SOCIO-ECONOMIC DETERMINANTS OF LONGEVITY IN DENMARK, ENGLAND AND WALES – A COMPARATIVE STUDY

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ABSTRACT

The fascination of human knowledge with our longevity is not just a recent debate. Its roots are deep in our history. The discussion of human longevity and its limits have been the focus of different scholars and different disciplines for a long time (Laslett, P, 1999). Many demographers, gerontologists and other scholars believe that life expectancy will continue to increase in the years to come. The recent debate has focused on the existence of the limits to our longevity, measured either through life expectancy at birth or through the extreme cases of our human life span. Some scholars believe that there is an upper limit to that increase (Fries 1980, Demeny 1984, Olshanky, J. 1990), while some others are more skeptical about the existence of the upper limit. The later foresee continuation in the process of declining of mortality and especially at old ages (Manton et al 1991, Vaupel and Gowan 1986, Vaupel and Lundstrom 1995, Wilmoth, 2001, Oeppen and Vaupel, 2002). Manton (1994) explains that the specification of such a limit remains elusive and that the most obvious evidence that suggests that there is such a limit is simply that there have not been observed many cases of long-lived people (e.g. persons documented to be age 130 or over). In his article "What's the fuss about the compression of mortality?" (1994), he concludes that mortality conditions (and their determinants, both socio-economic and biomedical) in developed countries are evolving rapidly, thus questioning the existence of such limitations. More recent works have demonstrated that historically both life expectancy at birth and extreme cases of longevity have increased continuously for as long as our human mortality records allow us to provide evidence (Oeppen and Vaupel, 2002, Wilmoth, 2001). In addition, the assumption of a genetically fixed upper bound to life expectancy does not take into account innovative genetic interventions that have been taking place more recently. As a result the rate of change in biomedical innovations and the inclusion of treatments of older ages has increased.

Not only life expectancy will continue to increase, but further gains will be achieved through reductions in mortality at old ages. The last 30 years have experienced an unprecedented reduction of the death rates at the old ages (Kannisto, V. 1996, Vaupel, J. 1997). In Japan, for example, half of the increase of 1.4 years in female life expectancy at birth achieved during 1985-1990 was due to falls in death rates among those aged 75 and over (Kono 1996).

In the early stages of mortality transition the improvements in mortality happened mainly at young and adult ages. Nowadays in all developed countries mortality at young ages is already

very low. Preston et al (1989) have demonstrated the further ageing of a number of already old populations with low fertility and mortality regimes is now largely mortality rather than fertility driven. This assumes that most of the improvements of mortality in the coming years are expected to happen at old ages. It is for this reason that a large number of scholars are focusing more nowadays at changes happening at old age, being they socio-economic or behavioral.

As the person grows old, the body acquires new diseases, which in time are demonstrated. Therefore it is important to understand how ageing itself is distinguished from manifestations and symptoms of disease, especially if it is assumed that disease would always be an unavoidable consequence of ageing. A number of scholars argue that increasing life expectancy may be producing 'longer life and worsening health' by adding years to life in which people are increasingly ill and disabled (Gruenberg, 1977; Manton, 1982; Schneider and Brody, 1983). This has been criticised by other scholars among which Fries (1980) who argued that continuing improvements in health and life expectancy will increasingly 'compress' morbidity and disability into a brief period in the last years of life.

However, it is clear that some subgroups of population manage to live longer and also experience less disability and functional limitations than others. The variation in human life expectancy is present among different developed countries as well as within different groups of the same population. This raises some important questions, such as: "What are the factors that determine the prolongation of life?" "Do socio-economic characteristics of people play an important role in determining their longevity?" "Are there determinants for a prolongation of life with reasonable quality (or is this just a matter of postponing death by prolonging the process of dying rather than an extension of healthy life)?" "Do these determinants continue to play a role also at the old ages or is everything set by that time?" Another important question that arises is finding out the 'mechanism' by which the different factors affect (determine) longevity. These questions are not easy to answer. As Hummer and colleagues note: '…the challenge to social demographers is to demonstrate why such differentials exist and to model the causal processes involved - that is, to understand the background sources and behavioural pathways by which social categories such as race, gender, and socio-economic status translate into inequalities in timing and cause of death.' (Hummer et al, 1998).

This work makes a modest contribution in trying to answer some of the above mentioned questioned. It focuses on the effect of socio-economic factors to longevity, by using two different data sets, in two different countries, England and Wales and Denmark.

After this brief introduction an extensive literature review follows in chapter II. This chapter reviews the main findings on determinants of mortality and especially with regards to the effect of socio-economic determinants to longevity. It focuses onto all aspects of socio-economic determinants and their effect to longevity, such as social class and type of employment, education, income and wealth, as well as the area level indicators. The chapter does not just look at research done on socio-economic factors and old age mortality, but looks at all research done in general on the area of socio-economic factors and their effect to mortality and health. It also examines different approaches of research from ecological studies to individual data ones. It looks at the effects of socio-economics determinants to longevity in macro level and at a micro level thus setting out the conceptual framework on which this thesis is based.

Chapter III considers the data and methodology used in this thesis. It explains the two data sets used in this work from both countries, England and Wales and Denmark. It explains the reasons why these two data sets were used and considers the common and different variables available in both data sets. A detailed description of each variable is also given here. Apart from that, the advantages and the limitations of both data sets are also made clear here. Following the description of the data used, the methods applied in these analyses are also described in this chapter.

Chapters IV and V focus on the effects of socio-economic determinants of survival at old ages using data from the 1% Longitudinal Study for England and Wales and from the Danish Population Census. These chapters aim to test whether socio-economic status has an effect in old age, whether this effect is gender-specific, whether it is long lasting and whether it differs from one cohort to the other. A discussion of the main findings is also done at each chapter.

Chapter VI aims to make comparisons of the main findings of chapters IV and V as well as draw attention to some other demographic issues that came across in the analyses. This chapter aims to summarize the main findings of this work.

Lastly conclusions from this work are drawn with respect to addressing further research and policy implications.