STRUCTURAL ADJUSTMENT AND HEALTH SYSTEM PERFORMANCE

"... Field observation shows continuing high or increased maternal, infant, and child mortality and morbidity as families cut household spending by delaying to seek treatment, if they seek treatment at all. Social services, along with ministries of health and education, are facing cuts in funding when, ironically, ministries of defence, internal and foreign affairs maintain high or increased levels of spending. Adjustment policies ensure that governments in the developing world do not renego on their debt repayments, and accelerate towards a Western style, free market economy. This ideology is exported by countries that seek to open foreign markets, while continuing to protect their own.". Wakhweya, Angela [1995]

Throughout the last decade, the World Health Organization has taken the lead in the international effort and crystallized a practical framework for assessing and comparing the performance of health systems worldwide. In this regard, the WHO capitalized on the great methodological development aiming at assessing health system performance. In June 2000, the WHO published its first official assessment of the performance of health systems worldwide using its new framework. The assessment has offered unprecedented opportunity of comparing the health system performance in adjusting and non-adjusting countries using a single composite indicator. This comparison is the subject of the current chapter.

The WHO’s framework for assessing the health system performance is based on a conceptual definition for the so-called “intrinsic goals” of health systems. These goals denote the ultimate goals a health system is set up to realize. The WHO defined three main goals for the health system: health, responsiveness and fairness.
in financing. After these three intrinsic goals were clearly articulated, the framework moves logically to define the measurement of these goals and the concept of overall performance.

**Health.**

Health has been defined by the WHO as the primary goal of health systems, which should reflect the health of individuals throughout the life course and include both premature mortality and non-fatal health outcomes as key components. The emphasis is placed on both the average level of population health and the distribution of health within the population.

The primary summary measure of population health is the disability adjusted life expectancy, which was explained and covered in details in the chapter 6.

**Responsiveness.**

The second intrinsic goal is to enhance the responsiveness of the health system to the legitimate expectations of the population for the non-health improving dimensions of their interaction with the health system. Responsiveness has been proposed to have two key sub-components: respect of persons and client orientation. Respect of persons: the elements of dignity, autonomy and confidentiality, capture aspects of the interaction of individuals with the health system that often have an important ethical dimension. Client orientation, includes the latter four elements, that are major components of consumer satisfaction that are not a function of health improvement. The seven sub-components are:

a) Respect for the dignity of the person. Health systems might be able to achieve higher levels of health by incarcerating individuals with a communicable disease or sterilizing individuals with a genetic disorder, but this would be a violation of basic human rights. Respect for dignity of the person also includes aspects of the interaction with providers such as courtesy and sensitivity to potentially embarrassing moments of clinical interrogation or physical exploration.

b) Respect for the autonomy of the individual to make choices about his/her own health. Individuals, when competent, or their agents, should have the right to choose what interventions they do and do not receive.

c) Respect for confidentiality. In interacting with the health system, individuals should have the right to preserve the confidentiality of their personal health information. Respect of confidentiality serves an instrumental goal of improving the quality of healthcare; when individuals have confidence that the confidentiality of their personal health information will be respected, they are more likely to give important medical history information to healthcare providers when asked. In
addition, respect of confidentiality is intrinsically valuable because it upholds a core notion of privacy and individual autonomy over personal information.

d) Prompt attention to health needs. Surveys of population satisfaction with health services routinely demonstrate that prompt attention is a key dimension. Individuals value prompt attention because it may lead to better health outcomes; this instrumental value is captured in the defining goal of health. Individuals may also value prompt attention because it can allay fears and concerns that come with waiting for diagnosis or treatment. Both the intrinsic and instrumental value of prompt attention is critically affected by factors such as physical, social and financial access.

e) Basic amenities. The basic amenities of health services such as clean waiting rooms or adequate beds and food in hospitals are aspects of care that are often highly valued by the population.

f) Access to social support networks for individuals receiving care. Even when care is promptly available, if it is provided far from the individual's family and community, access to social support networks during care and recovery may be hampered. An expectation to have access to social support is not only an instrumental goal because it may enhance health outcomes but an intrinsically valued attribute.

g) Choice of institution and individual providing care. Individuals may want to select who provides them with healthcare. This concern is most often for the individual provider and only secondarily for the institution providing care. Choice is a legitimate component of responsiveness and takes on an increasing importance as other items in this list have been satisfied.

As with health, we are concerned not only with the average level of responsiveness but also with inequalities in its distribution. A concern for the distribution of responsiveness across individuals means that we are implicitly interested in differences related to social, economic, demographic and other factors.

**Fair financing and financial risk protection.**

The third goal of health systems is also one of the common goals for all systems, namely, fairness in financing and financial risk protection for households. We argue that to be fair, financing of the health system should address two key challenges. First, households should not become impoverished or pay an excessive share of their income in obtaining needed health care. In other words, fairness in financing requires an important degree of financial risk pooling. Second, poor households should pay less towards the health system than rich households. Not only do poor households have lower incomes but a larger share of their income goes to basic
needs such as food or shelter. Contribution to the health system should reflect this difference in disposable income between rich and poor.

With a clearly defined set of goals and their measures, the level of goal attainment for different health systems can be compared. However, the WHO’s framework differentiate between goal attainment and performance, which is more complex than simply recording the level of goal attainment. According to the WHO, performance of the health system involves relating goal attainment to what could be achieved. In other words, performance is a relative concept. A rich country has higher levels of health than a poor one, but which country has a higher level of performance relative to health system resources? Therefore, the performance is assessed relative to the worst and best that can be achieved for a given set of circumstances.

**Overall health system performance**

The overall health system performance for the 63 adjusting countries ranged between a minimum of 0.16 in the Central African Republic to a maximum of 0.9 in Colombia. The mean score was estimated to be 0.56 with a standard deviation of 0.19. The median was estimated at 0.55 and the modus at 0.62. The overall performance for the 27 non-adjusting countries had a range between 0.17 in the Democratic Republic of Congo and 0.96 in Oman. The mean was estimated to be 0.54, with a standard deviation of 0.22. The median score was estimated at 0.52 and the modus at 0.17. The statistical analysis revealed that there was no statistical significant difference between adjusting and non-adjusting countries with respect to the overall health system performance.

The overall health system performance appeared, however, to significantly differ among different national income categories. The mean score was estimated at 0.44 (0.15) in low income countries, at 0.67 (0.16) in lower middle income countries and at 0.7 (0.18) in upper middle income countries. The median and the modus were 0.45 and 0.52 in low income countries, 0.7 and 0.32 in lower middle income countries and 7.3 and 3.4 in upper middle income countries, respectively.

When the performance index was compared within each income category between adjusting and non-adjusting countries, the analysis revealed that the difference was statistically significant in the lower income category only. However, the difference was in favor of the adjusting countries whose mean score was almost 20% better than non-adjusting countries. The mean score in this income category was estimated at 0.72 (0.11) for adjusting countries and 0.56 (0.2) for non-adjusting countries. In the low income category and the upper middle income category, the differences were not statistically significant. Adjusting low income countries had a
mean performance score of 0.46 (0.16), compared with 0.39 (0.13) for non-adjusting low income countries. In the upper middle income category, the mean score was 0.69 (0.12) and 0.70 (0.22) for adjusting and non-adjusting countries, respectively.

Health system performance differed significantly among regions as well. With a mean score of 0.73 (0.13) the Middle East and North Africa was the best performing region, followed with Latin and Middle America 0.7 (0.12) and Asia and Pacific 0.57 (0.17). Sub-Saharan Africa showed the worst performance score, which was estimated at 0.4 (0.14). The median performance score was 0.7 in the Middle East and North Africa, 0.72 in Latin and Middle America, 0.55 in Asia and Pacific and 0.39 in sub-Saharan Africa. The Modus of the performance score for the four regions was 0.52, 0.52, 0.32 and 0.16, respectively.

Notwithstanding, there were evident gaps in the performance scores of countries within each region. The biggest gap existed in sub-Saharan Africa, a region in which the mean performance score varied from a minimum of 0.16 in the Central African Republic and a maximum of 0.76 in Senegal. Asia and Pacific showed significant variations as well, which ranged between 0.32 for Cambodia and 0.81 for Thailand. With respect to the Middle East and North Africa, the worst score was reported in Sudan (0.52) and the highest in Oman (0.96). Haiti was the worst performing country in the Latin and Middle America (score 0.52) and Colombia was the best performing (score 0.91).

Contrary to the statistically significant difference between regions, within-region comparisons of adjusting and non-adjusting countries revealed statistically insignificant differences in the health system performance. In sub-Saharan Africa, adjusting countries had a mean performance score of 0.42 (0.14), compared with a mean performance score of 0.36 (0.13) for non-adjusting countries. Likewise, the means scores in the Middle East and North Africa were estimated at 0.73 (0.1) and 0.72 (0.16) in adjusting and non-adjusting countries, respectively. Adjusting countries in Latin and Middle America had a mean performance score of 0.69 (0.12) and non-adjusting countries a mean score of 0.70 (0.14). The figures for Asia and Pacific were 0.61 (0.15) and 0.47 (0.19) for adjusting and non-adjusting countries, respectively.

Figure 91 shows the association between the duration of structural adjustment implementation and the overall health system performance index. It is clear that a linear relation is not the case. The observation was confirmed with the linear regression and correlation models. The Pearson correlation coefficient and the regression β coefficient were estimated 0.07 and 0.06, respectively. These values were shown to be statistically insignificant.
Figure 89. The Overall Health System Performance in Adjusting and Non-adjusting Countries by National Income Category

Country income category

Figure 90. The Overall Health System Performance in Adjusting and Non-adjusting Countries by Region
Overall health attainment

The aggregate overall attainment of health system score did not differ in a statistically significant manner between adjusting and non-adjusting countries. For adjusting countries, the score ranged between a minimum of 45.9 and a maximum of 86.0. The aggregate mean was estimated at 67.1 (10.1), the median at 67.3 and the modus at 59.3. For non-adjusting countries, the attainment score ranged between a minimum of 50.1 and a maximum of 84.2. The mean attainment score was estimated at 66.2 (10.5), the median score at 62.8 and the modus at 62.3.

Breaking down the statistical analysis by national income category revealed wide disparities. For example, the gap in the mean score between low income and upper middle income countries was estimated to be almost 15 point. The mean attainment score was 60.5 (7.5) in low income countries, 73.6 (7.1) in lower middle income countries and 75.8 (8.1) in upper middle income countries. The median and modus were estimated at 60.0 and 59.3 for low income countries, 73.8 and 56.8 for lower
middle income countries and 79.3 and 57.4 for upper middle income countries. The differences were shown to be statistically significant.

However, there was wide gaps among countries within each income group. For example, the range for the attainment score varied in low income countries between 45.9 and 85.7. The range for lower middle income countries varied between 56.8 and 84.2. Upper middle income countries had a minimum attainment score of 57.4 and a maximum attainment score of 86.0.

The difference of attainment scores on health within each national income category between adjusting and non-adjusting countries was statistically significant only in the lower middle income category. In fact, adjusting countries had better attainment scores in all income groups than non-adjusting countries. The mean attainment scores for adjusting and non-adjusting countries were 61.2 (7.8) and 58.3 (6.1) in low income countries, 75.8 (4.5) and 68.2 (9.8) in lower middle income countries and 77.3 (7.7) and 74.6 (8.7) in upper middle income countries.

The aggregate regional averages of overall health system attainment appeared to be statistically significant. Sub-Saharan Africa had the lowest regional average attainment score, estimated at 58.4 (6.2). The attainment scores ranged in the region between a minimum of 45.9 and a maximum of 76.2. The median and modus were estimated to be 58.8 and 60, respectively. Asia and pacific had the second lowest attainment scores after sub-Saharan Africa. The mean score for the region was estimated at 69.9 (8.9), the median at 67.6 and the modus at 58.2. The range of the overall health system attainment ranged between 58.2 and 85.7.

The Latin and Middle America and the Middle East and North Africa had the highest attainment scores, estimated at 76.0 (6.3) and 73.6 (6.0), respectively. The attainment scores varied in the Latin and Middle America from a minimum of 62.8 and a maximum of 86.0. For the Middle East, the range lied between 62.3 and 80.4. The median and modus were estimated at 77.8 and 77.9 in the Latin and Middle America and at 74.9 and 62.3 in the Middle east and North Africa.

Despite these regional differences, the overall health system attainment was not shown to be associated with structural adjustment within each region. The mean attainment scores within all regions were not different between adjusting and non-adjusting countries in a statistically significant manner. The adjusting countries of the sub-Saharan Africa had a mean attainment score of 58.7 (5.8), compared with 57.3 (7.4) for non-adjusting countries. In the Middle East and North Africa the means were estimated at 74.2 (3.7) for adjusting countries and at 73.1 (7.5) for non-adjusting countries. In the Latin and Middle America the mean score was 76.3 (5.8) in adjusting countries and 74.5 (9.2) in non-adjusting countries. The mean attainment scores in Asia and Pacific were 71.3 (9.1) and 66.9 (8.6) for adjusting and non-adjusting countries, respectively.
The duration of structural adjustment implementation appeared to have no association with the overall health attainment score. The Pearson correlation coefficient and the linear regression $\beta$ coefficient were estimated at 0.06 level and were shown to be statistically insignificant. Figure 94 illustrates the relation.

Figure 92. The Overall Health System Attainment in Adjusting and Non-adjusting Countries by National Income Category

Country income category

Figure 93. The Overall Health System Attainment in Adjusting and Non-adjusting Countries by Region

Region
Figure 94. the Duration of Structural Adjustment Implementation and the Overall Health System Attainment

**Health System Performance on Health**

The aggregate scores for health system performance on health were almost equal for adjusting and non-adjusting countries, estimated at 0.60 for both groups of countries. The aggregate averages were shown to hide wide variation within each group. For example, the range for adjusting countries varied between a minimum score of 0.08 and a maximum of 0.96. Likewise, the range for adjusting countries was shown to vary between 0.18 and 0.99. The median was estimated at 0.63 and 0.61 for adjusting and non-adjusting countries, respectively.

The health system performance on health for low income countries was shown to be significantly lower than lower and upper middle income countries. The aggregate mean score for low income countries was estimated at 0.50 (0.20), compared with 0.72 (0.19) for lower middle income countries and 0.74 (0.19) for upper middle income countries. Within-income-category variability were evident in the analysis. The upper and lower scores in low income countries were 0.08 and 0.82. Likewise, the range varied between 0.18 and 0.96 in lower middle income countries and between 0.18 and 0.99 in upper middle income countries.
Adjusting lower middle income countries were shown to have better performance on health average than non-adjusting countries of the same income category. The mean score for adjusting countries was estimated at 0.78 (0.1), compared with 0.57 (0.28) for non-adjusting countries. The difference was statistically significant. In the low and upper middle income countries, structural adjustment did have a statistically significant association with health system performance on health. The means for adjusting and non-adjusting countries were 0.49 (0.18) and 0.52 (0.17) in low income countries and 0.77 (0.1) and 0.72 (0.25), respectively.

Estimation of the regional aggregate score of health system performance on health revealed great disparities, basically between sub-Saharan Africa and other region. The mean aggregate score was estimated at 0.41 (0.16) in sub-Saharan Africa, 0.80 (0.12) in the Middle East and North Africa, 0.78 (9.7) in Latin and Middle America and 0.65 (0.1) in Asia and Pacific.

The analysis indicated wide variations in each region, especially in sub-Saharan Africa. In this region, the performance on health score varied between a minimum of 0.08 and a maximum of 0.81. The variation was existing also in other regions, though less striking. The range varied between 0.52 and 0.99 in the Middle East and North Africa, between 0.57 and 0.96 in Latin and Middle America and between 0.48 and 0.8 in Asia and Pacific.

Despite all these intra- and inter-regional disparities, within-region comparison of adjusting and non-adjusting countries’ scores yielded statistically insignificant differences. The results were consistent in all regions. Furthermore, adjusting countries were shown to have better performance on health scores than non-adjusting countries in all regions. For example, the adjusting countries in sub-Saharan Africa was estimated at 0.43 (0.16), compared with 0.37 (0.17) in non-adjusting countries. For the Middle East and North Africa, the average scores were estimated at 0.81 (0.23) and 0.79 (0.15) for adjusting and non-adjusting countries, respectively. The figures were 0.79 (0.12) and 0.75 (0.14) for Latin and Middle America and 0.66 (0.21) and 0.63 (0.14) for Asia and Pacific. The figures are for adjusting and non-adjusting countries, respectively.

Figure 97 shows the relationship between the duration of structural adjustment implementation and the health system performance on health. From the diagram and from the linear regression analysis, an association between the two variables was not depicted. The Pearson correlation coefficient was estimated at -0.05 and the \( \beta \) coefficient of the linear regression at -0.048. Both values were shown to be statistically insignificant.
Figure 95. Health System Performance on Health Level in Adjusting and Non-adjusting Countries by National Income

Country income category

Figure 96. Health System Performance on Health Level in Adjusting and Non-adjusting Countries by Region

Region

Africa | Middle East | Americas | Asia & Pacific

non-adjusting | adjusting
non-adjusting | adjusting
non-adjusting | adjusting
non-adjusting | adjusting
Figure 97. The Duration of Structural Adjustment Implementation and Health System Performance on Health Level

Figure 98. Equality of Child Survival in Adjusting and Non-adjusting Countries by National Income Category
Figure 99. Equality of Child Survival in Adjusting and Non-adjusting Countries by Region

Figure 100. The Duration of Structural Adjustment Implementation and the Equality of Child Survival
HEALTH SYSTEM PERFORMANCE

Responsiveness

Assessment of the health system responsiveness to the legitimate non-health expectation of the population includes assessing the levels as well as the distribution of the responsiveness. The aggregate average scores for the responsiveness level was shown to differ between adjusting and non-adjusting countries in a statistically insignificant manner. The same holds true for the responsiveness distribution scores.

The aggregate mean score for the health system responsiveness level was estimated at 4.8 (0.6) in adjusting countries and 4.9 (0.7) in non-adjusting countries. The median was estimated to be 4.8 and 5.0 for both groups, respectively. The range for responsiveness levels varied between a minimum of 3.7 and a maximum of 6.2 in adjusting countries and a minimum of 3.7 and a maximum of 6.3 in non-adjusting countries.

With respective to the responsiveness distribution, the mean aggregate scores for adjusting and non-adjusting countries were estimated at 0.86 (0.1) and 0.86 (0.1), respectively. The median was shown to be 0.86 in adjusting countries and 0.87 in non-adjusting countries. The range for the responsiveness distribution score varied between a minimum of 0.41 and a maximum of 0.995 in adjusting countries and a minimum of 0.67 and a maximum of 0.995 in non-adjusting countries.

The responsiveness level and distribution scores were revealed in the analysis to vary significantly by national income category. The mean score for responsiveness level was estimated to be 4.5 (0.55) in low income country, 5.1 (0.43) in lower middle income countries and 5.5 (0.42) in upper middle income countries. The corresponding figures for responsiveness distribution were 0.81 (0.009), 0.90 (0.008) and 0.95 (0.004), respectively. The median score for responsiveness level and distribution were estimated to be 4.5 and 0.81 in low income countries, 5.1 and 0.93 in lower middle income countries and 5.5 and 0.95 in upper middle income countries.

There were wide variation within each income categories in the level and distribution of health system responsiveness. In the low income category, the range extended between 3.7 and 6.1 for responsiveness level and between 0.41 and 0.99 for responsiveness distribution. For lower middle income countries, the scores varied between a minimum of 4.2 and a maximum of 6.2 for the responsiveness level and between a minimum of 0.72 and a maximum of 0.99 for the responsiveness distribution. For upper middle income countries, the responsiveness level ranged between 4.8 and 6.3, while the responsiveness distribution varied between 0.873 and 0.995.
The difference in the aggregate scores of responsiveness level and distribution between adjusting and non-adjusting countries were statistically insignificant in all national income categories. In the low income category, adjusting countries had an average scores of 4.5 (0.53) for responsiveness level and 0.81 (0.01) for responsiveness distribution. This is compared with 4.4 (0.6) and 0.78 (0.008) for non-adjusting countries, respectively.

In the lower middle income countries, the responsiveness levels mean score was estimated to be 5.1 (0.46) sting countries and 5.0 (0.36) in non-adjusting countries. For responsiveness distribution, the mean score was 0.91 (0.003) for adjusting countries and 0.88 (0.005) for non-adjusting countries. Estimates for the upper middle income countries revealed that the mean responsiveness level score was 5.5 (0.45) in adjusting countries and 5.5 (0.42) in non-adjusting countries. The responsiveness level scores were 0.94 (0.003) and 0.95 (0.004) for adjusting and non-adjusting countries, respectively.

The health system responsiveness level and distribution were shown to vary significantly among regions. Again, sub-Saharan Africa showed the lowest scores for both level and distribution of health system responsiveness. The mean responsiveness level score was estimated at 4.4 (0.47) for sub-Saharan Africa, 5.1 (0.93) in the Middle East and North Africa, 5.1 (0.88) in Latin and Middle America and 5.2 (0.9) for Asia and Pacific. The median responsiveness level scores were 4.5, 5.0, 5.1 and 5.1 for the four regions, respectively.

Estimates of the mean responsiveness distribution score was 0.8 (0.009) in sub-Saharan Africa, 0.93 (0.009) in the Middle East and North Africa, 0.88 (0.008) in Latin and Middle America and 0.9 (0.007) in Asia and Pacific. The median score was estimated to be 0.81, 0.97, 0.91 and 0.9, for the four regions respectively.

The gaps among countries in each group was evident from the range of the responsiveness level and distribution scores. With respect to the responsiveness level, the range varied between 3.7 and 5.6 in sub-Saharan Africa, between 4.0 and 5.8 in the Middle East and North Africa, between 4.2 and 5.9 Latin and Middle America and between 3.8 and 6.3 in Asia and Pacific. Likewise, the responsiveness distribution scores ranged between 3.7 and 5.6 in sub-Saharan Africa, between 4.0 and 5.8 in the Middle East and North Africa, between 4.2 and 5.9 in Latin and Middle America and between 3.8 and 6.3 in Asia and Pacific.

Within each region, adjusting countries and non-adjusting countries appeared to have similar aggregate scores of responsiveness level and distribution of the health system. The differences in the mean scores for the responsiveness level and distribution were statistically insignificant between adjusting and non-adjusting countries in all regions.
In sub-Saharan Africa, the aggregate mean score of health system responsiveness levels was 4.4±0.4 in adjusting countries and 4.6±0.7 in non-adjusting countries. The lower and upper limits of the 95% confidence interval for the mean were 4.3 and 4.6 in adjusting countries and 4.1 and 5.1 in non-adjusting countries. With respect to responsiveness distribution, adjusting countries in the sub-Saharan Africa had a mean score of 0.80±0.01, compared with 0.81±0.1 for non-adjusting countries. The 95% confidence interval for the mean ranged between 0.76 and 0.83 in adjusting countries and between 0.73 and 0.88 in non-adjusting countries. The difference between adjusting and non-adjusting countries in the scores of responsiveness level and distribution were not statistically significant.

In the Middle East and North Africa, the aggregate mean of responsiveness level was estimated at 5.0±0.24 for adjusting countries and at 5.1±0.62 for non-adjusting countries. The 95% confidence interval was shown to range between 4.8 and 5.3 in adjusting countries and between 4.6 and 5.6 in non-adjusting countries. The aggregate means for responsiveness distribution were estimated to be 0.96±0.03 and 0.91±0.1 for adjusting and non-adjusting countries respectively. The lower and upper limits for the 95% confidence interval for the mean were 0.93 and 1.0 in adjusting countries and 0.82 and 1.0 in non-adjusting countries. The differences in the mean responsiveness level and distribution were statistically insignificant.

In Latin America, adjusting countries were shown to have an aggregate mean score of responsiveness level of 5.2±0.48, compared with 4.9±0.37 for non-adjusting countries of the region. The lower and upper limits of the 95% confidence interval for the responsiveness level mean were 4.9 and 5.4 in adjusting countries and 4.3 and 5.5 in non-adjusting countries. The aggregate mean for the responsiveness distribution was estimated at 0.89±0.1 for adjusting countries and at 0.86±0.1 for non-adjusting countries. The 95% confidence interval for the responsiveness distribution means ranged between 0.85 and 0.93 in adjusting countries and between 0.74 and 0.98 in non-adjusting countries. The differences were statistically insignificant.

In the Asia and Pacific, adjusting countries were estimated to have an aggregate responsiveness level mean of 5.1±0.81, compared with 5.4±0.67 for non-adjusting countries. The 95% confidence interval for the mean was estimated to range between 4.6 and 5.7 in adjusting countries and between 4.5 and 6.2 in non-adjusting countries. With respect to the responsiveness distribution, adjusting countries of the region had an aggregate mean of 0.9±0.1, compared with 0.9±0.05 for non-adjusting countries. The lower and upper limits of the 95% confidence interval of the mean were 0.85 and 0.96 in adjusting countries and 0.84 and 0.96 in non-adjusting countries. The differences were statistically insignificant.
Figure 101. Health System Responsiveness Level in Adjusting and Non-adjusting Countries by National Income Category

Country income category

Figure 102. Health System Responsiveness Level in Adjusting and Non-adjusting Countries by Region

Region

Africa Middle East Americas Asia & Pacific
Figure 103. The duration of structural adjustment implementation and health system responsiveness level.

Figure 104. Health system responsiveness distribution in adjusting and non-adjusting countries by national income.
Figure 105. Health System Responsiveness Distribution in Adjusting and Non-adjusting Countries by Region

Figure 106. The Duration of Structural Adjustment Implementation and the Health System Responsiveness Distribution
The correlation analysis and the linear regression analysis showed that there was no association between the duration of structural adjustment implementation in years and the responsiveness level or responsiveness distribution scores. The non-parametric spearman coefficient for the correlation and the β regression coefficient were estimated at –0.09 and –0.04 for the responsiveness level score and –0.04 and 0.01 for the responsiveness distribution score respectively. All coefficients were shown to be statistically insignificant.

**Fair Financing**

Fair financing is the third intrinsic goal of the health system and an integral component of the WHO’s framework for assessing the health system performance. The fair financing score reflect the degree of progressiveness of the health system financing.

The aggregate mean score of fairness of financial contribution was estimated at 0.91±0.06 for adjusting countries and at 0.89±0.08 for non-adjusting countries. The 95% confidence interval for the mean ranged between 0.89 and 0.92 in adjusting countries and 0.86 and 0.93 in non-adjusting countries. These differences were statistically insignificant.

Fairness of financial contribution to the health system was not shown to be related to the national income category. The aggregate mean for low income countries was estimated to be 0.89±0.07 (95% CI, 0.87 - 0.91), compared with 0.92±0.04 (95% CI, 0.90 - 0.94) for lower middle income countries and 0.91±0.09 (95% CI, 0.86 - 0.95) for upper middle income countries.

Comparing the mean scores of adjusting and non-adjusting countries within each national income category revealed that the difference within the low income category was statistically significant. However, adjusting countries were shown to have a better fairness of financial contribution scores than non-adjusting countries. The aggregate mean was estimated to be 0.91±0.05 for adjusting countries and 0.85±0.11 for non-adjusting countries.

For the lower middle and the upper middle income categories, the differences between adjusting and non-adjusting countries were not statistically significant. Adjusting lower middle income countries had a mean score of 0.92±0.05 (95% CI, 0.89 - 0.94), compared with 0.93±0.04 (95% CI, 0.89 - 0.96) for non-adjusting countries. In the upper middle income category, the aggregate mean was estimated at 0.88±0.12 (95% CI, 0.77 - 0.99) for adjusting countries and at 0.93±0.04 (95% CI, 0.90 - 0.96) for non-adjusting countries.

Regional analysis of fairness of financial contribution to the health system revealed that the regional aggregate means did not differ among regions in a statistically
significant manner. Sub-Saharan Africa had an aggregate mean of 0.91±0.04 (95% CI, 0.90 - 0.92), compared with 0.93±0.03 (95% CI, 0.92 - 0.95) for the Middle East and North Africa, 0.90±0.08 (95% CI, 0.86 - 0.93) for the Latin America, and 0.87±0.1 (95% CI, 0.81 - 0.93) for the Asia and Pacific.

Within-region comparisons of fairness of financial contribution to the health system of adjusting and non-adjusting countries yielded a statistically significant difference in the Asia and Pacific region. However, the difference was in favor of adjusting countries, which had a significantly higher score of fairness than non-adjusting countries. The aggregate mean of fairness score in adjusting countries was estimated at 0.92±0.07 (95% CI, 0.87 - 0.96) for adjusting countries and at 0.77±0.12 (95% CI, 0.62 - 0.92) for non-adjusting countries.

In other regions there was statistically significant differences between adjusting and non-adjusting countries in the scores of fairness of financial contribution between adjusting and non-adjusting countries. In sub-Saharan Africa the aggregate mean was shown to be 0.91±0.04 (95% CI, 0.98 - 0.92) for adjusting countries, compared with 0.92±0.03 (95% CI, 0.89 - 0.94) for non-adjusting countries. The estimated for the Middle East and North Africa showed that adjusting countries had an aggregate mean of 0.93±0.02 (95% CI, 0.89 - 0.92), compared with 0.93±0.03 (95% CI, 0.89 - 0.94). Adjusting countries of the Latin America had an aggregate mean of 0.89±0.09 (95% CI, 0.85 - 0.94), compared with 0.92±0.04 (95% CI, 0.85 - 0.98) for non-adjusting countries in the region.

Figure 107. Fairness of Financial Contribution to the Health System in Adjusting and Non-Adjusting Countries by National Income

![Figure 107. Fairness of Financial Contribution to the Health System in Adjusting and Non-Adjusting Countries by National Income](image-url)
Figure 108. Fairness of Financial Contribution to the Health System in Adjusting and Non-adjusting Countries by Region

Figure 109. The Duration of Structural Adjustment Implementation and Fairness of Financial Contribution to the Health System

Duration of Adjustment Program in Years

Fairness of Financial Contribution to Health System Index
The correlation analysis and the linear regression analysis showed that there was no association between the duration of structural adjustment implementation in years and the fairness of financial contribution scores. The non-parametric spearman coefficient for the correlation and the $\beta$ regression coefficient were estimated at -0.1 and 0.1. Both coefficients were shown to be statistically insignificant.

**Conclusion**

The conclusion to be drawn from the statistical analysis for the relationship between the structural adjustment programs and the health system analysis is that there is no empirical evidence justifying the claims that structural adjustment has had a detrimental impact on the health system. Comparing five aspects of health system performance between adjusting and non-adjusting countries and stratifying these comparisons by national income category and region supported this conclusion.

These aspects were the overall health performance, the overall health system attainment, the health system performance on health, the health system performance on responsiveness and the fair financial contribution to the health system. In all these five aspects, there was no statistically significant difference between adjusting and non-adjusting countries. When the performance index was compared within each income category between adjusting and non-adjusting countries, the analysis revealed that some statistically significant differences. However, the differences in all cases were in favor of the adjusting countries whose mean score in these cases were better than non-adjusting countries.

Furthermore, there was no association between the duration of structural adjustment implementation in years and the scores of the five aspects of the health system performance. If structural adjustment to have a detrimental impact on health system performance, early adjusting countries should have had worse performance indicators than late adjusting and non-adjusting countries. This pattern of dose-response relationship was refuted by the statistical analysis.