# Appendix 7. Willingness to Pay Measure

As mentioned in Stage 9, another way to compare the coefficients for each job attribute is to use the flexibility of the salary coefficient as just described to obtain a monetary value for each attribute. Just as we can multiply the salary coefficient by any currency amount to yield different preference values, we can also divide any preference values by the salary coefficient to yield different currency amounts. In this way, we can obtain respondents’ “willingness to pay” (WTP) for each attribute. As described earlier, the WTP measure conveys in monetary terms respondents’ preferences for one level of a job attribute as compared to the reference level or standard job posting (another job a health worker could choose instead of one at a rural facility). In other words, this is the value the doctor, nurse, or other health worker places on the offered intervention package in monetary terms. Given the context, WTP can be defined as a measure of how much salary a respondent would be willing to forgo to receive other benefits or incentives in the job.

## Step 1: Obtain “Willingness to Pay” Measure

To obtain WTP values, we need to divide each attribute’s coefficient by the salary coefficient, as shown in the table below:

| **Attribute** | **Levels** | **Coefficient** | **Calculation** | **WTP** |
| --- | --- | --- | --- | --- |
| Quality of the facility | 1 = Basic |  |  |  |
| 2 = Advanced | 0.8203349 | ÷ 0.00000179= | 458,288 |
| Housing | 1 = No housing |  |  |  |
| 2 = Housing allowance provided | 0.6011961 | ÷ 0.00000179= | 335,864 |
| 3 = Basic house provided | 0.5677403 | ÷ 0.00000179= | 317,173 |
| Length of commitment | 1 = Two years |  |  |  |
| 2 = Five years | -0.7682844 | ÷ 0.00000179= | -429,209 |
| Study assistance | 1 = No tuition support |  |  |  |
| 2 = Full tuition support | 1.297229 | ÷ 0.00000179= | 724,709 |
| Salary | 1 = 700,000/month |  |  |  |
| 2 = 1,000,000/month |  |  |  |
| 3 = 1,500,000/month |  |  |  |
| 4 = 2,000,000/month | 0.00000179 | ÷ 0.00000179= | 1.0 |
| Management support | 1 = Manager is not supportive |  |  |  |
| 2 = Manager is supportive | 0.4542702 | ÷ 0.00000179= | 253,782 |

You can also use the Excel spreadsheet provided in Appendix 7 to calculate the WTP values by entering the job attributes, levels and coefficients. (Refer to Stage 10, Step 1a and 1b, and Appendix 7: the Preference Calculation worksheet)

With these calculations we can discern how much respondents would be “willing to pay” for particular job attributes. Because the salary for a job posting is being considered, it is in fact more accurate to consider respondents’ “willingness to pay” as their “willingness to forego salary.”

The results in the above table suggest respondents would be willing to accept 458,288 Shillings less in salary if the quality of the facility is advanced. Similarly, the results suggest that respondents would be willing to accept 724,709 Shillings less in salary if the posting includes full tuition support for continued education. While this does not literally mean that health workers will receive a lower salary, this is a way to interpret how important certain job attributes are viewed by respondents compared to other job attributes.

## Step 2: Determine the Preferred Incentive Packages Using the Willingness to Pay Measure

We can then use the WTP measure to determine the most preferred incentive packages. Remember, you will need to carry out these steps for each cadre included in the Rapid DCE in order to determine the intervention packages preferred by each specific cadre since motivational factors may differ among doctors, nurse, pharmacist, and others.

* + 1. Using the table of WTP measures calculated in the preceding step, rank potential strategies from highest WTP to lowest WTP. This should be the same ordering as the weighted ranking we listed in Stage 9, Step 1. Note that the negative sign is not taken into consideration when expressing interventions as per their WTP measure. However, you should change the wording that was used to describe the attribute to instead describe a potential intervention.
       - Provide full tuition support for continued education: 724,709
    - Improve the quality of the health facility in terms of electricity, equipment, and supplies: 458,288
    - Guarantee that the length of time committed to the posting is two years: 429,209
    - Provide a housing allowance: 335,864
    - Provide a basic house: 317,173
    - Ensure that managers provide support to health workers: 253,782
    - Increase salary by 1 Shilling: 1.0
    1. Start by proposing a number of different combinations of incentive packages that could be offered to health workers. You can begin by offering the top three or four incentives with the highest WTP, as shown in the WTP ranking above, in addition to a selected salary level. As mentioned previously, it is useful to present each package of incentives or interventions with two different levels of potential salary for comparison purposes. For example, you may consider the below sample package for:
* Increase salary to 1,000,000 Shillings per month
* Improve the quality of the health facility
* Set commitment length of the position to two years
* Provide full tuition assistance for continued education.

To determine the WTP measure for the entire package, simply add up the WTP measure for each incentive or intervention being offered. See the table below for a few examples of the calculation.

|  |  |  |  |
| --- | --- | --- | --- |
| **Example of Doctor Packages using WTP** | | | |
| **Package 1: Salary Option A** | | **Package 1: Salary Option B** | |
| **Incentive/Intervention** | **WTP** | **Coefficient** | **WTP** |
| Increase salary to 1,000,000 Shillings/month | 1,000,000 | Increase salary to 800,000 Shillings/month | 800,000 |
| Improve the quality of the health facility | 458,288 | Improve the quality of the health facility | 458,288 |
| Set commitment to position at two years | 429,209 | Set commitment to position at two years | 429,209 |
| Provide full tuition support for continued education | 724,709 | Provide full tuition support for continued education | 724,709 |
| **Total WTP** | **2,612,206 Shillings** | **Total WTP** | **2,412,206 Shillings** |
| **Package 4: Salary Option A** | | **Package 4: Salary Option B** | |
| **Incentive/Intervention** | **WTP** | **Coefficient** | **WTP** |
| Increase salary to 1,000,000 Shillings/month | 1,000,000 | Increase salary to 800,000 Shillings/month | 800,000 |
| Provide full tuition support for continued education | 724,709 | Provide full tuition support for continued education | 724,709 |
| Provide a housing allowance | 335,864 | Provide a housing allowance | 335,864 |
| **Total WTP** | **2,060,573 Shillings** | **Total WTP** | **1,860,573 Shillings** |

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As in the previous method, you can see from the table that varying the options within an incentive package can either change the overall worth in terms of WTP in the eyes of the cadre in substantial or insignificant degrees. This is why it is worth calculating the WTP for various combinations of packages to try to find the package that simultaneously has the “right” degree of value to a cadre and the highest degree of political and financial feasibility.

|  |  |
| --- | --- |
| **Example of WTP for Cadre: Doctors** | |
| **Package 1** | |
| **Salary Option A**   1. Increase salary to 1,000,000 Sh/month 2. Improve the quality of the health facility 3. Set commitment to position at two years 4. Provide full tuition support for continued education   Doctors value this package at **2,612,206 Sh/month.** | **Salary Option B**   * + 1. Increase salary to 800,000 Sh/month  1. Improve the quality of the health facility 2. Set commitment to position at two years 3. Provide full tuition support continued education   Doctors value this package at **2,412,206 Sh/month.** |
| **Package 2** | |
| **Salary Option A**   1. Increase salary to 1,000,000 Sh/month 2. Ensure supportive management 3. Set commitment to position at 2 years 4. Provide full tuition support continued education   Doctors value this package at **2,407,700 Sh/month.** | **Salary Option B**   1. Increase salary to 800,000 Sh/month 2. Ensure supportive management 3. Set commitment to position at two years 4. Provide full tuition support continued education   Doctors value this package at **2,207,700 Sh/month.** |
| **Package 3** | |
| **Salary Option A**   1. Increase salary to 1,000,000 Sh/month 2. Set commitment to position at two years 3. Provide full tuition support for continued education   Doctors value this package at **2,153,918 Sh/month.** | **Salary Option B**   1. Increase salary to 800,000 Sh/month 2. Set commitment to position at two years 3. Provide full tuition support for continued education   Doctors value this package at **1,953,918 Sh/month.** |
| **Package 4** | |
| **Salary Option A**   1. Increase salary to 1,000,000 Sh/month 2. Provide full tuition support for continued education 3. Provide a housing allowance   Doctors value this package at **2,060,573 Sh/month.** | **Salary Option B**   1. Increase salary to 800,000 Sh/month 2. Provide full tuition support for continued education 3. Provide a housing allowance   Doctors value this package at **1,860,573 Sh/month.** |

As a reminder, it is recommended that a costing exercise also be conducted to determine the financial implications of the incentive packages under consideration. You can access the iHRIS Retain retention intervention costing tool, a collaborative effort between USAID’s Capacity*Plus* and the WHO, at: <http://retain.ihris.org/retain>