

Well-Being Inequality Using Superimposing Satisfaction Waves: Heisenberg Uncertainty in Behavioral Economics and Econometrics

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Abstract : In this article, for the first time in the literature for this subject we propose a new method for the measuring of well-being inequality through a model composed of superimposing satisfaction waves. The displacement of households' satisfactory state (i.e. satisfaction) is defined in a satisfaction string. The duration of the satisfactory state for a given period of time is measured in order to determine the relationship between utility and total satisfactory time, itself dependent on the density and tension of each satisfaction string. Thus, individual cardinal total satisfaction values are computed by way of a one-dimensional form for scalar sinusoidal (harmonic) moving wave function, using satisfaction waves with varying amplitudes and frequencies which allow us to measure well-being inequality. One advantage to using satisfaction waves is the ability to show that individual utility and consumption amounts would probably not commute; hence it is impossible to measure or to know simultaneously the values of these observables from the dataset. Thus, we crystallize the problem by using a Heisenberg-type uncertainty resolution for self-adjoint economic operators. We propose to eliminate any estimation bias by correlating the standard deviations of selected economic operators; this is achieved by replacing the aforementioned observed uncertainties with households' perceived uncertainties (i.e. corrected standard deviations) obtained through the logarithmic psychophysical law proposed by Weber and Fechner.

Keywords : Heisenberg uncertainty principle, superimposing satisfaction waves, Weber-Fechner law, well-being inequality

Conference Title : ICAQSP 2015 : International Conference on Applied Quantum and Statistical Physics

Conference Location : London, United Kingdom

Conference Dates : September 25-26, 2015