

# RETIREMENT AND LIFE SATISFACTION

## A Resource-Based Dynamic Perspective

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*To Andreas,  
for always believing in me*



# ABSTRACT

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Retirement from work is a major life event requiring adjustment to new life circumstances. The impact of retirement on well-being has been shown to vary, not only between individuals, but also within individuals over time. The overall aim of this thesis was to investigate differences between and within individuals in life satisfaction in the last years before and the first years following retirement. The resource-based dynamic model was used as a theoretical framework for understanding how and why retirement influences individual well-being. Resources evaluated for their role in the process of adjustment included self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and financial adequacy (basic financial resources and financial satisfaction). The thesis is based on four empirical studies using data from the longitudinal population-based HHealth, Ageing, and Retirement Transitions in Sweden (HEARTS) study ( $N = 5\,913$ ). **Study I** ( $N = 3\,471$ ) evaluated the role of resources relative to type of retirement transition. The findings showed that the six resources were more important for life satisfaction in abrupt rather than gradual retirement, and that poor financial resources were less detrimental for those retiring gradually. **Study II** ( $N = 1\,924$ ) investigated aspects of resource interdependency, i.e., whether the association between a particular resource and life satisfaction varies depending on other available resources. The findings suggest that autonomy is particularly important for retirees in poor health, and that higher social support and better perceived cognitive ability may compensate for negative effects of poor financial resources. **Study III** ( $N = 497$ ) evaluated longitudinal and bidirectional associations between resources and life satisfaction over four years covering the transition from work to retirement. The findings demonstrate that resource change help to explain changes in life satisfaction, but also that life satisfaction in itself is an important predictor for how we view and evaluate our resources in this process. **Study IV** ( $N = 796$ ) investigated the role of personality traits for between- and within-person differences in resources over the transition to retirement. The findings showed that retirees with higher levels of extraversion, agreeableness, and conscientiousness were more likely to adjust well to retirement, while those with higher neuroticism had more problems in adjusting to negative changes in key resources. The findings provide insights into the multidimensional and dynamic aspects of the transition to retirement and demonstrate that resources are relevant to adjustment, but also that the association between a particular resource and life satisfaction varies systematically depending on the type of retirement transition and other available resources. The results further indicate bidirectional associations between resources and life satisfaction and the indirect influence of personality on the process through its relevance to resource availability.

*Keywords:* individual resources, life satisfaction, personality, resource-based dynamic perspective, retirement adjustment, retirement transition



## SWEDISH SUMMARY

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Arbetet är för de flesta människor en central del av vardagen. Arbetslivet definierar vår tillvaro, våra rutiner och i många avseenden även våra sociala relationer. Att lämna arbetet kan därför innebära en stor livsomställning.

Övergången från arbete till pension är en av de största livshändelserna i den senare delen av vuxenlivet. Pensioneringen prövar vår förmåga att anpassa oss, inte bara till åldersrelaterade biologiska förändringar, utan också till nya möjligheter och förväntningar i vår sociala miljö. I och med pensioneringen förändras förutsättningarna för vår tillvaro. Såväl fysiska som intellektuella och sociala aktiviteter påverkas, något som i sin tur har betydelse för vårt fortsatta åldrande. Kunskap om pensioneringens betydelse för den psykiska hälsan är viktig för att öka förutsättningarna för att fler människor ska kunna trivas och må bra, men också för att möta de möjligheter och utmaningar samhället står inför med en växande äldre befolkning.

I denna avhandling studeras pensioneringsprocessen ur ett psykologiskt perspektiv med fokus på hur pensioneringen påverkar det psykiska välbefinnandet. Mer specifikt undersöks förändringar i livstillfredsställelse, det vill säga den egna uppfattning om hur livet är, under åren före och efter pensioneringen samt de faktorer som kan bidra till att förklara individuella skillnader i anpassningen till livet som pensionär.

Avhandlingen består av fyra empiriska studier baserade på forskningsmaterial från HEARTS-studien (HEalth, Ageing, and Retirement Transitions in Sweden) som är en svensk undersökning om övergången från arbete till pension. Studien startade våren 2015 då ett nationellt representativt urval av 14 990 personer födda mellan 1949 och 1955 (60–66 år) bjöds in att delta genom att besvara ett frågeformulär om sina liv och sin tillvaro. Totalt deltog 5 913 personer (39%). Deltagarna i studien är i många avseenden representativa för populationen i Sverige födda mellan 1949 och 1955, men kvinnor och personer med högskoleutbildning är något överrepresenterade. Årliga uppföljningar genomförs och vid det fjärde mättillfället våren 2018 deltog totalt 4 033 personer (4 651 personer 2016, 4 320 personer 2017). Avhandlingen baseras på data från de fyra första mätningarna.

\* \* \*

Pensioneringen har traditionellt beskrivits som en kris och en period präglad av förluster. Många upplever dock en känsla av befrielse och ser den som en möjlighet att fokusera på sig själva och sina egna intressen. Forskningen visar att majoriteten hanterar övergången väl och bara upplever mindre förändringar i välbefinnandet. Det finns dock stora individuella variationer och en

väsentlig andel, ca 10–25 procent, upplever svårigheter att anpassa sig till livet som pensionär.

Tidigare forskning visar, föga förvånande, att arbetsrelaterade faktorer som fysiska och mentala påfrestningar har betydelse för hur pensioneringen upplevs. Även faktorer kopplade till själva beslutet att gå i pension spelar roll. Personer som av olika skäl är tvingade att gå i pension rapporterar fler negativa upplevelser. Familjerelaterade faktorer som civilstånd, vård av föräldrar, barn eller barnbarn har också betydelse för hur vi upplever och hanterar övergången. Sociala, ekonomiska och hälsorelaterade förhållanden bidrar i sin tur till att definiera förutsättningarna för att trivas med livet som pensionär. Förhållandevis lite är dock känt om hur själva anpassningsprocessen ser ut och vilka faktorer som bidrar till att förklara *varför* vissa hanterar övergången väl medan andra upplever svårigheter.

Denna avhandling baseras på ett teoretiskt ramverk som utvecklats för att förklara *hur* och *varför* pensioneringen påverkar oss. Den så kallade resursbaserade dynamiska modellen utgör ett tvärvetenskapligt perspektiv på pensionsövergången med fokus på de faktorer som påverkar hur anpassningsprocessen ser ut. Pensioneringens betydelse för den psykiska hälsan beror, enligt detta perspektiv, dels på individens förutsättningar att hantera övergången, men också på de förändringar den medför. Modellen utgår från tillgången till olika resurser. Dessa innefattar såväl grundläggande fysiska, mentala och ekonomiska förutsättningar som sociala relationer, emotionella förutsättningar och motivationella drivkrafter. Grundantagandet är att individer med fler resurser, det vill säga bättre förutsättningar, har större möjligheter att hantera övergången och trivas med sina liv som pensionärer.

Enligt modellen bidrar en rad olika faktorer till att förklara individuella skillnader i tillgången till olika resurser samt hur dessa förändras i relation till pensioneringen. Såväl familje- och arbetsrelaterade faktorer som individuella, organisatoriska och strukturella förutsättningar är av betydelse för hur pensioneringen påverkar tillgången till olika resurser – vilket i sin tur bidrar till att förklara hur anpassningsprocessen ser ut. Pensioneringen antas påverka välbefinnandet negativt om den medför förlust av resurser, och positivt om den innebär ökade resurser. På samma sätt antas pensioneringen inte ha någon större inverkan på välbefinnandet om den inte medför några större förändringar i tillgången till olika resurser.

Att gå i pension medför till exempel för de flesta en minskad inkomst. Att lämna arbetet kan också innebära en förlust av arbetsrelaterade sociala relationer, samtidigt som det ger mer tid och utrymme för familj och vänner. Pensioneringen kan medföra en känsla av lättnad från arbetsrelaterade krav och förpliktelser, men också en förlust av yrkesidentitet. Att gå i pension från ett fysiskt eller mentalt krävande arbete kan ge utrymme för återhämtning, samtidigt som minskad fysisk och kognitiv stimulans kan leda till långsiktiga



försämringar. Alla dessa faktorer antas spela in och påverka anpassningsprocessen genom sina betydelse för förutsättningarna att trivas med livet som pensionär.

Det finns dock fortfarande förhållandevis lite empiriskt stöd för det grundläggande antagandet i resursmodellen, det vill säga om förändringar i resurser påverkar förändringar i välbefinnande. I detta sammanhang är det viktigt att undersöka om vissa resurser är viktigare än andra, och om förlust eller avsaknad av en specifik resurs kan kompenseras av tillgång till andra resurser. Mer forskning behövs också om vad som förklarar hur pensioneringen påverkar tillgången till olika resurser. Idag är det förhållandevis vanligt att fortsätta arbeta till viss del även efter att man tagit ut pension. En gradvis övergång antas underlätta anpassningsprocessen genom att skapa mer gradvisa förändringar i det dagliga livet. Olika resurser kan därför vara mer eller mindre viktiga för välbefinnandet beroende på hur själva pensioneringen går till. Psykologiska faktorer som personlighet kan också bidra till att förklara såväl tillgången till resurser som hur dessa förändras i relation till pensionsövergången. I denna avhandling undersöks dessa faktorer närmare.

\* \* \*

Avhandlingen består av fyra empiriska studier som samtliga tar avstamp i den resursbaserade dynamiska modellen. Mer specifikt undersöks betydelsen av självkänsla, autonomi, socialt stöd, självskattad fysisk hälsa och kognitiv förmåga samt ekonomiska faktorer som grundläggande ekonomiska förutsättningar och ekonomisk tillfredsställelse.

Med självkänsla avses individens egen uppfattning om sig själv och sin egen duglighet. Grad av autonomi reflekterar individens upplevelse av kontroll och självbestämmande över sin tillvaro. Socialt stöd speglar kvalitet snarare än kvantitet i sociala relationer. Fysisk hälsa och kognitiv förmåga mäts genom egna skattningar av allmänt hälsotillstånd och tankeförmåga. Med grundläggande ekonomiska förutsättningar avses en ekonomisk buffert på 15 000 kronor för oförutsedda kostnader. Ekonomisk tillfredsställelse mäter individens uppfattning om den egna ekonomiska situationen.

I **Studie I** ( $N = 3\,471$ ) undersöktes betydelsen av de sex resurstyperna för förändringar i livstillfredsställelse över ett år, samt om dessa effekter varierar beroende på om man lämnar arbetet helt ( $n = 346$ ) eller delvis ( $n = 360$ ). En mer gradvis övergång antogs bidra till anpassningsprocessen genom att minska betydelsen av tillgången till resurser. I studien inkluderades även de som fortsatte att arbeta ( $n = 1\,860$ ) samt de som redan gått i pension ( $n = 905$ ). Resultaten visade att individer med högre självkänsla, mindre autonomi, bättre upplevd kognitiv förmåga och tillgång till grundläggande ekonomiska förutsättningar rapporterade ökad livstillfredsställelse året efter

att de gått i (heltids-)pension. Avsaknad av ekonomiska resurser var förknippat med negativa förändringar både för de som gick i hel- och deltidspension, men effekten var mindre negativ för de som fortsatte att arbeta efter pensioneringen. Mer socialt stöd och bättre självskattad hälsa var förknippat med positiva förändringar i livstillfredsställelse för de som redan gått i pension, och bättre självkänsla var kopplat till ökad livstillfredsställelse bland de som fortsatte att arbeta.

Sammantaget visade resultaten från Studie I att de sex resurserna var viktigare för livstillfredsställelsen bland de som gick i pension jämfört med de som fortsatte att arbeta eller redan hade gått i pension. I linje med förväntningarna bidrog resurserna också till att förklara en större andel av förändringarna i livstillfredsställelse bland de som slutade att arbeta helt och hållet (31.4%) jämfört med de som fortsatte att arbeta till viss del efter att de gått i pension (11.7%).

I **Studie II** ( $N = 1\,924$ ) undersöktes om vissa resurser är mer eller mindre viktiga för livstillfredsställelsen beroende på vilka andra resurser som finns tillgängliga. Studien inkluderade de som gick i pension mellan det första och det tredje mättillfället ( $n = 614$ ) samt de som ännu inte gått i pension efter två år ( $n = 1\,310$ ). Resultaten visade, i linje med förväntningarna, att avsaknad av resurser till viss del kan kompenseras av närvaron av andra resurser. Sambandet mellan självskattad hälsa och livstillfredsställelse var svagare bland de som upplevde hög grad av autonomi, och sambandet mellan grundläggande ekonomiska förutsättningar och livstillfredsställelse var svagare bland de som rapporterade hög grad av socialt stöd och god kognitiv förmåga.

Sammantaget visade resultaten från Studie II att sämre hälsa och avsaknad av grundläggande ekonomiska förutsättningar kan kompenseras av högre autonomi, mer socialt stöd och bättre upplevd kognitiv förmåga. Dessa effekter var unika för de som gick i pension. Bland de som ännu inte gått i pension identifierades en kumulativ effekt av självskattad hälsa och ekonomiska resurser, vilket indikerar att närvaron av den ena resurstypen ökar inflytandet av den andra.

I **Studie III** ( $N = 497$ ) undersöktes i vilken utsträckning förändringar i resurser bidrar till att förklara förändringar i livstillfredsställelse i övergången från arbete till pension. Studien inkluderade de som gick i pension mellan det första och det tredje mättillfället. Resultaten från Studie III visade att förändringar i självkänsla, autonomi, socialt stöd samt självskattad fysisk och kognitiv hälsa kan relateras till förändringar i livstillfredsställelse. Effekterna var dock svaga och bidrog bara till att förklara en liten andel av variationen. Förändringar i ekonomisk tillfredsställelse samvarierade inte med förändringar i livstillfredsställelse. Resultaten indikerade också att livstillfredsställelse i sig påverkar hur vi ser på och värderar våra resurser. Individer med

högre livstillfredsställelse rapporterade fler positiva förändringar i självkänsla, autonomi samt självskattad fysisk hälsa och kognitiv förmåga.

Sammantaget visade resultaten från Studie III att förändringar i resurser endast bidrar till att förklara en liten andel av förändringarna i livstillfredsställelse. Resultaten indikerar därför att resurserna är av värde för att identifiera individuella skillnader i anpassningen till livet som pensionär, det vill säga varför vissa personer rapporterar högre välbefinnande än andra, men att de inte har ett stort inflytande på själva anpassningsprocessen. Individuella variationer i betydelsen av en specifik resurs bidrar sannolikt till att förklara varför vissa personer påverkas mer eller mindre av resursförändringar. Resultaten visar också att livstillfredsställelsen i sig är en viktig faktor för att förstå hur vi upplever olika aspekter av pensioneringen.

I **Studie IV** ( $N = 796$ ) undersöktes betydelsen av personlighet för tillgången till, och förändringar i, resurser i övergången från arbete till pension. Personlighet mättes i denna studie genom femfaktormodellen som inkluderar personlighetsdragen utåtriktning, vänlighet, samvetsgrannhet, känslomässig instabilitet och öppenhet. I studien inkluderades de som gick i pension mellan det första och det fjärde mättillfället.

Resultaten visade att individer med hög grad av utåtriktning rapporterade högre självkänsla, mer autonomi, mer socialt stöd och bättre kognitiv förmåga – men också mer positiva förändringar i självkänsla och socialt stöd i pensionsövergången. Individer med högre grad av vänlighet rapporterade högre självkänsla, mer socialt stöd och bättre kognitiv förmåga, och personer med högre grad av samvetsgrannhet rapporterade högre självkänsla, mer autonomi och bättre kognitiv förmåga. I motsats till dessa resultat rapporterade de med högre grad av känslomässig instabilitet lägre självkänsla, mindre autonomi, mindre socialt stöd, sämre fysisk hälsa, sämre kognitiv förmåga och lägre ekonomisk tillfredsställelse. Hög grad av känslomässig instabilitet var också kopplat till negativa förändringar i självkänsla, autonomi, socialt stöd, fysisk hälsa och kognitiv förmåga efter pensioneringen.

Sammantaget visade resultaten från Studie IV att hög grad av utåtriktning, vänlighet och samvetsgrannhet ökar förutsättningarna att hantera övergången genom sin betydelse för tillgången till olika resurser. Resultaten visade också att personer med hög grad av känslomässig instabilitet är mer sårbara i pensioneringsprocessen och att de rapporterar fler negativa förändringar i resurser.

\* \* \*

Denna avhandling bidrar med ökad kunskap om pensioneringsprocessen genom att studera faktorer av betydelse för livstillfredsställelsen under åren före och efter pensioneringen. Resultaten från de fyra studierna visar att de

flesta hanterar övergången väl och rapporterar ökad livstillfredsställelse de första åren efter att de gått i pension. Det finns dock stora variationer och många individuella och kontextuella omständigheter som bidrar till att förklara hur anpassningsprocessen ser ut.

Individer med sämre ekonomiska förutsättningar är särskilt utsatta. En gradvis övergång kan bidra till att motverka negativa upplevelser för dessa personer. Effekten är dock sannolikt beroende av förutsättningarna att själv bestämma när och hur man går i pension. Resultaten visar också att upplevelsen av kontroll är särskilt viktig för personer med sämre hälsa, och att socialt stöd och god upplevd kognitiv förmåga till viss del kan kompensera för avsaknad av grundläggande ekonomisk trygghet.

Förändringar i resurser bidrar till att förklara individuella variationer i anpassningen till livet som pensionär, men effekten av dessa förändringar varierar sannolikt beroende på den relativa betydelsen av en specifik resurs. Även personligheten kan spela in. Resultaten visar att personer med hög grad av känslomässig instabilitet är särskilt utsatta i pensioneringsprocessen. Fortsatta studier bör undersöka i vilken utsträckning dessa individer också är mer sårbara för resursförändringar, det vill säga om sambandet mellan förändringar i resurser och förändringar i livstillfredsställelse är starkare för individer med högre grad av känslomässig instabilitet. Mer forskning behövs också om vad som bidrar till att förklara varför vissa individer hanterar övergången väl, trots omfattande förändringar i tillgången till olika resurser.

Resultaten är av relevans för att förstå vad som påverkar våra möjligheter att anpassa oss till de förändrade livsomständigheter som pensioneringen medför. En ökad kunskap om de faktorer som inverkar på vårt välbefinnande under den senare delen av livet är avgörande för att kunna möta de möjligheter och utmaningar samhället står inför med en växande äldre befolkning.

# PREFACE

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This thesis is based on the following four papers, which are referred to by their Roman numerals:

- I. Hansson, I., Buratti, S., Thorvaldsson, V., Johansson, B., & Berg, A. I. (2018). Changes in life satisfaction in the retirement transition: Interaction effects of transition type and individual resources. *Work, Aging and Retirement*, 4, 352–366. doi: 10.1093/workar/wax025
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*Isabelle Hansson*  
Gothenburg, August 2019



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# INTRODUCTION

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Retirement from work is a major life event that signals aging, both at the societal and the individual level. From a societal viewpoint, it serves as a marker of entry into the “third age” in which the individual is defined as a senior citizen with no further obligation to participate in the workforce (Laslett, 1991). On the individual level, the transition involves a process of distancing oneself from the workforce behaviorally as well as and psychologically (Wang & Shi, 2014). The individual is confronted with new social roles, expectations, challenges, and opportunities—all of which are likely to influence health and well-being.

Retirement is a multifaceted life transition that involves both gains and losses (Wang, Henkens, & van Solinge, 2011). The relief from work can be seen as an opportunity to focus on the self and to devote time to pleasurable or interesting activities rather than meeting the demands of the working role. At the same time, the transition involves aspects of role loss and a process of reorientation. Retirement is associated with substantial changes in everyday life and the development of a satisfying post-retirement lifestyle can be challenging in many ways. In addition, the opportunities to find new and meaningful activities in retirement may be constrained by multiple factors on individual, meso, and macro levels. Aging-related processes such as declining physical and cognitive abilities and contextual factors such as social and societal circumstances are likely to influence the individual experience in retirement.

Research on retirement is important for several reasons. Its influence on individual well-being is of particular interest in the current landscape of rapidly aging populations (Organization for Economic Co-operation and Development [OECD], 2006). Today almost 20% of the Swedish population is 65 years or older and this number is estimated to increase to 25% by 2070 (Statistics Sweden, 2018). Although the statutory retirement age in Sweden is 67, more than 80% of workers retire at or before age 65 (Statens Offentliga Utredningar [SOU], 2012). A higher retirement age has been recommended as a necessary step to meet the demands of a growing proportion of older adults in the population (SOU, 2012). The financial incentive for increasing labor force participation among older adults has led to a growing interest in retirement research in the political, socioeconomic, and human resources areas (Wang & Shi, 2014).

Research on how to enable more people to work into older ages is crucial for sustainable societal development. One aspect of this research is the impact of retirement on individual well-being, i.e., for whom and under which

circumstances retirement is perceived as a stressful and challenging event. Knowledge about the factors involved in how and why retirement influences well-being is essential for evaluating the potential costs and benefits of a higher retirement age. A thorough understanding of the retirement process is crucial to improving and maintaining the well-being of older adults.

At the individual level, understanding retirement requires understanding adaptive psychological processes. Retirement challenges the capacity to adapt to the inner biological changes of aging and changes in the social and structural environment. Research on the role of retirement for well-being is of interest not only for knowledge about how people manage the transition, but also for understanding why some people adjust well to retirement while others struggle.

Subjective well-being, defined as a person's own evaluation of their current life situation, is a key indicator of psychological vitality in late adulthood (Smith & Ryan, 2015). Subjective well-being is of particular interest in the retirement process because it reflects a person's adaptive capacity. Research on factors associated with individual differences and intra-individual changes in subjective well-being in the last years before, and the first years following, retirement is important for understanding the mechanisms involved in psychological adaptation, but also for identifying people at risk for maladaptive adjustment.

The aim of this thesis is to contribute knowledge about the role of retirement for subjective well-being. Subjective well-being in this thesis is studied through measures of life satisfaction, defined as a global cognitive evaluation of overall satisfaction with life (Diener, 1984). The goal of the thesis is to identify factors associated with individual differences and intra-individual changes in life satisfaction in the transition from work to retirement in a Swedish sample of older adults. The thesis consists of four empirical studies based on data from the HHealth, Ageing, and Retirement Transitions in Sweden (HEARTS) study (Lindwall et al., 2017), a longitudinal population-based study designed to shed light on developmental psychological processes in the last years before and the first years following retirement.

## Retirement in the Context of Lifespan Development

A thorough understanding of retirement and its influence on individual well-being warrants some consideration of the context in which it takes place. In this sense, retirement cannot be treated as an isolated event, but as a process embedded in the life course and therefore influenced by multiple contextual factors. Lifespan psychology, with its origin in work by Paul Baltes and

colleagues (Baltes, 1987, 1997; Baltes, Reese, & Lipsitt, 1980), provides a metatheoretical framework for understanding the multidimensional and multidirectional dynamics of human development. This framework is used as a theoretical foundation for the work presented in this thesis. The underlying assumption is that retirement is a developmental process, and the factors and mechanisms involved in this process are studied from the perspective of lifespan psychology.

A fundamental assumption in lifespan psychology is that developmental processes vary between individuals but also within individuals over time, which highlights the need for longitudinal research that allows analysis of individual differences in intra-individual change. The following sections address two key components of lifespan psychology: (a) the nature of developmental processes and (b) the contextual determinants involved in shaping these processes.

## Developmental Processes

Lifespan development refers to the ongoing dynamics between gains and losses across the life course (Baltes, 1987). Development is thus seen as a lifelong process rather than restricted to a specific age range (Baltes & Smith, 2004). Development is defined within this framework as “*any* change in adaptive capacity of an organism, whether positive or negative” (Baltes, 1987, p. 616). In this sense, development is not reduced to growth or decline, but encompasses a continuum of growth, stability, and decline from conception to death (Staudinger & Lindenberger, 2003). That is, no process of development consists only of growth or progress (Baltes, 1987); rather, changes across the lifespan are described as systematic configurations of growth, maintenance (including repair and recovery), and loss regulation (Baltes & Smith, 2004).

A central concept of lifespan psychology is the idea of *multidirectionality* (Baltes, 1987). Any observable developmental trajectory is seen as the manifestation of one of many possible trajectories. That is, for any given individual, at any given time, and for any given psychological dimension, there are multiple potential developmental pathways (Staudinger & Lindenberger, 2003). Human development is seen as the result of interacting systems of influence in which different developmental trajectories are more or less likely. Another key concept is the notion of *plasticity* (Baltes, 1987). Plasticity refers to the capacity for differential developmental pathways and denotes the discrepancy between realized and maximum potential. A central goal of lifespan psychology is to evaluate the magnitude of plasticity in developmental processes and the extent to which it varies with age (Staudinger & Lindenberger, 2003).

Lifespan psychology views human development as a lifelong process of *adaptation* (Baltes, 1987). Successful development in this perspective is defined as the maximization of gains and the minimization of losses. The model of selective optimization with compensation constitutes a theoretical framework for understanding regulatory processes in human development (Baltes, 1997; Baltes & Baltes, 1990). The adaptive task of the individual is to *select* high-priority domains, tasks, or goals, *optimize* functioning in these domains, and to *compensate* and counteract losses by identifying alternative means to maintain functioning. The three processes are assumed to be universal and applicable to all types of development (Baltes & Baltes, 1990), but their combination and content are unique to each individual and in each specific situation (Baltes & Smith, 2004).

### Contextual Determinants

A central assumption in lifespan psychology is that developmental processes must unfold within a given context, and this context influences the way they unfold (Staudinger & Lindenberger, 2003). Lifespan psychology addresses two major sources of human development: biology and culture. Biological and environmental determinants of development are structured at three levels of influence: (a) age-graded, (b) history-graded, and (c) non-normative (Baltes, et al., 1980).

Normative *age-graded* (ontogenetic) influences include factors closely related to chronological age such as biological maturation and age-graded socialization events. Retirement constitutes one such example. The transition from work to retirement involves adjustment to new social roles and expectations in the external environment, a process sometimes referred to as a developmental task (Havighurst, 1972), but it also involves adjustments to age-related biological changes. In essence, retirement marks the transition between two major life phases in adulthood: midlife and old age.

Midlife refers to the period of approximately 40 to 60 years of age and can be described as the intersection between growth and decline (Lachman, Teshale & Agrigoraie, 2015). Midlife is a central period in the life course when physical and cognitive health starts to decline. At the same time, it involves aspects of growth in terms of increased experience and knowledge, and better emotional regulation (Lachman, 2004). Midlife bridges the earlier and later periods of life, and developmental processes in this life stage can be seen both as consequences of previous experiences and as determinants of future aging-related processes. For example, early childhood experiences predict health outcomes later in life (Levine, Miller, Lachman, Seeman, & Chen, 2018), and health behaviors and adaptive psychosocial resources in



midlife predict future developmental outcomes (Lachman & Agrigoroaei, 2010; Agrigoroaei & Lachman, 2011).

Old age refers to the period from retirement on. Entry into old age accelerates many of the challenges of midlife such as physical and cognitive decline, but it also involves a continuation of psychological development such as increased knowledge, experience, and emotional maturity (Baltes, 1987). Improved emotional regulation, selectivity in social relations, and secondary (i.e., internal) control are seen as key mechanisms in successful development in old age (Carstensen, Isaacowitz, & Charles, 1999; Carstensen, Fung, & Charles, 2003; Heckhausen & Schulz, 1995; Heckhausen, Wrosch, & Schulz, 2010).

Entry into old age, as manifested through retirement, is ultimately defined by the larger sociocultural structure in which individuals develop (Lachman, 2004). Retirement constitutes an age-graded socialization event in the sense that it is shaped by societal norms and views about older adults and their role in the society. The transition therefore involves aspects of adaptation, not only to inner biological changes, but also to changes in the social and structural environment. Perceptions of aging, in general (Drevenstedt, 1976; Yun & Lachman, 2006; Löckenhoff et al., 2009) and in relation to the self (Kleinspehn-Ammerlahn & Kotter-Grühn, 2008; Kotter-Grühn, Kleinspehn-Ammerlahn, Gerstorff, & Smith, 2009; Levy, Slade, Kunkel, & Kasl, 2002; Montepare & Lachman, 1989), have important implications for how people view and evaluate their capabilities, and consequently for how they adapt to age-related changes.

*History-graded* influences form the larger evolutionary biocultural context in which individuals develop. Such influences include long-term societal changes (e.g., demographic changes) as well as more time or period-specific events (e.g., war). Decreased fertility rates combined with rising life expectancy during the second half of the 20<sup>th</sup> century have led to a rapidly growing proportion of older adults in most developed countries, and Sweden is no exception (OECD, 2006). In the early 1900s, only 8% of the Swedish population were 65 years or older (Statistics Sweden, 2019a) and could anticipate living an average of 13 years more (Statistics Sweden, 2019b). Today, almost 20% of the Swedish population is over age 65 (Statistics Sweden, 2019a), and they can anticipate living an average of 20 more years (19 for men and 21 for women; Statistics Sweden, 2019b). These changes have important implications for how we view older adults and their role in the society. Projected life expectancy after age 65 also has important implications for individuals' plans and expectations for post-retirement life. Retirement in this sense is viewed less as an arrival and more as the starting point of a new life chapter.

Later-born cohorts differ from their parents and grandparents, not only in terms of life expectancy, but also in their different life experiences, expectations, challenges, and opportunities (Christensen, Doblhammer, Rau, & Vaupel, 2009). People approaching retirement today were born in the period after the Second World War, a time characterized by welfare reforms and substantial improvements in living conditions. The so-called baby boomer generation, i.e., people born between 1946 and 1964, benefited from improved child care, educational reforms, better working and housing conditions, as well as medical developments and better health care services (see e.g., Skoog, 2016). Steeply rising educational attainment is one example of such changes. Today, 30% (32% for women and 29% for men) of Swedish adults aged 65–74 have post-secondary education (Statistics Sweden, 2019c). This is almost five times more than 30 years ago. Equality reforms have also led to changes in family composition and dynamics, resulting in more women participating in the labor force. The retirees of today thus have drastically different labor market experiences than earlier generations.

Later-born cohorts are also healthier, more active, and less dependent than earlier generations. Older adults in Sweden today report fewer sleeping problems (Skoog et al., 2019), better social relations (Falk et al., 2014), more leisure activities (Falk et al., 2014), and more and better sexual relationships (Beckman, Waern, Gustafson, & Skoog, 2008) than they did 30 years ago. The physical and cognitive health of older adults has also improved considerably. Later-born cohorts of 70-year-olds in Sweden show better cognitive performance (Karlsson, Thorvaldsson, Skoog, Gudmundsson, & Johansson, 2015; Thorvaldsson, Karlsson, Skoog, Skoog, & Johansson, 2017) and better cardiovascular health (Zhi, Joas, Waern, Östling, Börjesson-Hanson, & Skoog, 2013), blood pressure (Joas, Guo, Kern, Östling, & Skoog, 2017), lung function (Lak, Skoog, & Guo, 2012), and hearing abilities (Hoff, Tengstrand, Sadeghi, Skoog, & Rosenhall, 2018) than previous generations. Later generations of older adults report less functional disability (Falk et al., 2014) and inactivity (Hörder, Skoog, Johansson, Falk, & Frändin, 2015) and they are also more satisfied with their health (Falk et al., 2014).

The findings in these studies suggest that older adults in Sweden approach retirement in much better shape today than they did 30 years ago. Their expectations of post-retirement life therefore differ considerably from those of earlier generations. More time in retirement and more time in better health may lead to greater aspirations and more positive experiences in retirement, but could also lead to negative consequences if a person is able and willing to work but prevented by pension regulations. Some studies report negative trends in later-born cohorts such as higher alcohol use (Ahlner et al., 2018) and more at-risk drinking behaviors (Waern, Marlow, Moring, Östling, & Skoog, 2013) than previous generations. Research also

suggests a higher prevalence of minor depression among older adults in later-born cohorts (Wiberg, Waern, Billstedt, Östling, & Skoog, 2013).

Taken together, these changes illustrate the impact of larger societal trends on a multitude of developmental processes and highlight the relevance of studying how current generations manage the transition to retirement and the extent to which their experiences differ from earlier generations.

*Non-normative* (idiosyncratic) influences include those sequences and events that deviate from the general and predictable course. Examples of such influences include serious accidents or illness, the unexpected death of significant others, migration, or suffering serious crime or warlike conditions. In the context of retirement, non-normative influences include permanent withdrawal from the labor force due to unemployment or disability. Normative retirement must therefore be considered in relation to non-normative retirement. For example, early retirement due to unemployment or disability differs from normative age-related retirement, and this has important implications for future developmental pathways (Pinquart & Schindler, 2007; Wetzel, Huxhold, & Tesch-Römer, 2015).

In summary, the lifespan approach highlights the impact of contextual factors on a multitude of developmental processes. Age-graded, history-graded, and non-normative influences contribute to our understanding of inter-individual differences in the direction and level of intra-individual change over time (Baltes & Smith, 2004). The individual experience in retirement is thus conditioned by multiple developmental processes, including early life experiences as well as midlife and aging-related factors, and larger social and societal trends influence the context in which the transition takes place. Rapidly changing demographics, welfare reforms, and medical developments in the second half of the 20<sup>th</sup> century have contributed to a new landscape in terms of how we describe and understand the challenges and opportunities of late life. These changes highlight the need to better understand how current generations respond to and cope with the transition to retirement.

## Retirement

Retirement is a multidisciplinary research field and the transition to this life phase can be studied from various perspectives on the micro, meso and macro levels (Szinovacz, 2013). Economic and political researchers typically approach retirement from a macro level perspective, highlighting issues related to larger societal trends, financial developments, and the pension system. Sociologists and researchers in human resources generally apply a meso level perspective, focusing on social and organizational structures. The

micro level perspective highlights factors related to individuals and their immediate surroundings. Several disciplines in the medical and social sciences approach retirement from the individual perspective, the vast majority focusing on the psychological and sociological aspects of the transition. A thorough understanding of the retirement process warrants attention to factors and influences operating on all three levels (Szinovacz, 2013). Macro level influences include socioeconomic factors, social norms about retirement, economic conditions and trends, and social security systems and government policies (Wang & Shultz, 2010). Meso level influences include job and organizational factors, and micro level influences range from social and demographic characteristics to personal needs, values, attitudes, skills, and abilities (Wang & Shultz, 2010).

Psychological research on retirement generally differentiates between three temporal phases (Shultz & Wang, 2011; Wang & Shi, 2010; Wang & Shultz, 2014): (a) the pre-retirement phase (i.e., planning and decision-making), (b) the transition phase (i.e., behavioral and psychological withdrawal from the labor market), and (c) the post-retirement phase (i.e., adjustment and post-retirement activities). Depending on the phase of interest, retirement may be viewed either as a dependent (outcome) or independent (predictor) variable (Ekerdt, 2010). Research on the pre-retirement phase typically conceptualizes retirement as an outcome, while researchers interested in the post-retirement phase mainly view retirement as a predictor of future outcomes. Research focused on the transition phase may include aspects of both. Factors on the micro, meso, and macro levels are likely to influence all three phases in various ways.

Retirement can be defined as a permanent withdrawal from the labor force, and the definition is typically conditioned on eligibility for old-age pension (Beehr & Bowling, 2013). The empirical operationalization however varies considerably across studies (Ekerdt & Deviney, 1990; Wang & Shi, 2014). A conceptual review (Denton & Spencer, 2009) identified eight common ways of measuring retirement status: labor force status, reduction in working hours and/or earnings, hours worked or income earned, receipt of pension income, exit from main employment, late career change, self-assessed retirement status, or a combination of two or more of these types of information. The definition used in a specific study ultimately depends on the research question of interest.

Rapidly aging populations combined with technical developments and changed labor market conditions have led to a fragmentation of the retirement landscape (Shultz & Wang, 2010). Increased flexibility in pension systems enable older workers to continue to work beyond the statutory retirement age or to combine their old-age pension with part-time work (OECD, 2017). As a result, retirement is no longer viewed as a one-step

permanent career exit (Cahill, Giandrea, & Quinn, 2013; Shultz & Wang, 2010). As an intermediate step toward a complete labor force withdrawal, many retirees continue to work to some extent through “bridge employments” (Dingemans, 2016; Shultz, 2003). Bridge employment refers to any kind of paid employment (e.g., part-time, full-time, or self-employment) that employees engage in after they retire from their main career (Zhan & Wang, 2015). Increased flexibility in the retirement system allows older workers to choose when and how they retire, and it has become relatively common to retire, “un-retire”, and “re-retire” several times (Beehr & Bennet, 2015).

This thesis focuses on the transition from work to retirement, and more specifically on how retirement influences individual well-being and what factors help to explain why some people adjust well to retirement while others experience more difficulties. The attention is thus on the transition phase and the post-retirement trajectory, but retirement is not necessarily viewed as a predictor in itself. Instead, a lifespan perspective on retirement suggests that the individual experience is conditioned by multiple contextual circumstances and influenced by various factors on the micro, meso, and macro levels. The following section considers common psychological conceptualizations of retirement and what type of research questions they raise. The next section deals with the national context and pension and labor market trends among older adults in Sweden.

## Conceptualizations of Retirement

Psychological research on retirement typically centers on one of the following three conceptualized processes: (a) retirement as decision-making, (b) retirement as career development, or (c) retirement as an adjustment process (Wang & Shi, 2014; Wang & Shultz, 2010). Most previous research has focused on how and why people retire whereas relatively little attention has been paid to post-retirement outcomes. Recent labor market trends have also led to a growing interest in alternative retirement pathways and opportunities for post-retirement career development. The main tenets of these three conceptualizations are described below.

Conceptualizing retirement as a *decision-making process* focuses on the period before retirement and the factors influencing the decision to retire. In this view, retirement is a motivated choice: the individual makes an informed decision about when and how to withdraw from the workforce (e.g., Adams, Prescher, Beehr, & Lepisto, 2002; Feldman, 1994). Older workers are assumed to base their retirement decisions on their own knowledge of their personal characteristics and their work and non-work environments (Wang & Shultz, 2010). Key factors in this process include health, family care needs, attitudes toward work, and desire for leisure activities (Wang & Shi, 2014).

As a decision-making process, retirement is defined as a decrease in psychological commitment to, and ultimately a withdrawal from, work and the workforce. Retirement in this sense is seen as an outcome variable measured through systematic decreases in work-related activities and increases in leisure and family- and community-related activities (Smith & Moen, 2004). A limitation of this view is that it assumes that all retirement decisions are voluntary. The theoretical usefulness of this approach thus depends on the extent to which retirement decisions are the result of personal choice (Wang & Shultz, 2010). If the decision is not voluntary, but forced through pension system regulations, the decision-making model is no longer applicable. This approach is therefore conditioned on the voluntariness of the decision.

An alternative approach is to view retirement as a *career development process*. In this view, retirement is less as an end in itself, but more a personal frontier and the possible beginning of something new (Ekerdt, 2010). The focus in this approach is on the post-retirement phase and the potential for continued career development (Shultz, 2003). This conceptualization, based on changing labor market traditions and job opportunities beyond the traditional linear career path (Wang, Olson, & Shultz, 2013), has its origin in the protean career model, in which careers are controlled by workers themselves rather than the organizations (Hall, 2004; Hall & Mirvis, 1995).

Conceptualizing retirement as a career development process shifts the focus from employers to workers' own personal values and goals (Freund & Baltes, 1998; Kim & Hall, 2013). This approach is useful for evaluating the potential for prolonged workforce participation among older adults. Individual factors such as physical (Wang, Zhan, Liu, and & Shultz, 2008) and cognitive (Wang & Chen, 2006) abilities, experiences, and expertise (Kim & Feldman, 2000) are likely to influence the potential for continued career development after retirement. Job and organizational factors such as old-age employment policies and working conditions are however also important determinants in this process (Posthuma & Campion 2009).

The third approach, viewing retirement as an *adjustment process*, incorporates both the transition from employment to retirement and the individual's development in retirement (i.e., the post-retirement trajectory). This approach considers both the decision-making process and the mechanisms involved in developing a satisfactory post-retirement life (van Solinge, 2013). The focus is thus on the developmental process in which people adjust to changes associated with their transition from traditional or accustomed work (Wang et al., 2011).

As a process of adjustment, the transition process embedded in the decision to retire is more important than the decision itself (van Solinge & Henkens, 2008). Wang and Shultz (2010) argue that different people can

make the same decision to retire, but the timing, preparation, resources, and changes in activities associated with their decisions may be very different. This approach emphasizes the complex functional mechanism of retirement rather than the simple decision content (Szinovacz, 2003).

Retirement in this perspective is seen as a process of adjusting to new life circumstances while seeking to achieve psychological comfort in life as a retiree (van Solinge & Henkens, 2008). The focus is thus on how well people manage the transition: how and why retirement influences individual well-being. Earlier theoretical models of this process highlighted possible negative experiences of role loss (Ashforth, 2001) and discontinuity in central aspects of daily life (Atchley, 1989). Contextual influences related to previous experiences and work and family contexts are also frequently highlighted (Elder, 1995). More recent work, however, suggests an integrative approach that accounts for the multidimensional and dynamic aspects of the transition (Wang et al. 2011).

The different conceptualizations outlined in this section illustrate the most common approaches in psychological research on retirement. Depending on how retirement is conceptualized, different aspects of the transition are more or less highlighted. As a result, different types of research questions are addressed. When retirement is conceptualized as a decision-making process, the research questions are concerned with identifying factors and circumstances that influence the decision to retire. Viewed as a career development process, retirement raises interest in opportunities for continued workforce participation. Conceptualizing retirement as an adjustment process provokes questions about how and why retirement influences individual well-being. In this thesis, retirement is conceptualized as an adjustment process because it is concerned with how people manage the transition. The focus is thus on factors related to individual differences and intra-individual changes in life satisfaction in the last years before and the first years following retirement.

## Retirement in Sweden

Sweden is a strong welfare state with a well-developed social security system. State pensions were introduced as early as 1913, making it the first country in the world to provide state pension benefits for the whole population (SOU, 2012). This pension served as a disability pension for those who were unable to work, but was also distributed to everyone at the age of 67. Pressure to increase the pension resulted in a first reform in 1948 and a second in 1960. The new system included a public pension and an income-based supplement (calculated from the best 15 years of working life) and could be taken at a

lower rate from the age of 63. A new reform in 1974 allowed full pension benefits from the age of 65 and the legal right to continue to work until 67.

Increased financial constraints resulting from a growing proportion of older adults led to a new reform in 1999. The pension is now calculated from total income across the whole working life, rather than the previous standard of the best 15 years. A “guarantee” pension was added to the pension for people aged 65 or more who had low or no income. This reform led to increased flexibility and also allowed people to begin collecting their pension from the age of 61. The total pension income consists of three components: (a) national retirement pension, (b) occupational pension, and (c) private pension savings. The national retirement pension is income-based and can be supplemented by the guarantee pension and housing benefits for people with low or no income. Some of the state-based pension, the “premium” pension, is placed in funds at the individuals’ own disposal. The occupational pension is financed by the employer and depends on the collective agreement, and the private pension is based entirely on individual savings and investments.

Continued improvements to the pension system are seen as necessary in the current landscape of aging populations (König & Sjögren Lindquist, 2016; OECD, 2006; SOU, 2012). The old-age dependency ratio (the number of individuals older than 65 years for every 100 persons of working age [20 to 64 years]) in the OECD countries has increased from 19.5 in 1975 to 27.9 in 2015, and it is projected to accelerate and almost double until 2050 (OECD, 2017). Sweden has among the highest dependency ratios (33.8 in 2015), but the employment rate among older adults in the ages 65–69 is relatively high (22.0% in Sweden and 20.9% on average in the OECD countries) and the effective retirement age is also among the highest in Europe (OECD, 2017). The average retirement age in Sweden is 65.8 years for men and 64.6 for women (OECD, 2017).

Many countries are raising the retirement age to meet the demands of rapidly aging populations (OECD, 2017). Recent political developments in Sweden (Departementsserien, Ds 2019:2) suggest a gradual increase of the lowest retirement age to 64 by 2026 (62 years 2020 and 63 years 2024), and an increase of the upper retirement age to 69 by 2023 (68 years 2020). The minimum age for additional pension benefits (guarantee pension and supplementary housing allowance) is suggested to increase to 66 in 2023 and to 67 by 2026. More and more countries are also moving beyond a fixed retirement age where people are forced to retire at a certain age (OECD, 2017). Increased flexibility in the pension system allows for more flexible retirement arrangements that allow individuals to choose when and how to retire. In Sweden, it is relatively common to continue working to some extent after beginning to collect the old-age pension. About 17% of those who



receive pension in the age group 55–69 are also engaged in the workforce (OECD, 2017). The corresponding number in the European Union is 6%. This highlights the heterogeneity of retirement in Sweden and the relatively large proportion of older Swedish adults who continue to work after retirement.

## Life Satisfaction

Questions about “the good life” have been of interest since the time of the ancient Greeks. Good health and well-being is one of the United Nations 17 goals for sustainable societal development (UN, 2015), and the World Health Organization defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 2006). Well-being is a central indicator of how well people are doing, and it constitutes an area of interest within multiple disciplines ranging from the individual micro level perspective to the larger social and macro level perspectives. As a result, the literature provides a wide range of theoretical and empirical conceptualizations (Forgeard, Jayawickreme, Kern, & Seligman, 2011; Linton, Dieppe, & Medina-Lara, 2016; Veenhoven, 2000).

What is it that makes life desirable and what determines a high quality of life? One approach to this question is to ask people how they feel about their own lives. This approach focuses on the extent to which people feel and think that their own lives are desirable regardless of other people’s view (Diener, 2009). Well-being, or “happiness” as often used in layman’s terms, is in this sense viewed as a subjective phenomenon: people evaluate their level of happiness and we consider them happy if they say they are, potentially independent of other circumstances in their lives (Myers & Diener, 1995).

Research on subjective well-being developed within a hedonic philosophical tradition, in which well-being is defined as maximizing pleasant, and minimizing unpleasant, experiences (Kahneman, Diener, & Schwarz, 1999). In contrast, psychological well-being refers to aspects of self-actualization and the realization of one’s true potential (Ryff & Singer, 1998), an approach developed within the eudaimonic tradition. Subjective well-being differs from psychological well-being in that it allows people to define for themselves whether or not they are happy. This approach considers people’s values, emotions, and evaluations, and does not grant interpretative privilege to external judgments (Diner, Sapyta, & Suh, 1998).

Happiness is a guiding principle for most of us. In fact, people want to be happy more than they want other things like love, wealth, or health (Kim-Prieto, Diener, Tamir, Scollon, & Diener, 2005). Subjective well-being encompasses both emotional experiences and cognitive evaluations (Diener,

1984; Tay, Chan, & Diener, 2014). People are considered happy when they experience frequent positive emotions, less frequent negative emotions, and when they evaluate their lives more favorably (Myers & Diener, 1995). The focus in this thesis is on the latter, cognitive evaluative, component. Subjective well-being is thus defined here as a cognitive evaluation of overall satisfaction with life (Diener, 1984). The rationale for using life satisfaction as an indicator of subjective well-being is based on the assumption that it is less sensitive to personal and situational characteristics than measures of positive and negative affect (Diener, 2000; Diener, Suh, Lucas, & Smith, 1999). Life satisfaction has also been shown to be a relevant and useful indicator of adaptation to major life events (Fujita & Diener, 2005; Lucas, 2007; Luhmann, Hofmann, Eid, & Lucas, 2012).

Research further suggests that happiness is not just a pleasant outcome, but also an important predictor of future outcomes (De Neve, Diener, Tay, & Xuereb, 2013; Diener, 2013; Diener & Chan, 2011). Happy people are more likely to think, feel, and act in ways that promote resource-building and goal-directed behavior (Lyubomirsky, King, & Diener, 2005). For example, happy people attract marital interest and they are also less likely to get divorced (Marks & Fleming, 1999). Happiness can also be used to track larger societal trends (Frey & Stutzer, 2010) and to compare entire societies (Diener & Seligman, 2004). The following sections address theoretical and methodological approaches to studying life satisfaction in general and in relation to major life events like retirement.

## Defining and Measuring Life Satisfaction

Research on life satisfaction examines how people view and evaluate their lives (Diener, Oishi, & Lucas, 2003). The most common approach in studying life satisfaction is to ask people to rate their level of agreement with statements such as “I am satisfied with my life” or “In most ways my life is close to my ideal” (Diener, Emmons, Larsen, & Griffin, 1985). Alternative approaches involve questions about satisfaction with life as a whole (Wagner, Frick, & Schupp, 2007; Lucas & Donnellan, 2012) and evaluations of satisfaction with different domains in life (e.g., health, finances, and standard of living; Weinberg, Seton, & Cameron, 2018).

Different theories consider how people go about in answering these questions. One approach is to conduct a systematic evaluation of various aspects of life, consider one’s progress in these domains, compare that progress to desired standards, and compute an overall assessment based on these evaluations (Campbell, Converse, and Rodgers, 1976; Michalos, 1985; Veenhoven, 1991). This requires a substantial amount of time and effort, and it is unlikely that people consider all these factors when they evaluate their

life satisfaction. Insights into decision-making processes (Gigerenzer, 2015) and social cognitive strategies (Fiske & Taylor, 1991) suggest that people aim for efficiency rather than exhaustiveness in their judgments.

Another approach is to assume that people have difficulties assessing their own well-being and that they therefore are sensitive to external stimuli (Bargh & Chartrand, 1999). In this view, life satisfaction judgments are based on momentarily accessible information rather than an extensive evaluation of the various aspects of life (Schwarz & Strack, 1999). However, life satisfaction judgments have been shown to be stable over time, which suggests that such influences are rather limited (Anusic & Schimmack, 2016; Eid & Diener, 2004). It is reasonable to assume that people think about and evaluate various aspects of their lives on a regular basis, and related questions should therefore not require a substantial effort to answer (Myers, 1992; Schimmack & Oishi, 2005). Research suggests that people evaluate domains of continuing importance in their lives, rather than fleeting ideas, when making life satisfaction judgments (Schimmack & Oishi, 2005). People also report thinking about present conditions rather than previous experiences when they evaluate their life satisfaction (Ross, Eyman, & Kishchuck, 1986), suggesting that life satisfaction ratings should be sensitive to life events (Robinson, 2000).

Theoretical models of subjective well-being typically follow one of two approaches: the bottom-up or the top-down model (Diener, 1984). The bottom-up approach suggests that life satisfaction is the outcome of optimal environmental circumstances and the sum of many small pleasures. In contrast, top-down models assume that there are certain sources of belief, affect, or disposition that stabilize well-being judgments, and that these are largely independent of objective circumstances. Several basic properties of well-being seem consistent with the top-down approach. Research demonstrates that the average person is more satisfied than dissatisfied (Cummins, 2003), suggesting that life satisfaction is non-neutral (Diener, Lucas, & Scollon, 2006; Veenhoven, 1991). Another argument for the top-down model is that life satisfaction tends to be stable over time and across situations (Eid & Diener, 2004). The most reasonable assumption, however, is that both bottom-up and top-down influences are valuable for understanding life satisfaction. Subjective evaluations of life can be seen as the result of multiple and parallel cognitive processes that involve judgments of momentary accessible information as well as assessments of chronically accessible and stable sources (Schimmack, Diener, & Oishi, 2002).

## Life Satisfaction and Adaptation to Life Events

A top-down approach to subjective well-being suggests that life satisfaction remains relatively stable across the lifespan (Costa, McCrae, & Zonderman, 1987). Cross-sectional research provides a rather scattered picture ranging from no association at all (Diener et al., 1999; Hamrat, Thompson, Aysan, Steele, Matheny, & Simons, 2002) to positive (Diener, 1984; Mercier, Peladeau, & Tempier, 1998; Prenda & Lachman, 2001) or negative (Chen, 2001; Freund & Baltes, 1998) trends with increasing age.

Large-scale cross-sectional studies suggest a U-curve in life satisfaction over the lifespan, with decreases from early adulthood to late midlife and increases from the late fifties and onwards (Blanchflower & Oswald, 2008; Stone, Schwartz, Broderick, & Deaton, 2010). Findings from cross-sequential research designs combining cross-sectional and longitudinal data suggest a relative stability in life satisfaction across adulthood but a steep decline after age 70 (Baird, Lucas, & Donnellan, 2010). Longitudinal research confirms the curvilinear trend in late adulthood and suggests a peak in life satisfaction at age 65 (Mroczek & Spiro, 2005). Research based on longitudinal data also demonstrates substantial heterogeneity in individuals' rate of change and degree of curvature (Mroczek & Spiro, 2005).

Life satisfaction is also frequently studied in relation to major life events such as marriage, childbirth, unemployment, or widowhood (Luhmann et al., 2012). Some studies suggest that life satisfaction is insensitive to life circumstances (Headey & Wearing, 1989; Loewenstein & Schkade, 1999; Robinson, 2000; Suh, Diener, & Fujita, 1996) and that personality and heritability are more important (Brickman, Coates, & Janoff-Bulman, 1978; Lykken & Tellegen, 1996). Experimental and quasi-experimental studies demonstrate that adverse health events such as spinal cord injuries (Brickman et al., 1978) and positive events such as a lottery win (Brickman et al., 1978; Sheldon & Lyubomirsky, 2007) have surprisingly small effects on subjective well-being.

Theoretical explanations for these findings suggest that people have a set point or happiness default that they quickly return to after unusual events (Brickman & Campbell, 1971; Frederick & Loewenstein, 1999; Suh, Diener, & Fujita, 1996). Aspirational spiral theory, assuming that people always strive to improve their life situation, further suggests that people change their aspirations in response to changes in their life circumstances (Nakazato, Schimmack, & Oishi, 2011). Life satisfaction judgments in this sense are thought to reflect what people feel they lack rather than what they actually have. Longitudinal studies provide a more nuanced picture (Anusic, Yap, & Lucas, 2014) and suggest that set points can change over longer periods of time (Anusic & Schimmack, 2016; Headey, Muffels, & Wagner, 2010). Most importantly, they show substantial variability in the changes and the extent

to which people return to their previous levels of life satisfaction after major life events (Diener et al., 2006; Fujita & Diener, 2005; Lucas, 2007; Luhmann et al., 2012).

Research suggests that different types of events have somewhat differential effects on life satisfaction. Clark and colleagues (Clark, Diener, Georgellis, & Lucas, 2008) showed that people adapted to marriage and widowhood within about three years, while unemployment had long term effects on well-being. Similarly, Anusic and colleagues (2014) found adaptation effects for marriage and childbirth, but more permanent effects for disability. People thus seem to adapt to changes in marital and family status, but may not be able to fully recover from periods of unemployment or disability (Lucas, 2007). Sources of intra-individual fluctuations over time further suggest that people have a set range rather than specific level of life satisfaction (Eid & Diener, 2004).

## Life Satisfaction and Personality

Research on life satisfaction is dedicated to explaining why some people are happier than others (Lyubomirsky, 2001). Assessments of life satisfaction naturally direct attention to various aspects of a person's life and the extent to which contextual factors account for individual variability in life satisfaction (Diener et al., 2003). Research demonstrates that demographic factors such as age, gender, race, and marital and socioeconomic status are valuable for understanding individual differences in life satisfaction, but that they only account for a small proportion (about 10–15%) of this variability (Andrews & Withey, 1976; Argyle, 1999; Diener, Suh, Lucas, & Smith, 1999; Lykken & Tellegen, 1996). Researchers have therefore adopted a top-down approach, assuming that there are certain dispositional characteristics that account for how people evaluate their life satisfaction (Diener et al., 1999). Such influences typically include personality traits (Costa & McCrae, 1980).

Personality, defined as consistent patterns of individual differences in thoughts, feelings, and behaviors (Costa & McCrae, 1980), is one of the strongest and most reliable predictors of life satisfaction (Lucas & Diener, 2009). The Big Five model (Goldberg, 1993), including dimensions of extraversion, agreeableness, conscientiousness, neuroticism, and openness, is the most common empirical conceptualization of personality. Extraversion measures the tendency to seek social stimulation, while agreeableness reflects levels of compassion and interest in other people. Conscientiousness refers to the tendency to be organized and self-disciplined, and neuroticism reflects a person's degree of emotional (in)stability and tendency to experience unpleasant emotions. Finally, openness captures aspects of curiosity and creativity, and the extent to which a person is open to new experiences.

Extraversion and neuroticism are the two most reliable predictors of life satisfaction: higher levels of extraversion and lower levels of neuroticism are generally associated with higher life satisfaction (Lucas & Diener, 2009). Several meta-analyses, however, suggest that individuals with higher levels of agreeableness (Steel, Schmidt, & Shultz, 2008) and conscientiousness (DeNeve & Cooper, 1998) tend to report higher life satisfaction. Costa and McCrae (1980) argue that personality traits are valuable for life satisfaction judgments because they determine an individual's set point. For example, individuals with higher extraversion are believed to be happier because they tend to view life in optimistic terms and experience more frequent positive emotions. In contrast, people higher in neuroticism are assumed to be more receptive of negative emotions and therefore more likely to rate their life satisfaction as lower.

Research suggests that personality can have both a direct and an indirect impact on life satisfaction (Heller, Watson, Ilies, 2004; Lucas & Diener, 2009). Top-down theories suggest a direct link between personality and life satisfaction, assuming that personality determines the individual's experience in a given situation and thereby influences how a person views and evaluates various aspects of life (McCrae & Costa, 1991). However, personality also has important implications for how a person reacts to and copes with various life challenges. Personality determines individual behavior in a given situation, which in turn influences the likelihood of future outcomes (Beier, Torres, & Gilberto, 2018; Jopp & Herzog, 2010; Stephan, Boiché, Canada, & Terracciano, 2014). People higher in extraversion are for example more likely to participate in and enjoy social activities, which in turn increases their likelihood of experiencing positive emotions and higher life satisfaction. Personality can therefore influence how well a person adapts to their new life in retirement.

## Retirement Adjustment

Retirement adjustment refers to the process of adapting to changes associated with the transition from work life to retirement (van Solinge & Henkens, 2008). Conceptualizing retirement as a process of adjustment highlights the longitudinal and dynamic aspects of the transition, suggesting that individuals may have more or less difficulty with this process.

Successful adjustment in this framework is broadly defined as psychological comfort with life in retirement, and the process is preferably studied using context-dependent measures like adjustment to, or satisfaction with, life in retirement (Wang et al., 2011). Such measures, however, are limited in that they allow only for post-retirement assessments. More global indicators

that allow for pre- and post-retirement comparisons are therefore frequently used (Barbosa, Monteiro, & Murta, 2016). This thesis focuses on how retirement influences individual well-being, including factors contributing to explain inter-individual differences in this process. A global indicator that takes into account pre- as well as post-retirement levels is therefore warranted. In this context life satisfaction serves as a relevant and adequate proxy for adjustment (Fujita & Diener, 2005; Lucas, 2007; Luhmann et al., 2012). The following sections address theoretical approaches to the study of retirement adjustment, previous research, and current directions within this field.

## Theoretical Approaches

The effect of retirement on individual well-being has been a topic of interest in gerontological research since the 1950s. Early studies viewed retirement as a crisis in which the older worker's physical and mental health was threatened (Barron, Strein, & Suchman, 1952). Although recognition is growing that retirement may also have beneficial effects (e.g., Kim & Moen, 2001; Mein, Martikainen, Hemingway, Stansfeld, & Marmot, 2003), theories on retirement adjustment have typically focused on explaining negative outcomes such as why individuals experience difficulties in adjusting to retirement. The most common theoretical approaches include role theory, continuity theory, stage theory, and resource theory.

*Role theory* describes retirement as a role transition (Riley & Riley, 1994) in which individual well-being is threatened by the loss of the work role. Role theorists argue that work is crucial for social status and identity (Ballweg, 1967; Ellison, 1968; George & Maddox, 1977), and that losing the work role leads to a decreased sense of self-worth (Ashforth, 2001; Taylor-Carter & Cook, 1995). These theorists posit that role loss related to retirement may cause feelings of anxiety or depression, which in turn generates lower well-being (Riley & Riley, 1994).

*Continuity theory* emphasizes the importance of consistency in central aspects of daily life (Atchley, 1989, 1999), and retirement is not viewed as harmful if people can maintain continuity in their social relations and lifestyle patterns. In contrast to role theory, continuity theory does not see work as crucial for self-concept and identity; instead, it sees family and non-work-related social networks as more important and does not generally associate retirement with major changes in these domains (Atchley, 1971). Both role theory and continuity theory contribute insights about why retirement may be a stressful event, but they are limited in that they both focus on the absolute good or bad impacts of retirement; they do not account for the possibility of intra-individual variability (Wang et al., 2011).

*Stage theory* suggests that people move through four distinct phases in developing a satisfactory post-retirement lifestyle (Atchley, 1976). In the first “honeymoon” stage, retirees may feel more energetic and satisfied as they pursue new activities and roles. In the second stage of disenchantment, they realize they now have fewer resources and/or they had unrealistic expectations about retirement. In the third reorientation stage, retirees reevaluate their life status, accept limitations, and focus on further adjustments to retirement. In the fourth stage, the retiree enters a phase of stability and settles into a predictable daily life pattern that continues until their death or disability. Although stage theory is acknowledged for its ability to account for the longitudinal and dynamic aspects of the transition, there is little empirical support for the specific adjustment pattern it suggests (Wang et al., 2011).

*Resource theory* emphasizes the role of resource availability for individual well-being. According to the conservation of resources (COR) theory (Hobfoll, 1989), retirement is a threat to individual well-being because it is associated with resource loss. COR assumes that “people strive to retain, protect and build resources and that what is threatening to them is the potential or actual loss of valued resources” (Hobfoll, 1989, p. 516). Resources are broadly defined as “those entities that either are centrally valued in their own right or act as means to obtain centrally valued ends” (Hobfoll, 2002, p. 307), including objects (e.g., a home), conditions (e.g., employment), individual characteristics (e.g., self-esteem), and energies (e.g., time). Adjustment is thus facilitated through access to resources; more resources are assumed to lead to fewer adjustment problems and higher well-being in retirement. COR theory also accounts for dynamic adjustment patterns as it assumes that well-being will change as a result of changes in resources (Hobfoll, 2002). In this view, decreased well-being caused by a loss in one resource domain can be compensated for by gains in other resources. Resource theory therefore provides a framework for understanding intra-individual fluctuations over time.

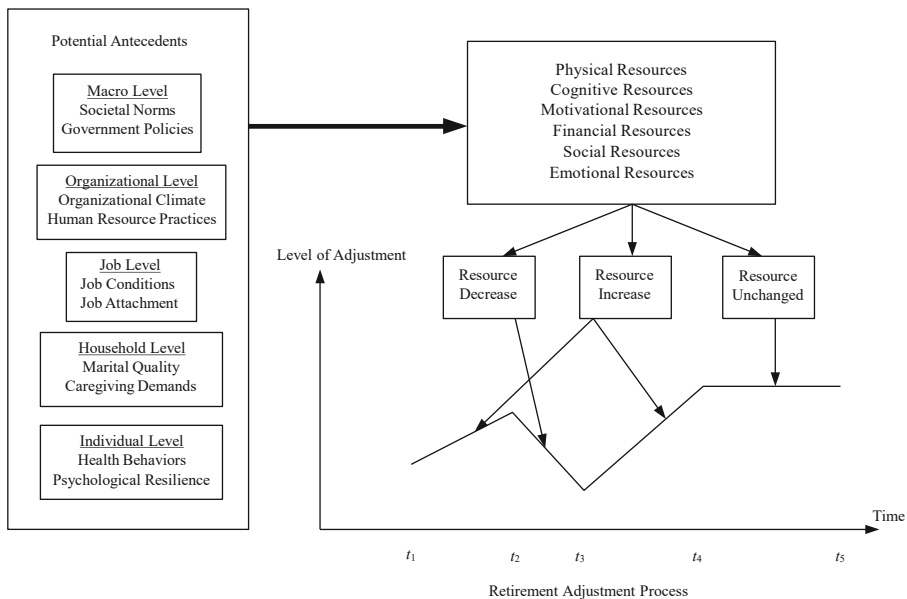
Recent developments in the field highlight the need to address contextual influences such as earlier life experiences, family and occupational factors, and the larger societal circumstances in which the transition takes place (Elder, 1995; Elder & Johnson, 2003; Settersen, 2003). A *life course* perspective has therefore often been used as a broader theoretical framework for studying the contextual embeddedness of the transition (Wang et al., 2011). A limitation of earlier theories on retirement adjustment is that they do not sufficiently account for individual differences in this process and the potential for intra-individual changes over time.

The *resource-based dynamic model* (Wang et al., 2011; see Figure 1) was presented as an integrative theoretical framework for understanding the



multidimensional and dynamic aspects of retirement. The model is based on the assumption that resource change is the driving mechanism for change in well-being over the retirement transition. Resources (means or assets that can be used to cope with challenges associated with the transition) are assumed to be key elements because they define the conditions of retirement and influence what people can do physically and afford financially. For example, people with limited financial resources and poor health may have difficulties maintaining their pre-retirement lifestyle and taking up new activities in retirement. More resources are assumed to lead to fewer adjustment problems and greater well-being.

Figure 1 The Resource-Based Dynamic Model of Retirement Adjustment



Note: Adapted from Wang, M., Henkens, K., & van Solinge, H. (2011). Retirement adjustment: A review of theoretical and empirical advancements. *American Psychologist*, 66, 204–213. doi: 10.1037/a0022414.

Multiple factors on the micro (personal and situational), meso (job and organizational), and macro (societal norms and government policies) levels are assumed to influence the availability of, and changes in, resource capability, which in turn determine how an individual adjusts to retirement. Physical, cognitive, motivational, financial, social, and emotional aspects of a person's total resource capability are suggested to be particularly important in this process. The resource-based dynamic model assumes that retirement will have a negative effect on well-being if it is associated with resource loss

and a positive effect in the case of resource gain. Accordingly, well-being will be unaffected if the total resource capability remain unchanged. With particular emphasis on the dynamic aspects of the transition, the model proposes that well-being can fluctuate as a result of change in the individual's resources over time and that a loss in one resource may be compensated for by gains in other resources.

The four studies presented in this thesis are all based on the resource-based dynamic model; individual differences and intra-individual changes in life satisfaction are evaluated as a function of the availability of, and changes in, resource capability.

## Heterogeneity in Retirement Adjustment

Research on retirement adjustment has typically focused on two aspects of the transition: (a) the impact of retirement, and (b) factors related to retirement adjustment quality (Wang et al., 2011).

Reviews of the impact of retirement (Henning, Lindwall, & Johansson, 2016; Wang et al., 2011; Wang & Shi, 2014) suggest that, for most people, retirement has a limited influence on well-being. Nevertheless, a considerable body of research indicates that the impact may differ both between and within individuals over time (van Solinge, 2012). Several longitudinal studies (Heybroek, Haynes, & Baxter, 2015; Muratore, Earl, & Collins, 2014; Pinquart & Schindler, 2007; Wang, 2007) report heterogeneity in the effects of retirement, with a significant proportion (approximately 10–25%) experiencing problems adjusting to retirement.

Empirical reviews of factors related to retirement adjustment quality (Barbosa et al., 2016; Wang et al., 2011; Wang & Shi, 2014; Wang & Shultz, 2010) demonstrate that a wide range of variables on the micro and meso levels contribute to the heterogeneity in adjustment patterns. Individual level variables such as health, finances, and social relations are frequently linked to direct and indirect indicators of retirement adjustment. Good health (e.g., Donaldson, Earl, & Muratore, 2010; Muratore & Earl, 2015; van Solinge & Henkens, 2008), adequate financial resources (e.g., Gall, Evans & Howard, 1997; Earl, Gerrans, & Halim, 2015; Kim & Moen, 2002), and supportive social relations (e.g., Price & Balaswamy, 2009; Taylor, Goldberg, Shore, & Lipka, 2008; Topa, Jiménez, Valero, & Ovejero, 2017) are generally associated with better outcomes in terms of more satisfaction and higher well-being in retirement. Family-related variables such as marital status and number of dependent children have also been shown to predict individual differences in retirement adjustment. Retirees who are happily married are more likely to report positive effects of retirement (Szinovacz & Davey, 2004; Wang, 2007),

while the number of dependent children has been shown to be negatively associated with well-being in retirement (Kim & Feldman, 2000).

Pre-retirement work factors like job satisfaction and physical and mental demands are also common predictors of retirement adjustment (Wang 2007). High work load (Quick & Moen, 1998; Wang 2007), stress (Wang, 2007), and job dissatisfaction (Wang, 2007) are associated with more positive changes in retirement, while a strong work role identity (Quick & Moen, 1998; Reitzes & Mutran, 2004) is related to negative effects on well-being. In contrast, people who retire from unemployment or disability tend to report more positive changes in retirement (Pinquart & Schindler, 2007; Wetzel et al., 2015). Research on transition-related variables such as reasons for retiring and the voluntariness of the decision unsurprisingly show that those who retire involuntarily (Quick & Moen, 1998) or for health reasons (Hyde, Ferrie, Higgs, Mein, & Nazroo, 2004; Reitzes & Mutran, 2004; van Solinge & Henkens, 2005, 2008) report more negative outcomes, while those who retire voluntarily due to financial incentives (Quick & Moen, 1998) or the desire to do other things (Quick & Moen, 1998) report higher well-being in retirement. In addition, planning for retirement is thought to facilitate better adjustment and deviations from that plan, i.e., retiring earlier or later than expected, is associated with poor adjustment and lower well-being (Reitzes & Mutran, 2004; Wang, 2007). Post-retirement activities such as bridge employment (Kim & Feldman, 2000; Wang, 2007; Zhan, Wang, Liu, & Shultz, 2009), volunteer work (Dorfman & Douglas, 2005; Kim & Feldman, 2000), and leisure activities (Dorfman & Douglas, 2005; Kim & Feldman, 2000) are generally related to higher well-being in retirement.

In their review of research on retirement adjustment, Wang and colleagues (2011) concluded that we are still lacking in our understanding of the mechanisms involved in this process, i.e., the factors involved in explaining *how* and *why* retirement influences individual well-being. The resource-based dynamic model was proposed as an integrative framework for understanding the contextual embeddedness of the transition, but also the factors accounting for intra-individual changes in this process. The model builds on the assumption that various factors on the micro, meso, and macro levels influence the availability of, and changes in, important resources, which in turn drive changes in well-being. Resources in this framework are broadly defined as the total capability an individual has to fulfill his or her centrally valued needs, and emotional, motivational, social, physical, cognitive, and financial aspects of a person's total resource capability are thought to be of particular importance in this process.

Factors likely to influence a person's resource capability include family-related variables (e.g., family composition and spouse's working status), pre-retirement work factors (e.g., physical and psychological demands, work role

identity, stress, and job satisfaction), transition-related variables (e.g., retirement planning and timing, type and voluntariness of the transition), and post-retirement activities (e.g., bridge employment and leisure activities). These variables are assumed to be important because they account for both within- and between-person differences in resource capability (Wang et al., 2011). For instance, a positive effect of retirement for people with high pre-retirement job demands reflect increased resources from the relief of job strain (Quick & Moen, 1998; Wang, 2007). A gradual transition is assumed to be beneficial in the adjustment process because it leads to more gradual changes in resources (Zhan & Wang, 2015). Similarly, taking up new activities in retirement likely has positive effects on the individual's resource capability and therefore also improves well-being.

## A Resource-Based Dynamic Perspective

The resource-based dynamic model (Wang et al., 2011) has received considerable support with respect to the predictive value of resources for accounting for individual differences in (direct and indirect indicators of) retirement adjustment (Barbosa et al., 2016).

*Physical resources*, typically assessed through indicators of subjective or objective health status, is the most well-studied resource domain. Cross-sectional research shows that retirees who perceive their health as good report better adjustment (Donaldson et al., 2010; Earl et al., 2015; Muratore & Earl, 2015), higher satisfaction (Asebedo & Seay, 2014), and higher overall life satisfaction (Hoppman, Infurna, Ram, & Gerstorf, 2017; Jones, Rapport, Hanks, Lichtenberg, & Telmet, 2003) in retirement. People with fewer health problems also report higher retirement satisfaction (Quick & Moen, 1998). Longitudinal research supports these findings and shows that better pre-retirement health is associated with fewer adjustment problems (Damman, Henkens, & Kalmijn, 2013; Reitzes & Mutran, 2004), higher satisfaction (Noone, Stephens, & Alpass, 2009; van Solinge & Henkens, 2008), and higher subjective (Dingemans & Henkens, 2014, 2019; Hershey & Henkens, 2013) and psychological (Kubicek, Korunka, Raymo, & Hoonakker, 2011) well-being in retirement. Negative health changes in retirement have also been linked to more adjustment problems (Gall et al., 1997), less satisfaction (van Solinge & Henkens, 2008), and lower subjective (Calvo, Haverstick, & Sass, 2009; Dingemans & Henkens, 2015) and psychological (Kim & Moen, 2002) well-being.

*Financial resources*, measured through absolute income or income adequacy, are also frequently studied in relation to retirement adjustment. Cross-sectional studies show that retirees with higher incomes report better adjustment (Donaldson et al., 2010; Wong & Earl, 2009), higher satisfaction

(Asebedo & Seay, 2014; Quick & Moen, 1998), and higher subjective well-being (Zhang & Zhang, 2015) in retirement. Perceived financial adequacy has also been linked to better adjustment in retirement (Earl et al., 2015; Muratore & Earl, 2015). Longitudinal research demonstrates that higher pre-retirement income predicts better outcomes in terms of higher satisfaction (Noone et al., 2009; van Solinge & Henkens, 2008) and fewer adjustment problems (Reitzes & Mutran, 2004) in retirement, but also higher subjective (Hershey & Henkens, 2013) and psychological (Kubicek et al., 2011) well-being. Income decline (Gall et al., 1997; van Solinge & Henkens, 2008; Segel-Karpas, Bamberger & Bacharach, 2013) or decrease in income adequacy (Kim & Moen, 2002) over the retirement transition are also related to more adjustment problems and lower well-being in retirement.

*Social resources* include measures of quantity and/or quality in social relations. Married retirees generally report higher well-being, and loss of spouse due to divorce or death has been linked to worse outcomes in retirement (Hershey & Henkens, 2013; van Solinge & Henkens, 2008). Higher perceived social support has been related to higher retirement satisfaction (Asebedo & Seay, 2014; Leung & Earl, 2012; Nguyen, Tirrito, & Barkley, 2014; Price & Balaswamy, 2009; Taylor et al., 2008) as well as higher overall life satisfaction in retirement (Jones et al., 2003; Nguyen et al., 2014; Topa et al., 2017). The few available longitudinal studies show mixed results. Pre-retirement quality of social relations predict post-retirement outcomes (Kubicek et al., 2011; Segel-Karpas, Ayalon, & Lachman, 2018), but changes in social relations across the transition period have not yet been linked to changes in well-being (Yeung, 2017; Yeung & Zhou, 2017).

Psychological resources have been studied less frequently, and the conceptualization of the emotional, motivational, and cognitive domains differ across studies. Among these, the motivational domain is the most well studied.

*Motivational resources* are typically measured through indicators of personal control, although they sometimes also include measures of tenacious goal pursuit and flexible goal adjustment. Retirees who perceive their personal control as higher experience fewer adjustment problems (Donaldson et al., 2010; Earl et al., 2015; Houliort, Fernet, Vallerand, Laframboise, Guay, & Koestner, 2015; Muratore & Earl, 2015), higher retirement satisfaction (Asebedo & Seay, 2014; Price & Balaswamy, 2009; Topa & Alcover, 2015), and higher overall life satisfaction (Gruszczynska, Kroemeke, Knoll, Schwarzer, & Warner, 2019; Wu, Tang, & Yan, 2005) in retirement. Longitudinal studies show that higher pre-retirement control (Gall et al., 1997; van Solinge & Henkens, 2005) and more positive changes across the transition period (Dingemans & Henkens, 2015; Gall et al., 1997; Henning, Bjälkebring, Stenling, Thorvaldsson, Johansson, & Lindwall, 2019)

facilitate better adjustment in retirement. Yeung (2017) conceptualized motivational resources through measures of tenacious goal pursuit and flexible goal adjustment, but found no association with (subjective or psychological) well-being. Leung and Earl (2012) and Yeung & Zhou (2017) used a similar approach but did not differentiate this resource from the cognitive and emotional domains. Kubicek and colleagues (2011), however, showed that higher pre-retirement levels of flexible goal adjustment and tenacious goal pursuit predicted higher psychological well-being in retirement.

*Emotional resources* include positive emotions and/or affective evaluations of self. Perceptions of self-worth, as conceptualized through measures of self-esteem, have been linked to more positive anticipations toward retirement (Mutran, Reitzes, & Fernandez, 1997) as well as better adjustment (Reitzes & Mutran, 2004) and higher satisfaction (Price & Balaswamy, 2009) in retirement. Yeung (2017) conceptualized emotional resources as experiences of positive emotions and the ability to perceive others' emotions, but found no association with well-being. Related constructs such as optimism have also been linked to higher satisfaction (Asebedo & Seay, 2014), and higher subjective (Noone, O'Loughlin, & Kendig, 2013) and psychological (Bretherton & McLean, 2014) well-being in retirement.

*Cognitive resources*, conceptualized as measures of cognitive abilities (e.g., memory, processing speed, spatial ability, reasoning, and problem-solving skills), have so far not been sufficiently integrated in research on retirement adjustment. Yeung (2017), Leung and Earl (2012), and Yeung & Zhou (2017) assessed self-reported cognitive abilities, but they did not differentiate these measures from self-esteem, mastery, and optimism, which limits the ability to evaluate the effects independently. The few available studies suggest a weak (Allerhand, Gale, & Deary, 2014; Jones et al., 2003; Llewellyn, Lang, Langa, & Huppert, 2008) or non-existing (Hoppman et al., 2017) association between overall cognitive functioning and well-being in retirement.

A limitation of previous research on retirement adjustment is that most studies have focused on a finite set of resources, and mainly on the impacts of health and wealth. Measures of physical health and financial assets were found to correlate with retirement outcomes in about 80% of the 115 studies reviewed by Barbosa and colleagues (2016). Only eight of those, however, included more than two of the six resource domains. In these studies, physical and financial resources were typically accompanied by measures of social and/or motivational resources. Frequency and/or quality of social relations were found to predict retirement adjustment in 63% of the reviewed studies. In their review, Barbosa and colleagues made no distinction between cognitive, motivational, and emotional resources, as suggested in the resource-based dynamic model. Instead, they categorized all three as indi-

cators of psychological resources. Measures of personal control or mastery were included in 10% of the studies, while only three studies evaluated the role of self-esteem. None of them assessed cognitive abilities. Only three studies (Leung & Earl, 2012; Yeung, 2017; Yeung & Zhou, 2017) so far have included all six resource domains in the resource-based dynamic model, and only one (Yeung, 2017) evaluated them separately. Both Leung & Earl and Yeung & Zhou aggregated tangible (i.e., physical and financial) and mental/psychological (i.e., emotional, motivational, and cognitive) resources.

More research on the relative importance of different resource domains is therefore needed. A systematic approach that considers all six domains could contribute to a more thorough understanding of the applicability of the resource-based dynamic model for understanding individual differences in retirement adjustment.

## Current Directions

The resource-based dynamic model has the potential to account for both between- and within-person differences in retirement adjustment, but as yet we have limited empirical support for the mechanisms involved in this process. Numerous factors can be linked to individual differences in various indicators of adjustment, but very few studies account for intra-individual changes across the transition. In order to understand the mechanisms involved in explaining *how* and *why* retirement influences individual well-being, it is necessary to consider what actually changes in this process.

A limitation of previous research is that most studies have focused on the association between pre-retirement conditions (e.g., job demands) and post-retirement outcomes (e.g., retirement satisfaction). Alternatively, studies have focused on the effects of post-retirement factors such as health, finances, and leisure activities. These studies have also tended to focus on post-retirement outcomes, i.e., adjustment to or satisfaction with life in retirement, or more global indicators of well-being such as life satisfaction, depression, and quality of life. This approach, however, limits the ability to account for intra-individual changes over time. A thorough understanding of the adjustment process requires longitudinal data that allow for the separation of between- and within-person effects.

To understand how and why retirement affects well-being, it is necessary to also consider individual differences that are not directly related to retirement. For example, people with better health, more supportive social relations, and adequate financial resources are likely to report higher well-being regardless of whether or not they retire. Analyses of changes in well-being across the transition period allow for control of such differences, and also to investigate inter-individual differences in intra-individual change, i.e.,

why some people adjust well in retirement while others experience more difficulties. Notably, relatively few studies on retirement adjustment are based on longitudinal data that accounts for changes across the transition period. For instance, Barbosa and colleagues (2016) reviewed 115 studies on retirement adjustment, and only one third of these ( $n = 41$ ) were based on longitudinal study designs. In their review of longitudinal research on retirement and well-being, Henning and colleagues (2016) identified a total of 32 studies. A growing recognition of the need to address the longitudinal and dynamic aspects of the transition has led to an increase in such studies since 2016 (e.g., Yeung, 2017; Yeung & Zhou, 2017), but the mechanisms involved in this process are still far from fully understood.

Furthermore, a central premise in the resource-based dynamic model is that well-being fluctuates as a function of changes in key resources. This means that the impact of retirement depends on the changes it brings and the extent to which a person copes with and adjusts to their new life circumstances. A thorough understanding of the adjustment process therefore requires analyses of inter-individual differences in intra-individual change, i.e., if resource change can be linked to changes in well-being, but also whether the changes are cumulatively related in the sense that more change in resources leads to more change in well-being. The few available studies addressing this issue (Hershey & Henkens, 2014; Kim & Moen, 2002; Yeung, 2017; Yeung & Zhou, 2017) demonstrate such associations, but the causal mechanisms have not yet been sufficiently investigated. For instance, research on subjective well-being continues to demonstrate reciprocal relationships between well-being and various aspects of life (e.g., Diener, 2013; Diener et al., 1999), and this perspective has not yet been integrated into research on retirement adjustment.

Another concern in research on retirement adjustment relates to the various indicators used to assess resource capability. The six resource domains (emotional, motivational, social, physical, cognitive, and financial) are broadly defined as assets that are needed to meet centrally valued goals (Wang et al., 2011). Resources are assumed to be valuable in the adjustment process because they determine the conditions of retirement in that they influence what people can do, physically, mentally, socially, and financially, in their post-retirement life. Wang and colleagues (2011) suggest indicators of the different resource domains and the potential antecedents of such factors, but these are denoted as illustrative rather than exhaustive. Muscle strength is suggested as an indicator of physical resources, processing speed and working memory as measures of cognitive resources, self-efficacy as a motivational resource, salary and pension as financial assets, social network and support as indicators of the social domain, and mood and affectivity as representations of the emotional domain. Empirical reviews (e.g., Barbosa et



al., 2016) demonstrate a wide range of indicators of the respective resource domains, and this could be considered both a strength and a weakness. Similar results for different measures strengthen the robustness of the model, but too vague definitions could also lead to misinterpretation of the results and the underlying mechanisms involved. More stringent selection and operationalization of the different resource indicators, i.e., why they are included and how they are assumed to influence the adjustment process, are necessary for continued developments within the field.

More research is also needed with respect to the relative importance of different resource domains. The resource-based dynamic model assumes that resources are interdependent in the sense that a loss in one domain can be compensated for by a gain in another resource (Wang et al., 2011), but to date we have limited empirical support for such mechanisms. More knowledge about the interrelations of different resources is crucial for understanding the extent to which lack in one domain is more or less detrimental depending on the availability of other resources.

A thorough understanding of the adjustment process further warrants attention to the various antecedents in the model, i.e., factors influencing levels and changes in resources. Increased heterogeneity in retirement transitions calls for more research on differences with respect to the type of retirement transition. A more gradual transition where the individual continues to work in retirement may be helpful in the adjustment process because it leads to more gradual life changes (Wang & Shultz, 2010; Zhan & Wang, 2015). Bridge employments are assumed to help people maintain structure in the central aspects of daily life (Beehr & Bennet, 2015), and a more gradual transition may facilitate adjustment as it leads to less adverse resource changes. Individual-level antecedents such as personality have so far received very little attention in research on retirement adjustment. The few available studies suggest that personality can help to explain both individual differences (Löckenhoff, Terracciano, & Costa, 2009; Robinson, Demetre, & Corney, 2010) and intra-individual changes (Henning, Hansson, Berg, Lindwall, & Johansson, 2017; Kesavayuth, Rosenman, & Zikos, 2016; Ryan, Newton, Chauhan, Chopik, 2017; Serrat, Villar, Pratt, Stukas, 2017) in well-being over the retirement transition, but studies are lacking on the role of personality for levels and changes in resource capability.

In summary, the current literature demonstrates that retirement is a heterogeneous life event and that the adjustment process may be influenced by various factors on the micro, meso, and macro levels. The resource-based dynamic model constitutes an integrated framework for understanding how and why retirement might influence individual well-being, but the fundamental assumption in the model has not yet been sufficiently investigated. More research is clearly needed, and a systematic approach that considers all

six resource domains as well as potential antecedents such as personality or type of retirement transition could contribute to our understanding of the involved mechanisms.

## Present Thesis

The present thesis addresses several aspects of the concerns mentioned above. The resource-based dynamic model is used as a theoretical framework for understanding individual differences and intra-individual changes in life satisfaction in the last years before and the first years following retirement. The six resource domains are conceptualized through measures of self-esteem (emotional), autonomy (motivational), social support (social), self-rated physical health (physical), self-rated cognitive ability (cognitive), and basic financial resources and financial satisfaction (financial).

*Self-esteem*, defined as an overall evaluation of self-worth (Rosenberg, 1965), is used as an indicator of emotional resources. Self-esteem is a well-known predictor of subjective well-being (Diener & Diener, 1995; Diener et al., 1999) and adaptation (Orth & Robins, 2014; Orth, Robins, & Widaman, 2012). People higher in self-esteem are more likely to be stress-resistant (Hobfoll, 2002) and less likely to view life difficulties as a mark of their own failure or lack of self-worth (Rosenberg, 1965). Self-esteem constitutes an emotional resource in the sense that it reflects a person's affective evaluation of self, i.e., "how do I feel about who I am?" (Campbell, Trapnell, Heine, Katz, Lavalle, & Lehman, 1996). Self-esteem is of particular interest in the retirement transition because it involves aspects of role loss which in turn may lead to a decreased sense of self-worth (Ashforth, 2001; Taylor-Carter & Cook, 1995). Higher self-esteem is assumed to facilitate better adjustment and higher satisfaction in retirement (Price & Balswamy, 2009; Reitzes & Mutran, 2004). Decreased self-esteem due to the loss of the work role (Bleidorn & Schwaba, 2018) should lead to decreased life satisfaction, while increased self-esteem resulting from the relief of an undesirable job role should have positive effects on life satisfaction.

*Autonomy*, defined as experiences of volition and self-endorsement (Chen et al., 2015), is used as an indicator of motivational resources. Autonomy is a central indicator of personal control, a construct frequently linked to well-being and the capacity to adapt to changing life circumstances (Lachman, 2004; Lachman, Neupert, & Agrigoroaei, 2011; Ryan & Deci, 2001). Perceived control constitutes a motivational resource in the sense that it influences goal-directed behaviors, i.e., how a person reacts to and copes with stressful situations (Heckhausen & Schulz, 1995; Heckhausen et al., 2010). Autonomy is of particular interest in the retirement transition because it may generate a higher sense of control (i.e., more freedom to pursue desired activities) at the

same time as the transition in itself may be constrained by multiple external factors (i.e., determining when and how a person retire). Higher autonomy is thought to facilitate active adjustment, while perceived lack of control increases the risk for maladaptive adjustment in terms of defensiveness and insecurity (Donaldson, Earl, & Muratore, 2010; Earl et al., 2015; Kim & Moen, 2002; Muratore & Earl, 2015; Price & Balaswamy, 2009). Increased autonomy resulting from the relief of work demands should generate higher life satisfaction, while decreased sense of control, for example due to involuntary retirement, would have a negative impact on life satisfaction.

*Social support*, defined as perceptions of adequate social support (Zimet, Dahlem, Zimet, & Farley, 1988), is used as an indicator of social resources. Social support is essential for well-being and a well-established predictor of adaptation in stressful and challenging life situations (Hobfoll, 2002), and quality rather than quantity in social relations are assumed to influence how well a person adjusts in retirement (Price & Balaswamy, 2009; Pinquart & Sorensen, 2000). Higher social support should ease the adjustment process and generate higher life satisfaction in retirement. Increased social support as a result of more time with friends and family after retirement would facilitate better adjustment, while decreased social support due to the loss of work-related networks should have a negative impact on life satisfaction.

*Self-rated physical health*, defined as an overall evaluation of current health, is used as an indicator of physical resources. Physical health is a well-established predictor of well-being (e.g., Myers & Diener, 1995), and subjective health evaluations are generally better indicators than more objective measures like disease load, especially among older adults (Berg, 2008; Berg, Hassing, McClearn, & Johansson, 2006; Berg, Hoffman, Hassing, McClearn, & Johansson, 2009; Hoppmann et al., 2017). Subjective evaluations of objective conditions are particularly valuable for well-being because they capture discrepancies between perceived and anticipated capacity (Diener et al., 1998). People in better health are assumed to experience fewer adjustment problems and higher life satisfaction in retirement (e.g., Donaldson et al., 2010; Earl et al., 2015; Muratore & Earl, 2015). Negative health changes in retirement should have a negative impact on life satisfaction, while improved health due to relief from job demands would facilitate better adjustment (van Solinge & Henkens, 2008).

*Self-rated cognitive ability*, defined as an overall evaluation of current thinking ability, is used as an indicator of cognitive resources. Cognitive health is an understudied aspect of the retirement transition, and the few available studies suggest a rather weak link between cognitive functioning and well-being (Allerhand et al., 2014; Hoppman et al., 2017; Jones et al., 2003; Llewellyn et al., 2008). Building on the idea that perceived capacity is more important than objective conditions (Diener et al., 1998), it is assumed

that a person's overall evaluation of their cognitive ability would be a better predictor of their adjustment than their cognitive ability per se. Perception of cognitive capacity should be of particular value in the adjustment process because it influences how a person views and evaluates their post-retirement life (i.e., opportunities to pursue desired activities). Higher perceived cognitive ability is assumed to facilitate better adjustment and higher life satisfaction in retirement. Decreased cognitive capacity as a result of aging-related processes or reduced cognitive stimulation is expected to have a negative impact on life satisfaction, while improved cognitive function, for example when recovering from job-related demands, should generate higher life satisfaction.

*Basic financial resources*, defined as the ability to cover urgent financial needs, and *financial satisfaction*, defined as satisfaction with current financial situation, are used as indicators of financial resources. Financial security and income adequacy are generally better predictors of subjective well-being than excessive wealth (Diener & Seligman, 2004), especially in economically developed countries (Diener & Biswas-Diener, 2002). Access to basic financial resources should facilitate better adjustment in retirement while lack of financial security is assumed to increase the risk for adjustment problems (Earl et al., 2015; Muratore & Earl, 2015). Decreased financial satisfaction due to lowered income in retirement would have a negative impact on life satisfaction, while increased financial satisfaction is assumed to be beneficial for life satisfaction.

All six resource domains are evaluated for their association with levels and changes in life satisfaction over the retirement transition. More specifically, individual differences and intra-individual changes in life satisfaction are evaluated as a function of levels and changes in resource capability.

## Aim

The overall aim of this thesis is to investigate individual differences and intra-individual changes in life satisfaction in the transition from work to retirement. The resource-based dynamic model is used as a theoretical framework for understanding how and why retirement influences individual well-being. Self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, basic financial resources, and financial satisfaction are used as indicators of the six resource domains, and levels and changes in these variables are assumed to contribute to explain individual differences and intra-individual changes in life satisfaction in the last years before and the first years following retirement. More resources are assumed to facilitate

better adjustment and higher life satisfaction while changes in these variables are assumed to influence intra-individual changes in life satisfaction.

The thesis consists of four empirical studies in which four different aspects of the model are evaluated. The aim of *Study I* was to investigate whether the association between the six resources and life satisfaction differ depending on type of retirement transition. The aim of *Study II* was to investigate the role of different resources relative to each other. The aim of *Study III* was to investigate the extent to which resource change can be linked to changes in life satisfaction, but also the potential that life satisfaction in itself may be an important predictor of resource availability (i.e., bidirectional association). Finally, the aim of *Study IV* was to investigate if personality, as conceptualized in the Big Five model, can influence the adjustment process indirectly through its relevance for levels and changes in resource capability.



# SUMMARY OF THE STUDIES

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## HEalth, Ageing, and Retirement Transitions in Sweden (HEARTS)

The four studies were based on data from the first four measurement waves of the HEARTS study (Lindwall et al., 2017), a study designed to shed light on psychological processes in the last years before and the first years following retirement.

A nationally representative sample of 14 990 individuals from the ages of 60 to 66 (i.e., birth years 1949–55) was recruited from the Swedish state's person address register ("Statens personadressregister", SPAR) in April 2015. SPAR includes all residents registered in Sweden and is updated each day with data from the Swedish Population Register. The sample was stratified by age, but no other restrictions were made. The participants received an invitation letter with general information about the study and information on how to participate via a web-based survey administered through the Qualtrics software service. The letter included a web-link, an individual study code, and a password. Non-responders received a first reminder three weeks later, and a second reminder including a paper-version of the survey was sent out after another three weeks.

The survey included questions on socio-demographic background, work life and retirement, health, lifestyle, well-being, social relations, and personality. The study was conducted in accordance with the national ethical guidelines (Swedish Ethical Review Act, SFS 2003:460; Personal Data Act, SFS 1998:204) and standards provided by the American Psychological Association (APA, 2002). Ethical approval was granted from the regional ethical approval board at the University of Gothenburg (Dnr: 970-14).

A total of 5 913 individuals (39.4%) responded to the invitation letter and completed the first wave (T1) questionnaire in the spring 2015. The majority ( $n = 4\ 068$ ) completed the web-based survey and about one third ( $n = 1\ 845$ ) responded via the paper-pencil version of the questionnaire. The sample is in many ways representative of the population in Sweden born between 1949 and 1955, although it consists of a slightly larger proportion of women (sample = 53%, population = 50%) and individuals with tertiary education (sample = 41%, population = 33%) than the general population (see Lindwall et al., 2017).

Annual follow-ups were conducted each spring. A total of 4 651 individuals participated in the first follow-up (wave 2: T2) in 2016, 4 320 in

## SUMMARY OF THE STUDIES

the second follow-up (wave 3: T3) in 2017, and 4 033 in the third follow-up (wave 4: T4) in 2018. The majority of participants (57.6%) completed all four measurement waves, one third participated in more than one (13.5% completed two waves and 16.7% completed three waves), and 12.1% participated in the first wave. Retention rates and sample demographics of the first four measurement waves (T1–T4) are shown in Table 1.



Table 1 Sample Demographics

	<b>T1 2015</b>	<b>T2 2016</b>	<b>T3 2017</b>	<b>T4 2018</b>
<b>N</b>	5 913	4 651	4 320	4 033
<b>Retention rate (%)</b>		78.7	92.9	93.4
<b>% of baseline sample</b>		78.7	73.1	68.2
<b>% paper-pencil respondents</b>	31.2	22.3	20.3	25.9
<b>Mean age (SD)</b>	63.1 (2.0)	64.1 (2.0)	65.1 (2.0)	66.1 (2.0)
<b>% women</b>	53.0	53.9	53.4	53.3
<b>% with tertiary/higher education</b>	40.8	43.0	43.9	43.4
<b>% born outside Sweden</b>	10.9	9.6	9.1	9.2
<b>% married/partnered</b>	71.0	72.8	73.2	73.3
<b>% single-person household</b>	21.3	21.2	21.2	21.1
<b>% with children</b>	89.0	89.3	89.5	89.7
<b>% with grandchildren</b>	65.6	65.6	65.6	66.0
<b>% with living parents/in-laws</b>	46.5	46.9	47.0	47.6
<b>Retirement status (%)</b>				
<b>Not retired</b>	64.1	48.3	35.6	25.4
<b>Retired, but still working and consider myself a worker</b>	7.5	10.5	11.7	12.2
<b>Retired, still working and consider myself a retiree</b>	4.4	7.3	9.3	10.3
<b>Full-time retiree</b>	21.4	32.7	42.5	51.1
<b>Labor force status (%)</b>				
<b>Working full-time</b>	44.1	34.8	27.5	20.2
<b>Working part-time</b>	20.8	23.2	24.5	24.6
<b>Unemployed</b>	2.7	2.1	1.5	0.9
<b>Sick leave/disability pension</b>	6.7	5.2	3.8	2.6
<b>Retired</b>	23.2	32.9	41.8	50.6

## Variables in Focus

### Retirement Status

Retirement status was assessed at each measurement wave through the question “Are you retired (receive old-age pension)?” with the following response alternatives: (1) *no*, (2) *yes, but still working and consider myself a worker*, (3) *yes, still working but consider myself a retiree*, and (4) *yes, full-time retiree*.

### Life Satisfaction

Life satisfaction was measured at all four waves using the Satisfaction with Life Scale (Diener et al., 1985). The scale consists of five items (e.g., “I am satisfied with my life”; see Table 2) measured on a 7-point scale, ranging from *strongly disagree* (1) to *strongly agree* (7). The scale has previously been used and validated in the Swedish context (Hultell & Gustavsson, 2008). Cronbach’s alpha was .92 at T1 and T2, and .93 at T3 and T4.

Table 2 The Satisfaction with Life Scale

Item	Original Version	Swedish Translation
1)	In most ways my life is close to my ideal	Det mesta i mitt liv är nära mitt ideal
2)	The conditions of my life are excellent	Omständigheterna i mitt liv är utmärkta
3)	I am satisfied with my life	Jag är nöjd med mitt liv
4)	So far I have gotten the important things I want in life	Så här långt har jag fått det jag anser viktigt i livet
5)	If I could live my life over, I would change almost nothing	Om jag kunde leva om mitt liv skulle jag nästan inte ändra någonting

### Individual Resources

#### *Self-Esteem*

Self-esteem was measured at all four measurement occasions on the five positively phrased items (e.g., “I feel that I have a number of good qualities”; see Table 3) from the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The five items were measured on a 4-point scale, ranging from *strongly disagree*

(1) to *strongly agree* (4)<sup>1</sup>. The scale has previously been used and validated in the Swedish context (Eklund, Bäckström, & Hansson, 2018). Cronbach's alpha was .91 at T1 and T3, .92 at T2, and .90 at T4.

Table 3 The Self-Esteem Scale

Item	Original Version	Swedish Translation
1)	I feel that I am a person of worth, at least on an equal plane with others	Jag känner att jag är värdefull, minst lika värdefull som andra
2)	I feel that I have a number of good qualities	Jag tycker att jag har många goda egenskaper
3)	I am able to do things as well as most other people	Jag klarar av saker och ting lika bra som de flesta andra människor
4)	I take a positive attitude toward myself	Jag har en positiv syn på mig själv
5)	On the whole, I am satisfied with myself	Jag är på det hela taget nöjd med mig själv

### Autonomy

Autonomy was measured at all four waves on a short form of the Autonomy subscale of the Basic Psychological Needs Scale (Chen et al., 2015). The scale consists of three items (e.g., "I feel a sense of choice and freedom in the things I undertake"; see Table 4) measured on a 5-point scale, ranging from *completely false* (1) to *completely true* (5). Related versions of the scale have previously been used and validated in the Swedish context (Aurell, Wilsson, Bergström, Ohlsson, Martinsson, & Gustavsson, 2015; Eriksson & Boman, 2018). Cronbach's alpha was .66 at T1 and T2, .65 at T3, and .68 at T4.

Table 4 The Autonomy Scale

Item	Original Version	Swedish Translation
1)	I feel a sense of choice and freedom in the things I undertake	Jag upplever valmöjlighet och frihet i de saker jag gör
2)	I feel forced to do many things I wouldn't choose to do (R)	Jag känner mig tvingad att göra många saker som jag inte skulle välja själv (R)
3)	I feel I have been doing what really interests me	Jag känner att jag gör sådant som verkligen intresserar mig

<sup>1</sup>The scale was accidentally measured on a 6-point scale in Wave 2. The measures were converted to a 4-point scale and validated in the analyses by comparing the estimates with and without T2 measures. The analyses showed comparable results.

*Social Support*

Social support was measured at all four measurement occasions on the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988). The scale consists of 12 items divided into three subdomains (see Table 5): family (e.g., “I get the emotional help and support I need from my family”; items 3, 4, 8, and 11), friends (e.g., “I can talk about my problems with my friends”; items 6, 7, 9, and 12), and significant other (e.g., “There is a special person who is around when I am in need”; items 1, 2, 5, and 10). Participants rated the items on a 7-point scale, ranging from *strongly disagree* (1) to *strongly agree* (7). The scale has previously been used and validated in the Swedish context (Ekbäck, Benzein, Lindberg, & Årestedt, 2013). Cronbach’s alpha was .95 in all four waves.

Table 5 The Social Support Scale

Item	Original Version	Swedish Translation
1)	There is a special person who is around when I am in need	Det finns en speciell person som är där för mig om jag behöver stöd
2)	There is a special person with whom I can share my joys and sorrows	Det finns en speciell person som jag kan dela min glädje och sorg med
3)	My family really tries to help me	Min familj försöker verkligen hjälpa mig om jag behöver stöd
4)	I get the emotional help and support I need from my family	Om jag behöver så får jag känslomässigt stöd och hjälp av min familj
5)	I have a special person who is a real source of comfort to me	Jag har en speciell person som ger mig trygghet
6)	My friends really try to help me	Mina vänner försöker verkligen hjälpa mig om jag behöver
7)	I can count on my friends when things go wrong	Jag kan räkna med mina vänner när något går fel
8)	I can talk about my problems with my family	Jag kan prata om mina problem med min familj
9)	I have friends with whom I can share my joys and sorrows	Jag har vänner som jag kan dela glädje och sorg med
10)	There is a special person in my life who cares about my feelings	Det finns en speciell person i mitt liv som bryr sig om mina känslor
11)	My family is willing to help me make decisions	Om jag behöver så får jag stöd av min familj när jag ska fatta beslut
12)	I can talk about my problems with my friends	Jag kan prata om mina problem med mina vänner

### *Physical Health*

Physical health was self-reported and assessed at each measurement occasion through the question “How do you currently evaluate your overall health condition?”. Response alternatives ranged from *very bad* (1) to *very good* (6).

### *Cognitive Ability*

Cognitive ability was self-reported and assessed in all four waves through the question “How do you currently perceive your thinking ability?”. Response alternatives ranged from *very bad* (1) to *very good* (6).

### *Financial Resources*

Financial resources were assessed in two different ways. Basic financial resources were measured at T1 through the participants’ estimation of their ability to cover unpredicted costs of 15 000 SEK (approximately €1 500) within one week. A positive response (*yes, using own or household’s money*) was coded as one (1) and a negative response (*yes, but only with help from family or friends* or *no*) was coded as zero (0). Financial satisfaction was measured at T2, T3, and T4 through the question “How satisfied are you currently with your financial situation?”. Response alternatives ranged from *very dissatisfied* (1) to *very satisfied* (5).

## Personality

The Big Five personality traits were measured using a short form of the International Personality Item Pool (Donnellan, Oswald, Baird, & Lucas, 2006). The scale consists of 20 items divided into five subscales (see Table 6):

- Extraversion (e.g., “I am the life of the party”):  
items 1, 6 (reversed), 11, and 16 (reversed)
- Agreeableness (e.g., “I sympathize with others’ feelings”):  
items 2, 7 (reversed), 12, and 17 (reversed)
- Conscientiousness (e.g., “I get chores done right away”):  
items 3, 8 (reversed), 13, and 18 (reversed)
- Neuroticism (e.g., “I have frequent mood swings”):  
items 4, 9 (reversed), 14, and 19 (reversed)
- Openness (e.g., “I have a vivid imagination”):  
items 5, 10 (reversed), 15 (reversed), and 20 (reversed)

Each item was measured on a 5-point scale, ranging from *strongly disagree* (1) to *strongly agree* (5). Related versions of the scale have previously been used and validated in the Swedish context (Gunnarsson, Gustavsson, Holmberg, & Weibull, 2015; Rosander, Bäckström, & Stenberg, 2011).

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The scale was included in all four waves, but in the second measurement wave distributed only to a subsample of participants responding to the paper version of the questionnaire ( $n = 1\,039$ ). Cronbach's alpha was .75 to .79 for extraversion, .62 to .65 for agreeableness, .55 to .62 for conscientiousness, .59 to .62 for neuroticism, and .60 to .65 for openness.

Table 6 The Big Five Personality Scale

Item	Original Version	Swedish Translation	Construct
1)	I am the life of the party	Jag är den som håller igång på sociala tillställningar	E
2)	I sympathize with others' feelings	Jag har förståelse för andras känslor	A
3)	I get chores done right away	Jag skjuter inte upp saker jag måste göra utan gör dom på en gång	C
4)	I have frequent mood swings	Jag har ofta humörsvägningar	N
5)	I have a vivid imagination	Jag har en livlig fantasi	O
6)	I don't talk a lot (R)	Jag är tystlåten (R)	E
7)	I am not interested in other people's problems (R)	Jag är inte så intresserad av andra människors problem (R)	A
8)	I often forget to put things back in their proper place (R)	Jag glömmer ofta att lägga tillbaka saker på sin plats (R)	C
9)	I am relaxed most of the time (R)	Jag är avslappnad för det mesta (R)	N
10)	I am not interested in abstract ideas (R)	Jag är ointresserad av abstrakta idéer (R)	O
11)	I talk to a lot of different people at parties	Jag pratar med många vid sociala tillställningar	E
12)	I feel others' emotions	Jag kan avläsa andra människors känslor	A
13)	I like order	Jag tycker om ordning och reda	C
14)	I get upset easily	Jag blir lätt upprörd	N
15)	I have difficulty understanding abstract ideas (R)	Jag har svårt att förstå abstrakta idéer (R)	O
16)	I keep in the background (R)	Jag håller mig gärna i bakgrunden (R)	E
17)	I am not really interested in others (R)	Jag är egentligen inte så intresserad av andra människor (R)	A
18)	I make a mess of things (R)	Jag skapar oreda omkring mig (R)	C
19)	I seldom feel blue (R)	Jag känner mig sällan nere (R)	N
20)	I do not have a good imagination (R)	Jag har inte så stor fantasiförmåga (R)	O

## Descriptive Results

Figure 2 shows the individual trajectories in retirement status across the four measurement waves. Each line represents a transition in retirement status, and the thickness of the line is proportionate to the number of participants who made this transition. About one fifth (19.8%) of the participants (who completed at least one of the three follow-up questionnaires) retired fully between measurement points (i.e., transitioned from 1 [not retired] to 4 [full-time retiree]) and another fifth (20.6%) transitioned into partial (i.e., response alternative 2 and 3, retired but working) or full-time retirement (from previous part-time retirement). About one in ten (10.5%) had a reversed transition pattern, i.e., transitioned from full- or part-time retirement to partial or no retirement. The rest (49.1%) did not change their retirement status during the four waves of data collection.

Women and participants with primary or secondary education were overrepresented among those who were retired at the first measurement occasion and those who transitioned into full-time retirement between waves. Men and those with tertiary or higher education were overrepresented among part-time retirees and those who retired gradually across waves. Women and people with primary or secondary education were also overrepresented among those in the younger cohorts (born 1954 or 1955) who retired fully between measurement waves (i.e., at age 61 or 62) while men and participants with tertiary or higher education were overrepresented among those retiring after normative retirement age (i.e., at age 66 or 67).

Figure 2 Changes in Retirement Status across Measurement Waves

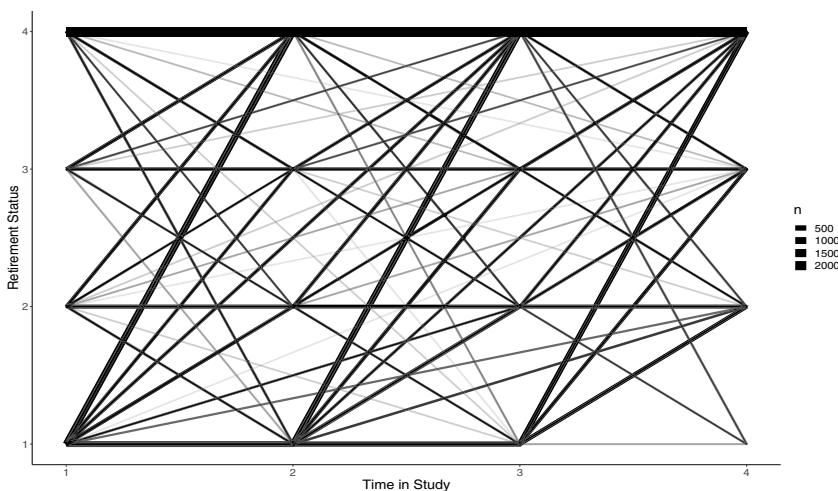


Figure 3 shows the individual trajectories in labor force participation relative to the retirement event. Labor force status (represented on the y-axis) was self-reported at each measurement occasion with the following response alternatives: (1) *working full-time (or more)*, (2) *working several days a week*, (3) *working once a week*, (4) *working once or twice a month*, (5) *unemployed*, (6) *on sick leave*, (7) *on disability pension*, and (8) *full-time retiree*. Time to and from retirement (in years) was generated from self-reported retirement dates. This variable represents the time when the individual first retired (i.e., started to collect old-age pension), regardless of whether or not they took up work again at a later point.

Of the participants who retired during the study period, 38.1% retired from full-time work, 29.3% from part-time work (i.e., response alternatives 2, 3, and 4), and 6.9% decreased their working hours (i.e., transitioned from 1 to 2, 3, or 4) in the last years before retirement. 14.5% reported sick leave (4.2%) or disability pension (10.3%) before retirement, and 5.2% retired from previous unemployment. Of the participants who retired fully during the study period, 5.9% reported part-time work at a later time point. Women and participants with primary or secondary education were overrepresented among those who retired from part-time work and they were also more likely to report disability pension before the age of 65. Men and people with tertiary or higher education were overrepresented among those retiring from full-time work and those continuing to work part-time after retirement.

Figure 3 Trajectories in Labor Force Status Relative to Retirement

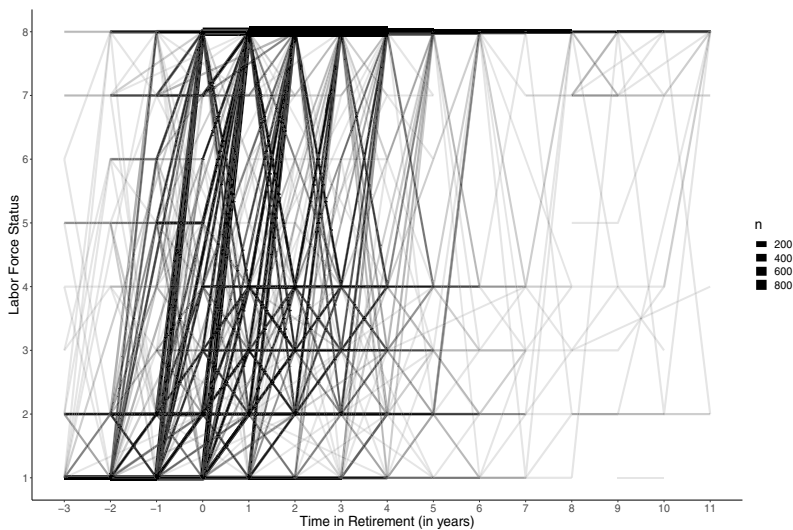
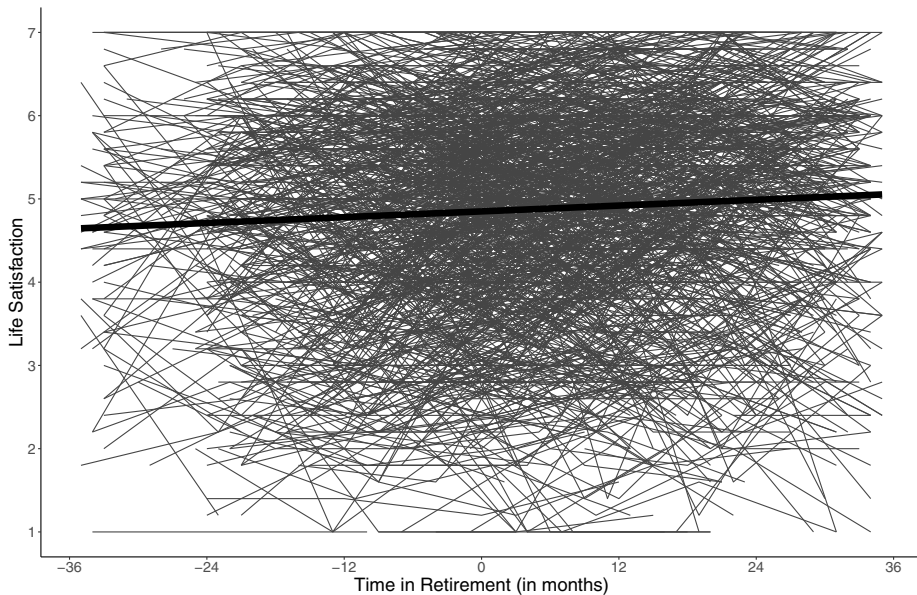




Figure 4 shows the individual trajectories in life satisfaction relative to the retirement event. The figure includes participants who retired during the study period, regardless of their pre-retirement labor force status and whether or not they continued to work in retirement. The thick black line shows a small but overall positive trend over the transition period, indicating that the participants were slightly more satisfied with their life after retirement. The trajectories also demonstrate substantial heterogeneity in the changes, suggesting that the impact of retirement varies both between and within individuals over time. People transitioning into full-time retirement reported slightly more positive changes than those who continued to work in retirement. No clear patterns were observed when the trajectories were stratified by gender and education, but participants in the younger birth cohorts (i.e., born 1954 or 1955) reported more positive changes if they also retired abruptly.

Figure 4 Changes in Life Satisfaction over the Retirement Transition



## Study I

The aim of Study I was to investigate whether individual differences in the six resource variables account for intra-individual changes in life satisfaction over the retirement transition, but also whether these associations vary systematically depending on the type of transition (i.e., gradual or abrupt).

### Sample

Study I was based on data from the first two measurement waves of the HEARTS study. The sample included participants who retired gradually (i.e., transitioned from not retired to retired but working;  $n = 360$ ) or fully (i.e., transitioned from not retired to retired and not working;  $n = 346$ ) between T1 and T2, as well as those continuously working (i.e., not retired;  $n = 1\,860$ ) or fully retired (i.e., not working;  $n = 905$ ) in both waves. Gradual retirement was thus defined as being retired but still engaged in the labor force, irrespective of whether the participants defined themselves as retirees (30%) or not (70%). This decision was based on the notion that continued labor force participation in retirement enables continuity in central aspects of daily life, and that this constitutes a qualitative difference from being fully retired.

Participants were excluded if they: (a) reported unemployment or disability pension at T1, (b) did not report retirement status at either measurement occasion, (c) were partially retired in both waves, (d) retired from previous bridge employment, or (e) “un-retired” between the two waves. The final sample consisted of 3 471 individuals with a mean age of 63 years ( $SD = 2.0$ ); 56% were women and 45% had tertiary/higher education.

### Measures

The analyses were conducted on T1 and T2 measures of life satisfaction and baseline (T1) measures of self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources. Age, gender, and education were included as control variables.

### Statistical Analyses

Main and interaction effects of transition type and individual resources were evaluated through a multiple group latent change score model where levels and changes in life satisfaction were regressed on each of the six resource variables. Transition type (working, gradual retirement, abrupt retirement, retired) was specified as group variable.

## Results

The results of Study I showed that the six resources accounted for individual differences in intra-individual changes in life satisfaction over one year, but that the effects varied systematically depending on the type of retirement transition (see Figure 5).

Higher self-esteem, lower autonomy, better perceived cognitive ability, and access to basic financial resources were associated with more positive changes in life satisfaction among those who retired fully between the two measurement waves. Lack of basic financial resources was associated with decreased life satisfaction among both retiring groups, but the effect was found to be less detrimental for those retiring gradually. Social support and self-rated physical health predicted changes in life satisfaction only among those who were continuously retired. More social support and better perceived health were related to positive changes while lower levels were associated with decreased life satisfaction after one year. Self-esteem was the only significant predictor of changes in life satisfaction among participants still working. High self-esteem was associated with positive changes while lower levels were related to an overall decrease in life satisfaction.

The findings suggest that resources are more important for life satisfaction in abrupt than in gradual retirement. The six resources accounted for a larger proportion of the changes in life satisfaction among those who retired between the two waves (21.2%) than in those continuously working or retired (12.6%). The six resources also accounted for a larger proportion of the variability in abrupt (31.4%) than in gradual (11.7%) retirement.

Figure 5 Interaction Effects of Transition Type and Resources

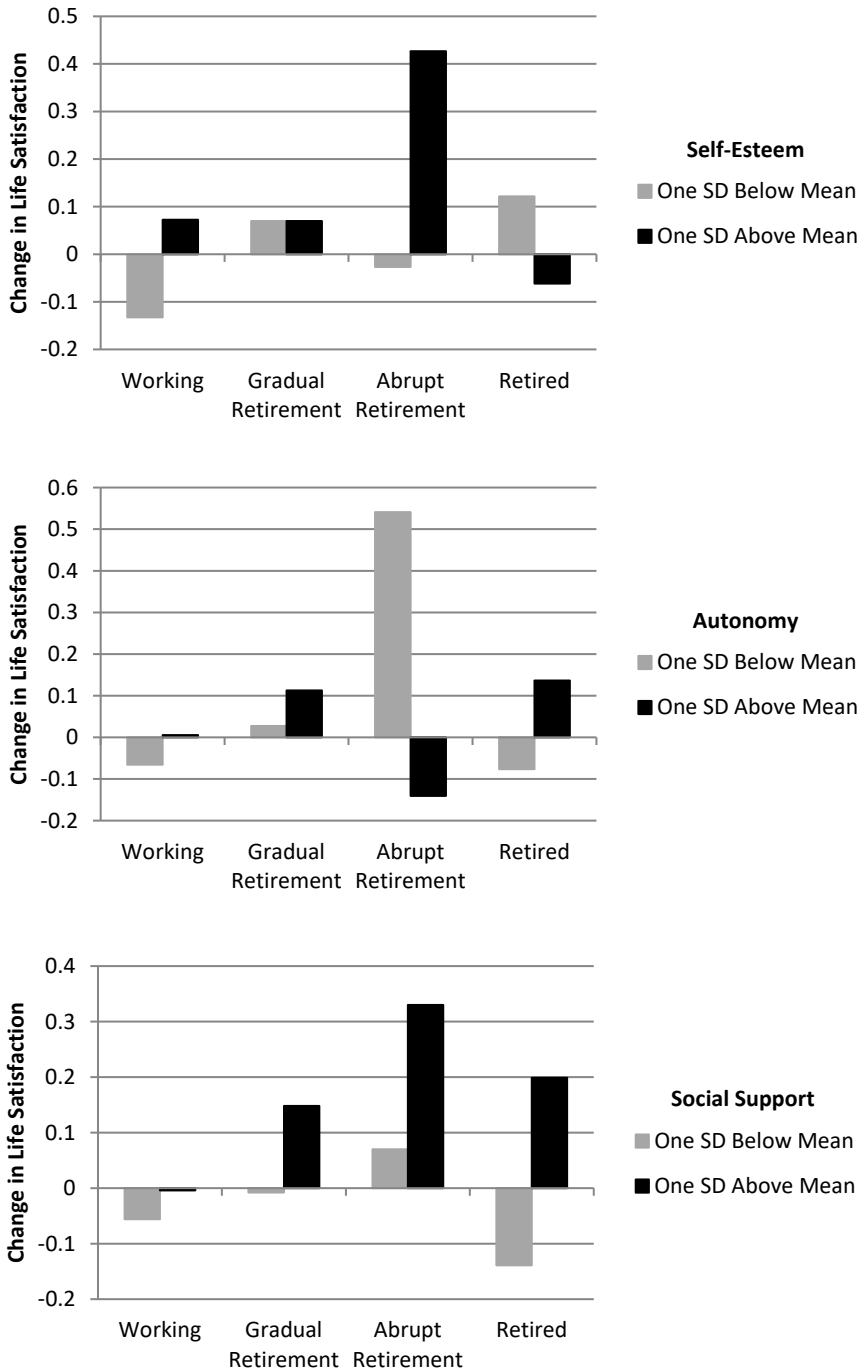
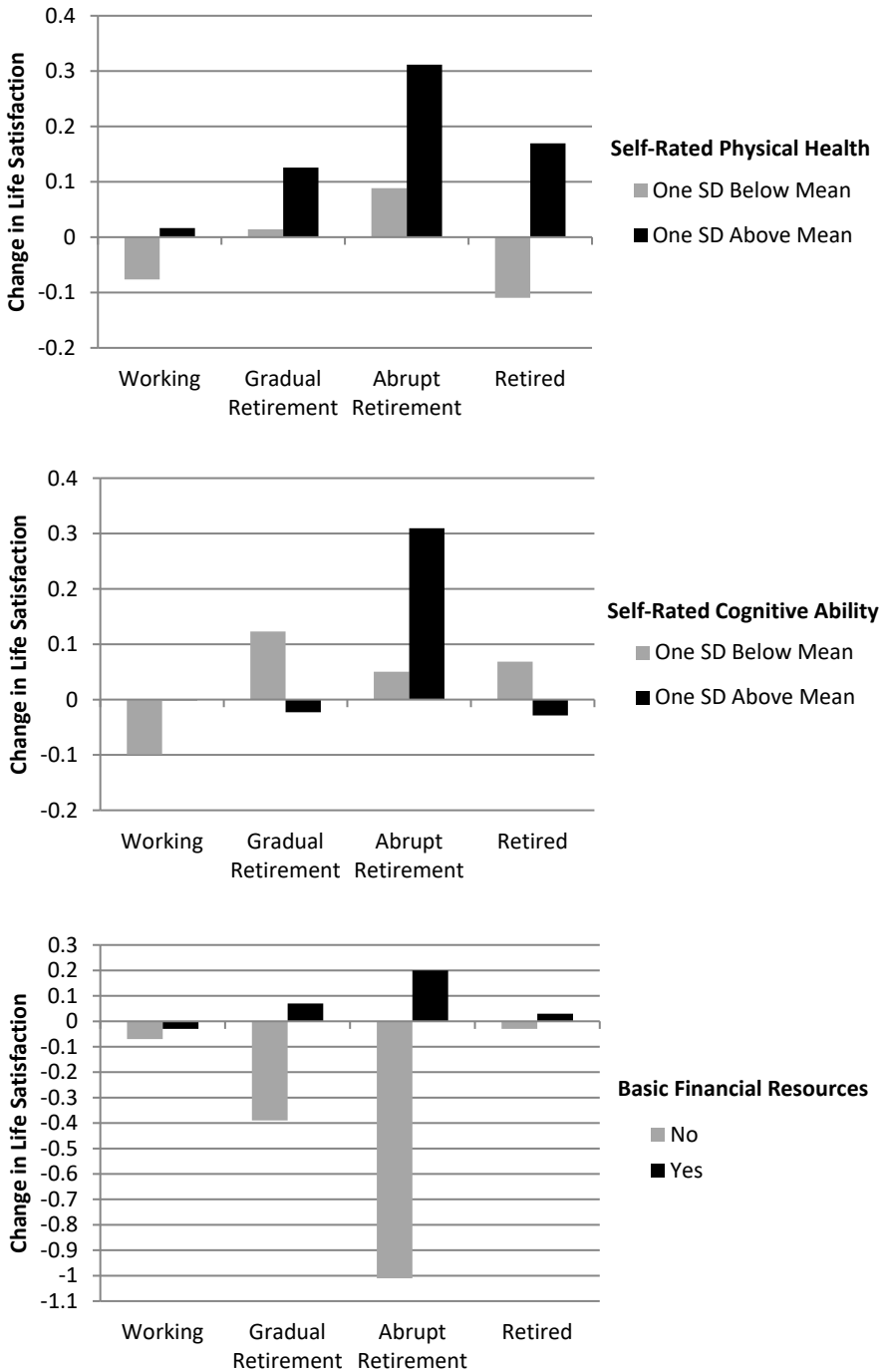


Figure 5 Interaction Effects of Transition Type and Resources



## Study II

The aim of Study II was to investigate whether the association between a particular resource and life satisfaction varies systematically depending on other available resources.

### Sample

Study II was based on data from the first three measurement waves of the HEARTS study. The sample included participants who retired fully (i.e., transitioned from not retired to retired and not working;  $n = 614$ ) between T1 and T3 and those who continued working (i.e., not retired;  $n = 1\,310$ ) across all three waves.

Participants were excluded if they: (a) reported unemployment or disability pension at T1, (b) were partially or fully retired at T1, (c) were retired but still working at T3, or (d) did not report retirement status at T1 and T3. The final sample consisted of 1 924 individuals with a mean age of 62 years ( $SD = 1.7$ ); 55% were women, and 47% had tertiary/higher education. The majority (91%) of the participants completed the questionnaire in all three waves; 44% of the retirees retired between the first two measurement occasions and another 12% reported partial retirement at T2.

### Measures

The analyses were conducted on T1, T2, and T3 measures of life satisfaction and on baseline (T1) measures of self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources. Age, gender, and education were included as control variables.

### Statistical Analyses

Interaction effects between the six resource variables were evaluated through a multiple group (working vs. retiring) latent growth curve model, regressing levels and changes in life satisfaction on the six resource variables and their 15 interaction terms (i.e., resource X resource).

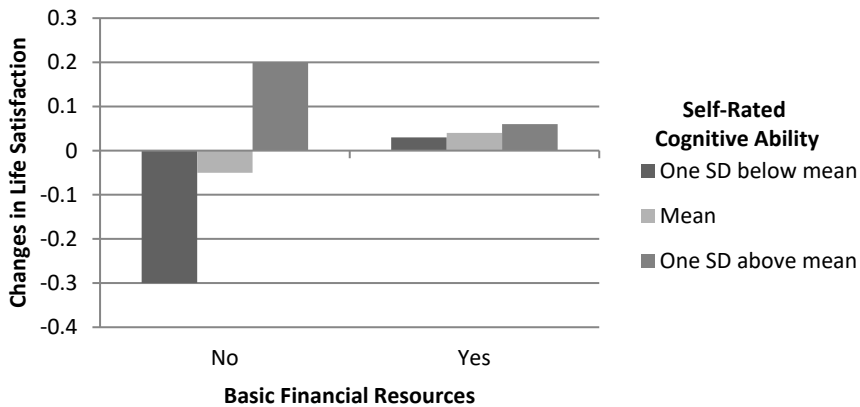
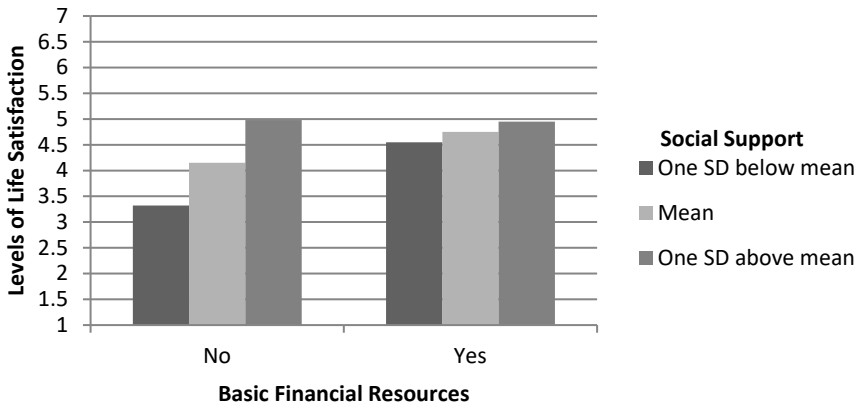
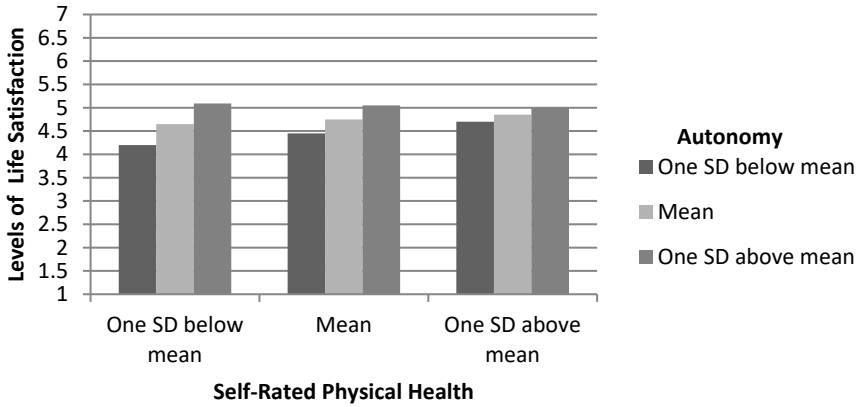
### Results

The results of Study II revealed several interaction effects, suggesting that some resources variously influence life satisfaction depending on other available resources (see Figure 6).

The association between self-rated physical health and (levels of) life satisfaction was stronger for individuals with low autonomy, and the relationship between autonomy and life satisfaction was stronger for individuals in poor health. The association between basic financial resources and (levels of) life satisfaction was stronger for individuals with low social support, and the relationship between social support and life satisfaction was stronger for individuals without basic financial assets. The association between basic financial resources and (changes in) life satisfaction was stronger for those who perceived their cognitive ability as poor, and the relationship between perceived cognitive ability and life satisfaction was stronger for those lacking basic financial assets.

The findings suggest that autonomy is particularly important for retirees in poor health, and that social support and perceived cognitive ability can compensate for negative effects of poor financial resources. These effects were observed only among those who retired between measurement waves. A cumulative effect of basic financial resources and self-rated physical health was found for those continuously working, suggesting that workers are more likely to benefit from good health if they also have access to basic financial assets.

Figure 6 Interaction Effects of Resources





## Study III

The aim of Study III was to investigate whether resource change can be linked to changes in life satisfaction over the retirement transition, but also if life satisfaction is of relevance for resource change (i.e., bidirectional association between resources and life satisfaction).

### Sample

Study III was based on data from the first three measurement waves of the HEARTS study. The sample included participants who retired fully (i.e., transitioned from not retired to retired and not working;  $n = 497$ ) between T1 and T3.

Participants were excluded if they: (a) reported unemployment or disability pension at T1, (b) were partially or fully retired at T1, (c) had partially retired at T2, (d) were retired but still working at T3, or (e) did not report retirement status at T1, T2, or T3. The final sample had a mean age of 63 years ( $SD = 1.5$ ); 58% were women, and 40% had tertiary/higher education. About half of the participants (50.5%) retired between the first two measurement waves and the other half (49.5%) retired between the second and third measurement occasions.

### Measures

The analyses were conducted on T1, T2 and T3 measures of life satisfaction, self-esteem, autonomy, social support, self-rated physical health, and self-rated cognitive ability, and T2 and T3 measures of financial satisfaction. Age, gender, education, and time in retirement (in months) were included as control variables.

### Statistical Analyses

Longitudinal and bidirectional associations between life satisfaction and individual resources were evaluated through a series of bivariate latent change score models where life satisfaction was paired with each of the six resource variables (including an aggregated variable for total resource capability). The model evaluated between- (level-level) as well as within-person (change-change) associations, but also the potential for bidirectional (cross-lagged level-change) effects. The effects were evaluated relative to the retirement event (i.e., before, during, and after the transition).

## Results

The results of Study III showed that changes in self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and total (aggregated) resources were associated with changes in life satisfaction, but no association was found for changes in financial satisfaction. The effects were slightly stronger in the transition phase, but the differences were small and unreliable.

Analyses of bidirectional effects showed that higher self-esteem, better perceived health, and more total resources were related to positive changes in life satisfaction over the retirement transition. Self-esteem was specifically related to changes in life satisfaction in the transition phase and the period after retirement, while self-rated physical health only predicted changes after retirement. Total resource capability predicted changes in life satisfaction before, during, and after the retirement transition. No effects were found for autonomy, social support, self-rated cognitive ability, or financial satisfaction. The results also showed that life satisfaction was associated with changes in self-esteem, autonomy, and perceived physical and cognitive ability. Higher life satisfaction was related to increased health before retirement, increases in autonomy and cognitive ability in the transition phase, and increases in self-esteem, and perceived physical and cognitive health in the post-retirement phase.

The findings suggest that resources are important for life satisfaction in the retirement transition, at the same time as overall life satisfaction accounts for how we perceive and evaluate our own resources during this process. Overall resource capability accounted for 12% of the changes in life satisfaction in the first years following retirement. Life satisfaction accounted for 16% of the changes in autonomy in the transition from work to retirement.

## Study IV

The aim of Study IV was to investigate direct and indirect associations between the Big Five personality traits and life satisfaction over the retirement transition. Indirect effects were evaluated through the role of personality for levels and changes in resources.

### Sample

Study IV was based on data from the first four measurement waves of the HEARTS study. The sample included participants who retired fully (i.e., transitioned from not retired to retired and not working;  $n = 796$ ) between T1 and T4.

Participants were excluded if they: (a) reported unemployment or disability pension at T1, (b) were partially or fully retired at T1, (c) were not yet retired or retired but still working at T4, or (c) did not report retirement status at T1 and T4. The final sample had a mean age of 63 years ( $SD = 1.6$ ); 56% were women, and 39% had tertiary/higher education. About one fourth (24.4%) of the participants retired between T1 and T2, 24.2% retired between T2 and T3, 20.4% retired between T3 and T4, 19.8% retired gradually across waves (reported being partially retired at T2 and/or T3), and the remaining 11.2% retired between T1 and T4 (were missing at T2 and/or T3).

### Measures

The analyses were conducted on T1, T2, T3, and T4 measures of life satisfaction, self-esteem, autonomy, social support, self-rated physical health, and self-rated cognitive ability, and T2, T3, and T4 measures of financial satisfaction. The main analyses were conducted on baseline (T1) measures of the Big Five personality traits, but follow-up (T2, T3, and T4) measures were included to control for changes in personality over the retirement transition. Age, gender, education, and type of transition (gradual or abrupt) were included as control variables.

### Statistical Analyses

Direct and indirect associations between personality traits, resources, and life satisfaction were evaluated through a multivariate latent growth curve model. Levels and changes in the six resource variables were regressed on each of the five personality traits, and levels and changes in life satisfaction were regressed on both (levels and changes in) resources and (baseline levels of) personality.

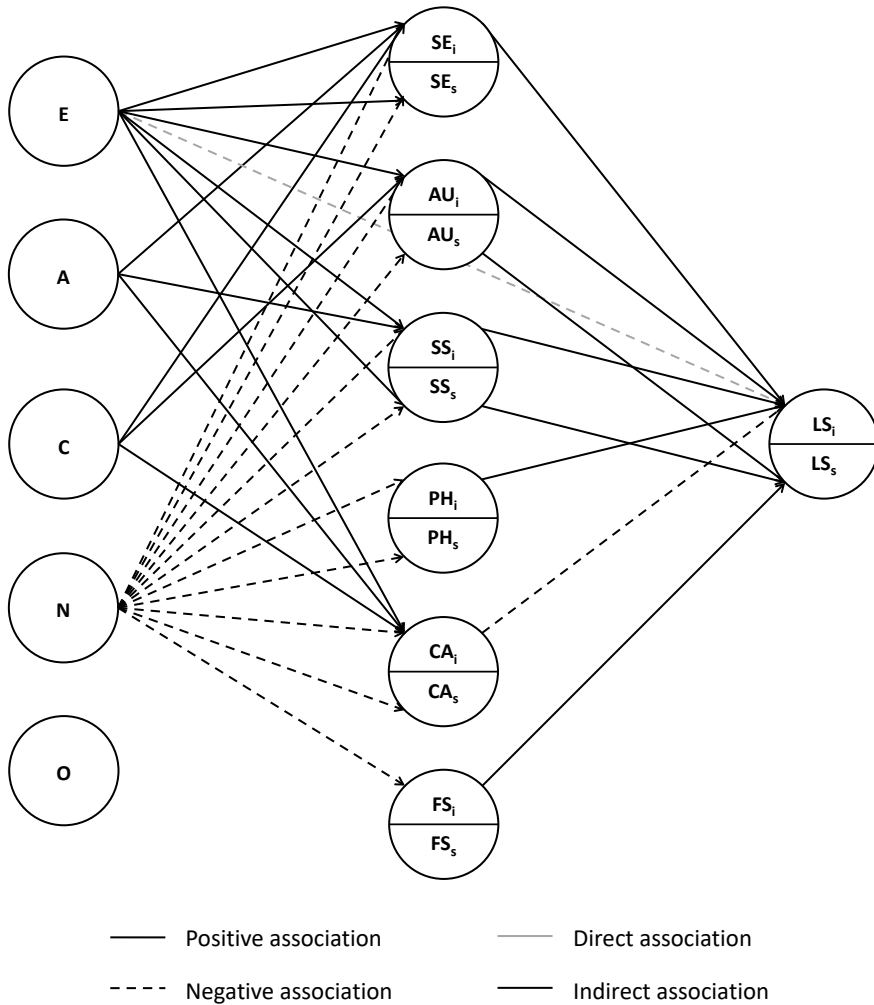
## Results

The results of Study IV showed multiple indirect pathways between the five personality traits, the six resource variables, and life satisfaction over the retirement transition (see Figure 7).

Higher extraversion was associated with higher levels of self-esteem, autonomy, social support, and self-rated cognitive ability, in addition to more positive changes in self-esteem and social support over the retirement transition. Higher neuroticism was related to lower self-esteem, less autonomy and social support, worse physical and cognitive health, and lower financial satisfaction, but also more decreases in self-esteem, autonomy, social support, physical health, and cognitive abilities. Agreeableness was positively associated with levels of self-esteem, social support, and self-rated cognitive ability, and higher conscientiousness was related to higher levels of self-esteem, autonomy, and perceived cognitive ability. No effects were found for agreeableness and conscientiousness on changes across the transition period. Openness was not related to levels or changes in any of the six resource variables. Evaluation of indirect pathways suggested that extraversion was positively related to life satisfaction through higher levels of self-esteem and autonomy, and that neuroticism was negatively related to life satisfaction through lower levels of self-esteem and lower levels and negative changes in autonomy and social support. Agreeableness was positively related to life satisfaction through higher levels of self-esteem and social support, and higher conscientiousness was related to higher life satisfaction through higher levels of self-esteem and autonomy.

The findings suggest that retirees with higher levels of extraversion, agreeableness, and conscientiousness are more likely to adjust well in retirement, while higher levels of neuroticism increase the risk for maladaptive adjustment due to negative changes in key resources.

Figure 7 Direct and Indirect Effects of Personality



*Note:* Identified (i.e., statistically significant) direct and indirect associations between the Big Five personality traits, the six resource variables, and life satisfaction.

E = extraversion, A = agreeableness, C = conscientiousness, N = neuroticism, O = openness, SE = self-esteem, AU = autonomy, SS = social support, PH = self-rated physical health, CA = self-rated cognitive ability, FS = financial satisfaction, LS = life satisfaction, i = intercept (baseline level), s = slope (changes across retirement).

## Overview of the Results: Associations between Resources and Life Satisfaction

Table 7 shows an overview of the results of the four studies with respect to the association between the six resource variables and life satisfaction over the retirement transition. The level–level (LL) association refers to the relationship between levels of resources and levels of life satisfaction (i.e., between-person effect). The level–change (LC) association refers to the relationship between pre-retirement resources and changes in life satisfaction over the retirement transition (i.e., individual differences in intra-individual change). The change–change (CC) association refers to the relationship between changes in resources and changes in life satisfaction over the retirement transition (i.e., within-person effect).

Table 7 Overview of the Results

	Study I		Study II		Study III			Study IV		
	LL	LC	LL	LC	LL	LC	CC	LL	LC	CC
<b>Self-Esteem</b>	X	X*	X		X	X	X	X		
<b>Autonomy</b>	X	X(-)*	X <sup>a</sup>	X(-)	X		X	X		X
<b>Social Support</b>	X		X <sup>b</sup>		X		X	X		X
<b>Self-Rated Physical Health</b>	X		X <sup>a</sup>		X		X	X		
<b>Self-Rated Cognitive Ability</b>		X*		X <sup>c</sup>	X		X	X(-)		
<b>Basic Financial Resources<sup>d</sup>/ Financial Satisfaction<sup>e</sup></b>	X	X*	X <sup>b</sup>	X <sup>c</sup>	X					X

Note. LL = level–level association, LC = level–change association, CC = change–change association, X = positive association, X(-) = negative association.

\* Effect varied depending on type of retirement transition

<sup>abc</sup> Variables with a common superscript showed interdependent effects.

<sup>d</sup> Study I and II.

<sup>e</sup> Study III and IV.

*Self-esteem* was associated with both levels and changes in life satisfaction. Retirees with higher levels of self-esteem reported higher initial (pre-retirement) levels of life satisfaction (Studies I–IV), but also more positive changes across the transition period (Studies I and III). The longitudinal effect, however, was found to differ depending on follow-up period. Pre-retirement self-esteem was associated with short-term (1-year) changes in life satisfaction (Studies I and III) while no effects were found for longer (2- or 3-year) follow-up periods (Studies II and IV). Changes in self-esteem across

the transition period were related to changes in life satisfaction, but this effect also varied across studies. Increased (or decreased) self-esteem was related to increased (or decreased) life satisfaction in short-term (Study III) but not long-term (Study IV) follow-up periods.

*Autonomy* was also related to both levels and changes in life satisfaction over the retirement transition. Higher pre-retirement autonomy was related to higher levels of life satisfaction (Studies I–IV), but also to more negative changes across the transition period (Studies I and II). The level–change association, however, was not found when accounting for intra-individual changes over time. Increased autonomy over the retirement transition predicted positive changes in life satisfaction, and negative changes were related to an overall decrease in life satisfaction (Studies III and IV).

*Social support* was related to levels but not changes in life satisfaction. Retirees with more social support reported higher life satisfaction, but they did not differ from those with less support with respect to changes in life satisfaction across the transition period (Studies I–IV). This finding was consistent regardless of follow-up period. Changes in social support over the retirement transition were, however, related to changes in life satisfaction; decreased social support was related to decreased life satisfaction while positive changes predicted an overall increase in life satisfaction (Studies III and IV).

*Self-rated physical health* was mainly related to life satisfaction at the between-person level. Retirees who reported better health also rated their life satisfaction as higher while no effects were found on changes over time (Studies I–IV). Changes in physical health across the transition period were positively related to changes in life satisfaction, but the effect varied depending on follow-up period. Short-term (1-year) changes in physical health were associated with short-term changes in life satisfaction (Study III), but no effects were found for longer (3-year) follow-up periods (Study IV).

*Self-rated cognitive ability* was inconsistently related to life satisfaction in the four studies. Studies I and II showed no association between levels of cognitive ability and levels of life satisfaction while the findings in Study III and IV showed contradictory effects. Higher perceived cognitive ability was related to higher life satisfaction in Study III and lower levels in Study IV. Changes in cognitive ability across the transition period were associated with changes in life satisfaction in the short-term (Study III) but not in the long-term (Study IV) follow-up period. Increased cognitive ability was related to increased life satisfaction while negative changes were related to an overall decrease in life satisfaction.

*Basic financial resources* and *financial satisfaction* were associated with both levels and changes in life satisfaction, but the effects varied between the studies. Retirees with access to basic financial resources reported higher

levels of life satisfaction and more positive changes across the transition period (Studies I and II). Higher financial satisfaction was associated with higher life satisfaction in Study III but not in Study IV. Higher pre-retirement financial satisfaction was associated with more positive changes in life satisfaction over the retirement transition, but the effect varied depending on follow-up period. Individual differences in financial satisfaction predicted long-term (3-year; Study IV), but not short-term (1-year; Study III) changes in life satisfaction. Changes in financial satisfaction across the transition period did not predict changes in life satisfaction in any of the studies (Studies III and IV).

The findings in Study III also showed that levels and changes in *total resource capability* can be linked to levels and changes in life satisfaction over the retirement transition. More total resources were associated with higher initial levels and more positive changes in life satisfaction across the transition period. Changes in a person's total resource capability was also related to changes in life satisfaction over the retirement transition. Positive resource changes were related to an overall increase in life satisfaction while negative changes were associated with decreased life satisfaction.

The findings in Study III also revealed substantial differences in the effect sizes depending on level of association. The average between-person (level-level) correlation across the six resource variables was .34 and the average within-person (change-change) correlation was .11. Individual differences in one of the six resource variables thus accounted for about 12% of the variability in life satisfaction, while changes in these variables only accounted for slightly more than 1% of the changes in life satisfaction. The largest effect sizes were found for autonomy (.53 and .25 respectively) and the weakest associations were found for financial satisfaction (.25 and .06). The correlation for total resource capability was .34 at the between-person level and .10 at the within-person level.



# GENERAL DISCUSSION

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The overall aim of this thesis was to investigate individual differences and intra-individual changes in life satisfaction in the transition from work to retirement. The resource-based dynamic model was used as a theoretical framework for understanding how and why retirement influences individual well-being. Individual differences and intra-individual changes in resource capability were included as predictors of levels and changes in life satisfaction in the last years before and the first years following retirement. Resources evaluated for their influence on life satisfaction included self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, basic financial resources, and financial satisfaction.

The overall findings demonstrate that retirement is a heterogeneous event and that multiple factors contribute to explaining individual differences as well as intra-individual changes in life satisfaction. The four studies suggest that self-esteem, autonomy, social support, perceived physical and cognitive abilities, and financial adequacy are valuable in the transition process and that they account for individual variability in retirement adjustment.

The findings in *Study I* showed that the six resources were more important for life satisfaction in abrupt rather than gradual retirement. A gradual transition could thus counteract some of the negative effects of retirement for individuals with scarce resources. This was particularly the case for those lacking basic financial assets. The findings of *Study II* showed that the association between life satisfaction and a particular resource varies depending on other available resources. Autonomy was particularly important for retirees in poor health, and social support and perceived cognitive ability were more important for those lacking basic financial resources. The findings of *Study III* showed that resource change could be linked to changes in life satisfaction over the retirement transition, but also that life satisfaction serves as an important predictor of how we view and evaluate our resources in this process. The findings in *Study IV* showed that individual differences in the Big Five personality traits help explain individual differences and intra-individual changes in resources over the retirement transition. Retirees with higher levels of neuroticism were shown to be more vulnerable in the transition process in that they reported more negative changes in self-esteem, autonomy, social support, physical health, and cognitive ability. Higher extraversion, on the other hand, was related to more positive changes in self-esteem and social support.

The four studies presented in this thesis provide a comprehensive and systematic investigation of the applicability of the resource-based dynamic

model for understanding individual differences in retirement adjustment. The findings provide insights into the multidimensional and dynamic aspects of the transition and demonstrate not only that emotional, motivational, social, physical, cognitive, and financial resources are relevant to the adjustment process, but also that the association between a particular resource and life satisfaction varies systematically depending on the type of retirement transition and other available resources. The results further highlight bidirectional associations between resources and life satisfaction, and that personality can influence the adjustment process indirectly through its relevance for resource availability. The following sections address the results in more detail.

## Resources and Life Satisfaction

The findings in the four studies demonstrate similarities as well as differences in the roles of the six resources for levels of and changes in life satisfaction. The inconsistencies can be partly related to differences in follow-up times and partly to alterations in the analytical approach and the inclusion of other variables. The associations between resources and life satisfaction were evaluated on three different levels: (a) individual (between-person) differences, (b) individual differences in intra-individual change, and (c) intra-individual associations.

The first approach examines the extent to which individual differences in life satisfaction can be attributed to individual differences in resource capability, i.e., whether people who have more resources rate their life satisfaction as higher. The findings provide consistent support for such associations for four of the six resource variables. Individuals with higher self-esteem, autonomy, social support, and self-rated physical health generally reported higher life satisfaction. The results for self-rated cognitive ability and financial resources were more inconsistent, and the differences can be attributed to differences in the analytical approach (i.e., inclusion of other variables) and the operationalization of the financial domain.

The second approach examines whether some people are more or less likely to experience changes in life satisfaction depending on their pre-retirement resource availability. The results show that these associations differ considerably across resource domains. The findings suggest that individuals with higher self-esteem are more likely to adjust well in retirement while no such effects were found for social support and self-rated physical health. Autonomy, self-rated cognitive ability, and financial resources showed inconsistent results, and the differences partially depended on alterations in the modeling procedure and follow-up time.

The third approach evaluates the extent to which intra-individual changes in life satisfaction can be linked to intra-individual changes in resources. This approach tests the fundamental assumption of the resource-based dynamic model, i.e., whether well-being changes as a consequence of resource change. The findings provide preliminary support for this assumption for five of the six resource variables. Individuals who experienced more positive changes in self-esteem, autonomy, social support, self-rated physical health, and self-rated cognitive ability also reported more positive changes in life satisfaction, while negative changes in these variables were associated with negative changes in life satisfaction. These associations were consistent regardless of follow-up period for autonomy and social support, while the effects related to self-esteem and physical and cognitive health only were observed in Study III. The inconsistency in the findings may be related to differences in follow-up periods and the inclusion of other variables (i.e., personality traits in Study IV). The results for the financial domain, however, suggest a weak or non-existing intra-individual link between financial satisfaction and life satisfaction.

The overall findings demonstrate that resources and life satisfaction are mainly linked at the between-person level. This means that resources are relevant for understanding why some people experience more difficulties than others in adjusting to life in retirement. The weak intra-individual associations, however, suggest that the underlying mechanisms are far from fully understood. The results show that people with more resources are more likely to adjust well in retirement, but changes in resources across the transition period only accounted for a small proportion of the changes in life satisfaction. Resources thus appear to be fairly good indicators of how people manage the transition, but they provide limited insights into the mechanisms involved. These findings extend previous knowledge on retirement adjustment by showing that resources are variously related to life satisfaction depending on the level of assessment, but also that these associations differ across resource domains.

*Self-esteem* was linked to life satisfaction at all three levels. The findings highlight the role of self-esteem for a person's ability to adjust to changing life circumstances, but also show that retirement's influence on individual well-being varies depending on its impact on feelings of self-worth. These results correspond with previous research on the role of work for feelings of self-worth (Mutran, Reitzes, & Fernandez, 1997; Reitzes, Mutran, & Fernandez, 1996a, 1996b) and suggest that a decreased sense of self-worth resulting from the loss of the work role increases the risk for adjustment problems. On the other hand, improved self-esteem resulting from the relief of leaving an undesired job role should facilitate better adjustment and higher well-being in retirement. The findings extend previous research (Price

& Balaswamy, 2009; Reitzes & Mutran, 2004) by showing that self-esteem is related to retirement adjustment at the intra-individual level.

*Autonomy* was also related to life satisfaction at all three levels. The negative association between pre-retirement levels of autonomy and changes in life satisfaction contradicts the resource-based dynamic model because more resources were associated with worse outcomes. This effect, however, was not shown when accounting for intra-individual changes in autonomy, which suggests that the impact depends on whether or not retirement is associated with changes across the transition period. The negative association could therefore be interpreted as a relief effect for those who felt constrained by their pre-retirement job; i.e., lower pre-retirement autonomy increases the likelihood for positive changes in life satisfaction. The relief of work-related constraints thus appears to be more beneficial for those who experienced less control in their pre-retirement job. These findings accord with previous research showing that changes in self-efficacy (Dingemans & Henkens, 2015), autonomy (Henning et al., 2019), and internal locus of control (Gall et al., 1997) can be linked to changes in well-being over the retirement transition.

*Social support* was related to life satisfaction at both inter- and intra-individual levels, but individual differences in baseline levels of social support did not predict changes in life satisfaction over time. The findings suggest that individuals with more social support report higher life satisfaction, but they are not necessarily more likely to adjust well in retirement. The results suggest rather that the impact of retirement depends on whether or not it is associated with changes in the quality of personal relations. Retirement may cause a loss of work related contacts as well as it provides an opportunity to focus on non-work related relations. The loss of work-related relations seem to have a negative impact on life satisfaction, while improved non-work-related relations facilitates better adjustment. These findings may, however, also partially reflect negative effects on non-work-related relations; more time with family and friends is not necessarily a good thing if the quality of those relations are poor. The findings contribute to previous research on the role of social relations in the adjustment process (Jones et al., 2003; Nguyen et al., 2014; Price & Balaswamy, 2009; Taylor et al., 2008; Topa et al., 2017) by showing that the association varies depending on the level of assessment.

*Self-rated physical health* was mainly related to life satisfaction at the between-person level. The findings suggest that individuals who are more satisfied with their health report higher life satisfaction, but this association could not be attributed to intra-individual changes over time. The only exception relates to short-term changes in physical health: immediate improvements in physical health after retirement were related to increased life satisfaction, while negative changes were related to an overall decrease in

life satisfaction. This finding suggests that recovery from pre-retirement job demands facilitates better adjustment, while negative changes, related to for example less physical stimulation, increase the risk of health-related adjustment problems. These results, however, were not replicated in longer follow-up periods, which imply that immediate health changes are more important for life satisfaction than long-term changes. This finding veers from results of previous research using longer follow-up periods (Calvo et al., 2009; Kim & Moen, 2002; van Solinge & Henkens, 2008), and the discrepancy may be due to differences in the modeling procedure (i.e., accounting for individual differences at baseline) and the conceptualization of well-being. The findings in this thesis extend previous knowledge by systematically evaluating the role of self-rated health at different levels of assessment.

*Self-rated cognitive ability* was inconsistently related to life satisfaction across the three levels. The findings suggest that perceptions of cognitive ability are valuable for life satisfaction, but the association varies depending on the modeling procedure, time of assessment, and the inclusion of other variables. The results nevertheless demonstrate that changes in perceived cognitive ability can be related to changes in life satisfaction over the retirement transition. This finding extends previous knowledge by showing that retirement variously influences life satisfaction depending on its impact on perceived cognitive capacity. Positive effects related to recovery from a cognitively demanding job thus appear to be beneficial in the adjustment process, while the negative effects of decreased cognitive stimulation may increase the risk of maladaptive adjustment.

*Financial resources* were mainly related to life satisfaction at the between-person level, although some effects were observed on intra-individual changes over time. The findings suggest that assessments of basic financial resources and perceived income adequacy are valuable for identifying people at risk for maladaptive adjustment. Lack of financial resources increase the risk for adjustment problems and negative changes in life satisfaction. The results confirm previous research showing that financial security contributes to individual differences in retirement adjustment (Earl et al., 2015; Kim & Moen, 2002; Muratore & Earl, 2015), but they also correspond with studies showing that psychological resources such as personal control or mastery are more important than financial assets (Dingemans & Henkens, 2015; Donaldson et al., 2010; van Solinge & Henkens, 2005).

In summary, the findings in this thesis suggest that resources are valuable for understanding individual differences in life satisfaction in the last years before and the first years following retirement. The six resource variables are, however, of limited value for understanding the process in which people adjust to changes associated with the transition. Changes in resources over the retirement transition accounted for only a small proportion of the

variability in changes in life satisfaction. More research is therefore needed to expand the knowledge of individual differences in adaptive capacity, i.e., why some people adjust well in retirement regardless of the impact on their resources and why some people have difficulties adjusting even if their resources remain unchanged.

## Theoretical Implications

The findings in this thesis extend current knowledge on retirement adjustment in four important ways. First, they show that resources influence life satisfaction in various ways depending on the type of retirement transition. Second, the results provide new insights into aspects of resource interdependency and the fact that the association between particular resources and life satisfaction varies systematically in relation to other available resources. Third, they demonstrate bidirectional associations between resources and life satisfaction over the retirement transition, suggesting that life satisfaction is itself an important predictor of how people adjust to changing life circumstances. Fourth, they show that personality can influence the adjustment process indirectly through its relevance for individual differences and intra-individual changes in resources.

## Type of Retirement Transition

The findings in Study I support the idea that a more gradual transition is beneficial in the adjustment process by facilitating more gradual lifestyle changes (Beehr & Bennet, 2015; Shultz & Wang, 2011; Wang & Shultz, 2010; Zhang & Wang, 2015). The results demonstrate that individual differences in resource capability account for a larger proportion of changes in life satisfaction in abrupt, rather than in gradual, retirement, which suggests that resources are more important for life satisfaction when retirement is associated with more immediate lifestyle changes. The findings particularly show that the negative effects of scarce financial resources are less detrimental for those who continue to work in retirement.

The interaction effect of transition type and resources on life satisfaction suggests that post-retirement work help to mitigate the negative effects of retirement, but could also hamper the potential positive effects. Those lacking basic financial resources reported negative changes in life satisfaction over the retirement transition, and this decline was less steep for those who retired gradually. Retirees with access to fundamental financial resources showed overall increases in life satisfaction, but this effect was also less pronounced for those who continued to work in retirement. This finding implies that bridge employment mitigates the effects of retirement—

prolonged workforce participation in retirement enables people to adjust gradually to changing life circumstances, but it also limits a person's ability to pursue desired activities.

The results suggest that the type of retirement transition can be viewed as and antecedent in the resource-based dynamic model. A gradual transition generate more successive lifestyle changes which, in turn, should influence the availability of resources. The negative effects of retirement on a person's resources would thus be less pronounced for those who retire gradually. For most people, retirement is associated with decreased income. Prolonged workforce participation may mitigate this effect by lessening the slope of the income decline. Similarly, loss of the work role could decrease a person's sense of self-worth, and a gradual transition that enables a person to continue to work in retirement should therefore help to mitigate this effect. Bridge employment could however also hamper positive resource changes. An increased sense of personal control or autonomy in retirement is likely less pronounced for those engaged in post-retirement work, and the positive effects of the relief from work-related demands (e.g., physical and mental recovery) are presumably more distinct in abrupt than in gradual retirement. The empirical support for this supposition, however, is still limited.

A related issue concerns the extent to which a person can choose when and how to retire (de Vaus, Wells, Kendig, & Quine, 2007). Retirement decisions are regulated at the societal level (through the pension system), conditioned by job and organizational factors (e.g., opportunities to decrease working hours), and ultimately dependent on individual factors such as health, finances, and family circumstances (Beehr & Bennet, 2007; Beehr & Bennet, 2015). This means that not everyone has the same ability to choose their preferred exit route. Men and people with higher education generally have more opportunities in the labor force market (Wang, Adams, Beehr, & Shultz, 2009) and are therefore also more likely to engage in post-retirement work (von Bonsdorff, Shultz, Leskinen, & Tansky, 2009; Wang et al., 2008). The findings in this thesis confirm those observations and show that men and people with higher education were more likely to retire gradually, while women and those with primary or secondary education were overrepresented among those who transitioned into full-time retirement.

The decision to retire also depends on whether or not the person can afford to retire or if their ability to continue to work is constrained by health or family-related factors. A person may have the opportunity and desire, but may not be able to continue working in retirement because of declining health (Barnes-Farrel, 2003; Kim & Feldman, 2000; Topa, Moriano, Depolo, Alcover, & Morales, 2009). Other people might feel forced to continue to work in retirement to supplement their low pension income (Hatcher, 2003). The findings in this thesis show that retirees lacking basic financial resources

were more likely to continue to work, while those with access to fundamental financial security were more likely to retire fully between measurement waves. This implies that the decision to retire is partially driven by financial factors. The results further suggest that those lacking basic financial resources were more likely to retire earlier, and this may be related to an inability to continue working due to reasons such as ill-health. Social and structural differences in the labor market (e.g., salary and working conditions) could influence both people's ability to work longer and their future pension incomes. The findings in this thesis demonstrate that women and people with primary or secondary education were more likely to retire early, and they were also overrepresented among those retiring from part-time work. No differences were found, however, in self-rated health: those who continued to work did not report better health than those who retired. Furthermore, the results showed demographic differences in resource availability—men and people with higher education were more satisfied with their financial situation—but no effects were found on changes across the transition period. Social and structural factors may therefore help to explain systematic differences in resource capability, which in turn influence how well a person adjusts to retirement. A gradual transition should therefore be more beneficial for those at risk for negative changes in key resources.

This thesis contributes insights into the multidimensional and dynamic aspects of the transition to retirement by showing that the association between a particular resource and life satisfaction varies systematically depending on the type (gradual or abrupt) of transition. A more gradual transition may help to mitigate the negative effects of retirement for those without adequate resources, at the same time as prolonged workforce participation may hamper the positive effects related to the relief of work-related demands.

## Resource Interdependency

The findings in Study II demonstrate that the association between a particular resource and life satisfaction varies systematically depending on other available resources. The results particularly suggest that autonomy is more important for those in poor health, and that social support and perceived cognitive ability are more valuable for those without basic financial resources.

The observed interaction effects indicate that negative effects of poor health and lack of financial resources could be compensated for by higher levels of autonomy, social support and perceived cognitive ability. Retirees in poor health were less satisfied with their lives, but this association was not found for those who perceived their personal control as high. In fact, among



those who reported high autonomy no difference in life satisfaction was found between people in poor or good health. However, although higher autonomy was related to higher life satisfaction irrespective of health status, the effect was more pronounced among those in poor health. This finding is in line with previous research showing that perceptions of personal control are particularly valuable in the adjustment process and often exceed the effects of material resources such as health and economy (Donaldson et al., 2010; Price & Balaswamy, 2009). Lack of basic financial resources was associated with lower life satisfaction and more negative changes across the transition period, but the effect was less pronounced for individuals with more social support and those who perceived their cognitive abilities as good. High social support was more beneficial for life satisfaction among retirees with poor financial resources, and negative changes across the transition period were found only among those who perceived their cognitive ability as low. The compensatory effect of social support accords with research showing that supportive social relations are fundamentally important for the ability to cope with stressful life events (Hobfoll, 2002), but the effect of the cognitive resource domain has not previously been integrated into research on retirement adjustment.

The findings suggest that people with higher autonomy, more social support, and better perceived cognitive ability are more likely to be actively engaged in the transition process, regardless of their physical and financial resources. People who perceive their personal control as high, their social relations as supportive, and their cognitive abilities as adequate may be more likely to choose to engage in various social and/or leisure activities that in turn have beneficial effects on their life satisfaction and ability to adapt to changing life circumstances. People who feel in control of their situation (mentally, socially, or cognitively) may also be more likely to view retirement optimistically as an opportunity for new experiences despite insufficient physical and financial resources.

This thesis contributes insights into the multidimensional and dynamic aspects of the transition by showing that the importance of some resources for life satisfaction varies with other available resources. Psychosocial variables such as autonomy, social support, and perceived cognitive ability are particularly valuable in the transition process and may help to counteract the negative effects of poor health and lack of fundamental financial assets.

## Bidirectional Effects

The findings in Study III demonstrate bidirectional associations between resources and life satisfaction over the retirement transition. These results suggest that while resources are valuable in the adjustment process, overall

life satisfaction helps to explain both individual differences and intra-individual changes in resources.

Study III tested the fundamental assumption of the resource-based dynamic model: that well-being changes as a result of changes in individual resource capability. The results show partial support for this supposition and demonstrate that resource change can be linked to changes in life satisfaction over the retirement transition. These findings accord with previous research (Hershey & Henkens, 2014; Kim & Moen, 2002; Yeung, 2017; Yeung & Zhou, 2017) and provide initial support for the suggested mechanism. The effect sizes, however, were relatively small which suggests that multiple non-observed factors account for how well a person adjusts to changing life circumstances.

Analyses of bidirectional effects demonstrate that the adjustment process is influenced by bottom-up as well as top-down mechanisms. This means that perceptions of resource capability account for individual differences in life satisfaction (i.e., bottom-up process), but also that life satisfaction in itself is of relevance for how we view and evaluate our resources (i.e., top-down process). People with higher self-esteem and more total resources showed more positive changes in life satisfaction over the transition to retirement, and those who were more satisfied with their life reported more increases in autonomy and perceived cognitive ability across the transition. The findings suggest that people with higher life satisfaction are more likely to view retirement as an opportunity to pursue desired activities (i.e., more autonomy). The fact that individuals with higher life satisfaction showed more positive changes in perceived cognitive ability reflects the importance of well-being for how retirees view and evaluate their lives and opportunities in retirement. Life satisfaction can thus influence the adjustment process by determining how an individual reacts to and copes with changes associated with the transition. The development of a satisfying post-retirement life style could therefore depend on how people view and evaluate their resources, which in turn will influence adaptive behaviors and resource-building activities (Lyubomirsky et al., 2005).

This thesis contributes insights into the multidimensional and dynamic aspects of the transition by showing that both resources and overall life satisfaction influence a person's adjustment to retirement.

## Personality

The findings in Study IV demonstrate that personality can influence the adjustment process indirectly through its relevance to resource availability. The results particularly suggest that retirees with higher levels of neuroticism

are more likely to experience problems adjusting to retirement because of negative changes in key resources.

The findings suggest that personality can be seen as an antecedent in the resource-based dynamic model: individual differences in the Big Five personality traits help to explain both individual differences and intra-individual changes in resources over the retirement transition. The results showed that four of the five personality dimensions (extraversion, agreeableness, conscientiousness, and neuroticism) could be related to individual differences in the six resources variables, and that two of them (extraversion and neuroticism) were associated with intra-individual changes across the transition period. These findings suggest that agreeableness and conscientiousness mainly influence the adjustment process at the between-person level, helping to explain individual differences in resource capability, while extraversion and neuroticism are more likely to explain intra-individual changes over time. Openness was not related to levels or changes in any of the six resource domains. Extraversion, agreeableness, and conscientiousness were positively related to life satisfaction through higher levels of self-esteem, extraversion and conscientiousness through higher levels of autonomy, and extraversion and agreeableness through higher levels of social support. Neuroticism was negatively related to life satisfaction through lower levels of self-esteem and lower levels and negative changes in autonomy and social support.

The findings support the idea that higher levels of extraversion, agreeableness, and conscientiousness are beneficial in the transition process while higher levels of neuroticism increase the risk for maladaptive adjustment (Reis & Gold, 1993). The results imply that retirees with higher levels of extraversion are better equipped to cope with changes associated with the transition in that they are more likely to find and engage in resource-building activities, which in turn enable more supportive social relations, a higher sense of control, and better perceived self-worth. Agreeableness is thought to provide better opportunities for creating and maintaining social relations, and the findings suggest that retirees higher in agreeableness also have a more positive attitude toward themselves. Conscientiousness is assumed to facilitate more effective coping mechanisms and the results demonstrate that higher levels were associated with better perceived self-worth and a higher sense of control, which in turn were associated with higher life satisfaction. The results further suggest that retirees with higher levels of neuroticism have more difficulty maintaining their pre-retirement lifestyle, which increases their risk of negative changes in key resources. Evaluation of indirect pathways suggests that neuroticism increases the risk for maladaptive adjustment due primarily to decreased sense of control and

poorer social relations in retirement. The behavioral mechanisms involved in explaining these associations are, however, not yet established.

The association between personality and resources reflect both bottom-up and top-down mechanisms in retirement adjustment. The subjective nature of the different resource indicators implies that personality influences how a person views and evaluate various aspects of life (i.e., top-down process). The effects on intra-individual changes over time, however, suggest that personality influences how a person reacts to and copes with various aspects of the transition, which in turn influence resource availability (i.e., bottom-up process). The two processes are likely highly intertwined and simultaneously influence how a person adjusts to retirement. Perceptions of resource availability are likely to influence individual behavior in a given situation, which has important implications for the ability to build and maintain resources. For example, people who perceive their cognitive abilities as poor might not engage in cognitively stimulating activities, and this could influence their actual resource availability.

This thesis contributes insights into the multidimensional and dynamic aspects of the transition to retirement by showing that individual differences in the Big Five personality traits are relevant for understanding both inter-individual differences and intra-individual changes in resource capability. These findings are valuable for identifying people at risk for maladaptive adjustment in retirement.

## Strengths and Limitations

One of the main strengths of this thesis is that it is based on a large-scale longitudinal study that allowed for separation of between- and within-person effects. The longitudinal data enabled a systematic evaluation of the association between resources and life satisfaction at different levels of assessment, and this enhanced the ability to draw conclusions about the nature of these associations. By investigating how resources help to explain both inter-individual differences and intra-individual changes in life satisfaction, it is possible to identify people at risk for maladaptive adjustment at the same time as the mechanisms involved in explaining why some people experience more difficulty than others can be evaluated.

Another strength is that the HEARTS sample was selected to represent the general population in Sweden born between 1949 and 1955. The results can therefore be assumed to generalize beyond the specific sample studied in this thesis. The generalizability is limited by a relatively low response rate (39.4%) and the fact that the HEARTS sample consists of a relatively larger proportion of women and individuals with higher education than the

population as a whole (Lindwall et al., 2017). The low response rate should however be considered in relation to an overall declining trend in almost all European countries (Beullens, Loosveldt, Vanenplas, & Stoop, 2018), and the numbers are comparable to the response rates of the national health survey conducted by the Swedish Public Health Agency (2018).

A common problem in survey-based research is that it relies on people's willingness to participate and therefore tends to oversample those who are in better physical and mental condition (Bethlehem, 2010). The HEARTS study is no exception; participants with higher education were more likely to complete the follow-up assessments (Hansson, Berg, & Thorvaldsson, 2018) and those in poor physical and mental health were more likely to drop out (Lindwall et al., 2017). Analyses additionally revealed systematic attrition related to personality; individuals with higher agreeableness were more likely to participate in the follow-up waves while those higher in extraversion and neuroticism were more likely to drop out over time (Hansson et al., 2018). Systematic differences between web and paper-pencil respondents (Lindwall et al., 2017), however, suggest that the inclusion of a paper-based version of the survey helps to counteract such selectivity (Kelfve, Kivi, Johansson, & Lindwall, 2019). The longitudinal nature of the data also provides valuable opportunities to study changes across the transition period, and the modeling techniques used in the four studies help to account for missing over time (Graham, 2009; McArdle, 2009).

A third strength of this thesis is that it considers the multidimensional aspects of the transition. Not many studies have integrated all six resource domains in the resource-based dynamic model. As noted in the Introduction, most previous research has focused on the physical and financial domains, and very few studies have included aspects of all six resource domains (Barbosa et al., 2016). This approach enables an investigation of the relative importance of different resources. The theoretical implications are limited, however, by the fact that the selected indicators represent very specific aspects of each resource domain. Due to their subjective nature, the different resource indicators are also limited in that they may not accurately account for actual resource availability. Subjective measures are likely to differ from more objective indicators because they are conditioned on the extent to which people feel that they have access to a specific resource. Research on subjective well-being also suggests that mere access to resources does not necessarily generate higher life satisfaction (Diener, 2013; Diener & Biswas-Diener, 2002; Diener & Fujita, 1995; Diener et al., 1999). Instead, the importance of a particular resource likely depends on how it is valued by the individual and if it can be transformed into functions needed to reach a specific goal (Diener & Fujita, 1995; Sen, 1985). Subjective resource measures in this context are particularly valuable because by considering the individ-

ual's own perspective, they can capture discrepancies between perceived and anticipated capacity (Diener et al., 1998).

The resource-based dynamic model assumes a causal relationship between resources and well-being (i.e., that retirement variously influence well-being depending on its impact on resource availability). The present findings challenge this assumption by showing bidirectional associations between resources and well-being. The theoretical implications are limited, however, because they do not allow inferences about the causal mechanisms. The analyses were conducted on observational data, and the bidirectional effects involve a time lag (i.e., future outcomes were predicted by previous levels). This means that the results can be interpreted in terms of individual differences in intra-individual change—individuals with more resources are more likely to show positive changes in life satisfaction, and those who experience positive changes in resources tend to report more positive changes in life satisfaction—but they do not allow inferences about cause and effect.

A related issue concerns the risk for shared method variance and common causes related to implicit theories about retirement. Research on subjective well-being demonstrates that the association between overall life satisfaction and satisfaction with various life domains can be spurious and influenced by numerous factors related to the data collection and the participants' response behaviors (Fox & Kahneman, 1992; Headey, Veenhoven, & Wearing, 1991; Schimmack, 2008). Systematic differences in data collection (e.g., when and how participants respond to a questionnaire) could generate trends in the data regardless of whether people actually are changing or not. The relatively large sample size and the fact that most analyses were conducted on more than one follow-up assessment, however, should minimize such bias. Implicit theories about retirement could also generate artificial associations between the observed variables. Older workers' anticipation of retirement as a positive or negative life event can have important implications for how they evaluate many aspects of life. People with a negative attitude toward retirement may, for instance, report more negative changes whether or not they actually experience these changes. The present thesis did not account for such effects, but the inclusion of personality traits in Study IV provided initial insights into individual differences in how people view and evaluate various aspects of life in the years before and following retirement.

The generalizability of the findings is also conditioned on the national context in which the transition takes place. Sweden is a strong welfare state with high employment rates and relatively generous pension benefits, although the proportion of retirees with low income is higher than in other Nordic countries (OECD, 2017). The results may therefore not generalize to countries with substantially different retirement contexts. Furthermore, the

focus in this thesis was on normative retirement, i.e., retirement from work at (or close to) the normative retirement age. The effective retirement age in Sweden (65.8 years for men and 64.6 for women) is slightly higher than the OECD average (65.1 for men and 63.6 for women; OECD, 2017). The findings may therefore not generalize to non-normative retirements or to countries with radically different retirement norms and regulations. The generalizability of the findings could also be restricted to the specific birth cohorts (i.e., 1949–55) studied in this thesis. Historical and contextual factors are likely to influence people's anticipation and experience of retirement. The experiences and expectations of people retiring today are different from those of earlier born cohorts, and future generations are likely to approach new challenges and opportunities. Demographic changes, technical developments, rapidly changing labor market conditions, and changes in retirement and pension policies are just a few factors that are likely to influence the experiences of future generations (Henkens et al., 2018).

## Practical Implications

The findings in this thesis are valuable for identifying people at risk for maladaptive adjustment in retirement. The results suggest that people generally adjust well to retirement and the overall trajectory demonstrates a small but significant increase in life satisfaction over the transition period. However, the results also reveal substantial individual variability in the changes and show that a significant proportion of retirees have problems adjusting to retirement.

Practitioners should take this heterogeneity into account and consider that multiple factors contribute to explain why some people have more difficulties than others. Retirees without fundamental financial security are particularly vulnerable. A gradual transition from work to retirement might help older workers adapt to the associated changes over time, leading to better adjustment and higher well-being in retirement. Supportive social relations and well-functioning cognitive abilities may also contribute to counteract negative effects for those in lack of adequate financial resources. The findings further suggest that a higher sense of control may help to compensate for negative effects of poor health.

Individuals with higher levels of neuroticism are also more likely to experience adjustment problems. A supportive environment that helps the retiree to maintain structure and continuity in central aspects of daily life may help to counteract negative experiences in retirement. The findings suggest that the individual's total resource capability is particularly relevant in the transition process. Practitioners should therefore consider the extent

to which retirement brings changes in central aspects of daily life. For instance, decreased sense of self-worth due to loss of the work role might be counteracted by new meaningful activities in retirement.

Practitioners should also take into account that life satisfaction in itself is of relevance for how people view various aspects of life, and this can influence how well they adjust to retirement. Finally, practitioners should consider the fact that not everyone has the same opportunity to choose when and how to retire, and this choice or lack of it can have important implications for how well a person adapts to their changed circumstances in retirement.

## Future Directions

Future research on retirement adjustment should consider the multi-dimensional and dynamic aspects of the transition and multiple potential interactions in the effects of retirement on individual well-being. The findings in the four studies provide initial support for the resource-based dynamic model, but they also show that the mechanisms are not necessarily as straightforward as initially depicted.

Continued research in the area would benefit from a more detailed investigation of the relative importance of different resource indicators and the factors involved in explaining individual differences and intra-individual changes in resources. The weak yet consistent associations between resource change and changes in life satisfaction over the retirement transition indicate that other non-observed variables may help to explain why some people adjust well to retirement regardless of whether or not their resources change. Individual differences in the capacity to adapt to changing life circumstances may help explain such discrepancies. The association between resource change and changes in life satisfaction may, for instance, vary depending on the relative importance of a particular resource or how much change the individual experiences in other resource domains. Negative changes in one resource domain could, for example, be compensated for by increases in other domains. The findings in Study II provide initial support for such interactions, but the empirical evidence is so far limited with respect to intra-individual associations. The findings in Study III suggest that an individual's total resource capability is more important than specific resource availability. More detailed analyses of the interconnection of different resources will likely contribute to a more nuanced picture.

Personality is another potential moderator of the association between resources and life satisfaction. The findings in Study IV suggest that individuals with higher levels of neuroticism are more vulnerable in the transition process because they are more likely to experience resource loss, but so far



there is limited knowledge of the consequences of these changes on life satisfaction. More research on the role of personality in the capacity to adapt to changing resources could contribute with additional insights into the involved mechanisms. Retirees with higher neuroticism may, for instance, be more vulnerable for resource change, and the association with life satisfaction could therefore be stronger for these people.

More detailed measures of the individual experience in retirement may help to disentangle the mechanisms involved in the adjustment process. More context-dependent measures of anticipations toward, and experiences in, retirement could provide important insights into the observed heterogeneity. The use of life satisfaction as an indirect indicator of adjustment is valuable because it allows for evaluation of changes across the transition period, but it also limits the ability to differentiate between factors of relevance to well-being in general and those related to the retirement process. The weak link between resource change and changes in well-being could thus be underestimated because it does not sufficiently account for the individual experience in this process. More frequent measurements around the retirement transition could also help to better capture short-term dynamics in adjustment. Alternative methodological approaches such as narrative interviews may also contribute to a better understanding of individuals' own perspectives on the challenges and opportunities of retirement.

More research is also needed on the factors of relevance for individual differences in resource capability. The findings in this thesis suggest that personality is a potential antecedent in the resource-based dynamic model, but knowledge of the behavioral mechanisms in these associations remains limited. Previous research suggests that personality predicts participation in various social, physical, and leisure activities (e.g., Beier et al., 2018; Jopp & Herzog, 2010; Stephan et al., 2014), which in turn facilitates resource-building (e.g., new social relations and better physical and cognitive health). This approach has not yet been integrated in research on retirement adjustment, and more knowledge about the involved mechanisms could contribute to a better understanding of the role of personality in this process.

## Conclusions

This thesis contributes to the current knowledge on retirement adjustment by showing that retirement influences life satisfaction in various ways depending on the availability of, and changes in, emotional, motivational, social, physical, cognitive, and financial resources. The findings highlight the multidimensional and dynamic aspects of the transition and demonstrate that individuals with more resources are more likely to adjust well to retire-

ment, but that changes in resources accounted for only a small proportion of changes in life satisfaction. This means that resources are valuable for identifying people at risk for maladaptive adjustment, but that multiple other individual and contextual factors influence how a person reacts to and copes with the various challenges associated with the transition. Type of retirement transition and individual differences in personality were shown to account for a substantial proportion of this heterogeneity, but more research is needed before any firm conclusions about the involved mechanisms can be drawn.

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# APPENDIX

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