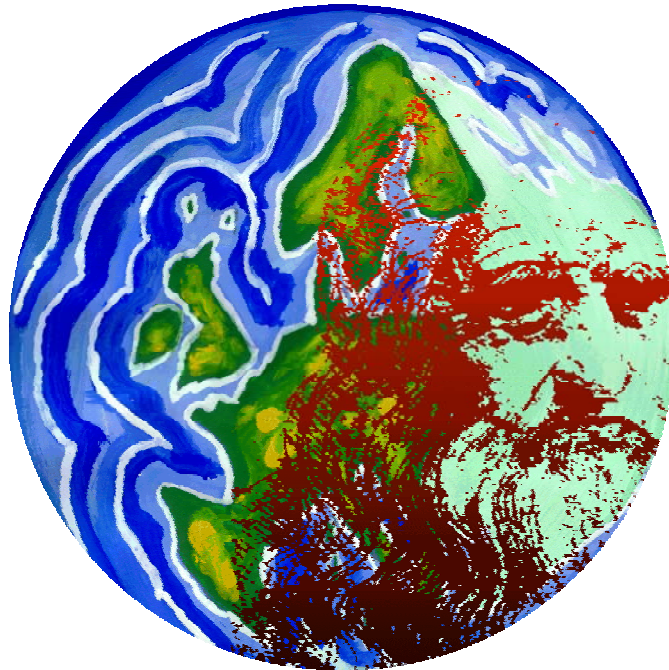


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Comparative Report on The European Model of Ageing Well

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INTRODUCTION	4
ADULT DEVELOPMENT AND AGEING	4
<i>Historical perspectives</i>	4
<i>Models of Ageing</i>	5
<i>Regulative processes and ageing: Changing the world or changing the self?</i>	7
<i>Indicators of Successful Ageing</i>	9
THE EUROPEAN MODEL OF AGEING WELL	11
METHODOLOGY	17
<i>Research Design</i>	17
Phase 1	17
Phase 2	18
Phase 3	18
Main characteristics of sample.....	18
<i>Results</i>	21
Goodness of fit-statistics	21
Prediction of life satisfaction and self-worth	23
Prediction of life satisfaction.....	23
Prediction of self-worth	26
Prediction of life satisfaction and self-worth – when age comes into play.	29
IMPLICATIONS OF THE “EUROPEAN MODEL OF AGEING WELL”	33
REFERENCES	35

Tables

Table 1: Cross-tabulation of objective life situations and their subjective evaluations.	10
Table 2: Constructs and indicators within the European Model of Ageing Well	15
Table 3: Constructs and indicators within the European Model of Ageing Well (continued)	16
Table 4: ESAW sample by country and type of locality (rural – urban)	19
Table 5: ESAW sample by country and gender.....	19
Table 6: ESAW sample by country and ethnicity	19
Table 7: ESAW sample by country and age group.....	20
Table 8: ESAW sample by country and living arrangements.....	20
Table 9: Goodness of fit-statistics	22
Table 10: Results of the model tests in the total and the national samples.	23
Table 11: Latent correlations between predictor and criterion variables with age and gender.....	31

Figures

Figure 1: European Model of Ageing Well.	14
Figure 2: Prediction of life satisfaction in six national samples.	24
Figure 3: Regression coefficients in the prediction of life satisfaction obtained in the total sample.	25
Figure 4: Prediction of self-worth in six national samples.....	27
Figure 5: Regression coefficients in the prediction of self-worth obtained in the total sample.....	28
Figure 6: Comparison of the predictors in the total sample.	28
Figure 7: Enlarged prediction model.....	29
Figure 8: Model integrating indirect effects of age and gender on life satisfaction and self-worth.	30
Figure 9: Model integrating indirect effects of age and gender on life satisfaction and self-worth on the basis of latent correlations.	32

Introduction

The European Study of Adult Well-being (ESAW) Project was designed as part of the ***Global Ageing Initiative***, initiated by the Indiana University Center on Aging and Aged, under the directorship of Dr. Barbara Hawkins. The aim of this parent project is to develop a globally applicable model of Ageing Well, estimating the direct causal contribution of five key components, personal characteristics and culture to the outcome variable of global life satisfaction, which is here chosen as a widely accepted indicator of *Ageing well*. The five components included in the study are: (1) physical health and functional status; (2) cognitive efficacy (in the ESAW renamed self-resources); (3) material security; (4) social support resources; and (5) life activity.

ESAW, funded by the European Union, represents a European sub-group of the larger global study, which aims to develop a European model of Adult Well-being, using the five key components and parallel methodology. The ESAW partner countries are: Austria, Italy, Luxembourg, the Netherlands, Sweden and the United Kingdom. The work has been co-ordinated by Professor G. Clare Wenger, of the University of Wales, Bangor, United Kingdom.

This paper summarises the theoretical background of the European model of Adult Well-being and specifies and tests the model using Structural Equation Modelling. Different theoretical approaches and models of the process of ageing are presented, before conceptualising and accentuating the role of life satisfaction as one crucial indicator of individual adaptation in age and old age. In the results section, the structural equation model will be specified followed by an empirical model test in the six national samples. Finally, a summary and a discussion of the model implications is presented.

Adult development and Ageing

Historical perspectives

Although Plato and Cicero as well as Aristotle and Seneca have already analysed and differently evaluated the chances and risks of ageing, present gerontological models may be rooted to the beginning of the 20th century. Here, the first models were published, which structured the human life span with respect to predominant themes, tasks and crises of each phase, allowing for a differentiation of different life phases. Before different models on the process of ageing and its evaluation as "successful", "productive", "proactive" etc. are presented it seems necessary to outline these models which still have an impact on gerontological theory and research.

Charlotte Bühler (1933) proposed five stages of the human life span and described them by specific biological and psychological changes underlying each phase, the last phase starting with the age of 63 being described by biological decline, sickness, retirement and retrospection. Erikson (1950) described eight stages of the human life span by their underlying psychosocial crises and individual development should in this view depend on the solution of the respective crises. The task of old age within

the model proposed by Erikson is described by the struggle to achieve a sense of ego integrity in solving the conflict between "integrity and despair", which should be typical for this age span. Havighurst (1948) differentiated between nine developmental phases across the human life span and described them by their specific profile of developmental tasks. He formulated six developmental tasks, which should be typically faced during late life and which comprise coping with decreasing physical strength and health, the adjustment to personal losses as well as the adaptation to a disengagement from social life and social roles.

Common feature of these models is the accentuation a *general deterioration* of biological, social and psychological factors as a general characteristic of age and old age, which surely reflects the objective social context of ageing at the lifetime of these authors. Especially the models proposed by Erikson and Havighurst give nevertheless space for plasticity in ageing, which depends in both models on the solution of the respective development crises and tasks. Ageing is in this view "successful" if one achieves a sense of ego integrity or adapts to the specifics of the changed life situation in old age. And it is not surprising that Havighurst (1961) was one of the first authors who brought the concept of *successful ageing* into the scientific debate and thus started a series of theoretical models and empirical research on this issue.

Models of Ageing

Rowe and Kahn (1998) have stated that ageing is a universal but in no means a uniform process, and this clearly marks the starting point of theoretical considerations of the ageing process and its underlying changes. Ageing represents a developmental phenomenon that has to be described on multiple dimensions and out of several scientific perspectives, and depending on the perspective and dimension under consideration differential descriptive profiles and explications of ageing may emerge. A further essential point to be taken into consideration is that ageing always takes place in a social context and depending on the social context different conditions for ageing and the evaluation of ageing can be expected.

Core pieces of the early definition of "successful aging" as it was proposed by Havighurst have been "adding life to the years" and "getting satisfaction from life", thus combining objective and subjective criteria, which have been used in many further approaches. Quite another definition of "successful ageing" is presented within *disengagement theory*, which represents a simultaneous conceptualisation of the ageing process (Cumming & Henry, 1961); here, emphasis is placed on the lessened capabilities and diminished interest on the one side and societal disincentives for participation on the other side as factors, which should lead individuals to gradually withdrew or disengage from social roles in the process of ageing. "Successful ageing" is in this view, thus, characterized by the willing retirement from work or family life, the pursuit of solitary, passive activities as a preparation for death. Shorter life expectancy, an earlier onset of disability, physically demanding work roles, mandatory retirement and few organized activities for older adults set the socio-cultural background for this theory.

Activity theory marks the contra-position to disengagement theory (Lemon, Bengtson & Perterson, 1972) and active participation in daily and social activities is here

described as a prerequisite for successful ageing. This theoretical approach can also be linked to the predominant features of the 1960s and 1970s in the Western countries, which may be characterized by volunteerism and senior activism, the development of senior centres and other recreational facilities for the elderly. Active participation in these activities was clearly desired and became thus one of the core domains in evaluating the ageing process as successful.

It was also within that time-span, when the first longitudinal studies on the process of ageing were started, and the Bonn Longitudinal Study on Ageing (BOLSA) may be named here as one example (for an overview see Schaie, 1983a). It was Thomae (1970) as the initiator of that study, who developed a cognitive theory of ageing, in which he emphasized not only the objective incidence but also the interpretation and evaluation of age-correlated impairments and losses as the crucial factor in determining one's life-satisfaction in old age. According to this author the interpretation of changes depends, on the one hand, on needs, motives, and aspirations of older people and, on the other hand, the present socially shared stereotypes of old age in a given society. In this line of reasoning, the essential feature for life satisfaction is the balance between individual needs and perceived reality.

In later works, Thomae differentiated between "ageing styles" ("Alternstile") and ageing as fate ("Altersschicksale") both accentuating an active and non-deficit view of older people: Ageing styles are described as active attempts of an individual to shape his or her development; "ageing as fate" describes the individual coming to terms with normative age related events which cannot be prevented (i.e., losses and functional impairments). This dichotomy between active attempts at coping and more or less passive ways of accepting what cognitive restructuring cannot change was also taken up in later theories, presented below.

The implementation of longitudinal studies finally emphasized the conceptualisation of the ageing process as a developmental phenomenon, which covers the whole life span and does not stop in early adolescence. Life-span developmental psychology is characterized by the assumption that development takes place across the whole life-span, and by its emphasis on interindividual as well as intraindividual patterns of change, which are observed across life (see Baltes, 1987). The works of Schaie (1983b) on differing age courses of intelligence has convincingly demonstrated such an approach.

When it comes to the term of successful ageing, it was Atchely (1972) as one of the first authors, who took an explicit perspective by conceptualising ageing within the context of an individual's life long development. According to the continuity theory proposed by this author successful ageing implies the preservation of habits, lifestyles and relationships from midlife into late life. Parallel to the shift of paradigm within developmental psychology, which accentuated the plasticity and variability of developmental processes across the life span, ageing became, thus, reconstructed as part of the individual development, which may be described, by continuity or discontinuity of individual development.

Thomae's cognitive theory as well as continuity theory mark a shift in the theoretical focus on ageing, since the individual perception and "construction" of ageing have become more predominant criteria compared with objective criteria when describing the ageing process as successful. As a consequence of this paradigm shift regulative

processes were put into focus and the adaptive nature of the ageing individual is highlighted in following models. On the other hand, this conceptualisation also gave rise to models emphasizing the importance of activity in old age out of a less individualistic but more sociological perspective, and two of these models will be sketched in the following.

Butler and Gleason (1985) introduced the term *productive ageing*, and define this as the capacity of an individual or a population to serve in the paid workforce and in volunteer activities, to assist in the family, and to maintain him or herself as independently as possible. The concept of active ageing is also clearly promoted by the World Health Organization (WHO; Kalachea & Kickbusch, 1997); the concept is used here for the support of policies, which will keep people active for as long as possible. In this view, factors that will enhance activity are crucial and the WHO subsumes here more broad social categories as well as individual factors: *health and social service systems*, which should educate and enable individuals to take control over their own health; *economic factors: income, work and social protection*, which include the means to reduce poverty and increase the involvement of older people in income-generating activities; *factors in the physical environment* (i.e., the provision and construction of age-friendly environments); *factors in the social environment* (such as social support, opportunities for education and lifelong learning, and protection from violence and abuse). On the individual level *behavioural factors* such as physical activity, dietary and healthy life styles are accentuated as well as *personal factors* involving biological as well as psychological factors that foster the active participation in the economic process as well as social life in spite of impairments.

While these two conceptions of a desirable ageing process focus on activity and on policy, social, and individual factors, which may help to achieve this criterion, the approaches described in the following take a more individualistic perspective. Here, a paradigmatic definition of the quality of ageing is avoided since multiple, sometimes mutually exclusive, criteria are specified, by which ageing may be described, thus accounting for the large inter-individual variance, which can be observed in the ageing process.

Regulative processes and ageing: Changing the world or changing the self?

Successful ageing as it is defined by Rowe and Kahn (1998) implies the ability to maintain three relative and interrelated key elements or characteristics: (1) Low probability of disease and disease-related disability, (2) High cognitive and physical functional capacity, and (3) High engagement with life (i.e., activities). Ageing is differentiated with respect to non-pathological and pathological ageing, where the first category is further differentiated with respect to usual or *average* ageing and *successful* ageing. Usual ageing is defined as ageing, in which extrinsic factors heighten the effects of intrinsic ageing processes (i.e., normal functional decrements due to the genetic programme), whereas successful ageing refers to ageing in which extrinsic factors counteract intrinsic ageing processes so that there is little or no functional loss. Rowe and Kahn (1998) recommend that theory and research should

focus on the group of successfully ageing individuals in order to identify those processes underlying an optimal ageing process.

The processes, which may contribute to successful or optimal ageing are explicated within the framework of the Theory of Selective Optimisation with Compensation (SOC) proposed by Baltes and Baltes (1990). Successful ageing is defined here as the maximisation and attainment of positive outcomes and goals and the minimisation and avoidance of negative outcomes and goals. In order to achieve this hedonistic principle – already formulated by Freud – the components of selection, compensation and optimisation are used. Selection implies the selection and concentration on goals and desired outcomes, which can be achieved in old age; compensation implies the use of compensatory means to adapt to capacities that are no longer intact, and optimisation, finally, implies the best use of still intact capacities. The differential use of these manoeuvres should represent the explicator of differences in objective and subjective indicators of ageing within this model. Baltes and Baltes (1990) suggest that the nature of what constitutes gains and losses or desired outcomes and goals is conditioned by cultural and personal factors as well as by the life phase of an individual. The model thus represents a meta-model, which can be applied to study the whole developmental process and it integrates social, cultural and individual factors.

If the SOC-model is applied to explain individual forms of ageing, the three regulative processes may be characterized to different degrees by the use of two differing processes, which may be described as “changing the world” and “changing the self”. This dichotomy was first proposed by Rothbaum, Weisz and Snyder (1982), and has influenced a lot of subsequent reasoning and models on coping in old age. Starting from the premise that the preservation and experience of control is an essential human need the authors differentiate in their two-process model of perceived control between primary (i.e., “Changing the world”) and secondary control (“changing the self”). Primary control comprises active behavioural endeavours to change one’s environment in order to achieve one’s goals and to preserve personal autonomy; secondary control involves the manipulation and accommodation of one’s internal cognitive and affective states (i.e., changing one’s goals and aspirations) in order to reduce the impact of events, which are not controllable by primary control endeavours. The authors state that “secondary control ... is particularly likely in cases of prolonged failure to obtain highly desired and important objectives, or cases in which inability is perceived as permanent” (p.29, Rothbaum et al, 1982), and thus outline why this theory is also suited for the description of coping in old age.

The dichotomy described here is also to be found within the two-process model proposed by Brandstadter and coworkers (e.g., Brandstadter & Greve, 1984). Here, successful ageing is seen as a dynamic process of balancing assimilative, accommodative and immunising strategies in order to maintain a realistic sense of self. While assimilative activities represent behavioural endeavours to prevent or reduce losses in domains that are central to the self, accommodative processes comprise the cognitive regulation of aspirations and goals (such as disengagement from blocked goals, lowering of aspirations). Immunising strategies imply the selective and self-serving filtering and processing of information, which may be a threat to the self-esteem (e.g., by selective comparisons).

Heckhausen and Schulz (1995) and Schulz and Heckhausen (1996) also emphasise these processes in their model. They propose a life span theory of primary and

secondary control in close conceptual relation to the theory proposed by Rothbaum et al. (1982), and predict that secondary control strategies are more frequently used at higher ages in order to preserve their self-esteem and self-efficacy, since external restrictions increase with increasing age.

Summing up, one may hold that theory and research on the concept of successful ageing has increasingly emphasised the role of individual processes in adapting to the changed life situation in old age, and that there has been a shift from more or less objective criteria to more subjective criteria, when evaluating the quality of ageing.

Indicators of Successful Ageing

The term successful ageing has been used within gerontological research to describe a special form of non-pathological aging where a person of sound mind actively participates in social life and is not impaired by diseases and functional impairments, as Rowe and Kahn (1998) have proposed it. Other concepts such as "productive ageing", "active ageing" or "conscious ageing" (Moody, 2002) have entered the scientific discussion and accentuate certain key elements, which should be predominant in evaluating the ageing process. "Successful ageing", nevertheless, is a term, which is used comparatively often, although its connotation implies that ageing may be a kind of achievement, which can be reached with sufficient effort.

But a definition of the nature of success is elusive and more so, when it comes to the evaluation of a whole time-span describing part of individual development. In general, three approaches may be chosen to select criteria for an evaluation of the ageing process (see also Ferring, Filipp & Vaitl, 2002). First, one may use more or less objective criteria (e.g., the incidence and prevalence of medically diagnosed diseases and illnesses, functional impairments); second, one may rely on predominant theories and models of ageing and derive standards, which may be described by their interindividual validity; third, one may choose subjective self-ratings as the defining criteria. All three approaches are used, and all of them have their shortcomings.

Strawbridge, Wallhagen and Cohen (2002) clearly demonstrated this in a recently published study with a sample of 857 subjects aged 65-99 years. The authors identified in a first step persons, who were ageing successfully, by using the objective criteria proposed by Rowe and Kahn as indicators of successful ageing (namely the of absence of disease, disability, and risk factors; the maintenance of physical and mental functioning, and active engagement with life). Besides this they also asked participants to rate the way they were ageing by responding to the statement "I am ageing successfully (or ageing well)" with "agree strongly," "agree somewhat," "disagree somewhat," or "disagree strongly". When applying this subjective criterion they identified 50.3% of the sample, which rated their ageing as successful compared with 18.8% classified as ageing successfully according to Rowe and Kahn's criteria. The authors point out, that although the absence of chronic conditions and maintained functioning were positively associated with successful ageing for both definitions, many participants with chronic conditions and with functional difficulties still rated themselves as ageing successfully. The study shows

that objective and subjective criteria do not necessarily have to correspond when it comes to the evaluation of ageing.

Within gerontological research there seems to be an emphasis on subjective criteria for the appraisal of the ageing process. Besides the maintenance of personal autonomy, the balance of positive and negative affect, life satisfaction represents one of the most popular criteria when it comes to describing the subjective estimation of the life situation in old age. The concept has been described as the cognitive component of subjective well-being implying a judgemental process, in which the present life situation (the "is") is compared and weighted with respect to a desired life situation (the "ought"); (see Diener, 1999; Ferring & Filipp, 1997). Interestingly, little difference has been observed when cross-sectional comparisons of life satisfaction ratings were performed between younger and older age groups. The overall result pattern, which has emerged here, can be described as inconsistent and slightly in favour of results indicating a comparable evaluation of life satisfaction across different age groups (e.g., Brandtstadter, 1999).

Basically, one may contrast the possible divergences between the objective and the subjectively experienced life situation as it is done in Table 1. If the life situations that may be described with respect to objective criteria as "good" or "bad" correspond with the subjective judgments, their convergence may be described as "actual well-being" and as "deprivation", respectively. The case in which an objectively "good" life situation is judged as bad may be described as "dilemma of discontentment". The phenomenon that a "bad" life situation is judged as good is described here as "satisfaction paradox" indicating the effectiveness of regulative and adaptive processes (see also Ferring & Filipp, 1997, 2002).

Table 1: Cross-tabulation of objective life situations and their subjective evaluations.

Subjective judgment	Objective life situation	
	Good	Bad
Good	Well Being	Satisfaction paradox
Bad	Dilemma of discontentment	Deprivation

Lack of differences in life satisfaction, which may nevertheless be expected because of age-related losses and impairments, describe a "satisfaction paradox" and indicate the use of adaptive processes in old age that allow for a regulation of subjective well being. Life satisfaction in old age may be dynamically shaped by reducing discrepancies between the "is" and the "ought". This may be done by changing the evaluation of the present life situation by using new evaluation criteria, or by changing the evaluation of the desired life situation by changing one's aspirations and expectations (c.f., Ferring & Filipp, 1997, 2002). Thus, within this line of reasoning one has to ask if life satisfaction in old age has to be conceptualised as an inter-individual difference variable that mainly reflects differences in the use of individual regulative strategies or if life satisfaction represents a context sensitive judgment, which reflects differences across different life situations.

Summing up, one may hold that life satisfaction represents one of the most predominant criterion variables in gerontological theory and research. But the almost exclusive focus on this variable has led to the neglecting of other indicators, which also represent valid criteria for an evaluation of the ageing process; self-esteem especially may be introduced here as a further criterion. As Brandtstädter and Greve (1994) have pointed out the self is at risk in old age, since the ageing person is confronted with a host of changes, especially losses, which may have a detrimental impact on self-esteem. This can for instance be illustrated by a decreasing functional ability and the diminishing capability in performing activities of daily living (e.g., preparing meals, getting dressed, shopping), which certainly impose a threat to self-esteem, especially since these activities represent routine acts earlier in the life-span.

Many studies have shown that levels of global self-esteem are remarkably stable across adulthood and well into old age (e.g., Bengtson, Reedy, & Gordon, 1985, Brandtstädter & Greve, 1994; Freund & Smith, 1999), which again shows the importance of regulative processes as well as individual life conditions in ageing. The importance of self-esteem in ageing is also strengthened by findings showing that high self-esteem in old age represents a protective factor against age-correlated changes since it may buffer the effects of these on psychological well-being (see Brandtstädter, Wentura & Greve, 1993; Filipp & Ferring, 2002).

Finally, resilience may be named as a further criterion for estimating the quality of ageing. The concept represents the individual perception of his or her reserve capacity and thus constitutes a further core domain of the self in old age (see Weber et al., 2003). This is important since the concept was developed to account for the fact that some individuals show very good developmental outcomes even though they have encountered a high number of risk factors known to usually lead to negative outcomes. Resilience, therefore, applies very well to the general maintenance of well-being and self-esteem in old age (Staudinger, Marsiske, & Baltes, 1995).

In summary, life satisfaction, self-esteem, and resilience may represent criteria, which reflect an individual estimate of his or her psychosocial well-being and may thus indicate the quality of ageing well. It is an open question, which factors will contribute to stability and variability of these indicators in ageing and old age and these factors will be introduced in the following section.

The European Model of Ageing Well

Besides the question addressing adequate criteria to describe the concept of "ageing well", the second crucial question underlying the European model implies the identification and the weighting of factors, which predict differences in the chosen criteria. Four domains describing the individual life situation in age are considered within the model: (1) physical health and functional status, (2) material security, (3) social support resources, and (4) life activities. All these domains have been described as core domains for the description of the individual life situation and have been thoroughly investigated and studied within ESAW (see the respective reports by Ferring et al., 2003; Lamura et al., 2003; Burholt et al., 2003; Drooglever et al., 2003). Although the importance of these domains is quite evident, some comments shall outline their significance for the quality of ageing, as well as the indicators,

which have been chosen from the respective domain to be included in the European Model of Ageing Well:

- Health is at risk with ageing and old age among other things because of the increasing risk of contracting diseases that will affect functional status. It is well-known that there is a significant drop in functional status as well as an increase in the prevalence of diseases and multi-morbidity especially in the age group above 80 years (see Steinhagen-Thiessen & Borchelt, 1996). Elderly people report increasing impairments in performing daily activities, the incidence of the so-called age-correlated diseases (e.g., osteoporosis, diabetes, cardio-vascular diseases, dementia) increases as well. Health problems clearly represent a challenge and a task confronting the ageing person. Within ESAW several indicators have been studied and within the European model an emphasis will be put on the number of self-reported diseases as well as the number of medications. The term health status will be used in the following although the concept of health is much wider than the number of diseases and medications used.
- Material security represents a further core domain, especially since the discussion about the security of pensions and assurance systems as well as national welfare systems is in most West-European countries presently at risk. This is due to global economic developments, but is also linked to increased life expectancy, the large birth cohorts that are now entering old age as well as a reduced birth rate in most countries, which leads to a disproportion of those still in the work force paying taxes and those receiving retirement payments. Worries about material security as well as its actual situation thus represent another significant factor, which challenges individual well-being and also affects other domains such as the affordability and the provision of health care services. Since the worry about material security certainly represents a main domain of concern in old age, two indicators of material security were chosen to be included within the European model, allowing for an estimate of the sufficiency of financial resources in the present as well as the future.
- Social support resources are one key domain in gerontological research since they represent a protective factor when it comes to the adaptation to impairments and losses associated with age. Several theories have outlined and tested this importance using both quantitative and qualitative criteria of social support (see Burholt et al, 2003). Within the European Model two indicators were considered describing the social integration and the quantity of communication with non-kin persons such as friends and neighbours.
- Life activities reflect the engagement of the individual in "inside" as well as "outside" the house activities. The ability to perform home maintenance and housekeeping, to stick to hobbies and social activities at home, as well as using the diverse media, represent the first category, the participation in sports, cultural activities (i.e. movies, concerts), as well as going-out (i.e. restaurant, pub) indicate outside the house activities. The amount to which a person is capable of performing a variety of these activities clearly demonstrates his or her functional status and it also indicates an interest in daily living and participation in social life. Recent findings have shown that

the activity profile of a person during his or her life represents one important protective factor against the development of neurodegenerative diseases, which further underlines the significance of this domain in age and old age. The quantity of in-house and out-the house activities were used as indicators of the domain of life activities within the European model.

The four domains of health, material security, social support resources, and life activities are each described by two indicators and, depending on the individual estimation of these indicators, different relationships with life-satisfaction and feelings of self-worth can be expected. Within the European Model considering self-esteem as well as perceived resilience conceptually differentiated self-worth. In analysing the relationship between life domains and life satisfaction as well as self-worth the method of structural equation modeling (SEM) was used (see Jöreskog & Sörbom, 1988). Although SEM has become quite popular in social research, it seems worthwhile to describe its central properties and advantages. Basically, dependent and independent variables are differentiated within the social sciences, and within SEM are further differentiated if these variables are observed, manifest variables or non-observed, latent variables. The relationships between manifest and latent variables are specified using measurement models, which allow for a weighting of each manifest variable according to its reliability and, thus, an estimate of the interrelation between latent variables, which is not influenced by measurement errors. Measurement models specify the relations between manifest and latent variables in the following way:

$$X_i = \Lambda \chi \tau + \varepsilon_i$$

According to Classical Test Theory (see Steyer, Ferring & Schmitt, 1992) the latent variable stands for the "true score" τ of a person, and the variance of the error ε_i is estimated by using the difference between the variance of the manifest indicator X_i and the variance of the true score. In order to get a reliable estimate of the true score at least two indicator variables are necessary. The relation of the latent variables is specified in a structural equation of the following form.

$$\eta_i = \Gamma * \xi_i + \zeta_i$$

The latent dependant variables η_i are predicted by a set of latent independent variables, which are weighted according to their predictive value by regression weights γ_i . The term ζ_i describes the residual variance, which is not explained by the set of chosen predictors. The quality of the models is estimated by goodness of fit-indices, which indicate the degree to which a specified model explains the covariance of the observed variables.

Relying on this method the model depicted in the following figure was tested. Here, it becomes evident that two manifest indicators, which are weighted according to their importance for the underlying latent variable by an error estimate as well as factor loadings, have measured each of the latent variables. The most important coefficients within the model are the path coefficients or regression weights γ_i ; these will give an estimate of the predictive power of each domain for the two dependant variables. Since they can be standardized within the range of $-1 < \gamma < +1$ the coefficients resulting for the single domains can also be compared with respect to their relative contribution in predicting the two criteria.

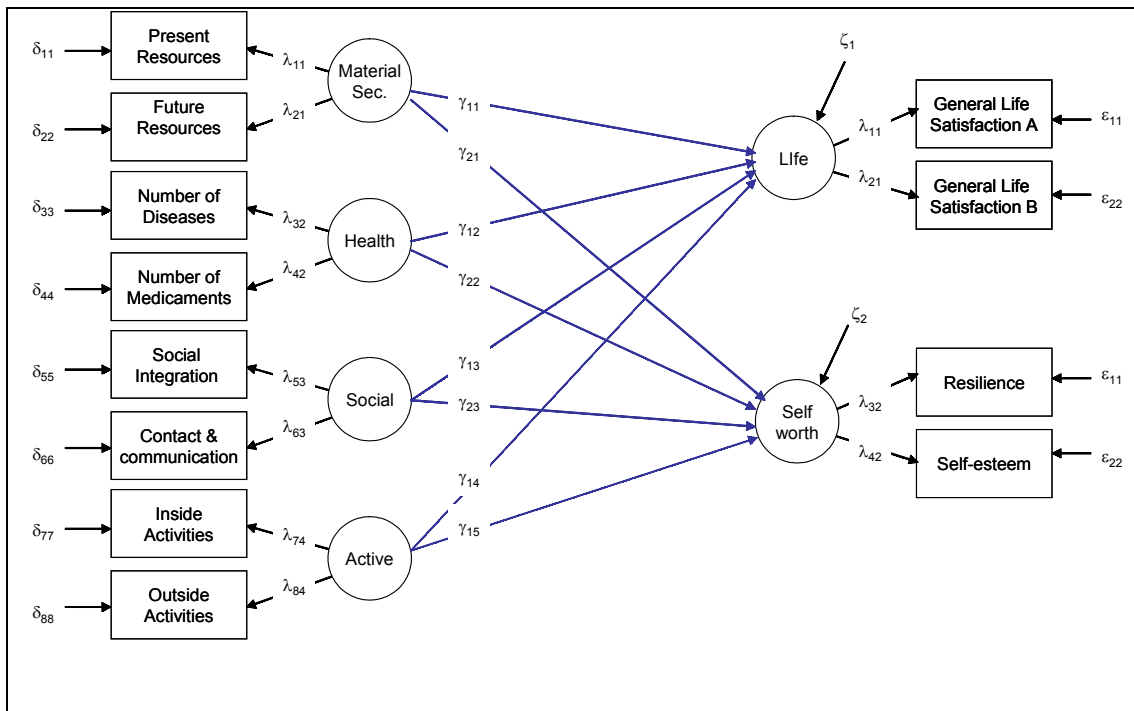


Figure 1: European Model of Ageing Well.

The indicators, which have already been mentioned above, are listed in the table on the following pages; here the constructs considered within the model - the indicators - as well as the items and questionnaires being used to measure the indicators are listed. All indicators, which have been chosen, represent comparatively objective indicators of the life domain under consideration. Although domain specific ratings of satisfaction (i.e., for material security, health, social support, and activities) were available these have been preferred in order to avoid a prediction pattern, which reflects conceptual overlaps between domain and general satisfaction ratings. One has to state, nevertheless, that the degree of objectivity in self-report data is always open to discussion. Subjective estimates are open to interpretative processes, which may serve several motives. One of these motives may be social desirability; others include psychodynamic processes, which may aim at the stabilization of one's self-esteem and life satisfaction by denying or redefining threatening aspects of the life situation (see Schwarz & Strack, 1999).

With respect to the life domains considered within the European Model, one may state that the probability of a self-serving bias in the data may be comparatively low. This is due to the fact that the judgments underlying each domain represent the result of a "data driven" process; information about the respective domains is highly accessible and is used in the respective judgment.

Table 2: Constructs and indicators within the European Model of Ageing Well

Domain/Construct	Indicators	Aggregate indices, items and measures being used
Health	Self-reported diseases	Number of diseases out of a list of 26 diseases (OARS Multidimensional Functional Assessment Questionnaire ; Fillenbaum, 1988))
	Self reported medications	Number of medications out of a list of 20 medications OARS Multidimensional Functional Assessment Questionnaire (Fillenbaum, 1988)
Material security	Sufficiency of present financial resources	"How well do you feel your needs are met by the financial resources you have?" (3-point rating scale (poorly to very well)); (OARS Multidimensional Functional Assessment Questionnaire ; Fillenbaum, 1988)) "At the present time, do you feel that you will have enough money for your needs in future?" (Dichotomous rating; Yes, no). (OARS Multidimensional Functional Assessment Questionnaire ; Fillenbaum, 1988))
Social Support Resources	Social Integration	Aggregate index comprising the following items: "How many people do you know well enough to visit in their homes?" (4-point rating scale: none, 1-2, 3-4, 5 or more); "About how many times did you talk to someone--friends, relatives, or others in the past week (either in person, on the telephone, or e-mail)". (4-point rating scale: not at all, once, 2-6 times, once a day or more). "How many times during the past week did you spend some time with someone who does not live with you, that is you went to see them or they came to visit you, or you went out to do things together?" (4-point rating scale: not at all, once, 2-6 times, once a day or more). (OARS Multidimensional Functional Assessment Questionnaire ; Fillenbaum, 1988))

Table 3: Constructs and indicators within the European Model of Ageing Well (continued)

Social Support Resources	Communication and contact	<p>Aggregate index comprising the following items:</p> <p><i>"If you have friends in this community/ neighbourhood, how often do you have a chat or do something with one of your friends?"</i> (5 point-rating scale: never, daily, 2-3 times a week, at least weekly);</p> <p>"How often do you see any of your neighbours to have a chat with or do something with?" (5 point-rating scale: never, daily, 2-3 times a week, at least weekly).</p> <p>(Practitioner Assessment of Network Type (PANT), Wenger, 1989).</p>
Life activities	In-house activities	<p>Frequency of four in-home activities: "participation in home maintenance and housekeeping", "participation in hobbies and indoor activities", "participation in social activities at home (i.e. visiting, phoning)", and "occupation with the media (i.e. newspaper, internet)"</p> <p>(Lifestyle Factors and Health Outcomes for Older Adults, Hawkins et al. 1996)</p>
	Out-of-house activities	<p>Frequency of five activities: outdoor activities, sports, cultural activities (i.e. movies, concerts), going-out (i.e. restaurant, pub), and miscellaneous activities</p> <p>(Lifestyle Factors and Health Outcomes for Older Adults, Hawkins et al. 1996)</p>
Self-worth	Self-esteem	<p>Aggregate index of the "Self-Esteem-Scale" (Rosenberg, 1965), an often used and soundly tested instrument to measure global self-esteem. The 10 Items of the scale are rated on a 5-point scale ranging from "strongly agree" to "strongly disagree".</p>
	Resilience	<p>Aggregate index of the Resilience scale, a component of the <i>OARS Multidimensional Functional Assessment Questionnaire</i> (Fillenbaum, 1988). The scale used here comprised of 20 items to be answered on a 7-point rating scale, ranging from "strongly disagree" to "strongly agree".</p>
Life satisfaction		<p>Two test halves constructed from the "Life satisfaction scale" by Neugarten, Havighurst and Tobin (1961), a soundly proven measure of life satisfaction comprising 13 statements to be answered on a 3-point rating scale, ranging from "strongly disagree" to "not sure".</p>

METHODOLOGY

As noted above, the ESAW Project was designed as part of the *Global Study of Ageing*, initiated by the Indiana University Centre on Aging and Aged, under the directorship of Dr. Barbara Hawkins. The aim of the parent project is to develop a globally applicable model of Ageing Well, estimating the direct causal contribution of the five key components, personal characteristics and culture to the outcome variable *Ageing Well*. The five components included in the study are: (1) physical health and functional status, (2) self-resources, (3) material security, (4) social support resources, and (5) life activity. ESAW represents a European sub-group of the larger global study, which aims to develop a European model of Adult Well-Being using the five key components and parallel methodology.

Study Areas

Six West European countries participated in the study: Austria, Italy, Luxembourg, the Netherlands, Sweden and the United Kingdom. The six countries range from Scandinavia to the Mediterranean. The ESAW research was initiated and co-ordinated by the United Kingdom. A Principal Investigator and a team of researchers conducted the work in each participating country.

Research Design

The ESAW research design had 3 phases.

Phase 1

Questionnaire development: Researchers at Indiana University (IU) prepared a questionnaire for the global project. In Phase 1 the ESAW participants produced compatible versions of the questionnaire for each country and translated the questionnaire into the necessary languages. Interviewers were recruited and trained by the national teams.

The translation of questionnaires is not straightforward. The theoretical model being tested is defined by manifest or measured variables to represent conceptualized latent variables set in a causal model to explain the *European Social-Cultural Model for Ageing Well*. Therefore, it was important that universal meaning be shared across the cultural groups participating. Some questions needed to be calibrated to be culturally/nationally appropriate. For example, in some instances they needed to be calibrated to be applicable locally and then re-calibrated for cross-cultural analysis and model testing.

Sample selection: A representative population of adult people aged 50-90 was selected by each of the country teams. Samples included both rural and urban areas. In the United Kingdom, three distinct sub-samples were drawn representing England, Scotland and Wales. Because of the differences in the settlement patterns and population density, definitions used were those relevant to the particular participating country. A target sample of 2000 was set in each country. Achieved samples ranged from 1854 to 2154. All countries experienced higher than expected refusal rates. A total sample of over 12,000 was achieved.

Phase 2

Interviewing: The second phase of the research focused primarily on data collection. In most cases, the questionnaire was administered to respondents face-to-face, in their own homes, in the first language of the respondent, by trained interviewers. In some instances, depending on local situations, postal questionnaires and telephone interviews were used with part of the sample.

Measures used; the questions used as well as how they were phrased are presented in the result section and in the tables and figures. ESAW is concerned with measuring domains that have been shown to impact on the ageing process and well-being and extensive literature searches have been undertaken. A literature review (conducted by colleagues in the University of Indiana – the parent project) identified indicators that have been used to explain adult well-being.

Data-sets: Each team created a national data-base in SPSS. Care was taken to ensure compatible data-sets. Methods for handling data cleaning and reliability testing were agreed between the teams. Cleaned data-sets were subsequently combined into an integrated dataset by the UK Principal Investigator and all teams provided with a complete data-set.

Phase 3

The third phase of the research focused on data analysis, writing and dissemination. This report represents one of six comparative reports written on each of the five key component areas and a sixth report on the cultural backgrounds of the study areas and participating countries. An authorship team of at least one member from each nation, was drawn up for each paper of which two or three acted as lead authors. Subsequently, work will be completed on *the European Socio-Cultural Model for Ageing Well* using causal modelling techniques.

Each of the comparative papers considers the effect of the following intervening variables: age, gender, income status, ethnicity, locality, household composition and further indicators of health satisfaction. Socio-economic status is measured on the basis of the national distributions and described as high, medium or low. Rurality is defined using the definition of rurality applicable to each country. Ethnicity was measured on the basis of what is relevant in each country but for the purpose of comparative analysis this has been recoded as: born in this country, born in another EU country, born elsewhere. Living arrangements have been collapsed into the following categories: living alone, living with spouse only, living with others, (which may include the spouse if they are not the only other person in the household).

Main characteristics of sample

Reflecting the actual distribution of the total population, the great majority (71%) of the subjects included in the ESAW study were recruited in urban areas (Table 4). However, partly as a consequence of the different definitions used in the countries for the terms "rural" and "urban" (United Nations 1998), partly for the difficulties encountered by partners in the data collection in certain areas - this average value differs from country to country, ranging from 48% in the UK up to 92% in Sweden, with Italy closer to the latter, the Netherlands and Austria to the former, Luxembourg just above average.

Table 4: ESAW sample by country and type of locality (rural – urban)

Type of locality	NL	L	I	A	UK	S	Total
Urban	1144 59,2%	1541 72,4%	1760 87,2%	1262 59,8%	881 47,5%	2201 92,2%	8789 70,7%
Rural	790 40,8%	586 27,6%	258 12,8%	849 40,2%	972 52,5%	186 7,8%	3641 29,3%
Total	1934 100,0%	2127 100,0%	2018 100,0%	2111 100,0%	1853 100,0%	2387 100,0%	12430 100,0%

In all ESAW countries, a majority (54%) of the recruited subjects are women (Table 5) reflecting their greater longevity in developed countries. This pattern is slightly more accentuated for the Austrian sample (where female subjects reached 56% of the total), while the UK, the Netherlands and Sweden record female quotas below the average (54.2%).

Table 5: ESAW sample by country and gender

	NL	L	I	A	UK	S	Total
Male	904 46,7%	983 45,8%	911 45,1%	926 43,9%	858 46,3%	1136 47,0%	5718 45,8%
Female	1030 53,3%	1162 54,2%	1107 54,9%	1185 56,1%	995 53,7%	1281 53,0%	6760 54,2%
Total	1934 100,0%	2145 100,0%	2018 100,0%	2111 100,0%	1853 100,0%	2417 100,0%	12478 100,0%

Almost 93% of the ESAW total sample belong to the national majority, i.e. the quantitatively most relevant ethnic group of the country (Table 6). From this point of view, the most homogeneous country is Italy, where almost no representatives of ethnic minorities are included in the sample (reflecting their very small presence in the older Italian population), with Sweden and Luxembourg with 90% of "national" subjects. However, it should be noted that the presence of non-EU citizens reaches the highest levels in the Netherlands and Austria.

Table 6: ESAW sample by country and ethnicity

	NL	L	I	A	UK	S	Total
National majority	1742 91,1%	1916 89,9%	2012 99,8%	1951 93,1%	1756 95,0%	2134 88,3%	11511 92,7%
Other European	62 3,2%	211 9,9%	1 0,0%	55 2,6%	36 1,9%	236 9,8%	601 4,8%
Non-European	109 5,7%	4 0,2%	4 0,2%	89 4,2%	56 3,0%	47 1,9%	309 2,5%
Total	1913 100,0%	2131 100,0%	2017 100,0%	2095 100,0%	1848 100,0%	2417 100,0%	12421 100,0%

Reflecting the age stratification of general population, the relative size of the ESAW ten-year age groups decreases remarkably from the younger to the older ones. Small deviations from the total average (Table 7) can be seen as follows. In the Dutch sample the younger age

Results

In the following, the results of the model tests are presented by considering, first the overall fit of the models, then breaking down the results for the dependent variables life satisfaction and self-worth. All analyses were performed using the LISREL program by Jöreskog and Sörbom (1993).

Goodness of fit-statistics

The appropriateness of a structural equation model is measured in different ways, the first one being its theoretical plausibility. Besides this there are many statistical tests, which are used to evaluate the fit between the empirically observed covariance structure and the structure implied by the theoretical model. All statistics thus rely on a comparison of expected and observed covariance structures in a given sample. Linear structural equation modelling provides many fit indices, which may be described firstly as measures of relative or of absolute fit. A second feature of the fit measures is that they interact in a different way according to sample size, model parsimony, or the estimation procedure used. In the following, the goodness of fit- and the adjusted goodness of fit-index, as well as the root mean square error of approximation (RMSEA) are described since they are used to evaluate the model fit.

The *Goodness of fit-index* (GFI) describes the extent to which the squared non-redundant elements of the sample covariance matrix are explained by the implied model structure. The GFI has a range of $0 < \text{GFI} < 1$ whereas 1 represents a perfect fit and values approximating 0 an absolute misfit; values of $\text{GFI} > .90$ indicate an acceptable model fit (see Gerbing & Anderson, 1992). The GFI has the problematic characteristic that it depends on the number of estimated parameters (k). By adding parameters to a model GFI increases, although the final model will then contain "nonsense" parameters. The *Adjusted-Goodness-of-Fit-Index* (AGFI) is one index, which does account for model parsimony and thus represent a comparatively more reliable fit indicator (see Tanaka, 1983). It is defined as

$$AGFI = 1 - \frac{(k)(k+1)}{2df}(1 - GFI)$$

The goodness-of-fit measures GFI and AGFI do not depend on sample size explicitly and measure how much *better* the model fits as compared to no model at all. Since the fit function ($F(S, \Sigma)$) is asymptotically χ^2 -distributed (with $(N \rightarrow \infty)$), one can also test the model fit as a chi square statistic

$$\chi^2 = N - 1 * \text{Min}(F(S, \Sigma))$$

with

$$df = \frac{(k)(k+1)}{2} - t$$

The χ^2 -statistic measures the distance between the sample covariance matrix and the fitted covariance matrix, and, thus, it allows for a test that the population covariance matrix does

not significantly differ from the implied covariance matrix. The interpretation of the χ^2 is only guaranteed if the following assumptions and conditions are satisfied: (1) the observed variables show a multivariate normal distribution, (2) the analysis is based on a covariance matrix and not a correlation matrix, and (3) sample size is adequate.

Jöreskog and Sörbom (1993) as well as many other authors warn against use of the χ^2 as a reliable test statistic, since it is largely dependant on sample size. They recommend using it as a descriptive fit index, in particular for the comparison of different models. The use of chi-square (as a central χ^2 -statistic) is based on the assumption that the model holds exactly in the population. Since this may, however, represent an unreasonable assumption in most empirical research, Browne and Cudeck (1993) proposed a number of fit measures, which take particular account of the error of approximation in the population and the precision of the fit measure itself. They define an estimate of the *population discrepancy function* (PDF) and on this basis the *root mean square error of approximation* (RMSEA) is estimated.

The authors suggest that a value of 0.05 indicates a close fit and that values up to 0.08 represent reasonable errors of approximation in the population; values greater than 0.08 indicate a comparatively high error of approximation and thus a bad fit. LISREL also provides a 90 percent confidence interval of RMSEA and a test of $RMSEA < 0.05$ which both give useful information for assessing the degree of approximation in the population.

The resulting Fit-indices for the model test in the total sample as well as the six national samples are summarized in the following table. Here, it becomes evident that the RMSEA indicates in all samples a reasonable if not a good fit, since the respective values are all below $RMSEA = .08$ and the confidence interval also does not exceed this value. The GFI and AGFI in the same way indicate a comparatively good fit of the model.

Table 9: Goodness of fit-statistics

Fit-indices ^a	Total	NL	L	I	A	UK	S
DF	41	42	42	41	42	42	42
RMSEA	.038	.051	.044	.061	.051	.054	.049
90 CI for RMSEA							
Lower	.031	.045	.038	.055	.045	.047	.043
Upper	.041	.058	.051	.068	.058	.061	.054
p-Value (RMSEA < 0.05)	1.00	.38	.93	.00	.38	.15	.63
GFI	.99	.98	.98	.97	.98	.98	.98
AGFI	.97	.96	.97	.94	.96	.95	.96

^a DF: degrees of freedom, RMSEA: Root mean square error of approximation, 90 CI: 90percent confidence interval for RMSEA (lower: lower bound of CI, upper: Upper bound of CI); GFI: Goodness of fit; AGFI: Adjusted Goodness of fit.

The degrees of freedom are less in the total and the Italian sample, which was due to properties of the measurement models being specified; since this has no effect for the model comparison described in the following, it needs not to be specified further here.

Prediction of life satisfaction and self-worth

Table 10 show the results obtained in the model tests, and here the explained variance in the two latent dependant variables as well as the regression coefficients obtained in the prediction of life satisfaction and self-worth are listed. The amount of explained variance in life satisfaction was quite high since it ranged between $.30 < R^2 < .57$, the least variance explanation being obtained in the Austrian and the highest in the UK sample. Nevertheless, the four predictor variables account for a significant amount of inter-individual differences in life satisfaction in all national samples. The variance being explained with respect to feelings of self-worth was - although lower than for life satisfaction - still significant and substantial ranging between $.22 < R^2 < .37$. The lowest variance explanation was observed in the Luxembourg sample and the highest one was registered in the Swedish sample. Summing up these results on the level of the explained variance showed that the chosen predictors account in a substantial manner for inter-individual differences in the criterion variables; results also indicated a differential predictive pattern for both dependant variables, which will be inspected in the following.

Table 10: Results of the model tests in the total and the national samples.

Statistics	Total	NL	L	I	A	UK	S
Explained variance							
Life satisfaction	.42	.44	.40	.33	.30	.57	.49
Self-worth	.26	.23	.22	.27	.24	.31	.37
Regression weights for the prediction of <i>life satisfaction</i>							
Material Security	.44	.42	.41	.20	.28	.52	.53
Health	.24	.25	.28	.20	.29	.00	.20
Social Support	.14	.16	.00	.27	.14	.00	.19
Life Activities	.13	.00	.12	.17	.11	.35	.09
Regression weights for the prediction of <i>self worth</i>							
Material Security	.29	.24	.29	.12	.15	.34	.27
Health	.17	.20	.22	.16	.21	.09	.32
Social Support	.19	.25	.11	.29	.30	.09	.24
Life Activities	.13	.00	.00	.18	.09	.25	.11

Prediction of life satisfaction

With respect to life satisfaction differing profiles of predictive power resulted for the four predictors in the national samples, and the results are graphically summarized in the

following figure. Starting with the Netherlands, it showed that material security ($\gamma=.42$) had the highest impact on life satisfaction, followed by the perceived health condition ($\gamma=.25$), and social support resources ($\gamma=.16$); life activities did not contribute to the prediction of life satisfaction, and the 44 percent of explained variance in this criterion were solely explained by these three predictors.

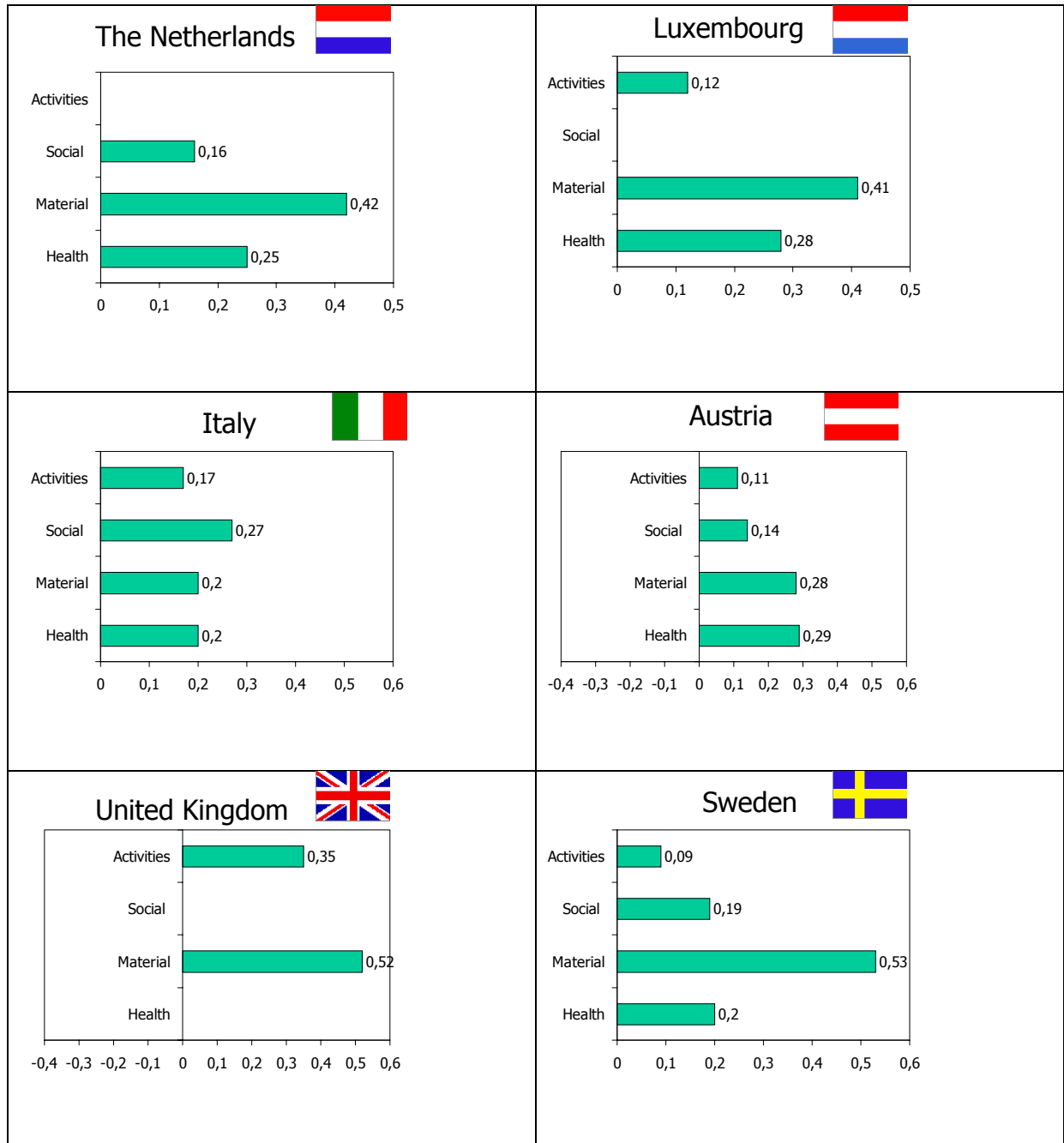


Figure 2: Prediction of life satisfaction in six national samples.

The profile, which resulted in the Luxembourg sample, also showed the highest impact of material security ($\gamma=.41$), followed by health ($\gamma=.28$) and life activities ($\gamma=.12$), the latter having a small but significant effect on life satisfaction. Social support resources did not contribute to the overall variance explanation of 40 percent within that sample.

In the Italian sample all four predictors were significant in their predictive contribution, showing the following sequence with respect to the observed regression coefficients: Social support resources ($\gamma=.27$), material security ($\gamma=.20$), health ($\gamma=.20$), and life activities ($\gamma=.17$). All these predictors explained a total of 33 percent of inter-individual variance.

All four predictors were significant in the Austrian sample explaining 30 percent of the variance; compared with the Italian sample the predictors here obtained differing weights, health ($\gamma=.29$) and material security ($\gamma=.28$) being more important in their contribution than social support resources ($\gamma=.14$) and life activities ($\gamma=.11$).

A completely different predictive pattern was observed in the UK sample where material security ($\gamma=.52$) and life activities ($\gamma=.35$) appeared to be the only significant predictors of life satisfaction accounting for 57 percent of the variance in this criterion, which also represented the highest variance explanation across all national samples.

With respect to the Swedish sample, all four predictors were significant, whereby material security represented the by far most important predictor ($\gamma=.53$), followed by health ($\gamma=.20$) and social support resources ($\gamma=.19$) with a comparable contribution, and life activities ($\gamma=.09$) obtaining the relatively lowest weight ($\gamma=.09$).

As a common feature of these differential result patterns one may hold in a first step that out of the set of predictors material security as well as perceived health status were significant predictors of life satisfaction in all national samples, whereas the importance of social support resources and life activities were not so significant. Social support resources were not important in the Luxembourg and the UK sample, but showed a pronounced impact in the Italian sample, where this domain was the most significant predictor. In the national samples of Sweden, Austria, and the Netherlands perceived social support resources took a third place with respect to their predictive power. Life activities showed the most pronounced effect in the UK sample, and were not important in the Netherlands sample. In the Italian, Luxembourg, Austrian, and Swedish samples they significantly contributed to the prediction of life satisfaction, however, this contribution always represented the lowest compared with the other domains under consideration.

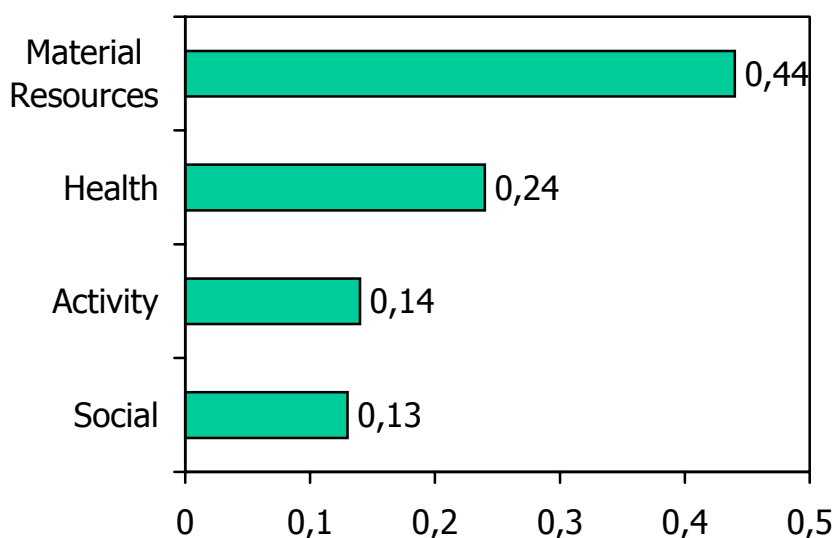


Figure 3: Regression coefficients in the prediction of life satisfaction obtained in the total sample.

The overall trend in the prediction of life satisfaction is summarized in figure 3, where the relative importance of the single predictors is illustrated by the coefficients, which resulted for the total sample. Starting from this, one may hold, that perceived material security indicated by two indicators, which described worry about present and future financial means, represented the most important predictor, followed by perceived health status. The better the estimation of one's financial means in the present as well as the future and the better the evaluation of one's physical health indicated by the self-reported number of diseases and medications thus corresponded with heightened life satisfaction in all national samples. High frequency of inside and out-of the house activities as well as perceived social integration and an opportunity structure for contact and communication also predicted heightened life satisfaction, although not in such a pronounced matter.

Prediction of self-worth

Feelings of self-worth constituted the second dependent variable and were indicated by self-esteem and resilience. Comparable to life satisfaction, a differential profile in the prediction of this variable resulted for the six national samples.

In the Netherlands sample social support resources ($\gamma=.25$), material security ($\gamma=.24$), and perceived health ($\gamma=.20$) explained 23 percent of variance in self-worth to an almost comparable amount. The predictors were also significant in the Luxembourg sample accounting for 22 percent of variance, but here material security ($\gamma=.29$) and health ($\gamma=.22$) had a higher predictive power than social support resources ($\gamma=.11$). The frequency of life activities did not have an impact in both samples on feelings of self-worth.

For the other four national samples all four predictors had a significant contribution in the prediction of self-worth although with differing profiles. In the Italian sample social support resources once again proved to be the most significant predictor ($\gamma=.29$), followed by life activities ($\gamma=.18$), perceived health status ($\gamma=.16$), and material security ($\gamma=.12$); a total of 27 percent of inter-individual differences in self-worth was explained here. In the Austrian sample 24 percent of variance was explained, and the sequence of the predictors was comparable with Italy since social support resources ($\gamma=.30$) represented the most important predictor followed by perceived health ($\gamma=.21$); differing from the Italian sample, material security had a higher impact ($\gamma=.15$) than life activities ($\gamma=.09$). Perceived material security ($\gamma=.34$) proved to be the most important predictor for feelings of self-worth in the UK sample followed by life activities ($\gamma=.29$) and perceived health ($\gamma=.09$) and social support resources ($\gamma=.09$), which had less impact on this criterion. These four predictors explained 24 percent of variance within the UK sample. The most important predictor for self-worth in the Swedish sample was health ($\gamma=.32$) followed by material security ($\gamma=.27$) and social support resources ($\gamma=.27$); life activities ($\gamma=.11$) also predicted differences in self-worth here, although to a comparatively lesser degree. A total of 37 percent of variance were explained in this sample.

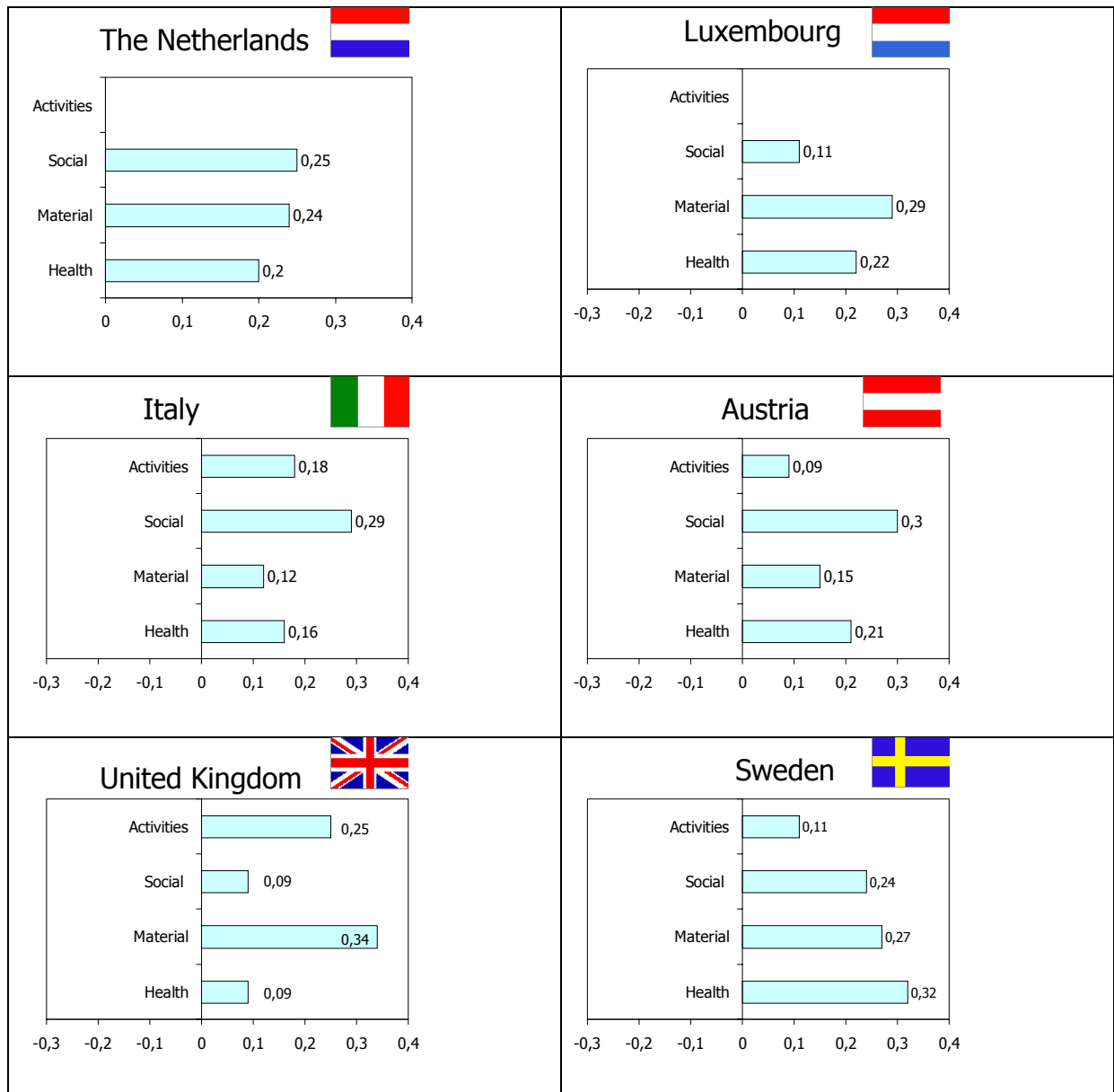


Figure 4: Prediction of self-worth in six national samples.

Summing up so far, it becomes evident that the chosen predictors show a different profile in the prediction of self-worth than life satisfaction, and additionally more pronounced national differences were observed. Figure 5 summarizes the results obtained for the total sample and these show that material security ($\gamma=.23$), perceived health status ($\gamma=.20$), and social support resources ($\gamma=.20$) have a comparable predictive weight. The clear predominance of material security and health, which has been observed in the prediction of life satisfaction, could not be replicated when predicting feelings of self-worth. Especially, social support resources proved to be a more relevant domain for explaining differences in feelings of self-worth across the national samples and this was most pronounced in the Italian, Austrian, Netherlands and Swedish samples. While material security was important in all national samples it was not as pronounced as in the prediction of life satisfaction. Concerning its relative importance, perceived health held the third position across the national samples. Life activities proved to be less important in the Netherlands, the Luxembourg, the Austrian and the Swedish samples, but had a pronounced predictive value in the UK and Italian samples.

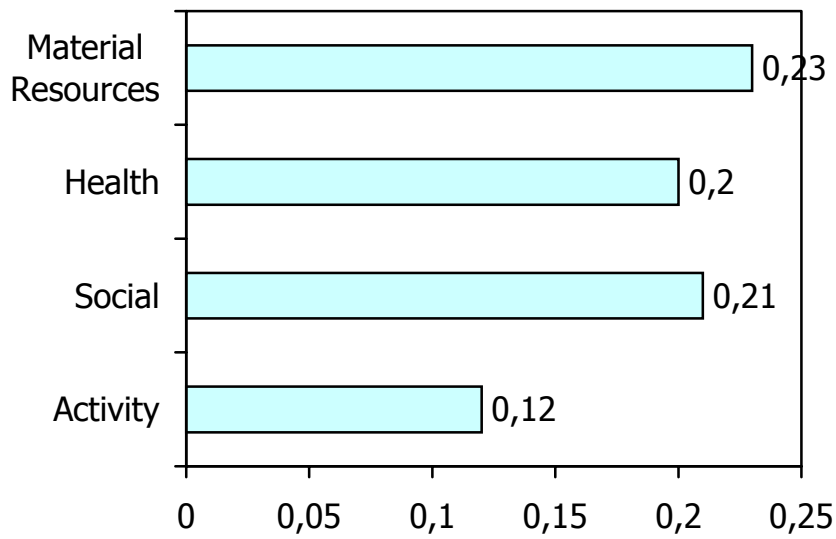


Figure 5: Regression coefficients in the prediction of self-worth obtained in the total sample.

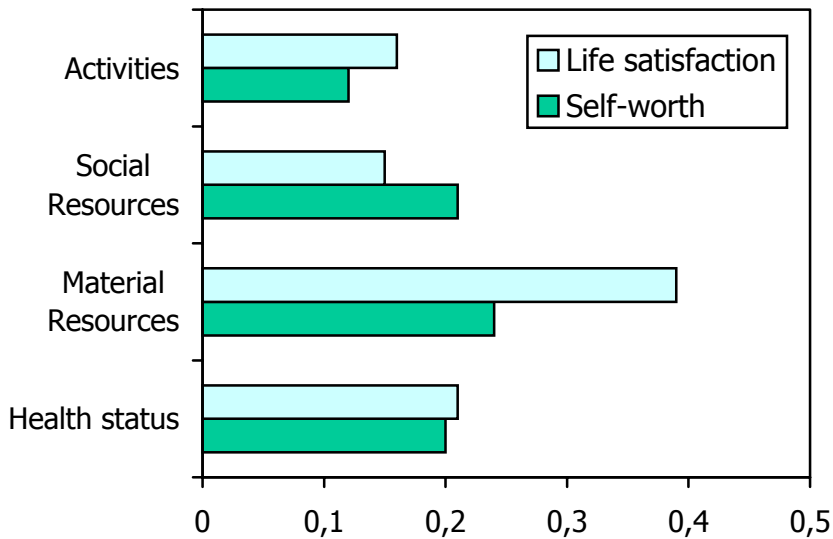


Figure 6: Comparison of the predictors in the total sample.

The differing profiles, which resulted in the prediction of the two criteria, are summarized in figure 6. The result profile clearly underlines the importance of all chosen predictor variables since they do contribute to heightened life satisfaction and feelings of self-worth.

Prediction of life satisfaction and self-worth – when age comes into play.

In a last step of analysis, age and gender were integrated in the model in order to estimate their predictive power. The resulting model structure is depicted in Figure 7. Two additional effects were estimated in this model – the effects of age and gender on life satisfaction and feelings of self-worth. Interestingly, there were no significant effects of these two variables on both criterion variables, after controlling for the effects of material security, perceived health, social support resources, and life activities. On reflection, this result is not surprising since especially chronological age represents a variable with comparatively low explanative power (see Wohlwill, 1977) being only a crude correlate of developmental changes in the life situations of older people. The same holds true for gender, which represents a correlate of differing biological as well as psychological characteristics of men and women. The explanative power of these two variables diminishes if indicators of the changing life situation with age as well as the differing life situations of men and women are considered. This logic leads to the assumption that although there are no direct effects of age and gender, indirect effects, as the have been depicted in figure 8 cannot be excluded.

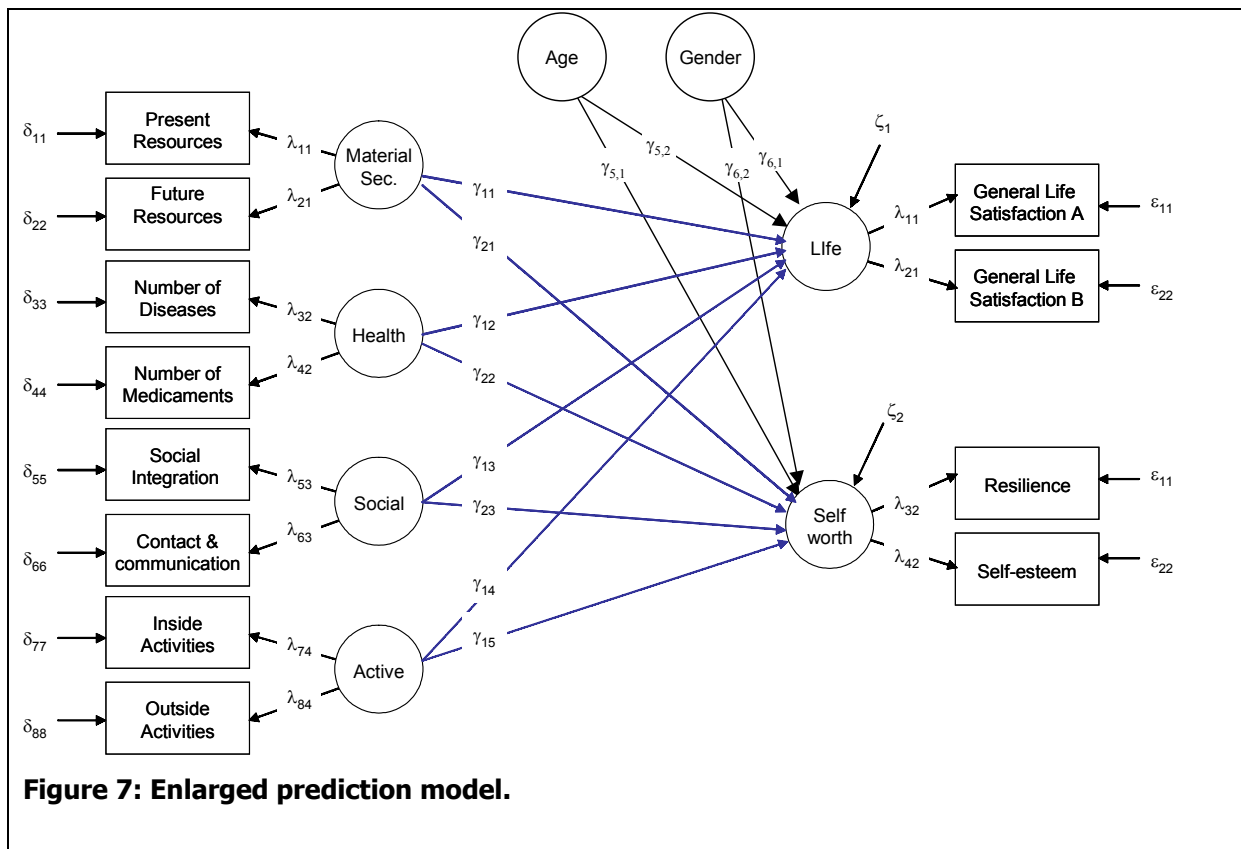
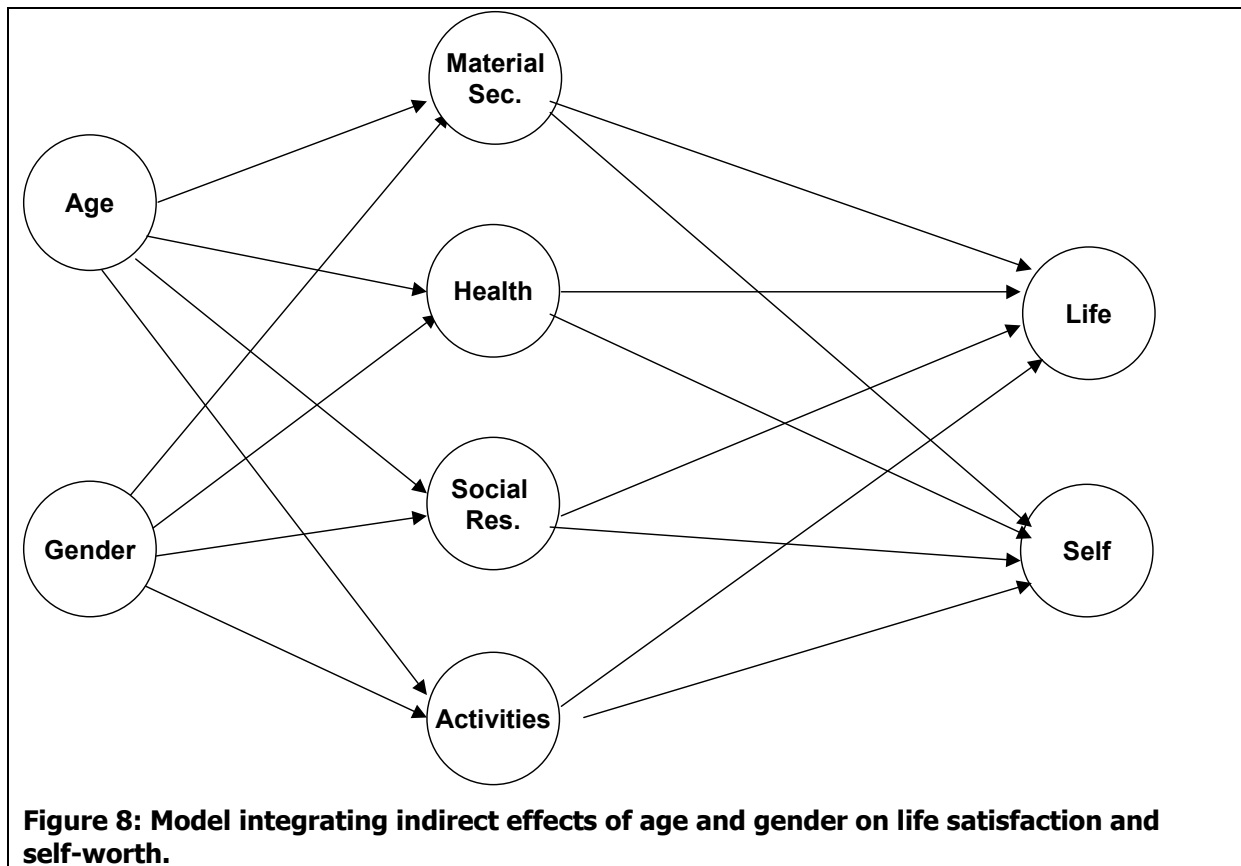


Figure 7: Enlarged prediction model.



Although this latter model could not be explicitly tested, the latent correlations between age and gender with the four predictor variables show that substantial relationships exist. These correlations are summarized in the following table.

With respect to age, the most pronounced correlation was observed with health in all national samples, clearly demonstrating that older people reported a worsened health status (see also Ferring et al., 2003); next to this, the number of life activities was also substantially correlated with age indicating that fewer activities were reported with increasing age (see also Drooglever et al., 2003). Correlations also showed that social support resources were rated as less available with increasing age (see also Burholt et al., 2003). Material security, finally, did not show such a clear-cut correlation pattern across the national samples, since the correlation was not significant in three samples. In the Austrian, the Italian and the Swedish samples the correlations indicated that lower material security was reported with increasing age.

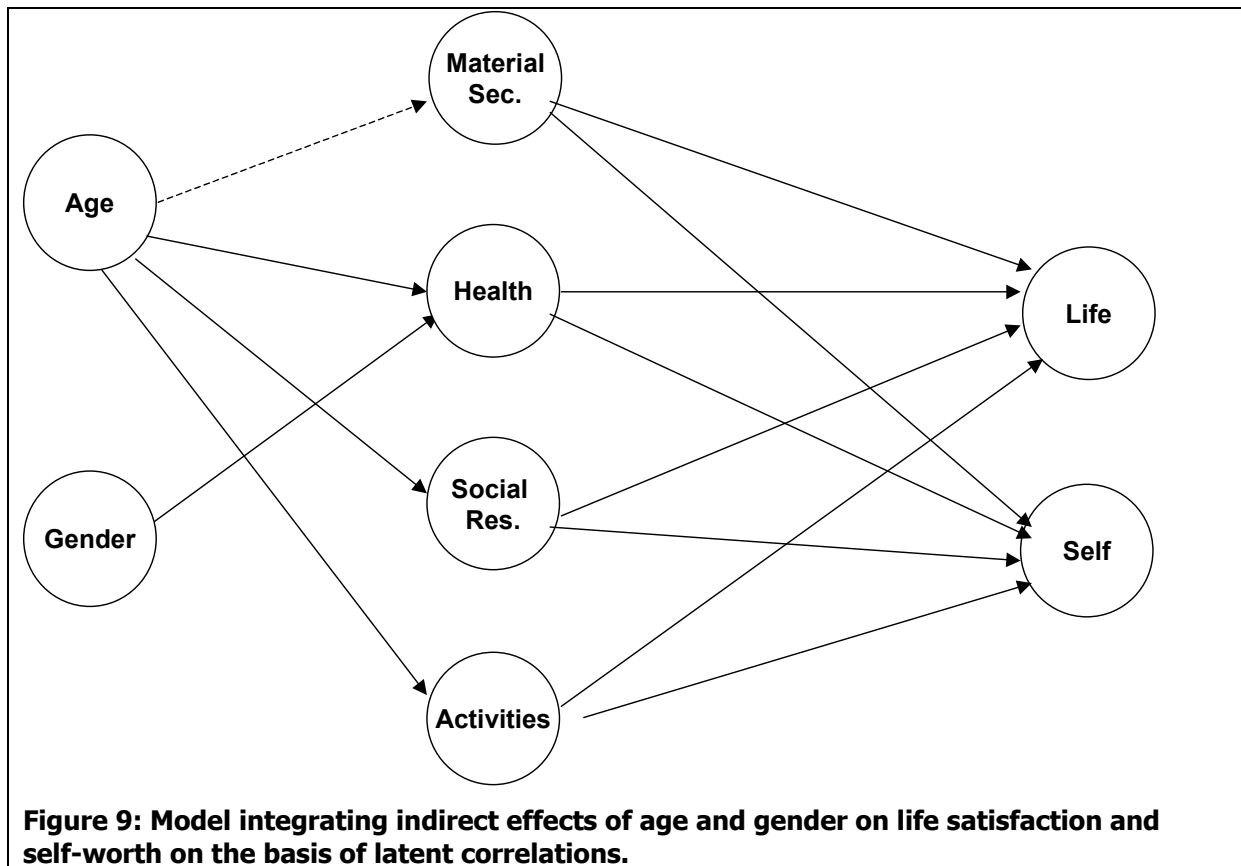
The latent correlations obtained for gender were not that pronounced, in part even negligible. The (comparatively) most substantial correlation resulted for health, indicating that female respondents estimated health conditions to be worse than men did. With respect to material security, correlations showed that female respondents in the national samples of Austria, Italy and Sweden estimated material security to be less good than men did. Concerning social support resources, women in the Italian sample reported fewer resources, whereas female respondents in the Swedish sample reported more social support resources than men. Life activities correlated significantly with gender in two national samples: In the Austrian sample, women reported fewer activities whereas women in the Italian sample reported more life activities than men.

Table 11: Latent correlations between predictor and criterion variables with age and gender.

	Health	Material Security	Social Support Resources	Life activities
The Netherlands				
Age	-0.29*	0.10*	-0.17*	-0.38*
Gender	-0.08*	-,01	0.03	0.03
Luxembourg				
Age	-0.42*	0.01	-0.15*	-0.35*
Gender	-0.23*	-0.05	-0.03	-0.01
Austria				
Age	-0.46*	0.00	-0.18*	-0.32*
Gender	-0.20*	-0.16*	0.01	-0.05*
Italy				
Age	-0.42*	-0.10*	-0.18*	-0.49*
Gender	-0.18*	-0.11*	-0.07*	0.16*
United Kingdom				
Age	-0.30*	0.14*	-0.15*	-0.32*
Gender	-0.06*	0.04	0.05	-0.01
Sweden				
Age	-0.38*	0.07*	-0.09*	-0.28*
Gender	-0.13*	-0.09*	0.11*	-0.02

* Significant at $p < .05$

Taken together, results of the latent correlations indicate that age is a substantial correlate of the life situation concerning perceived health, social support resources, and life activities. With respect to perceived material security, correlations were not that clear and indicated a decrease with ongoing age in the three samples of Austria, Italy, and Sweden and no significant relation in the remaining national samples of the Netherlands, Luxembourg, and the UK. Age, thus, does not have a direct but an indirect influence on life satisfaction and self-worth, being mediated by the substantial correlations with the life domains under consideration. With increasing age, deterioration of health, decrease of social support resources and fewer life activities are reported, and in part less material security, which then affects life satisfaction and feelings of self-worth. With respect to gender, the analysis showed that this variable has a substantial co-variation with perceived health status, whereas relationships with other life domains were not that pronounced. The model depicted in figure 8 may on the basis of the existing results be revised as it is shown in figure 9.



The value of this model certainly has to be seen as a heuristic one, which will guide further model specifications, particularly since the European model proposed here will be further developed in the future. Nevertheless, the existing result pattern, based on a cross-section of six European countries, has clear-cut implications, which will be presented in the following.

Implications of the “European model of Ageing Well”

Taking up the notion of the heuristic value of the model being presented, one has to emphasize that the specification and testing of models, as it has been described here, has to be conceptualised as a process of knowledge construction. In further tests indirect as well as compensatory effects of the life domains under consideration will be included and the model will have to be enlarged. Taking this methodological consideration into account, the results reported so far demonstrate the importance of all considered indicators of the individual life situation. They also allow for a ranking of their relative importance on the level of the total sample, where material security and health status proved to be the most important predictors of life satisfaction, whereas material security, social support resources, and health were the most important predictors for feelings of self-worth. When comparing the two criteria, the variance explanation in the latter was substantial but not as pronounced as for life satisfaction. This underlines the conceptual distinctiveness of the two constructs, and at the same time emphasises their importance as indicators of psychosocial well-being with age and in old age (see Weber et al., 2003). The implications of the model will now be outlined in the following by referring to each of the chosen predictors.

Material security has been measured by two estimates describing the sufficiency of present and future financial means. Although, these two measures clearly represent subjective ratings, which may have a conceptual overlap especially with life satisfaction, it can be assumed that they represent bottom-up or data-driven judgements with a comparatively high overlap with the objective financial situation of the respondents (see Schwarz & Strack, 1999). The results obtained for this domain have obvious implications for pensions policy, since they raise questions about the security of private and contributory pensions as well as responsibilities of employers and organisations. Besides this, the need for private pension funds, which are open to a broad spectrum of the society, needs to be discussed.

Social policy-makers would be well-advised to promote measures which guarantee material security. These may for instance include incentives and support for the achievement of home ownership earlier in the life cycle. The reduction of compulsory retirement for those who are still interested in an active work life has also been recommended (see WHO; Kalachea & Kickbusch, 1997).

In the long term the results also have clear implications for the educational system, since those, who have better education and skills are able to get better jobs, which secure material security in old age. These implications clearly impose a strain on the national welfare systems, which depend more and more on the process of a growing globalisation. In face of a dramatically growing proportion of retired people a redistribution of financial means certainly may have to be proved.

Health status and the provision of preventative, mobile, stationary, and rehabilitative facilities will present a challenge for the future in each European country. There are clear indicators that people will live longer with comparatively low physical and mental impairment. This rather broad time span of moderate and deteriorating health indicates the importance of preventive health care information and education commencing early in the ageing process, even in schools, to reduce the cost of health care to a large number of older people.

On the level of preventative endeavours health education should be fostered already in the early years to promote healthy living throughout the life course. In old age preventative home visits may be beneficial in terms of lower health care consumption when applied to people at the age of 75 years or above. In general, measures aiming at consolidating personal autonomy in spite of deteriorated health and allowing older people to live at home as long as possible in an independent way, with support services, may be most suitable and effective in lowering health costs in the long run.

Social support resources also represent a significant factor in explaining differences in life satisfaction and feelings of self-worth. Access to these resources is not always guaranteed and it seems worthwhile to discuss measures, which will facilitate this. Impaired mobility often results in reduced access to social resources, and this fosters the need for transport facilities for the impaired older people, such as easy entry to buses and trains. Domiciliary services will also maintain people near to family and friends, and are thus extremely important. Providing better transport facilities will also have an impact on life activities, which has been considered here as a predictor of psychosocial well-being in old age.

Compared with material security, health status and support resources **life activities** had a lower impact on the criterion variables. This may be explained by the fact, that the capacity to perform various kinds of activities certainly depends on one's financial means, physical and functional status, as well as the availability of support resources. But life activities can on the other hand also be health maintaining and they therefore represent one goal dimension of preventative health education programs. Here again, the mobility of older people and access to respective facilities should be encouraged. Preventative activities should also focus on those factors that can impair an active life, and here, earlier interventions for impairments of sight and hearing may be listed as an example.

All in all, the perception of the life domains under consideration explained differences in life satisfaction and self-worth, and this points to the importance of the **psychological make-up** of people, which seems to be critical in the adaptation to ageing. Results reported here, therefore have implications for **child raising and education** in general, as well as social programs aiming at the compensation of the aggregate effects of disadvantage resulting from low educational expectations, race, gender, and poverty. Special programmes developed for older people should aim at a reinforcement of self-worth and competencies, and should value the experience and uniqueness of older people. It goes without saying that all these measures should be accompanied by changing attitudes towards ageing of the individual and the society at the socio-cultural level, which focuses on the possibilities and challenges that ageing may provide while being aware of the problems of old age. Old age is the goal that most people seek rather than the alternative of an early death. The contradiction is many people stigmatise older people. Changing perceptions of old age, therefore, certainly represents one the most important tasks for the future in the Western societies.

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