**Appendix 1**

1. **First we will prove that using the two step approach u will never result in a value greater than 1.**

As is a probability, it is always , consequently .

On the other hand, represents the mean utility value for those people not in perfect health, therefore, necessarily

If we multiply with a positive value on both sides we get

At the same time, summing a positive value in both sides to this formula, we obtain

1. **In addition, it is possible to obtain negative mean utility values using this approach.**

Let , as represents the mean utility value for those people not in perfect health asthat is a possible case.

If we multiply with a positive value ,

Therefore, when we sum a positive value on both sides, we obtain

That means that in those cases when we will find that