Life Satisfaction in the Retirement Transition

A Resource-Based Dynamic Perspective on Retirement Adjustment
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ABSTRACT


Retirement from work is a multidimensional and dynamic process of adjustments 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 resource-based dynamic model of retirement adjustment suggests that well-being in the retirement transition depends on the availability of emotional, motivational, social, physical, cognitive, and financial resources. The applicability of this model was investigated in two studies using data from the larger Swedish longitudinal population-based HEARTS (HEalth, Ageing, and Retirement Transitions in Sweden) study, including 5 913 individuals aged 60–66 at baseline.

In Study I, the importance of self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources for life satisfaction was investigated in a cross-sectional sample including workers (n = 2 725), bridge employees (n = 565), and retirees (n = 1 074). Hierarchical multiple regression analyses showed that the six resources accounted for 46% to 49% of observed variance in life satisfaction among workers, bridge employees, and retirees. Autonomy was the strongest predictor in all three retirement groups, while no effects were found for self-rated cognitive ability in any of the groups. Interaction effects revealed that the relationship between a particular resource and life satisfaction can vary depending on other available resources, but also that these effects differ between workers, bridge employees, and retirees. Multiple interactions, both compensatory and cumulative, were observed for participants who were partially or fully retired, but no interaction effects were found among those not yet retired.

In Study II, the six resources were evaluated for their influence on changes in life satisfaction over one year. The sample (N = 4 025) included seven groups of people at various stages of the retirement transition. Results from multiple group latent change score models showed no overall effect for type of transition, but individual differences in resources were associated with both levels and changes in life satisfaction. High self-esteem, strong social support, good physical health, and basic financial resources were generally associated with increased life satisfaction after one year. The effects of available resources, however, varied with the type of transition and accounted for a larger proportion of changes in life satisfaction in participants who retired fully (27%) between the two waves of data collection than in those who retired gradually (17%). The findings suggest that bridge employment may serve as a buffer against the negative effects of retirement for individuals with poor financial resources.

This thesis contributes to our understanding of retirement adjustment by investigating factors accounting for within- and between-person differences in subjective well-being in the transition to retirement.

Keywords: retirement transition, retirement adjustment, resource-based dynamic perspective, life satisfaction, individual resources, bridge employment
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Swedish Summary


Pensioneringen har traditionellt beskrivits som en kris och en period präglad av förluster. Idag vet vi att majoriteten (ca 70–75 %) av alla som går i pension hanterar övergången väl och endast upplever mindre förändringar i välbefinnande. Av de resterande upplever en mindre grupp (ca 5–15 %) positiva effekter av att gå i pension medan en något större grupp (ca 10–25 %) påverkas negativt. Däremot vet vi fortfarande förhållandet om
hur själva anpassningsprocessen ser ut och vilka faktorer som påverkar vår förmåga att anpassa oss till livet som pensionär.


Enligt modellen kan pensioneringen också innebära förändringar i tillgången till olika typer av resurser, något som i sin tur påverkar hur vi mår. Att gå i pension kan till exempel medföra minskade ekonomiska och sociala resurser. Det kan även leda till förbättrade emotionella och motivationella resurser om pensioneringen upplevs som en befrielse från arbetets krav och förpliktelser. Pensioneringen kan också medföra en kortsiktig förbättring av fysiska och kognitiva resurser om man lämnar ett fysiskt och/eller mentalt krävande arbete, men en långsiktig försämring om den leder till minskad fysisk och kognitiv stimulans.

I modellen betonas pensionsövergången som en dynamisk process, vilket innebär att pensioneringen inte ses som något absolut positivt eller negativt. Man antar istället att individens välbefinnande kan förändras över tid, allt eftersom man anpassar sig till och bygger upp en ny tillvaro som pensionär.

Tidigare forskning har i huvudsak fokuserat på betydelsen av hälsa och ekonomi för individens förutsättningar att trivas med livet som pensionär. Dessa studier visar inte helt överraskande att personer med goda fysiska och ekonomiska förutsättningar klarar sig bättre än de med sämre förutsättningar. Andra studier har visat att sociala relationer, självkänsla och personlig kontroll är viktiga för välbefinnandet i pensionsövergången. Få studier har däremot inkluderat samtliga sex resurstyper som föreslås i de resursbaserade dynamiska modellen. Detta innebär att vi inte vet så mycket om i vilken utsträckning betydelsen av en specifik resurs är beroende av tillgången till andra resurser.

att också undersöka om betydelsen av olika resurser varierar beroende på om man lämnar arbetet gradvis eller helt och hållet från en dag till en annan. Dessa frågeställningar undersöks här närmare genom två studier.

I denna licentiatavhandling ligger fokus på det subjektiva välbefinnandet, som här studeras genom skattnings av livstillförmåga. Studie I baseras på material från det första mättillfället i HEARTS-projektet. I Studie II undersöks förändringar i välbefinnande genom uppföljningen efter ett år.

I båda studierna inkluderades de sex resurstyper som föreslås i den resursbaserade dynamiska modellen: (1) emotionella, (2) motivationella, (3) sociala, (4) fysiska, (5) kognitiva, och (6) ekonomiska resurser. De sex resurserna representerades i båda studierna genom mätningar av: (1) självkänsla, (2) autonomi, (3) socialt stöd, (4) självskattat fysisk hälsa, (5) självskattat kognitiv funktion, och (6) grundläggande ekonomiska förutsättningar. Med självkänsla avses individens egen uppfattning om sig själv och sin egen duktighet (t.ex. "Jag tycker att jag har många goda egenskaper"). Grad av autonomi reflekterar individens upplevelse av kontrast och självbestämmande i sin tillvaro (t.ex. "Jag upplever valmöjlighet och frihet i de saker jag gör"). Socialt stöd speglar kvalitet snarare än kvantitet i sociala relationer (t.ex. "Det finns en speciell person som jag kan dela glädje och sorg med"). Fysisk hälsa och kognitiv funktion mäts genom egna skattnings av allmänt hälsotillstånd och tankeförmåga. Med grundläggande ekonomiska förutsättningar avses att personen innehar en ekonomisk buffert på 15 000 kronor för oförutsedda kostnader.

I Studie I undersökt sambandet mellan de sex resurstyperna och subjektivt välbefinnande i olika stadier av pensionsövergången. Mer specifikt studerades betydelsen av resurserna hos de individer som (1) ännu inte lämnat arbetslivet (n = 2 725), (2) börjat ta ut pension men fortfarande är yrkesverksamma (n = 565), eller (3) är heltidspensionärer (n = 1 074). Resultaten visade att individuella skillnader i självkänsla, autonomi, socialt stöd, fysisk hälsa och ekonomiska resurser förklarade 46–49% av variationen i livstillförmåga i de tre grupperna. Upplevd autonomi var den faktor som bäst förklarade skillnader i subjektivt välbefinnande. Inget samband hittades mellan upplevd kognitiv funktion och livstillförmåga i någon av de tre grupperna.

Resultaten från Studie I visar att betydelsen av en specifik resurs varierar beroende på vilka andra resurser som finns tillgängliga, men också att dessa effekter skiljer sig mellan yrkesverksamma, deltidspensionärer och heltidspensionärer. Både kompensatoriska och kumulativa effekter identifierades. Med kompensatoriska effekter menas att sambandet mellan en specifik resurs och välbefinnande är svagare i närvaron av andra resurser, vilket indikerar att
resurserna skulle kunna kompensera för varandra. Sådana effekter identifierades mellan självkänsla och fysisk hälsa (del- och helpensionärer), autonomi och socialt stöd (delpensionärer) och mellan socialt stöd och fysisk hälsa (helpensionärer). Med kumulativa effekter menas att sambandet mellan en specifik resurs och välbefinnande är starkare i närvaron av andra resurser, något som tyder på att resurserna är beroende av varandra för att inverka på välbefinnandet. Dessa effekter identifierades mellan självkänsla och autonomi (delpensionärer), självkänsla och ekonomiska resurser (delpensionärer), socialt stöd och fysisk hälsa (delpensionärer) och mellan autonomi och fysisk hälsa (helpensionärer). Studie I illustrerar att betydelsen av en specifik resurs är mindre beroende av närvaron av andra resurser före jämfört med under och efter pensionsövergången.

I Studie II undersöktes förändringar i subjektivt välbefinnande efter ett år. Mer specifikt studerades betydelsen av typ av pensionsövergång (hel- eller deltidspensionering) och i vilken utsträckning de sex resurserna kan relateras till förändringar i livstillfredsställelse. Deltagarna (N = 4 025) delades in i sju olika grupper utifrån hur de förändrade sin pensionsstatus mellan det första och andra mättillfället. Resultaten visade att de som gick i pension upplevde en ökning i välbefinnande efter ett år. Däremot fanns ingen skillnad i förändring beroende på om man lämnade arbetet gradvis eller helt och hållet. Individuella skillnader i självkänsla, socialt stöd, fysisk hälsa och ekonomiska förutsättningar kunde relateras till förändringar i livstillfredsställelse. Mer resurser var generellt förknippade med ett ökat välbefinnande medan sämre resurser associerades med en försämring efter ett år.

Resultaten från Studie II visar också att betydelsen av de sex resurserna varierade beroende på typ av pensionsövergång. Resurserna förklarade en större proportion av förändringarna i välbefinnande för de som gick i helpension (27 %) jämfört med de som gick i delpension (17 %) mellan mättillfällen. Resultaten visade bland annat att personer med låg grad av autonomi året innan de gick i pension upplevde pensioneringen som mer positiv jämfört med de med högre autonomi. Detta resultat speglar en känsla av lättnad och befrielse från arbetets åtaganden och med pensioneringen. Studie II indikerar att individer med sämre ekonomiska förutsättningar riskerar att påverkas negativt av att gå i pension, men att en gradvis övergång till viss del kan motverka denna effekt.

* * * *

Sammantaget visar de två studierna att graden av självkänsla, autonomi, socialt stöd, fysisk hälsa och ekonomiska förutsättningar är av betydelse för det subjektiva välbefinnandet i övergången från arbetsliv till pension. Betydelsen av en specifik resurs verkar dock variera beroende på vilka andra
resurser som finns tillgängliga, men också på om man lämnar arbetet delvis eller helt och hållet från en dag till en annan.

Resultaten är av relevans för att förstå vilka faktorer 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 konsekvenserna av en växande äldre befolkning.
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Isabelle Hansson
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Preface

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


Introduction

Populations around the world are increasingly ageing (OECD, 2006). In Sweden, it is estimated that 25% of the population will be 65 years or older in 2060 (Statistics Sweden, 2017). A major challenge to the Swedish welfare system is that more than 80% of Swedish workers retire from the labor force at or before age 65 (SOU 2012:28). An increase of the retirement age has been recommended as a necessary step to meet the demands of a growing proportion of older adults (SOU 2012:28). The financial incentive for increasing the health and well-being of older adults is another important factor in the growing interest in retirement research in political, socio-economic, and human resources areas (Wang & Shi, 2014).

This thesis is based on two empirical studies focusing on the transition from work to retirement in older adulthood. In particular, levels and changes in life satisfaction were studied in the years before and after retirement. The two studies are based on data from the Swedish longitudinal population-based HEalth, Ageing and Retirement Transitions in Sweden (HEARTS) study, designed to shed light on psychological aspects of the retirement transition.

Retirement in the Context of Lifespan Development

Retirement from work in older adulthood is a major life event. It serves as a marker of the transition from pre-retirement midlife to a new life phase as a senior citizen (Ekerdt, 2010). This transition involves a process of psychologically and behaviorally distancing oneself from the workforce (Shultz & Wang, 2011). People are confronted with new social roles, expectations, challenges, and opportunities, all of which have the potential to influence their well-being (Wang & Shi, 2014). In the context of lifespan development, retirement can be viewed as a developmental task (Baltes, 1987).

Lifespan development refers to the ongoing dynamics between gains and losses across the life course (Baltes, 1987). Development is here defined as “any change in adaptive capacity of an organism, whether positive or negative” (Baltes, 1987, p. 616). Developmental tasks involve problems, challenges, or life-adjustment situations across the life course caused by biological development, social expectations, or personal action (Baltes, 1987). Retirement constitutes a developmental task in the sense that the pension system is constructed around chronological age (i.e., related to
biological development), but it is also driven by social expectations (e.g., work and family situation) and personal actions (i.e., behavioral withdrawal from work).

From a lifespan perspective, no process of development consists of only growth or progression (Baltes, 1987). Instead, changes across the lifespan are described as systematic configurations of growth, maintenance (including repair and recovery), and regulation of loss (Baltes & Smith, 2004). As a developmental task, retirement is associated with aspects of both loss (e.g., decreased social, cognitive and/or physical stimulation) and gain (e.g., more time to pursue desired activities). Successful development is in this respect viewed as the relative maximization of gains and the minimization of losses (Baltes, 1997).

Developmental processes are also influenced by various contextual factors. Biological and environmental determinants of developmental influences can be divided into three broad categories: (a) age-graded (ontogenetic), (b) history-graded, and (3) non-normative (Baltes, 1987; Baltes & Smith, 2004). Age-graded influences include factors closely related to chronological age, for example biological maturation and age-graded socialization events (such as retirement). History-graded influences constitute the larger evolutionary, biocultural context in which individuals develop. Such influences include long-term societal changes (e.g., modernization) as well as more time or period-specific events (e.g., war). Non-normative influences include those sequences and events that deviate from the general and predictable course (e.g., unexpected death of significant others).

Retirement should thus be described as a contextually embedded developmental process (Elder, 1995; Elder & Johnson, 2003; Settersen, 2003) conditioned by the specific circumstances in which the transition occurs (Damman, Henkens, & Kalmijn, 2015). Factors likely to influence this process include: control over the transition, individual attributes (e.g., resources and demographic characteristics) and history (e.g., experiences from previous life transitions, and current and past job experiences (Wang, Henkens, & van Solinge, 2011).

In sum, the lifespan perspective provides a theoretical framework for understanding the complex multidimensional and multidirectional dynamics of human development across the life course. Within this framework, the retirement transition is understood as a developmental task in which the individual is confronted with aspects of both loss and gain. In addition, the specific developmental trajectory is to be understood in the context of multiple biological and environmental factors.
Retirement and Subjective Well-Being

As a developmental task, retirement may influence individual well-being in multiple ways. Subjective well-being reflects a person’s adaptive capacity and serves as one of the central indicators of psychological vitality in late adulthood (Smith & Ryan, 2015). The focus in this thesis is thus on the role of retirement for levels and changes in subjective well-being among Swedish older adults.

Subjective well-being refers to a person’s own evaluation of their life (Diener, 1984), and it has been identified as an important predictor of future health status and survival (Diener, & Chan, 2011; Wiest, Schüz, Webster, & Wurm, 2011). The concept of subjective well-being developed within a hedonic philosophical tradition, in which well-being is means maximizing pleasant and minimizing unpleasant experiences (Kahneman, Diener, & Schwarz, 1999). According to Diener (1984), subjective well-being consists of two components, one affective and one cognitive. The affective component includes positive and negative emotions, whereas the cognitive domain comprises satisfaction with life. Within this framework, high levels of positive emotions and life satisfaction, and low levels of negative emotions, are fundamental for well-being.

The two studies conducted in this thesis focus on life satisfaction, here defined as the global cognitive evaluation of overall satisfaction with life (Diener, 1984). The decision to use life satisfaction as an indicator of subjective well-being was based on the assumption that this measure is less sensitive to personal and situational characteristics than measures of positive and negative affect (Diener, 2000; Diener, Suh, Lucas, & Smith, 1999).

Conceptualizations of Retirement

In psychological research, retirement has often been conceptualized as a decision-making process (Wang & Shi, 2014). In this view, retirement is a motivated choice behavior where the individual chooses to decrease their psychological commitment to work and behaviorally withdraw from work-related activities (e.g., Adams, Prescher, Beehr, & Lepisto, 2002; Feldman, 1994).

In conceptualizing retirement as a decision-making process, older workers are assumed to make their retirement decisions based on information they have about their own characteristics and their work and non-work environment (Wang & Shultz, 2010). Factors influencing the decision include health, family care needs, attitudes toward work, and desire for leisure activities (Wang & Shi, 2014). It is hypothesized that, after the decision is made, the person systematically decreases work-related activities and
increases non-work, such as family- and community-related, activities (Smith & Moen, 2004).

A limitation of this conceptualization is that it assumes that all retirement decisions are voluntary. The theoretical usefulness of this approach thus depends on the extent to which the retirement decision is a result of personal choice (Wang & Shultz, 2010). If the decision is not voluntary, but forced through regulations in the pension system, conceptualizing retirement as a decision-making process is no longer applicable. This approach is therefore conditioned by the voluntariness of the decision.

An alternative approach is to view retirement as a process of adjustment. This approach provides a more comprehensive understanding of retirement that includes more than decision making (Wang, Adams, Beehr, & Shultz, 2009) and see retirement as a longitudinal developmental process (Wang, 2007) that incorporates not only the transition from employment to retirement, but also the person’s development in post-retirement life (Wang & Shultz, 2010). Retirement is described as a process of adjusting to new life circumstances while seeking to achieve psychological comfort in the life as a retiree (van Solinge & Henkens, 2008).

In conceptualizing retirement as an adjustment process, 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 conceptualization emphasizes the complex functional mechanism of retirement rather than the simple decision content (Szinovacz, 2003).

Theories on Retirement Adjustment

How retirement affects 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 there is growing recognition 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.

In role theory, retirement is described as a role transition (Riley & Riley, 1994) in which individual well-being is threatened by the loss of a 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 could lead to low levels of well-being in retirement (Riley & Riley, 1994).

Continuity theory emphasizes the importance of consistency in certain aspects of life for individual well-being (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 with 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 on well-being (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 longitudinal aspects of retirement adjustment, 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 is 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). It is assumed that adjustment is facilitated by access to resources; more resources are expected to lead to fewer difficulties in adjusting to retirement. COR theory also accounts for dynamic aspects of retirement adjustment as it assumes that well-being will change with changes in individual resources.
over time (Hobfoll, 2002). In this view, decreased well-being caused by one resource loss can be compensated for with a gain in another resource. Resource theory therefore provides a framework for understanding within-person fluctuations in well-being over time.

In a review of theories and empirical advancements on retirement adjustment, Wang and colleagues (2011) concluded that our understanding of the underlying mechanisms for successful adjustment to retirement is still lacking. They argued that the field would benefit from a more integrative theoretical framework and proposed a resource-based dynamic perspective for future research on retirement adjustment.

A Resource-Based Dynamic Perspective

The resource-based dynamic model on retirement adjustment of Wang and colleagues (2011; see Figure 1) claims that retirement is a dynamic longitudinal process in which individual well-being is influenced by available resources and changes in these resources over time. The model is proposed as an integrative theoretical framework suitable for the study of various outcomes of retirement and the underlying mechanisms through which retirement impacts well-being. Unlike the previous theories on retirement, this framework could potentially account for both within- and between-person differences in retirement adjustment.

The driving mechanism of change in well-being in this view is the (changing) availability of resources, which is influenced by several factors on the micro, meso, and macro levels. Physical, cognitive, motivational, financial, social, and emotional resources are especially important in this process. 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.

This model suggests that we can expect negative effects on well-being if retirement is associated with resource loss and positive effects in cases of resource gain. Accordingly, well-being will be unaffected if the total resource capability is 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 a gain in other resources.
Research on Retirement Adjustment

Retirement adjustment refers to the psychological comfort with life in retirement (Wang et al., 2011) and is often indicated by direct measures of adjustment to and satisfaction with retirement, although more indirect measures (e.g., life satisfaction) are frequently used (Barbosa, Monteiro, & Murta, 2016). Research on retirement adjustment has typically focused on two aspects of the transition: (1) the impact of retirement, and (2) factors related to retirement adjustment quality (Wang et al., 2011).

Recent reviews on the impact of retirement (e.g., Henning, Lindwall, & Johansson, 2016) suggest that for the majority retirement has limited influence on well-being. Nevertheless, a considerable body of research indicates that the impact may differ both within and between 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 of older workers likely to experience problems adjusting to retirement.

In a review of factors influencing retirement adjustment quality, Barbosa and colleagues (2016) identified 25 predictors related to direct or indirect indicators of retirement adjustment. The most frequent predictors included
physical health, finances, psychological health and personality, leisure activity, voluntary retirement, and social integration.

The applicability of a resource perspective in the study of retirement adjustment has received considerable support (see Barbosa et al., 2016, for a recent review). However, most previous research has focused on a limited set of resources, 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). People with poor health and financial problems are more likely to experience problems adjusting to retirement (e.g., Earl, Gerrans, & Halim, 2015; Kim & Moen, 2002; Muratore & Earl, 2015).

The role of psychosocial resources in retirement adjustment has been studied less frequently, even though factors such as social support, self-esteem, and perceived control are known to be key components of well-being (Hobfoll, 2002). It is reasonable to assume that retirement is associated with changes in several resource domains. Retirement may lead to lowered income and decreased social, physical, and/or cognitive stimulation, but it can also influence psychological resources such as self-esteem (i.e., decreased sense of self-worth) and sense of personal control (i.e., more time to pursue desired activities), two factors known to be crucial for adjusting to new life circumstances (Hobfoll, 2002).

Only eight of the studies reviewed by Barbosa and colleagues (2016) explicitly include more than two of the six resource domains specified in the resource-based dynamic model (Wang et al., 2011). None of them include all six domains. In these studies, physical and financial resources are typically accompanied by measures of social and/or motivational resources. Social resources, frequently measured in terms of frequency and/or quality of social relations, were found to predict retirement adjustment in 63% of the studies (e.g., Earl et al., 2015; Price & Balaswamy, 2009). In their review, Barbosa and colleagues (2016) make no distinction between cognitive, motivational and emotional resources, as suggested in the model by Wang and colleagues (2011). Instead, they categorize all three as indicators of psychological resources. Motivational resources, however, often measured as self-efficacy or personal control or mastery, are the most common type reported in this umbrella category. Lack of personal control or mastery is generally associated with adjustment problems (Earl et al., 2015; Kim & Moen, 2002; Muratore & Earl, 2015; Price & Balaswamy, 2009; Reitzes & Mutran, 2004). Self-esteem, as an indicator of emotional resources, has also previously been related to retirement adjustment (e.g., Price & Balaswamy, 2009; Reitzes & Mutran, 2004). Interestingly, none of the 115 studies reviewed by Barbosa and colleagues (2016) included measures of cognitive resources (i.e., memory, processing speed, or general cognitive ability). More in-depth
studies on the role of psychological resources could contribute to the understanding of heterogeneity in retirement adjustment as these resources are likely to influence how people react to and cope with changes associated with the transition (van Solinge, 2012).

To date, only one study on retirement adjustment has explicitly included all six resource domains. Leung and Earl (2012) evaluated a resource inventory and found the six resource types to be aggregated in three clusters with a shared variance between material (i.e., physical and financial) and psychological (i.e., cognitive, emotional, and motivational) resources. Social resources were in this study the only resource type identified as a separate domain. Thus, there is still limited empirical support for the applicability of a six-factor resource model in the study of retirement adjustment.

Another central premise in the resource-based dynamic model is the possibility that a resource loss may be compensated for by a gain in another resource (Wang et al., 2011). Resources are assumed to be interdependent and influence well-being variously depending on the availability of other resources. Only one previous study on retirement adjustment has addressed this issue and investigated the effects of resource interdependency on retirement. Zaniboni (2015) investigated the interaction between personal resources and workplace discrimination (as an indicator of social resources) and their influence on desired retirement age and expected future retirement adjustment among older workers. The results showed that personal resources were associated with selected outcomes only among people who experienced low age discrimination at work. However, Zaniboni made no distinction between the distinct types of psychological resources suggested by Wang and colleagues (2011), and the study was conducted using only a limited subset of the resource domains specified in the model. An additional limitation of Zaniboni’s study was that the outcome measure related to expected adjustment rather than actual comfort in retirement. Thus, there is a need to improve our understanding of the importance of emotional, motivational, social, physical, cognitive, and financial resources in relation to each other.

The Changing Nature of Retirement

Retirement is a multidimensional and dynamic process (van Solinge, 2012) that no two people are likely to experience in exactly the same way (Shultz & Wang, 2011). Retirement is no longer viewed as a one-step permanent career exit (Wang & Shultz, 2010; Zhan & Wang, 2015). As an intermediate step toward a complete withdrawal from the labor force, many retirees continue to work to some extent through bridge employments (Shultz, 2003). Bridge employments can take several forms, and today it has become relatively
common among older workers to retire, “un-retire”, and “re-retire” several times (Beehr & Bennet, 2014; Shultz & Wang, 2011).

In this context, the Swedish retirement system is relatively flexible. The old-age pension consists of three components: public pension, occupational pension, and private pension savings. After the age of 61, a worker can mostly choose when and how to receive their pension from the three funds. Notably, only seven percent of people aged 66–74 in Sweden are engaged in the labor force; of these, men and those who are highly educated are overrepresented (SOU 2012:28). Given the growing societal interest in increasing work engagement among older adults, it is important to investigate the extent to which prolonged work engagement may influence well-being.

Bridge employment is often described as an optional part of the retirement process (Shultz & Wang, 2011; Wang & Shultz, 2010) and it is assumed to be beneficial for physical and psychological well-being (Zhan, Wang, Liu, & Shultz, 2009). In their review on bridge employment, Zhan and Wang (2015) suggested that it may serve as a coping mechanism in the adaptation process. In this sense, bridge employment can be a strategy against the adverse effects of an abrupt loss of work role and act to preserve continuity in lifestyle patterns (e.g., Wang & Shultz, 2010; Zhan & Wang, 2015). It can also be an opportunity to financially and psychologically prepare for complete withdrawal from the labor force (Zhan & Wang, 2015). Similarly, Beehr and Bennet (2014) proposed that bridge employment may help people to maintain central structures in their daily life, including the financial situation, everyday schedule, social contacts, physical activity, and sense of identity.

Bridge employment has been shown to be beneficial in the retirement adjustment process as it predicts both retirement satisfaction and overall life satisfaction (Kim & Feldman, 2000). It also seems to contribute to a smooth transition, producing less change in well-being than for those who retire directly with no bridge employment (von Bonsdorff, Shultz, Leskinen, & Tansky, 2009; Wang, 2007). Bridge employment has also been found to mitigate the negative impacts of involuntary retirement on life satisfaction (Dingemans & Henkens, 2014).

However, in other studies, bridge employment has been shown to have negative influences on well-being even though retirees generally report positive reasons for working after retirement (Dingemans, 2016; Fasbender, Wang, Voltmer, & Deller, 2015). For instance, some retirees enter bridge employment involuntarily because of financial constraints (Zhan, 2016). Dingemans and Henkens (2014) found that bridge employment for financial reasons seems to be associated with decreased life satisfaction. De Vaus and colleagues (de Vaus, Wells, Kending, & Quine, 2007) found that gradual retirement was associated with less health deterioration, but more adjustment problems than a clearer break from employment to retirement. No differences
were, however, found between the groups in terms of psychological well-being.

Several reviews on bridge employment (e.g., Beehr and Bennet, 2014; Wang & Shultz 2010; Zhan & Wang, 2015) have concluded that more research is needed on the various outcomes of bridge employment. It has been argued that even though bridge employment is generally believed to ease retirement adjustment (Cahill, Giandrea, & Quinn, 2013) there remains a lack of studies on the underlying mechanisms of how and why retirees may (or may not) benefit from prolonged work engagement after retirement (Zhan & Wang, 2015). For instance, bridge employment may be more or less beneficial for retirement adjustment depending on individual differences in resource capability.

Aim of the Thesis

The aim of this thesis is to investigate the applicability of the resource-based dynamic model (Wang et al., 2011) in studying retirement adjustment as estimated indirectly through measures of life satisfaction.

All six resource domains suggested in the model are included: (1) emotional, (2) motivational, (3) social, (4) physical, (5) cognitive, and (6) financial. These six resources are measured through: (1) self-esteem, (2) autonomy, (3) social support, (4) self-rated physical health, (5) self-rated cognitive ability, and (6) basic financial resources. Given the changing nature of retirement, the applicability of the model was studied for different types of retirement statuses and transitions.

The importance of the six resources for life satisfaction in the retirement transition was evaluated in two studies:

I. In Study I, the importance of the six resources for life satisfaction was investigated in a cross-sectional sample including people who were not yet retired (workers), partially retired (bridge employees), and fully retired (retirees). The interdependency of the selected resources, i.e., their impact on life satisfaction in relation to each other, was also studied.

II. Study II was designed to investigate to what extent the six resources are associated with changes in life satisfaction after one year, and whether these effects depend on the type of transition. Both the type of transition and individual differences in resource capability were assumed to be related to changes in life satisfaction in the retirement transition.
Three hypotheses were formulated:

1) Gradual retirement is associated with less change in life satisfaction than observed for abrupt retirement.

2) All six resources are associated with changes in life satisfaction after one year; fewer resources at baseline are expected to generate a decrease, while more resources are assumed to produce an increase, in life satisfaction.

3) The effects of type of transition and individual resources vary systematically in relation to each other; the six resources account for a larger proportion of the variance in changes in life satisfaction for people who retire fully between waves of data collection than for those who retire gradually.
Methods

Sample and Procedure
The two studies were based on data from the Swedish longitudinal population-based HEalth, Ageing and Retirement Transitions in Sweden (HEARTS) study, designed to capture developmental psychological processes in the years before and after the retirement transition.

The participants in HEARTS were recruited from the Swedish register “Statens personadressregister” (SPAR). In April 2015, a representative national sample of 14,990 people aged 60–66 were invited to participate in the study. The participants were asked to complete a survey including questions about their socio-demographic background, work life and retirement, health, lifestyle, well-being, social relations, and personality. The data were collected mainly through the online platform “Qualtrics”, but a paper version of the questionnaire was generated for participants who did not respond after the second reminder six weeks later.

In total, 5,913 people (39.4%) participated in the first wave (T1); of those, 4,068 (69%) completed the web-based survey and 1,845 (31%) completed the paper version. The sample is in many ways representative of the population, although it consists of a slightly larger proportion of females and people with higher education than the general population born in Sweden from 1949 to 1955. The participants in HEARTS are followed annually, with the first follow-up (T2) conducted in spring 2016 resulting in a retention rate of 78.7% (N = 4,656).

Study I
Study I was based on three subsamples from the first wave of HEARTS (T1). To avoid potential confounding effects of labor market status (Wetzel et al., 2015), participants were excluded if they were unemployed (n = 161) or received disability pension (n = 397). Participants were also excluded if they did not complete the selected resource measures, resulting in a final sample of 4,364 individuals.

The subsamples were drawn based on self-reported retirement status from answers to the question “Are you retired (receive old-age pension)?”. Four response alternatives were given: (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.
For the purpose of this study, no distinction was made between the two middle response alternatives. Thus, a negative answer (no) was coded as working, the two middle alternatives (yes, but still working and consider myself a worker and yes, still working but consider myself a retiree) were coded as bridge employment and a positive answer (yes, full-time retiree) was coded as retired.

The three subsamples consisted of 2,725 workers (mean age 62 years, 54% women), 565 bridge employees (mean age 64 years, 45% women), and 1,074 retirees (mean age 65 years, 58% women).

**Study II**

Study II was based on data from the two first waves of HEARTS (T1 and T2). As in Study I, participants were excluded if they reported unemployment (n = 158) or disability pension (n = 333) at either T1 or T2. Participants were also excluded if they did not report retirement status at both T1 and T2 (n = 140), resulting in a final sample of 4,025 people with a mean age of 63.24 years (SD = 2.03), and 54% of whom were women.

As in Study I, retirement status was assessed with the question “Are you retired (receive old-age pension)?” at T1 and T2, but no distinction was made regarding whether participants perceive themselves as workers or retirees. Seven retirement transition types were generated based on their reported retirement statuses at T1 and T2 (see Table 1): worker (W), worker to bridge employee (WtB), worker to retiree (WtR), bridge employee (B), bridge employee to retiree (Br), retiree to bridge employee (RtB), and retiree (R).

<table>
<thead>
<tr>
<th>Retirement Transition Group</th>
<th>Retirement Status T1</th>
<th>Retirement Status T2</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker (W)</td>
<td>Worker</td>
<td>Worker</td>
<td>1,860</td>
</tr>
<tr>
<td>Worker to bridge employee (WtB)</td>
<td>Worker</td>
<td>Bridge employee</td>
<td>360</td>
</tr>
<tr>
<td>Worker to retiree (WtR)</td>
<td>Worker</td>
<td>Retiree</td>
<td>346</td>
</tr>
<tr>
<td>Bridge employee (B)</td>
<td>Bridge employee</td>
<td>Bridge employee</td>
<td>343</td>
</tr>
<tr>
<td>Bridge employee to retiree (Br)</td>
<td>Bridge employee</td>
<td>Retiree</td>
<td>129</td>
</tr>
<tr>
<td>Retiree to bridge employee (RtB)</td>
<td>Retiree</td>
<td>Bridge employee</td>
<td>82</td>
</tr>
<tr>
<td>Retiree (R)</td>
<td>Retiree</td>
<td>Retiree</td>
<td>905</td>
</tr>
</tbody>
</table>
Measures

Life Satisfaction
Life satisfaction was measured using the Satisfaction With Life Scale (Diener, Emmons, Larsen & Griffin, 1985) at T1 and T2. The scale consists of five items (e.g., “I am satisfied with my life”) measured on a 7-point scale, ranging from strongly disagree (1) to strongly agree (7).

In study I, a total score (range 5–35) was calculated for each participant based on their T1 ratings. In study II, latent satisfaction scores (range 1–7) were generated for each wave of data collection (T1 and T2). Cronbach’s alpha was estimated to .92 at both T1 and T2.

Resources
Self-esteem
Self-esteem was measured at T1 on the five positively phrased items (e.g., “I feel that I have a number of good qualities”) from the Rosenberg Self-esteem Scale (Rosenberg, 1965). This decision was based on studies suggesting that positively phrased items elicit more accurate responses than negatively phrased items (Lindwall et al., 2012; Schriesheim & Hill, 1981). The items were measured on a 4-point scale, ranging from strongly disagree (1) to strongly agree (4), and mean scores were calculated for each participant. Cronbach’s alpha was estimated to .91.

Autonomy
Autonomy was measured at T1 on the Autonomy subscale of the Basic Psychological Need Satisfaction Scale (Chen et al., 2015). The subscale consists of three items (e.g., “I feel a sense of choice and freedom in the things I undertake”) measured on a 5-point scale, ranging from completely false (1) to completely true (5). A total score (range 3–15) was calculated for each participant. Cronbach’s alpha was estimated to .66.

Social support
Social support was measured at T1 on the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). The scale consists of 12 items sorted into three subdomains: Family (e.g., “I get the emotional help and support I need from my family”), Friends (e.g., “I can talk about my problems with my friends”), and Significant Other (e.g., “There is a special person who is around when I am in need”). Participants rated the items on a 7-point scale, ranging from strongly disagree (1) to strongly agree (7). A total score (range 4–28) was first calculated for each subscale. A mean total was then calculated for each participant, resulting in an overall social
support score with the same range (4–28). Cronbach’s alpha was estimated to .95.

**Self-rated physical health**
Self-rated physical health was measured at T1 on one item (‘‘How do you currently evaluate your overall health condition?’’) and estimated on a 6-point scale ranging from *very bad* (1) to *very good* (6).

**Self-rated cognitive ability**
Self-rated cognitive ability was measured at T1 on one item (‘‘How do you currently perceive your thinking ability?’’) and estimated on a 6-point scale ranging from *very bad* (1) to *very good* (6).

**Basic financial resources**
Basic financial resources were measured at T1 through the participants’ estimation of their ability to cover unpredicted costs of 15 000 SEK (approx. €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).

**Covariates**
Demographic information, including age, gender (0 = male, 1 = female), education (0 = primary/secondary, 1 = tertiary/higher), and relationship status (0 = no partner, 1 = partner; only Study I) was collected at T1 to control for potential confounding effects.

**Statistical Analyses**

**Study I**
Estimates of life satisfaction (at T1) were analyzed separately for workers, bridge employees, and retirees through three ordinary least squares hierarchical regression models using IBM SPSS Statistics, version 23. The demographic variables of age, gender, education, and relationship status were included as covariates in the first step. The second step included the six resources: self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources. Finally, 15 interaction terms were generated from the six resources and included in the third step. All continuous (or non-binary) predictors were group-mean centered before inclusion in the analysis.
Study II
Levels of, and changes in, life satisfaction between T1 and T2 were investigated through structural equation modelling techniques in R version 3.3.1 (R Core Team, 2016), with latent change score (LCS) models estimated using the lavaan package (Rosseel, 2012). As suggested in literature reviewing statistical methods for analysis of within-person changes, particularly for data including only two time points (e.g., McArdle, 2009; Newsom, Jones, & Hofer, 2011), LCS models are preferable to raw difference score models or lagged regression models because they are better suited to controlling for statistical problems such as regression to the mean, inflated standard errors, and low reliability among difference scores.

As a first step to establish an adequate measurement model, a two-latent factors confirmatory model for life satisfaction was generated from the item scores at T1 and T2, and variances over time and across groups were evaluated. An LCS was then generated from the residual in T2 when regressed on T1. The model was designed so that the total variance in T2 would be accounted for by T1 plus change. T1 was regressed on change and intercepts were specified for both T1 and change. This way, the change intercept represents the average rate of change while controlling for life satisfaction at T1 (McArdle, 2009). The items were mean centered (items for T2 centered on average level on the corresponding item for T1) before being included in the analysis, so the change intercept can be interpreted as the average change given mean levels at T1. Selected covariates (age, gender, and education) were included as predictors of both T1 and change.

To further investigate between-person differences in change, a multiple group LCS model was estimated with all parameters initially constrained to be equal across the seven retirement groups. In a second model, the change intercept was released to be a free parameter and to vary across the groups. Significant group differences were investigated using chi-square tests on pairwise constraints.

In a third model, all six resources (self-esteem, autonomy, social support, self-rated physical health, self-rate cognitive ability, and basic financial resources) were included as covariates of both T1 and change. To investigate the overall effects of individual resources on change in life satisfaction, the parameters were constrained to be equal across all retirement groups. In the fourth and final model, all resource parameters were freed to vary across retirement groups, and significant group differences were investigated using chi-square tests. All models were evaluated using full information maximum likelihood estimation and continuous (or non-binary) predictors were grand-mean centered.
Results

Study I

The results from Study I show that higher self-esteem, autonomy, social support, physical health, and basic financial resources were associated with higher levels of life satisfaction regardless of retirement status (i.e., worker, bridge employee, or retiree), but that their impact on life satisfaction varied in relation to each other.

The results demonstrate relative stability in the effects of the six resources in the sense that similar patterns were observed for people in different phases of the retirement transition. Of the six resources, autonomy was the strongest predictor for life satisfaction among workers (Figure 2), bridge employees (Figure 3), and retirees (Figure 4). Self-esteem, social support, self-rated physical health, and basic financial assets were found to be reliable predictors of life satisfaction across all three groups, while self-rated cognitive ability was not associated with life satisfaction in any of the three groups. After controlling for basic demographic factors (age, gender, education, and relationship status), individual differences in the six resources contributed to 46% to 49% of the observed variance in life satisfaction among workers, bridge employees, and retirees.

Figure 2  Standardized Estimates (with 95% CI) for Workers
Compensatory effects (Figure 5) were found between self-esteem and physical health (bridge employees and retirees), autonomy and social support (bridge employees), and social support and physical health (retirees). These findings suggest that high self-esteem can, to some extent, compensate for the negative effects of poor physical health by decreasing the influence of this resource on life satisfaction. Similarly, low autonomy and poor physical health may be less detrimental for life satisfaction if a person has supportive social relations.

Cumulative effects (Figure 6) were found between self-esteem and autonomy (bridge employees), self-esteem and financial resources (bridge employees), social support and physical health (bridge employees), and autonomy and physical health (retirees). These findings demonstrate that some resources are interrelated in a way that amplifies the positive effect of one
resource if the person also has other resources. For instance, the relationship between physical health and life satisfaction was stronger in bridge employees with higher, rather than lower social support. This illustrates that they are more likely to benefit from their good health if they also have a strong social network. Similarly, self-esteem and physical health had a stronger impact on life satisfaction among people with high autonomy.

The findings in Study I demonstrate the dynamic nature of retirement adjustment. The inclusion of interaction effects revealed that the relationship between a particular resource and life satisfaction can vary depending on other available resources, but also that these effects differ between workers, bridge employees, and retirees. Multiple interactions were observed for partially or fully retired participants, but no interaction effects were found among those not yet retired.
Figure 5  Compensatory Effects on Life Satisfaction

Low/Poor = One SD below mean, High/Good = One SD above mean.
Figure 6  Cumulative Effects on Life Satisfaction

Low/Poor = One SD below mean (absence of basic financial resources), High/Good = One SD above mean (presence of basic financial resources).
Study II
The results from Study II show no overall effect for type of transition, but individual resources were associated with both levels and changes in life satisfaction after one year. In addition, the effects of individual resources were found to vary systematically depending on type of transition.

The results indicate that type of retirement transition is related to changes in life satisfaction (see Figure 7). A larger increase in life satisfaction was found in participants who had retired between waves (WtR) than in those still working in both waves (W), who in fact experienced a decrease in life satisfaction. Abrupt retirement (WtR) was also associated with a larger average increase in life satisfaction than gradual retirement (WtB and BtR), but those effects were not found to be significant. The prediction that gradual retirement would be associated with fewer changes in well-being than abrupt retirement is thus not supported.

![Figure 7 Changes in Life Satisfaction after One Year](image)

W = worker, WtB = worker to bridge employee, WtR = worker to retiree, B = bridge employee, BtR = bridge employee to retiree, RtB = retiree to bridge employee, R = retiree.

Individual differences in resources were associated with both levels and changes in life satisfaction. Self-esteem, autonomy, social support, self-rated physical health, and basic financial resources were associated with life satisfaction at baseline, while no effect was found for self-rated cognitive ability. In partial support of the predictions, high self-esteem, strong social support, good physical health, and basic financial resources were associated with increased life satisfaction after one year. Contrary to the predictions,
however, autonomy and self-rated cognitive ability had no overall effects on changes in life satisfaction.

The effects of the six resources on changes in life satisfaction were found to vary across the seven retirement groups (see Figure 8). In line with the predictions, individual differences in resource capability accounted for a larger proportion of the changes in life satisfaction for participants who retired fully (WtR, 27%) than for those retiring gradually between waves (WtB, 17%). A lack of basic financial resources before retirement was associated with decreased life satisfaction for those who retired partially (WtB) or fully (WtR) between waves, but the effect was found to be less detrimental for gradual than for full retirement. Moreover, a stronger increase in life satisfaction was found for participants retiring fully (WtR) with basic financial resources than for those retiring gradually (WtB) with the same resources. In addition, autonomy and self-rated cognitive ability were related to changes in life satisfaction after one year only among those who retired fully between waves (WtR). Low autonomy and high perceived cognitive ability before retirement were associated with a stronger positive effect.

The findings in Study II demonstrate that both the type of transition and individual differences in resource capability contribute to both within- and between-person differences in life satisfaction in the retirement transition.
Figure 8  Effects of Individual Resources on Changes in Life Satisfaction across the seven Retirement Transition Groups

Low = One SD below mean (absence of basic financial resources), High = One SD above mean (presence of basic financial resources), W = worker, WtB = worker to bridge employee, WtR = worker to retiree, B = bridge employee, BtR = bridge employee to retiree, RtB = retiree to bridge employee, R = retiree.
The aim of this thesis was to investigate the applicability of the resource-based dynamic model for studying retirement adjustment (Wang et al., 2011). All six resource domains suggested in the model were included and their importance for life satisfaction in the retirement transition was evaluated. In both studies, the six resource domains were measured through: (1) self-esteem, (2) autonomy, (3) social support, (4) self-rated physical health, (5) self-rated cognitive ability, and (6) basic financial resources. The model’s applicability was studied in participants in various stages of the transition.

The findings in Studies I and II confirm previous research (Barbosa et al., 2016) and indicate that emotional, motivational, social, physical, and financial resources are essential for well-being in the retirement transition. The results from Study I accord with research (e.g., Donaldson, Earl, & Muratore, 2010; Muratore & Earl, 2015; Price & Balaswamy, 2009) demonstrating that motivational resources such as autonomy, personal control, or mastery are more important than material resources such as health and wealth. The results from Study II showed that resources such as self-esteem, social support, physical health, and financial assets are also important in changes in life satisfaction in the retirement transition. More resources are generally associated with better outcomes after one year. Furthermore, the effects of the six resources were found to differ depending on other available resources (Study I) and type of retirement transition (Study II).

The Applicability of a Six-Factor Model

The results provide only partial support for the applicability of a six-factor resource model for detecting the underlying mechanisms of retirement adjustment. Studies I and II showed that emotional, motivational, social, physical, and financial resources are associated with levels of life satisfaction in the retirement transition, while no effects were found for the cognitive resource domain.

As noted in the introduction, only one previous study has included all six resource domains in the same model. In that study, Leung and Earl (2012) found a shared variance between emotional, motivational, and cognitive resources and thus treated them as one factor in the analyses, which limits their ability to draw inferences about the importance of cognitive resources relative to emotional and motivational resources. Hence, there is still limited support for the applicability of a six-factor model for studying retirement adjustment. The fact that Leung and Earl identified a latent construct for psy-
Psychological resources may explain the insignificant effects of the cognitive domain in this study. Thus, it is possible that the effects of self-esteem and autonomy erase the influence of cognitive ability because the three share a large variance between them. Post-hoc analyses revealed that the effect of the cognitive component was eliminated only in models including three or more of the other resources. Self-esteem, autonomy, and physical health were found to have the most influence on the effect of the cognitive domain. These conclusions were confirmed also in models excluding the control variables (age, gender, education, and relationship status).

It should also be noted that the insignificant effects may be due to an inadequate measure of this construct. Subjective estimates of cognitive ability are likely to differ from more objective measures and the use of a single-item indicator is inevitably limited in its ability to account for the multidimensional aspects of cognitive function. However, the relationship between cognitive function and well-being has previously been shown to be relatively weak (Allerhand, Gale, & Deary, 2014; Llewellyn, Lang, Langa, & Huppert, 2008), and the inclusion of other resource domains with stronger impacts on life satisfaction may thus eliminate this effect. In addition, subjective cognitive function is presumed to be a better predictor of subjective well-being than more objective measures because it captures the discrepancy between perceived and anticipated cognitive capacity (Diener, Sapyta, & Suh, 1998). The fact that the results were replicated in several subsamples (i.e., workers, bridge employees, and retirees) should also be considered as strength in terms of the reliability of the observed effects.

**Resource Interdependency**

Study I demonstrate that the six resources variously influence life satisfaction depending on other available resources.

The identified compensatory effects indicate, in accord with the resource-based dynamic model (Wang et al., 2011), that a loss in one of these resources can be compensated for by a gain in the other. However, the observed cumulative effects do not accord with this framework. These interactions are more in line with Sen’s (1985) theory of capabilities, in which resources influence well-being only if the person is able to use those resources. For instance, the beneficial effects of social support may be conditioned on the person’s physical ability to participate in social activities, which would explain why the relationship between social support and life satisfaction is stronger for individuals in better health. The capability approach suggested by Sen (1985) may thus provide some insights into why some resources also generate cumulative effects on well-being.
The findings in Study I highlight the dynamic nature of retirement adjustment and demonstrate that the importance of a particular resource may vary depending on other available resources, but also that these effects differ between workers, bridge employees, and retirees. Multiple interactions, both compensatory and cumulative, were observed for participants who were partially or fully retired, although no interaction effects were found for those not yet retired. It is generally argued that work engagement helps to maintain structure in central aspects of people’s daily life, including financial situation, everyday schedule, social contacts, physical activity, and sense of identity (Beehr & Bennet, 2014). Retirement, however, confronts people with new social roles, expectations, challenges, and opportunities, all of which may influence their well-being (Wang & Shi, 2014). Given that retirement is associated with changed life circumstances, it is perhaps reasonable to expect greater dynamics among these resources after rather than before the actual retirement event.

Notably, more resource interdependency was observed among those engaged in bridge employment than in those fully retired. Bridge employment is generally believed to ease adjustment to retirement as it is associated with more gradual lifestyle changes (e.g., Wang & Shultz, 2010; Zhan & Wang, 2015), but reasons for engaging in bridge jobs vary (Zhan, 2016), and the motives may be related to levels of resource capability. For instance, resources such as good health can enable people to continue in bridge employment, but lack of resources (e.g., scarce financial resources) can also drive people to continue to work when they would prefer to retire. This interdependency of resources and motives among bridge employees may thus be related to the influence of resources on the decision to work after retirement, which will inevitably also affect the influence of other resources.

Type of Transition

Study II showed that both type of transition and individual differences in the six resources are associated with changes in life satisfaction in the retirement transition.

It has been suggested that bridge employment is beneficial for retirement adjustment (Shultz & Wang, 2011; Wang & Shultz, 2010; Zhang & Wang, 2015) and that gradual retirement is associated with smaller changes in well-being than abrupt retirement (von Bonsdorff et al., 2009; Wang, 2007). The findings in Study II showed no support for this position. The results did, however, demonstrate group differences in levels of life satisfaction and individual resources. Participants engaged in bridge employment reported higher life satisfaction and autonomy at T1 than those working full-time, and more
bridge employees and fewer retirees reported having basic financial resources than the sample as a whole.

These results indicate that bridge employment may increase both well-being and resources. It is, however, possible that the opportunity to engage in bridge employment is also determined by a person’s resource capability. The participants in this group were more educated than participants in the other groups. Higher education is likely associated with better-paid jobs and positions with more autonomy, which in themselves may have positive effects on individual well-being. These pre-conditions may also be related to a greater opportunity to choose a preferred exit route. Bridge employment may therefore more often be an outcome of resource capability than a determinant for well-being. It is therefore important to consider the circumstances under which bridge employment can be beneficial for retirement adjustment.

Individual differences in resource capability were found to influence changes in life satisfaction variously depending on the type of transition. In line with our expectations, a larger proportion of the changes was explained by the six resources among participants who retired fully (WtR, 27 %) than in those who retired gradually between waves (WtB, 17 %). Lack of basic financial resources before retirement was associated with decreased life satisfaction for those who retired partially (WtB) or fully (WtR) between waves, but this effect was found to be less detrimental in partial than in full retirement. These findings suggest that bridge employment may serve as a buffer against the negative effects of retirement on well-being for individuals with poor financial resources. In this sense, our results support the suggested beneficial effects of bridge employment on retirement well-being (Shultz & Wang, 2011; Wang & Shultz, 2010; Zhang & Wang, 2015). A larger increase in life satisfaction was also found in participants retiring fully (WtR) with basic financial resources than in those retiring gradually (WtB) with the same resources, which indicates that bridge employment can in fact hamper the positive effects of retirement.

Autonomy was related to changes in life satisfaction after one year only among those who retired fully between waves (WtR). Contrary to our expectations, low autonomy before retirement was associated with a stronger positive effect. This finding may be related to research on the importance of personal control or mastery for well-being (e.g., Earl et al., 2015; Kim & Moen, 2002; Muratore & Earl, 2015; Price & Balaswamy, 2009; Reitzes & Mutran, 2004). It is likely that people with few opportunities to influence their work conditions experience an increase in well-being after retirement because they are released from work-related constraints (i.e., increased sense of autonomy). The positive effect of retirement on well-being may thus be mediated through an increase in autonomy. Furthermore, self-rated cognitive ability was also related to changes in life satisfaction only among those par-
Participants who retired fully between waves (WtR). This result indicates, in line with the resource-based dynamic model (Wang et al., 2011), that people with more resources have better chances to benefit from retirement.

Implications for Research on Subjective Well-Being

This thesis may contribute to research on subjective well-being in areas other than retirement. Subjective well-being is traditionally conceptualized as either a bottom-up or a top-down process (Diener, 1984; Diener et al., 1999). Theoretical frameworks that emphasize the importance of objective circumstances such as health and finances are often referred to as bottom-up theories, while models focusing on the role of individual characteristics such as personality and coping strategies are described as top-down theories. Although there is a growing recognition that these approaches need to be combined to understand the underlying mechanisms of subjective well-being, many theories still focus on only one of the two perspectives (Diener et al., 1999).

The resource-based dynamic model (Wang et al., 2011) applied in this thesis demonstrates an integration of the two approaches. Previous research on retirement adjustment has largely focused on bottom-up processes in the sense that most previous studies (see Barbosa et al., 2016, for a review) have investigated the importance of health and wealth for retirement well-being. A resource perspective (e.g., COR; Hobfoll, 1989) contributed to the field by emphasizing also the role of psychosocial resources (i.e., top-down processes). However, few studies have integrated both material and psychosocial resources in research on retirement adjustment. The resource-based dynamic model includes both bottom-up and top-down processes by acknowledging that various types of resources may influence retirement adjustment. Bottom-up and top-down processes can also be identified in the model’s antecedents – factors on micro, meso, and macro levels that influence retirement adjustment indirectly by determining resource availability. These factors may include both bottom-up functions through regulations in the pension system and top-down influences from individual attributes such as personality.

Although both objective conditions and subjective evaluations of these conditions are relevant to subjective well-being in late adulthood (Berg, 2008; Malmberg, 1990), it is generally assumed that the influence of objective indicators depends on the experienced value of these conditions (Diener et al., 1999). As previously mentioned, subjective evaluations of objective conditions may be more valuable because they capture the discrepancy between perceived and anticipated capacities. For instance, an objective health condition (e.g., a chronic disease) may not necessarily have negative effects
on subjective well-being if the person does not experience it as a limitation. A subjective measure therefore allows for distinctions between people who experience difficulties caused by their objective condition and those who do not. The research conducted for this thesis supports this perspective by including people’s subjective evaluations of objective conditions such as health, economy, and cognitive function.

**Limitations**

Retirement adjustment is best studied using context-sensitive measures to differentiate between adjustment to and satisfaction with retirement (van Solinge & Henkens, 2008). The use of a global measure of well-being as an indirect estimate of retirement adjustment is therefore a limitation in this thesis. However, the use of a context-sensitive measure would be inadequate given that both studies included people who were not yet retired. Life satisfaction has previously been shown to be a reliable indicator of adaptation to life events (e.g., Lucas, 2007) and consequently should be an acceptable indirect measure of retirement adjustment.

The selected resource indicators in this thesis are limited in that they measure specific aspects of each resource domain. Although self-esteem, autonomy, and social support were measured using standardized scales, they cannot fully account for the emotional, motivational, and social resource domains. Instead, they were selected because they represent constructs well known for their impacts on well-being (e.g., Hobfoll, 2002). For instance, quality rather than quantity of social relations predict retirement well-being (Price & Balaswamy, 2009). Caution should also be taken in interpreting the observed effects for the autonomy scale, in which the reliability coefficient was relatively low.

Furthermore, the measures of cognitive and physical resources were limited to self-rated single-item indicators. Nevertheless, subjective health has frequently been shown to be a better predictor of subjective well-being than more objective health indicators (Diener & Seligman, 2004; Wu et al., 2013), and again, subjective measures are valuable because they provide estimates of the discrepancy between perceived and anticipated capacity (Diener et al., 1998).

The measure of financial resources was restricted to capture individuals without adequate financial resources rather than to measure their actual assets. It is, however, generally argued that basic financial security is more important than excessive wealth for individual well-being (Diener & Biswas-Diener, 2002; Diener, Oishi, & Lucas, 2003; Diener & Seligman, 2004; Veenhoven, 1991). The selected indicator is thus assumed to be an acceptable measure of financial resources within the scope of this thesis.
It is important to note that Study I is based on cross-sectional data, which limits our ability to draw conclusions about the compensatory and cumulative resource effects in an individual over time. Future research should therefore further investigate the applicability of the resource-based dynamic model (Wang et al., 2011) by studying whether resource loss is associated with a decrease in well-being and whether this loss can be compensated for by a gain in another resource.

It should also be noted that the findings in Study II are based on changes across only two measurement points, which increases the risk that observed effects are related to measurement errors (e.g., regression to the mean). For instance, the observed decrease in life satisfaction among participants who “un-retired” between waves may be related to their high levels of life satisfaction reported at baseline that may have been more likely to decrease at follow-up than that of participants scoring lower at baseline. Also, although latent change score models are assumed to provide more reliable change estimates (McArdle, 2009), additional measurements points would improve both the accuracy of observed effects and the ability to identify within-person fluctuations over time.

The inability to account for potential confounding effects of employment specific factors should also be considered a limitation in this thesis. Although education is used as a proxy for employment related socioeconomic differences, more detailed information about the participants work conditions could have contributed to a more contextual understanding of the observed effects. However, the inclusion of already retired individuals substantially decreases the validity of such factors as they refer to past (i.e., previous jobs) rather than present experiences.

Another limitation concerns the risk for selectivity bias in the sample. Even though the original sample was selected to be representative of the population, it is well known that healthier and higher educated individuals are often oversampled in survey-based studies (Bethlehem, 2010). It is therefore unclear how accurately the results of this study can be generalized to all those born in Sweden from 1949 to 1955. Additional caution with regards to the generalizability of the results relates to the fact that the two studies included in this thesis are conducted within the scope of “normal” retirement. The results may thus not apply for individuals retiring for other reasons than the normative age-related retirement (e.g., disability pension or retirement from competitive sports).

Despite these limitations, findings from the two studies included in this thesis contribute new knowledge about within- and between-person differences in subjective well-being in the retirement transition.
Conclusions and Future Directions

This thesis contributes to the understanding of retirement adjustment by investigating the applicability of the resource-based dynamic model in a Swedish population-based sample of older adults.

The findings demonstrate that individual differences in resource capability are associated with both level and change in life satisfaction in the retirement transition, but that the effects differ depending on the availability of different resources and type of retirement status and transition. Individual resources prior to retirement account for some of the previously identified heterogeneity in retirement adjustment. In the absence of adequate financial resources, bridge employment may serve as a buffer against the negative effects of retirement.

The results presented in this thesis are of relevance for understanding the complex multidimensional and multidirectional dynamics of retirement adjustment. A deeper understanding of the various factors that influence individual well-being in the transition from work to retirement is crucial for meeting the consequences of an ageing population.

Future research would benefit from a more thorough investigation of the applicability of the resource-based dynamic model by investigating whether changes in individual resources are associated with changes in well-being, and to what extent a loss in one resource may be compensated for by a gain in another. Future research should also seek to investigate antecedents of resource capability, i.e., factors of relevance for the availability of various resources. For instance, it has been argued that retirement in itself has limited impacts on well-being, but only if it is associated with changes in individual resource capability (Wang et al., 2011). It is therefore important to investigate factors influencing the availability of, and changes in, individual resources as people approach and transition to retirement.

More research on factors influencing levels and changes in individual resources in the retirement transition is important also from a lifespan developmental perspective. The specific context in which the transition occurs is colored by various factors, including age-graded (e.g., retirement age), history-graded (e.g., retirement system), and non-normative (e.g., disability pension) influences (Baltes, 1987; Baltes & Smith, 2004). A thorough understanding of factors influencing the retirement adjustment process is fundamental for developing interventions to meet the societal challenges associated with an ageing population.


Appendix


Life Satisfaction and Individual Resources in the Retirement Transition: The Applicability of a Six-Factor Resource Model in a Swedish Population-Based Sample

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Abstract
Retirement represents a multidimensional and dynamic process requiring adjustments to new life circumstances. The resource-based dynamic model suggests that emotional, motivational, social, physical, cognitive, and financial resources are essential for well-being in the retirement transition. In the present study, we investigated the role of self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources for life satisfaction in a sample of older adults (age 60–66) from the HEalth, Ageing and Retirement Transitions in Sweden (HEARTS) study, including workers (n = 2 725), bridge employees (n = 565) and retirees (n = 1 074). Hierarchical multiple regression analyses showed that the six resources accounted for 46–49 per cent of the observed variance in life satisfaction among workers, bridge employees, and retirees. Autonomy was the strongest predictor in all three groups, while no effects were found for self-rated cognitive ability in any of the groups. Interaction effects revealed that the relationship between a particular resource and life satisfaction can vary depending on other available resources, but also that these effects differ between workers, bridge employees, and retirees. Multiple interactions, both compensatory and cumulative, were observed among bridge employees and retirees whereas no interactions were found for participants not yet retired. Possible explanations are discussed in relation to maintenance of structures in central aspects of daily life.

Keywords: individual resources, life satisfaction, retirement adjustment, resource-based dynamic perspective
LIFE SATISFACTION AND INDIVIDUAL RESOURCES IN RETIREMENT

Life Satisfaction and Individual Resources in the Retirement Transition: The Applicability of a Six-Factor Resource Model in a Swedish Population-Based Sample

Retirement from work is a major life transition in older adulthood that requires adjustments to new life circumstances (van Solinge & Henkens, 2008). Retirement is associated with both opportunities, (e.g. more time for desired activities) and disadvantages (e.g. loss of work-related social and cognitive stimulation), which means that we can expect positive as well as negative effects on health and well-being. Subjective well-being in early retirement, defined here as a person’s global cognitive evaluation of satisfaction with life as a whole (Diener, 1984), has been identified as an important predictor of future health status and survival (Diener, & Chan, 2011; Wiest, Schüz, Webster, & Wurm, 2011). This finding, combined with reports of rapidly ageing populations (OECD, 2006), has contributed to a growing interest in retirement research within the political, socioeconomic, and human resources areas (Wang & Shi, 2014).

Research on retirement adjustment or the process of getting used to changes due to exit from work life (van Solinge & Henkens, 2008), has typically focused on two aspects of the transition: the impact of retirement, and factors related to retirement adjustment quality (Wang, Henkens, & van Solinge, 2011). Retirement adjustment refers to a person’s psychological comfort with life as a retiree (Wang et al., 2011) and is often evaluated through direct measures of an individual’s adjustment to and satisfaction with retirement, although more indirect measures (e.g., life satisfaction) are frequently used (Barbosa, Monteiro, & Murta, 2016). Recent reviews of the impact of retirement (e.g., Henning, Lindwall, & Johansson, 2016) suggest that, for the majority, 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 heterogeneous effects of retirement and a significant proportion of older workers who have difficulty adjusting to becoming a retiree.

In a review of factors influencing retirement adjustment quality, Barbosa and colleagues (2016) identified 25 predictors related to direct or
indirect indicators of retirement adjustment. The most frequent predictors included physical health, finances, psychological health and personality, leisure activity, voluntary retirement, and social integration. Wang and colleagues (2001) reviewed theoretical approaches to studying the retirement adjustment process and concluded that we still lack an understanding of the underlying mechanisms for a successful adjustment. They argued that the field would benefit from a more integrative theoretical framework and proposed that a resource-based dynamic perspective might illuminate about how and why retirement affects well-being.

A Resource-Based Dynamic Perspective on Retirement Adjustment

The resource-based dynamic model (Wang et al., 2011) was designed to address both the impact of retirement and the underlying mechanisms of that impact. In contrast to previous theories (e.g., role theory, continuity theory, and stage theory), this model has the potential to account for both within- and between-person differences in retirement adjustment. The model assumes that multiple factors on the micro, meso, and macro levels influence the individual’s resource capability, which is crucial in the retirement adjustment process. We can expect negative effects on well-being if retirement is associated with resource losses, positive effects with resource gains, and no effect if a person’s total resource capability is unchanged. By emphasizing the dynamic aspects of the transition, this model proposes that well-being can fluctuate with changes in the person’s access to resources over time and that resource losses may be compensated for by gains in other resources.

The resource-based dynamic model derives from the Conservation of Resource (COR) theory developed by Stevan Hobfoll in the late 1980’s. COR posits 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) and include objects (e.g., a home), conditions (e.g., employment), individual characteristics (e.g., self-esteem) and energies (e.g., time). In the resource-based dynamic model, the six most valuable resource domains are: (1) emotional, (2) motivational, (3) social, (4) physical, (5) cognitive, and (6) financial resources (Wang et al.,
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2011). Resources are here described as means or assets that can be used to cope with challenges associated with the retirement transition. These are assumed to be key elements because they define the conditions of retirement and influence not only what people can do physically and mentally, but also what they can afford financially, in retirement. For instance, individuals with limited financial resources and poor health may have difficulty maintaining their pre-retirement lifestyle and taking up new activities in retirement. More resources are expected to lead to fewer adjustment problems and greater well-being (Wang et al., 2011).

The applicability of a resource perspective to the study of retirement adjustment has received considerable support (see Barbosa et al., 2016, in a recent review). However, most previous research has focused on only a select and limited 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), and people with poor health and financial problems were more likely to experience problems in adjustment to retirement (e.g., Earl, Gerrans, & Halim, 2015; Kim & Moen, 2002; Muratore & Earl, 2015).

The role of psychosocial resources in retirement adjustment has been studied less frequently, even though factors such as social support, self-esteem, and perceived control are known to be key components of well-being (Hobfoll, 2002). It is reasonable to assume that retirement is associated with changes in several resource domains. Retirement may lead to lowered income and decreased social, physical, and/or cognitive stimulation, but it can also influence psychological resources such as self-esteem (i.e., decreased sense of self-worth) and sense of personal control (i.e., more time for desired activities); two factors known to be crucial for the ability to adjust to new life circumstances (Hobfoll, 2002).

Notably, only eight of the studies reviewed by Barbosa and colleagues (2016) explicitly included more than two of the six resource domains specified in the resource-based dynamic model (Wang et al., 2011). None of them included all six domains. In these studies, physical and financial resources were typically accompanied by measures of social and/or motivational resources. Social resources, frequently measured as frequency and/or quality of social relations, were found to predict retirement adjustment in 63% of those studies (e.g., Earl et al., 2015; Price & Balaswamy, 2009). In
their review, Barbosa and colleagues (2016) made no distinction between cognitive, motivational, and emotional resources, as suggested in the model by Wang and colleagues (2011). Instead, these were all categorized as indicators of psychological resources; within this category, motivational resources (often measured as self-efficacy, personal control, or mastery) were the most common resource type. Lack of personal control or mastery is generally associated with adjustment problems (Earl et al., 2015; Kim & Moen, 2002; Muratore & Earl, 2015; Price & Balaswamy, 2009; Reitzes & Mutran, 2004). Self-esteem, as an indicator of emotional resources, has also been related to retirement adjustment (e.g., Price & Balaswamy, 2009; Reitzes & Mutran, 2004). Notably, none of the 115 studies reviewed by Barbosa and colleagues (2016) included measures of cognitive resources (i.e., memory, processing speed, or general cognitive ability). More in-depth studies on the role of psychological resources could contribute to our understanding of the heterogeneity in retirement adjustment because these resources are likely to influence how a person reacts to and copes with the changes associated with the retirement transition (van Solinge, 2012).

To our knowledge, only one study on retirement adjustment has to date included all six resource domains. In this study, Leung and Earl (2012) evaluated a resource inventory and found the six resource types were aggregated in three clusters with a shared variance between material (physical and financial) and psychological (cognitive, emotional, and motivational) resources. Thus, there is still limited empirical support for the applicability of a six-factor resource model for studying retirement adjustment.

A central premise of the resource-based dynamic model is that a loss in one resource may be compensated for by a gain in another (Wang et al., 2011). This means that we can expect resources to be interdependent and to influence well-being variously depending on the presence of other resources. We know of only one previous study that has addressed this issue and investigated the interdependency of resources in retirement adjustment. In that study, Zaniboni (2015) investigated the interaction between personal resources and age discrimination in the workplace (as an indicator of social resources) and their influence on desired retirement age and expected future retirement adjustment among older workers. The results showed that personal resources were associated with the selected outcomes only among individuals
with low perceived age discrimination. However, Zaniboni made no distinction between different types of psychological resources as suggested in the model by Wang and colleagues (2011), and the study was conducted using only a limited subset of the resource domains specified in the model. An additional limitation of Zaniboni’s study was that the outcome measure was related to an expected future adjustment rather than to a person’s actual comfort in retirement. Our understanding of the importance of emotional, motivational, social, physical, cognitive, and financial resources in relation to each other during the retirement adjustment process continues to need improvement.

**Present Study**

We applied a resource-based dynamic perspective to retirement adjustment and investigated the roles and interdependencies of individual resources for life satisfaction in the retirement transition. This study contributes to previous research by including all six resource domains suggested in the resource-based dynamic model (Wang et al., 2011): (1) emotional, (2) motivational, (3) social, (4) physical, (5) cognitive, and (6) financial resources. In this study, the six resources were in measured as: (1) self-esteem, (2) autonomy, (3) social support, (4) self-rated physical health, (5) self-rated cognitive ability, and (6) basic financial resources. We also investigated interdependencies among selected resources through the impact of each resource on life satisfaction relative to each of the others.

The roles and interdependencies of these resources in life satisfaction were studied separately for people in three different retirement phases: (1) workers, (2) bridge employees, and (3) retirees, based on the view that retirement is a process rather than a simple one-step permanent career exit (e.g., Wang & Shultz, 2010; Zhan & Wang, 2015). Many people continue to work to some extent before fully retiring, using bridge employment as an intermediate step toward a complete withdrawal from the labor force (Shultz, 2003). It is therefore relevant to distinguish between retirement statuses and to investigate whether and how certain resources contribute differently to people’s well-being depending on whether they are still working, partially retired, or fully retired. It could be argued that some aspects of life remain more constant in people still working than in those transitioning to retirement (Beehr & Bennet, 2014). This constancy may be associated with less weight
of a particular resource for the individual’s well-being. Through parallel analyses in specific subgroups, we can investigate the applicability of the resource-based dynamic model in individuals at various stages of the retirement transition.

Method

Sample and Procedure

We used data from the first wave of the HEalth, Ageing and Retirement Transitions in Sweden (HEARTS) study, a longitudinal population-based study aimed to capture developmental psychological processes in the years before and after the retirement transition. The participants in HEARTS were recruited from the Swedish register “Statens personadressregister” (SPAR). In April 2015, a nationally representative sample of 14,990 individuals aged 60–66 received a mail with an invitation to participate in the study. The participants were asked to complete a survey including questions about their socio-demographic background, work life and retirement, health, lifestyle, well-being, social relations, and personality. Data were collected mainly through the online platform “Qualtrics”, but a paper version of the questionnaire was generated for participants who did not respond after a second reminder six weeks later.

In total, 5,913 individuals (39.4%) participated in the first wave, 69% (n = 4,068) completed the web-based survey, and 31% (n = 1,845) completed the paper version. The sample is in many ways representative of the population, although it has a slightly larger proportion of women and people with higher education than the general population in Sweden born between 1949 and 1955. To avoid potential confounding effects of labor market status (Wetzel et al., 2015), we excluded people reporting unemployment (n = 161) or disability pension (n = 397). Participants were also excluded if they did not complete selected resource measures, resulting in a final sample of 4,364 individuals.

Three subsamples were generated based on the participants’ self-reported retirement status in answer to the question “Are you retired (receive old-age pension)?”. Four response alternatives were given: (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. For this study, we made no distinction between the two middle response alternatives. Thus, a negative
answer (no) was coded as working, the two middle alternatives (yes, but still working and consider myself a worker and yes, still working but consider myself a retiree) were coded as bridge employment, and a positive answer (yes, full-time retiree) was coded as retired. The three subsamples consisted of 2725 workers (mean age 62 years, 54 % women), 565 bridge employees (mean age 64 years, 45 % women), and 1074 retirees (mean age 65 years, 58 % women).

Measures

Life satisfaction. Life satisfaction was measured using the Satisfaction With Life Scale (Diener, Emmons, Larsen & Griffin, 1985). The scale consists of five items (e.g., “I am satisfied with my life”) measured on a 7-point scale, ranging from strongly disagree (1) to strongly agree (7). A total score, ranging from 5 to 35, was calculated for each participant. Cronbach’s alpha was estimated to .92.

Self-esteem. Self-esteem was measured on the five positively phrased items (e.g., “I feel that I have a number of good qualities”) from the Rosenberg Self-esteem Scale (Rosenberg, 1965). This decision was based on studies suggesting that responses to positively phrased items are more accurate than responses to negatively phrased items (Lindwall et al., 2012; Schriesheim & Hill, 1981). The items were measured on a 4-point scale, ranging from strongly disagree (1) to strongly agree (4), and a mean score was calculated for each participant. Cronbach’s alpha was estimated to .91.

Autonomy. Autonomy was measured on the Autonomy subscale of the Basic Psychological Need Satisfaction Scale (Chen et al., 2015). The subscale consists of three items (e.g., “I feel a sense of choice and freedom in the things I undertake”) measured on a 5-point scale, ranging from completely false (1) to completely true (5). A total score (range 3–15) was calculated for each participant. Cronbach’s alpha was estimated to .66.

Social support. Social support was measured on the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). The scale consists of 12 items divided into three subdomains: Family (e.g., “I get the emotional help and support I need from my family”), Friends (e.g., “I can talk about my problems with my friends”), and Significant Other (e.g., “There is a special person who is around when I am in need”). Participants rated the items on a 7-point scale, ranging from
strongly disagree (1) to strongly agree (7). A total score (range 4–28) was calculated for each subscale. Mean totals were then calculated for each participant, resulting in an overall social support score with the same range (4–28). Cronbach’s alpha was estimated to .66.

**Self-rated physical health.** Self-rated physical health was measured on one item (“How do you currently evaluate your overall health condition?”) and estimated on a 6-point scale ranging from very bad (1) to very good (6).

**Self-rated cognitive ability.** Self-rated cognitive ability was measured on one item (“How do you currently perceive your thinking ability?”) and estimated on a 6-point scale ranging from very bad (1) to very good (6).

**Basic financial resources.** Basic financial resources was measured through the participants’ estimation of their ability to cover unpredicted costs of 15 000 SEK (approx. €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).

**Demographics.** Demographic information, including age, gender (0 = male, 1 = female), education (0 = primary/secondary, 1 = tertiary/higher), and relationship status (0 = no partner, 1 = partner) was collected to control for potential confounding effects.

**Statistical Analysis**

Estimates of life satisfaction were analyzed separately in workers, bridge employees, and retirees through three ordinary least squares hierarchical regression models using IBM SPSS Statistics, version 23. The demographic variables of age, gender, education and relationship status were included as covariates in the first step. In the second step, we included the six resources variables self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial assets. Finally, we generated 15 interaction terms from the six resources and included them in the third step. All continuous (or non-binary) predictors were group-mean centered before inclusion in the analysis.


**Results**

Descriptive statistics are shown in Table 1, and bivariate correlations among the included measures are presented separately for workers, bridge employees, and retirees in Table 2. On average, workers reported lower levels of life satisfaction and autonomy than bridge employees and retirees. Bridge employees reported better cognitive ability than workers and retirees, and better physical health than workers. Fewer retirees than workers and bridge employees reported that they had basic financial resources. No group differences were found in levels of self-esteem and social support. Compared with the other two groups, more retirees were women and fewer had higher education. In addition, more bridge employees and retirees than workers reported being in a relationship.

--- Table 1 inserted here ---

--- Table 2 inserted here ---

**Workers**

Table 3 shows the estimated effects of the six resources on life satisfaction for workers. Self-esteem, autonomy, social support, self-rated physical health, and basic financial resources were significantly related to life satisfaction when controlled for age, gender, education, and relationship status. Higher levels of these resources were associated with higher life satisfaction. No effect was found for self-rated cognitive ability. Figure 1 shows standardized estimates with 95 % confidence intervals. The strongest effect was found for autonomy ($\beta = .38$), followed by self-esteem ($\beta = .22$), social support ($\beta = .20$), physical health ($\beta = .14$), and financial resources ($\beta = .05$). No overlap in the confidence intervals indicates a significant difference in effect ($p < .05$). Accordingly, the effect for autonomy was stronger than for all other resources and the effect for self-esteem was stronger than for physical health, financial resources, and cognitive ability, but not for social support. There were also differences between the effects of social support, physical health, financial resources, and cognitive ability. When interaction effects were included, no systematic variance in effect depended on any of the other resources.
Bridge Employees

Table 4 shows the estimated effects of the six resources on life satisfaction for bridge employees. As seen in the group of workers, self-esteem, autonomy, social support, self-rated physical health, and basic financial resources were positively associated with life satisfaction among bridge employees, while no effect was found for self-rated cognitive ability. A similar pattern was also found in the relative importance of the six resources (Figure 2). Autonomy ($\beta = .38$) was the strongest predictor, followed by self-esteem ($\beta = .19$), physical health ($\beta = .17$), social support ($\beta = .14$), and financial resources ($\beta = .09$). Autonomy was found to be a stronger predictor for life satisfaction than all other resources. Unlike the workers, bridge employees showed no differences in effect between self-esteem, physical health, social support, financial resources, and cognitive ability. This may be related to this group’s smaller sample size.

Including interaction effects showed that the six resources influenced life satisfaction variously depending on other available resources. Positive interaction effects were found between self-esteem and autonomy, self-esteem and financial resources, and social support and physical health. These effects show that the association between self-esteem and life satisfaction was stronger in people with high autonomy and basic financial resources, and vice versa. Similarly, the relationship between social support and life satisfaction was stronger in those with good physical health. In contrast, negative interaction effects were found between self-esteem and physical health, and between social support and autonomy. These effects show that the relationship between self-esteem and life satisfaction is stronger in people with poor physical health, and the association between physical health and life satisfaction is stronger in those with low self-esteem. Accordingly, the relationship between social support and life satisfaction was stronger in participants with low autonomy, and the association between autonomy and life satisfaction was stronger in those with low social support.
Retirees

Table 5 shows the estimated effects of the six resources on life satisfaction for retirees. The results for retirees were similar to those observed for workers and bridge employees: self-esteem, autonomy, social support, self-rated physical health, and basic financial resources were positively associated with life satisfaction. No effect was found for self-rated cognitive ability. Figure 3 shows the standardized estimates for retirees. Autonomy ($\beta = .33$) was the strongest predictor, followed by social support ($\beta = .21$), physical health ($\beta = .20$), self-esteem ($\beta = .17$), and financial resources ($\beta = .12$). As for workers and bridge employees, the effect for autonomy was stronger than the effects for all other resources. No differences in effect were found between social support, physical health, self-esteem, and financial resources.

As in the group of bridge employees, when interaction effects were included, the effects of each of the six resources varied with the presence of other resources. A positive interaction effect was found between autonomy and physical health, showing that the relationship between autonomy and life satisfaction was stronger in people with good physical health. Similarly, the association between physical health and life satisfaction was stronger in those with low social support. The negative interaction between self-esteem and physical health found among bridge employees was also observed in retirees. Hence, the effect of self-esteem on life satisfaction was stronger among participants with poor physical health. In contrast to the positive interaction between social support and physical health observed among bridge employees, there was a negative interaction effect for these factors in retirees, which suggests that the relationship between social support and life satisfaction was stronger in participants with poor physical health than in those with better health.
Discussion

We applied a resource-based dynamic perspective to retirement adjustment and investigated the roles and interdependencies of individual resources for life satisfaction in the retirement transition. More specifically, we examined the importance of self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources for life satisfaction among workers, bridge employees, and retirees.

Our findings show that higher self-esteem, autonomy, social support, physical health, and the possession of basic financial resources are associated with higher levels of life satisfaction regardless of retirement status, but that the effects vary depending on other available resources.

The results demonstrate the relative stability of the effects of the six resources in that similar patterns were observed for people at different phases of the retirement transition. Of the six resources, autonomy was shown to be the strongest predictor of life satisfaction among workers, bridge employees, and retirees. This finding accords with previous research (e.g., Donaldson, Earl, & Muratore, 2010; Muratore & Earl, 2015; Price & Balaswamy, 2009) showing that personal control or mastery is a key resource for well-being in retirement and that it is more important than physical and financial resources. Self-esteem, social support, self-rated physical health, and basic financial assets were also shown to be reliable predictors of life satisfaction across all three groups, while self-rated cognitive ability was not associated with levels of life satisfaction in any of the three groups. After controlling for basic demographic factors (age, gender, education, and relationship status), individual differences in the six resources contributed to 46% to 49% of the observed variance in life satisfaction among workers, bridge employees, and retirees.

Our results largely confirm previous research (Barbosa et al., 2016) and the findings accord with the resource-based dynamic model (Wang et al., 2011), suggesting that emotional, motivational, social, physical, and financial resources predict individual well-being in the retirement adjustment process. The only exception was the measure of cognitive resources that showed no effects on life satisfaction. As noted in the introduction, Leung and Earl (2012) included all six resource domains in the same model. They found a shared variance between emotional, motivational, and cognitive resources and treated them as one factor in the analyses. This treatment, however,
limited their ability to draw inferences about the importance of the cognitive domain relative to the other two. Therefore, there is still limited support for the applicability of this six-factor model for detecting the underlying mechanisms of retirement adjustment. Leung and Earl’s (2012) identification of a latent construct for psychological resources may explain the insignificant effects of the cognitive domain in this study. The effects of self-esteem and autonomy may eliminate the influence of cognitive ability because of the large shared variance between them. It should also be noted that the insignificant effects may be due to an inadequate measure of this construct. Subjective estimates of cognitive ability are likely to differ from more objective measures and the use of a single-item indicator is inevitably limited in its ability to account for the multidimensional aspects of cognitive function. However, the relationship between cognitive function and well-being has previously been shown to be relatively weak (Allerhand, Gale, & Deary, 2014; Llewellyn, Lang, Langa, & Huppert, 2008), and the inclusion of other resource domains with stronger impacts on life satisfaction may thus eliminate its effect. Subjective cognitive function is also presumed to be a better predictor of subjective well-being than more objective measures because it captures the discrepancy between perceived and anticipated capacity (Diener, Sapyta, & Suh, 1998).

It should also be noted that the selected resource indicators are limited in that they measure specific aspects of each resource domain. Although self-esteem, autonomy, and social support were measured on standardized scales, we cannot argue that they fully account for the emotional, motivational, and social resource domains. Instead, they were selected because they represent constructs well known for their impact on well-being (Hobfoll, 2002). For instance, it has been suggested that the quality, rather than quantity, of social relations predicts retirement well-being (Price & Balaswamy, 2009). Attention should also be paid to the relatively low reliability coefficient for the autonomy scale. Furthermore, as for the cognitive domain, the measure of physical resources was limited to a self-rated, single-item indicator. Nevertheless, subjective health is frequently shown to be a better predictor for subjective well-being than more objective health indicators (Diener & Seligman, 2004; Wu et al., 2013), and we argue that subjective measures have strength in capturing a person’s perceived resource capability (Diener et al., 1998). The measure of financial resources
is also somewhat insufficient as it is designed to capture people without adequate financial resources rather than measure the actual assets people possess. It is, however, generally argued that fundamental financial security is more important for individual well-being than excessive wealth (Diener & Biswas-Diener, 2002; Diener, Oishi, & Lucas, 2003; Diener & Seligman, 2004; Veenhoven, 1991), and we therefore claim that this measure is suitable for the aim of the present study.

Despite its acknowledged limitations, we believe this study contributes novel findings to the field of research on retirement adjustment as one of only a very few studies that included all six of the resource domains suggested in the resource-based dynamic model (Wang et al., 2011).

The inclusion of interaction effects revealed group differences and showed that the six resources variously influence life satisfaction depending on the presence of other resources. While no interaction effects were found for participants not yet retired, there was a relatively large amount of resource interdependency among those partially or fully retired. The interactions revealed both compensatory and cumulative effects on life satisfaction. That is, some resources showed stronger effects on life satisfaction in the absence of each other (i.e., compensatory effects), while others had a stronger influence in presence of each other (i.e., cumulative effects).

Compensatory effects were found between self-esteem and physical health (bridge employees and retirees), autonomy and social support (bridge employees), and social support and physical health (retirees). These findings suggest that high self-esteem can, to some degree, compensate for the negative effects of poor physical health by decreasing its influence on life satisfaction. Similarly, low autonomy and poor physical health may be less detrimental to life satisfaction for a person who has supportive social relations. The interaction between autonomy and social support among bridge employees is in line with Zaniboni’s (2015) finding that personal resources have a stronger influence on expected retirement adjustment in people with low perceived age discrimination at work (in this study used as an indicator of social resources). The identified compensatory effects support the position of the resource-based dynamic model (Wang et al., 2011) that a loss in one resource can be compensated for by a gain in one of the others.

Cumulative effects were found between self-esteem and autonomy (bridge employees), self-esteem and financial resources (bridge employees),
social support and physical health (bridge employees), and autonomy and physical health (retirees). These findings demonstrate that some resources are interrelated in a way that amplifies their positive effects. For instance, physical health was shown to have a stronger influence on life satisfaction in people with higher than lower social support. This illustrates that people are more likely to benefit from good health if they also have a strong social network. Similarly, self-esteem and physical health had a stronger impact on life satisfaction among individuals with high autonomy. These interactions do not correspond well with the resource-based dynamic model (Wang et al., 2011), which suggests compensatory rather than cumulative effects on retirement adjustment. Instead, they are more in line with Sen’s (1985) theory of capabilities, which more explicitly emphasizes the importance of being able to mobilize resources. According to this approach, resources influence well-being only if the person possesses the ability to use them. For instance, the beneficial effects of social support may be conditioned by the individual’s physical capability (e.g., to participate in social activities), which would explain why the relationship between social support and life satisfaction is stronger for individuals in better health. The capability approach suggested by Sen may thus provide some insights into why some resources also generate cumulative effects on well-being.

Our findings highlight the dynamic nature of retirement adjustment. By including interaction effects, we found that different resources tend to influence life satisfaction variably depending on the availability of other resources, and that these effects vary between workers, bridge employees, and retirees. Multiple interaction effects were observed among both partially and fully retired participants, whereas no interactions were found for those not yet retired. It is generally argued that engagement in work helps people to maintain structure in the central aspects of their daily lives, including finances, everyday schedules, social contacts, physical activities, and sense of identity (Beehr & Bennet, 2014). Retirement, on the other hand, confronts people with new social roles, expectations, challenges, and opportunities, all of which have the potential to influence well-being (Wang & Shi, 2014).

Because retirement is associated with changed life circumstances, it is reasonable to expect greater dynamics among these resources after the event than before it occurs. Notably, more resource interdependency was observed among those engaged in bridge employment than in retirees. Bridge
employment is generally believed to ease adjustment to retirement through more gradual lifestyle changes than an abrupt cessation of work (e.g., Wang & Shultz, 2010; Zhan & Wang, 2015). Nevertheless, the reasons for engaging in bridge employment vary (Zhan, 2016) and may be related both to higher and lower levels of resource capability. Resources (e.g., good health) can determine a person’s ability to engage in bridge employment, but their lack (e.g., scarce financial resources) can also serve as a driving force for continued work after retirement. The observed interdependency of resource among bridge employees may thus be related to the fact that work after retirement is conditioned on the availability of resources, which will also inevitably affect the influence of other resources.

It is important to note that this study is based on cross-sectional data, which clearly limits our ability to draw conclusions about to what extent compensatory and cumulative resource effects can be observed within an individual over time. Future research should seek to further investigate the applicability of the resource-based dynamic model (Wang et al., 2011) by studying whether the loss of a resource is associated with a decrease in well-being and whether this loss can be compensated for by a gain in another resource.

Another limitation of our study is the risk for selectivity effects in the sample. Even though the original sample was selected to be representative of the population, it is well known that healthier and more highly educated people are often oversampled in survey-based studies. It is thus unclear how well these results can be generalized to all people born in Sweden from 1949 to 1955. Furthermore, retirement adjustment is preferably studied with context-sensitive measures with the ability to differentiate between adjustment and satisfaction (e.g., van Solinge & Henkens, 2008). The use of a global measure of well-being as an indirect estimate of retirement adjustment is therefore a limitation in this study. However, due to the fact that we also included non-retired individuals, we were restricted to use a more indirect measure. In addition, life satisfaction has been shown to be a reliable indicator of adaption to life events (e.g., Lucas, 2007). We therefore argue that the use of a standardized measure of global well-being was acceptable for the present study.

Despite these limitations, we believe this study contributes to existing knowledge on retirement adjustment by investigating two central aspects of
the resource-based dynamic model (Wang et al., 2011): the applicability of a six-factor model, and the interdependency of the effects of various resources on life satisfaction in the retirement transition. The inclusion of individuals at different phases of the transition showed that emotional, motivational, social, physical, cognitive, and financial resources may influence well-being differently depending on whether the individual is still working, partially retired, or fully retired. Future research would benefit from a more thorough investigation of the extent to which individual resources influence retirement adjustment differently depending on type of transition.

References


LIFE SATISFACTION AND INDIVIDUAL RESOURCES IN RETIREMENT


## Tables

**Table 1.** Descriptive Statistics for Workers, Bridge Employees, and Retirees.

<table>
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<tr>
<th></th>
<th>Workers (n = 2725)</th>
<th>Bridge Employees (n = 565)</th>
<th>Retirees (n = 1074)</th>
<th>Group Differences</th>
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<td>M (SD) / %</td>
<td>M (SD) / %</td>
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<td>Autonomy³</td>
<td>11.38 (2.12) ab</td>
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<td>12.20 (2.10) b</td>
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Note. ¹Range 5–35; ²Range 1–4; ³Range 3–15; ⁴Range 4–28; ⁵⁶Range 1–6; ⁷% With basic financial resources; ⁸Range 60–66; ⁹% Females; ¹⁰% Higher education. abValues with a common subscript are significantly different at p < .05 with Bonferroni adjustments. *Significantly different from the average proportion, p < .05.
### Table 2.

<table>
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|                  | 4                   | 5                        | 6                    |
| Life Satisfaction|                    |                          |                      |
| Self-Esteem      |                    | .41***                   |                      |
| Autonomy         |                    | .39***                   |                      |
| Social Support   |                    | .36***                   |                      |
| Self-Rated Physical Health | .30*** | .33*** | .19*** |
| Self-Rated Cognitive Ability | .28*** | .21*** | .38*** |
| Basic Financial Resources | .06** | .12*** | .05** |

|                  | 7                   |                          |                      |
| Life Satisfaction|                    |                          |                      |
| Self-Esteem      |                    | .36***                   |                      |
| Autonomy         |                    | .26***                   |                      |
| Social Support   |                    | .36***                   |                      |
| Self-Rated Physical Health | .28*** | .21*** | .38*** |
| Self-Rated Cognitive Ability | .31*** | .20*** | .41*** |
| Basic Financial Resources | .10** | .18*** | .18*** |

Note. **p < .01, ***p < .001.
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*Note. N = 2725. ***p < .001.*
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Note. N = 1074. ***p < .001.
**Figures**

**Workers**

Figure 1. Standardized estimates (with 95 % CI) of individual resources on life satisfaction for workers.

**Bridge Employees**

Figure 2. Standardized estimates (with 95 % CI) of individual resources on life satisfaction for bridge employees.
Figure 3. Standardized estimates (with 95% CI) of individual resources on life satisfaction for retirees.
Life Satisfaction in the Retirement Transition: The Role of Bridge Employment and Individual Resources

Isabelle Hansson, Sandra Buratti, Valgeir Thorvaldsson, Boo Johansson, Anne Ingeborg Berg
Department of Psychology, University of Gothenburg, Sweden

Author note

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Abstract
The impact of retirement on well-being varies between individuals, but also within individuals over time. Bridge employment and individual resources are suggested to be beneficial for the retirement adjustment process. The aim of this study was to investigate whether the type of transition and individual differences in resource capability are related to changes in life satisfaction in the retirement transition. We studied changes in life satisfaction over one year in a sample of 4,025 individuals aged 60–66 drawn from the HEalth, Ageing, and Retirement Transitions in Sweden (HEARTS) study. Resources evaluated for their role in the transition included self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial assets. Results from multiple group latent change score models showed no overall effect for type of transition, but individual differences in resources were associated with both levels and changes in life satisfaction. High self-esteem, strong social support, good physical health, and basic financial resources were generally associated with increases in life satisfaction after one year. The effects of available resources, however, varied depending on type of transition and accounted for a larger proportion of changes in life satisfaction among participants who retired fully between waves (27%) than among those who were retiring gradually (17%). Our findings suggest that bridge employment may serve as a buffer against the negative effects of retirement for individuals with poor financial resources.

Keywords: bridge employment, individual resources, life satisfaction, retirement
Life Satisfaction in the Retirement Transition: 
The Role of Bridge Employment and Individual Resources

Retirement from work is a major life event in older adulthood because it serves as a marker of the transition from pre-retirement midlife to the new life phase as senior citizen (Ekerdt, 2010). This transition involves a process of psychologically and behaviorally distancing oneself from the workforce. The person is confronted with new social roles, expectations, challenges and opportunities, all of which can influence well-being (Wang & Shi, 2014). Research has shown that, for the majority, retirement has no major impact on well-being (see Henning, Lindwall, & Johansson, 2016, for a recent review). 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 and show that many older workers may have problems adjusting to retirement.

Well-being in early retirement has been identified as an important predictor of future health status and survival (Diener, & Chan, 2011; Wiest, Schütz, Webster, & Wurm, 2011). These findings, combined with reports of a rapidly aging population (OECD, 2006), have contributed to a growing interest in retirement research in political, socioeconomic, and human resources areas (Wang & Shi, 2014). The transition to retirement is, however, frequently characterized as a multidimensional and dynamic process (van Solinge, 2012) in which no two people are likely to have the same experience (Shultz & Wang, 2011). Pre-retirement work factors such as psychological and physical demands (Quick & Moen, 1998), stress, and job satisfaction (Wang, 2007) are likely to influence well-being in retirement. Other factors related to well-being in retirement include socio-economics and labor market status (e.g., Wetzel, Huxhold, & Tesch-Römer, 2015).

Retirement adjustment refers to the process of getting used to life changes accompanied with the transition (van Solinge & Henkens, 2008). Research on the retirement adjustment process has typically focused on either the impact of retirement or the factors related to retirement adjustment quality (Wang, Henkens, & van Solinge, 2011). Retirement adjustment is preferably estimated using context-dependent measures of the person’s psychological
comfort with life as a retiree (Wang et al., 2011). Direct measures of adjustment and satisfaction in retirement have some obvious advantages for capturing the dynamics of the process (van Solinge & Henkens, 2008), but to account for changes in well-being across the retirement transition, it is also necessary to also include measures of well-being before the actual retirement event. In this study, we estimated retirement adjustment indirectly through measures of life satisfaction defined by Diener (1984) as the person’s global cognitive evaluation of their satisfaction with life as a whole.

In a recent review, Wang and colleagues (2011) concluded that there is still a lack in our understanding of the underlying mechanisms of successful adjustment to retirement. Type of transition, gradual or abrupt work exit (Zhan & Wang, 2015), and resource capability (Wang et al., 2011) are two important aspects of this process.

**Bridge Employment**

Whether the work exit is gradual or abrupt is likely to influence both the immediate effects of retirement and the development of a post-retirement lifestyle. Retirement may not necessarily be viewed as a permanent career exit (Wang & Shultz, 2010; Zhan & Wang, 2015); many retirees continue working to some extent in the form of bridge employments as an intermediate step toward a complete labor force withdrawal (Shultz, 2003). Bridge employments can take many forms, and it has become relatively common among older workers to retire, “un-retire”, and “re-retire” several times (Beehr & Bennet, 2014; Shultz & Wang, 2011). Bridge employment, often described as an optional part of the retirement process (Shultz & Wang, 2011; Wang & Shultz, 2010), is assumed to be beneficial for both physical and psychological well-being (Zhan, Wang, Liu, & Shultz, 2009).

In their review, Zhan and Wang (2015) suggested that bridge employment may serve as a coping mechanism in adapting to retirement. In this sense, bridge employment can be used to prevent the adverse effects of an abrupt loss of work role and to preserve continuity in lifestyle patterns (e.g., Wang & Shultz, 2010; Zhan & Wang, 2015). It can also be an opportunity for people to financially and psychologically prepare for their definite withdrawal from the labor force (Zhan & Wang, 2015). Similarly, Beehr and Bennet (2014) proposed that bridge employment may help to
maintain structure in central aspects of daily life, including finances, daily routines, social contacts, physical activities, and sense of identity.

Bridge employment has been shown to be beneficial in the retirement adjustment process as it predicts both retirement satisfaction and overall life satisfaction (Kim & Feldman, 2000). Bridge employees seem to have a smoother transition and less change in well-being than retirees without bridge jobs (von Bonsdorff, Shultz, Leskinen, & Tansky, 2009; Wang, 2007), and bridge employment has been shown to mitigate the negative effects of involuntary retirement on life satisfaction (Dingemans & Henkens, 2014).

However, even though retirees generally report positive reasons for working after retirement (Dingemans, 2016; Fasbender, Wang, Voltmer, & Deller, 2015), bridge employment has also been shown to have negative influences on well-being. Some retirees enter bridge employment for financial reasons (Zhan, 2016), which Dingemans and Henkens (2014) found to be associated with decreased life satisfaction. De Vaus and colleagues (de Vaus, Wells, Kending, & Quine, 2007) found that gradual retirement is associated with less health deterioration, but with more adjustment problems than abrupt retirement. They found no differences, however, in psychological well-being between those who retired gradually or abruptly.

Several reviews on bridge employment (e.g, Beehr and Bennet, 2014; Wang & Shultz 2010; Zhan & Wang, 2015) have concluded that more research on the various outcomes of bridge employment is needed. Although bridge employment is generally believed to ease retirement adjustment (Cahill, Giandrea, & Quinn, 2013), studies are lacking on the mechanisms underlying how and why retirees can benefit from prolonged work engagement after retirement (Zhan & Wang, 2015). For example, the benefits of bridge employment may vary depending on individual differences in resource capability.

**Individual Resources**

The resource-based dynamic model on retirement adjustment by Wang and colleagues (2011) claims that retirement is a longitudinal dynamic process in which individual well-being is influenced by available resources and changes in these resources over time. The model is proposed as an integrative theoretical framework suitable for the study of various outcomes of retirement as well as the underlying mechanisms through which retirement
has its impact. In contrast to previous theories on retirement (e.g., role theory, continuity theory, and stage theory), it has the potential to account for within-as well as between-person differences in retirement adjustment. The central premise in the resource-based dynamic model is that the ease of retirement adjustment is seen as the direct effect of the individual’s access to resources. Resources are here 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).

Factors on various levels, including individual, household, job, organizational, and macro level variables are expected to influence the availability of and changes in individual resources, which are described as the driving mechanism behind changes in well-being. Emotional, motivational, social, physical, cognitive, and financial resources are suggested to be of particular importance in this process. Resources are described as means or assets that can be used to cope with challenges associated with the transition. Resources are assumed to be key elements because they define the conditions of retirement and influence what people are able to do physically and what they can afford financially in retirement. For instance, individuals with limited financial resources and poor health may be constrained in the maintenance of their pre-retirement lifestyle and the possibilities to take up new activities in retirement. More resources are expected to lead to fewer adjustment problems and greater well-being (Wang et al., 2011).

The applicability of a resource perspective when studying retirement adjustment has received considerable support (see Barbosa, Monteiro, & Murta, 2016, for a recent review). However, most previous research has focused on a limited set of resources and mainly on the impact 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). People with poor health and financial problems are more likely to experience problems in adjustment to retirement (e.g., Earl, Gerrans, & Halim, 2015; Kim & Moen, 2002; Muratore & Earl, 2015). Notably, only eight of the reviewed studies explicitly included more than two of the six resource domains specified in the resource-based dynamic model (Wang et al., 2011). None of them included all six domains. In these studies, physical and financial resources were typically accompanied with measures of social and/or motivational resources. Social resources, frequently
measured as frequency and/or quality in social relations, was found to predict retirement adjustment in 63% of the studies (e.g., Earl et al., 2015; Price & Balaswamy, 2009).

The role of psychological resources for retirement adjustment is studied less frequently. In their review, Barbosa and colleagues (2016) made no distinction between cognitive, motivational and emotional resources, as suggested in the model by Wang and colleagues (2011). Instead, they were all categorized as indicators of psychological resources, and within this category, motivational resources, often measured as self-efficacy, personal control or mastery, was the most common resource type. Lack of personal control or mastery is generally associated with adjustment problems (Earl et al., 2015; Kim & Moen, 2002; Muratore & Earl, 2015; Price & Balaswamy, 2009; Reitzes & Mutran, 2004). Self-esteem, as an indicator of emotional resources, has also previously been related to retirement adjustment (e.g., Price & Balaswamy, 2009; Reitzes & Mutran, 2004). Noteworthy, none of the 115 studies reviewed by Barbosa and colleagues (2016) included measures of cognitive resources (i.e., memory, processing speed, or general cognitive ability). More in-depth studies on the role of psychological resources could contribute to the understanding of heterogeneity in retirement adjustment as these resources are likely to influence how the individual react to and cope with changes associated with the transition (van Solinge, 2012).

To our knowledge, only one study on retirement adjustment has so far included all six resource domains. In this study, Leung and Earl (2012) evaluated a resource inventory and found the six resource types to be aggregated in three clusters with a shared variance between material (i.e., physical and financial) and psychological (i.e., cognitive, emotional, and motivational) resources. Thus, there is still limited empirical support for the applicability of a six-factor resource model for studying retirement adjustment.

**Present Study**

In this study, we specifically aimed to examine two aspects of the retirement adjustment process.

First, we expected the type of transition to be related to changes in life satisfaction. Given the changing nature of retirement (Shultz & Wang, 2011), we differentiated between different types of retirement statuses and
transitions and investigated changes in life satisfaction over a one year period. We anticipated that gradual retirement would be associated with less change than abrupt retirement (e.g., Shultz & Wang, 2011; Wang & Shultz, 2010; Zhang & Wang, 2015).

Second, we expected, in accord with the resource-based dynamic model (Wang et al., 2011), that life satisfaction in the transition to retirement would be related to individual resource capability. All six resource domains: (1) emotional, (2) motivational, (3) social, (4) physical, (5) cognitive, and (6) financial resources, were therefore included in the study and measured as (1) self-esteem, (2) autonomy, (3) social support, (4) self-rated physical health, (5) self-rated cognitive ability, and (6) basic financial resources. We expected all six resources to be associated with levels and changes in life satisfaction, with fewer resources at baseline expected to generate a decrease in life satisfaction and more resources assumed to produce an increase.

To account for the substantial heterogeneity in adjustments to retirement, we also investigated whether the effects of the type of transition and of available resources varied in relation to each other. For example, abrupt retirement brings immediate lifestyle changes that may make a person more vulnerable and more dependent on the availability of certain resources than would a gradual transition. In the absence of adequate resources, bridge employment may buffer the negative effects of retirement. We therefore expected differences in individual resources to account for a larger proportion of the changes life satisfaction for participants who had retired fully between waves than those who had retired gradually.

Method

Sample and Procedure

We used data from the HEalth, Ageing and Retirement Transitions in Sweden (HEARTS) study, a longitudinal population-based study aimed to capture developmental psychological processes in the years before and after the retirement transition. The participants in HEARTS were recruited from the Swedish register “Statens personadressregister” (SPAR). In April 2015, a nationally representative sample of 14,990 people aged 60–66 were mailed an invitation to participate in the study. Participants were asked to complete a survey including questions about their socio-demographic background, work life and retirement, health, lifestyle, well-being, social relations, and
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personality. Data were collected mainly through the online platform “Qualtrics”, but a paper version of the questionnaire was generated for participants who did not respond after a second reminder six weeks later.

A total of 5,913 individuals (39.4%) participated in the first wave (T1), 69% (n = 4,068) completed the web-based survey, and 31% (n = 1,845) completed the paper version. The sample is generally representative of the population born in Sweden from 1949 to 1955, although the proportions of women and of people with higher education are slightly higher. The first follow-up (T2), conducted in the spring 2016, resulted in a retention rate of 78.7% (N = 4,656). To avoid potential confounding effects of labor market status on changes in life satisfaction (Wetzel et al., 2015), we excluded people reporting unemployment (n = 158) or disability pension (n = 333) at T1 or T2. We also excluded participants who did not report retirement status at both T1 and T2 (n = 140), resulting in a final sample of 4,025 individuals with a mean age of 63.24 years (SD = 2.03), and 54% of whom were women.

Measures

Retirement. Retirement status was measured at T1 and T2 through responses to the question “Are you retired (receive old-age pension)?”. Four response alternatives were given: (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. For this study, we made no distinction between the two middle response alternatives. Thus, a negative answer (no) was coded as ”worker”, the two middle alternatives (yes, but still working and consider myself a worker and yes, still working but consider myself a retiree) were coded as “bridge employee”, and a positive answer (yes, full-time retiree) was coded as “retiree”. The 47 participants who indicated bridge employment at T1 and working at T2, but still reported full-time employment in both waves were coded as “working” at both T1 and T2. As shown in Table 1, seven retirement transition types were generated based on the participants’ retirement statuses at T1 and T2: worker (W), worker to bridge employee (WtB), worker to retiree (WtR), bridge employee (B), bridge employee to retiree (BtR), retiree to bridge employee (RtB), and retiree (R).

----------------------------------Table 1 inserted here----------------------------------
Life satisfaction. Life satisfaction was measured at T1 and T2 using the Satisfaction With Life Scale (Diener, Emmons, Larsen & Griffin, 1985). The scale consists of five items (e.g., “I am satisfied with my life”) measured on a 7-point scale, ranging from strongly disagree (1) to strongly agree (7). Cronbach’s alpha was estimated to .92 in both waves.

Self-esteem. Self-esteem was measured at T1 on the five positively phrased items (e.g., “I feel that I have a number of good qualities”) from the Rosenberg Self-esteem Scale (Rosenberg, 1965). This decision was based on studies suggesting responses to positively phrased items are more accurate than those to negatively phrased items (Lindwall et al., 2012; Schriesheim & Hill, 1981). The items were measured on a 4-point scale, ranging from strongly disagree (1) to strongly agree (4); mean scores were calculated for each participant. Cronbach’s alpha was estimated to .91.

Autonomy. Autonomy was measured at T1 on the Autonomy subscale of the Basic Psychological Need Satisfaction 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”) measured on a 5-point scale, ranging from completely false (1) to completely true (5). A total score (range 3–15) was calculated for each participant. Cronbach’s alpha was estimated to .66.

Social support. Social support was measured at T1 on the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). The scale consists of 12 items divided into three subdomains: Family (e.g., “I get the emotional help and support I need from my family”), Friends (e.g., “I can talk about my problems with my friends”), and Significant Other (e.g., “There is a special person who is around when I am in need”). Participants rated the items on a 7-point scale, ranging from strongly disagree (1) to strongly agree (7). A total score (range 4–28) was first calculated for each subscale. A mean total was then calculated for each participant, resulting in an overall social support score with the same range (4–28). Cronbach’s alpha was estimated to .95.

Self-rated physical health. Self-rated physical health was measured at T1 on one item (“How do you currently evaluate your overall health condition?”) and estimated on a 6-point scale ranging from very bad (1) to very good (6).

Self-rated cognitive ability. Self-rated cognitive ability was measured at T1 on one item (“How do you currently perceive your thinking
ability?”) and estimated on a 6-point scale ranging from very bad (1) to very good (6).

**Basic financial resources.** Basic financial resources were measured at T1 by the participants’ estimates of their ability to cover unpredicted costs of 15 000 SEK (approx. €1 500) within one week. A positive response (yes, using own or households 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).

**Covariates.** Demographic information from T1, including age, gender (0 = male, 1 = female) and education (0 = primary/secondary, 1 = tertiary/higher) were included to control for potential confounding effects.

**Statistical Analysis**

Levels and changes in life satisfaction between T1 and T2 were investigated through structural equation modelling techniques in R version 3.3.1 (R Core Team, 2016). More specifically, we evaluated latent change score (LCS) models using the lavaan package (Rosseel, 2012). As suggested in literature reviewing statistical methods for analysis of within-person changes, particularly in data including only two time points (e.g., McArdle, 2009; Newsom, Jones, & Hofer, 2011), LCS models are preferable to raw difference score models or lagged regression models because they can better control for statistical problems such as regression to the mean, inflated standard errors, and low reliability among difference scores.

As a first step to establish an adequate measurement model, we generated a two-latent-factors confirmatory model for life satisfaction from the item scores at T1 and T2, and evaluated measurement invariance over time and across groups. We then generated an LCS from the residual in T2 when regressed on T1. Figure 1 illustrates the estimated LCS model; two latent factors (“sT1” and “sT2”) were derived from the items scores at T1 (“A101_1”–“A101_5”) and T2 (“B101_1”–“B101_5”), and a latent change score (“chn”) was generated based on the two latent measures of life satisfaction at T1 and T2. The model was specified so that the total variance in T2 was accounted for by T1 plus change. T1 was regressed on change and intercepts were specified for both T1 and change. This way, the change intercept represents the average rate of change while controlling for life satisfaction at T1 (McArdle, 2009). The items were mean centered (items for
T2 centered on average level on the corresponding item for T1) before included in the analysis so that the change intercept could be interpreted as the average change given mean levels at T1. Selected covariates (age, gender, and education) were included as predictors of both T1 and the change component.

To further investigate between-person differences in change, we estimated a multiple group LCS model with all parameters initially constrained to be equal across the seven retirement groups. In a second model, the change intercept was released to be a free parameter and vary across the groups. We tested group differences using chi-square tests on pairwise constraints.

In a third model, all six resources (self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources) were included as covariates of both T1 and change. To investigate overall effects of individual resources on change in life satisfaction, the parameters were constrained to be equal across all retirement groups. In the fourth and final model, all resource parameters were free to vary across retirement groups and significant group differences were investigated using chi-square tests. All models were estimated using full information maximum likelihood and continuous (or non-binary) predictors were grand-mean centered.

**Results**

Table 2 provides an overview of baseline demographic and resource related differences across the seven retirement types. Workers (W) reported slightly lower life satisfaction at T1 than bridge employees (B), retirees (R), and participants who returned to bridge employment between waves (RtB). No differences were found between the other groups. Workers (W, WtB, and WtR) reported lower autonomy than both bridge employees (B) and retirees (R and RtB), but no difference was found between bridge employees and retirees. Compared with the proportion in the total sample, a larger proportion of those retiring between waves (WtR) and those engaged in bridge employment (B), and a smaller proportion of the retirees (R), reported that
they had sufficient financial resources to cover unpredicted costs. No significant differences were found in levels of self-esteem, social support, physical health, or overall cognitive ability across the groups. As expected, participants still working were generally younger than those retired at T1 and T2. In addition, men and highly educated people were overrepresented among bridge employees (B) and underrepresented among retirees (R). Bivariate correlations among the six resources are presented in Table 3.

Changes in Life Satisfaction

The measurement model showed acceptable fit indices ($\chi^2(21) = 378.80, p < .001$, CFI = .990, TLI = .978, RMSEA = .065, 90% CI [.060, .071], SRMR = .022) and strong measurement invariance was established over time and across groups. More specifically, the factor loadings and intercepts ($\Delta \chi^2(5) = 0.90, p = .97, \Delta$CFI < .001) were found to be relatively stable over time, but the residual variances ($\Delta \chi^2(5) = 13.29, p = .001, \Delta$CFI < .001) varied slightly between T1 and T2. Similarly, the factor loadings and intercepts ($\Delta \chi^2(60) = 35.81, p = .99, \Delta$CFI < .001) were stable across retirement groups while the residual variances ($\Delta \chi^2(48) = 101.96, p < .001, \Delta$CFI = .002) differed to some extent between groups. Given that chi-square tests are sensitive to large sample sizes (Milfont, & Fischer, 2010) and that CFI decreased marginally between the models (Meade, Johnson, & Braddy, 2008), we assumed strict measurement invariance for the following models (i.e., the factor loadings, intercepts, and residual variances were constrained across time and groups).

Table 4 shows the results from the estimated LCS models. In Model 1, the change intercept was constrained to be equal across all seven retirement transition types, and in Model 2 this parameter was released to vary between groups. The change intercepts represent the estimated changes in average levels of life satisfaction at T1. Model 1 show no overall changes in life satisfaction from T1 to T2. Model 2 shows the estimated changes separately for each retirement group, and these effects are also illustrated in Figure 2. An average increase was found for participants retiring between
waves (WtR), and a decrease was shown for those working at both waves (W). No significant changes were found for bridge employees (B), retirees (R), or participants retiring (WtB, BtR) or “un-retiring” (RtB) gradually between waves. Chi-square tests for group specific differences showed, contrary to our expectations, no differences in average rate of change between abrupt and gradual retirement (WtR vs. WtB, $\Delta \chi^2(1) = 2.86, p = .091$; WtR vs. BtR, $\Delta \chi^2(1) = 0.34, p = .561$). The only significant group difference was found between workers (W) and fully retiring participants (WtR; $\Delta \chi^2(1) = 10.31, p = .001$).

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**Effects of Individual Resources on Changes in Life Satisfaction**

In Model 3, we constrained the effects of individual resources at T1 on change in life satisfaction to be equal across all retirement transition types. In Model 4, we allowed these parameters to vary between the groups (see Table 6). The results from Model 3 showed that individual differences in resources at T1 were associated with both levels and changes in life satisfaction. Self-esteem, autonomy, social support, self-rated physical health and basic financial resources were positively related to life satisfaction at T1. No significant effect was found for self-rated cognitive ability. Showing partial support for our hypothesis, higher self-esteem, more social support, good physical health, and basic financial resources at T1 were associated with an overall increase in life satisfaction after one year. However, in contrast to our expectations, autonomy and self-rated cognitive ability were not found to predict changes in life satisfaction.

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The results from Model 4 revealed group differences in the effects of self-esteem, autonomy, social support, self-rated physical health, self-rated cognitive ability, and basic financial resources at T1 on changes in life satisfaction after one year ($\Delta \chi^2(36) = 78.74, p < .001$). In line with our expectations, a larger proportion of the changes in life satisfaction were
explained by individual differences in resource capability when retirement was abrupt rather than gradual. More specifically, there was a difference in explained variance between participants retiring fully between waves (WtR; $R^2 = .27$) and those retiring gradually from work to bridge employment (WtB; $R^2 = .17$; $\Delta \chi^2(6) = 22.95, p < .001$), but not between WtR and participants retiring fully from previous bridge employment (BtR; $R^2 = .14$; $\Delta \chi^2(6) = 11.90, p = .064$). The effects for WtR also differed from workers ($\Delta \chi^2(6) = 34.82, p < .001$), bridge employees ($\Delta \chi^2(6) = 27.13, p < .001$), and retirees ($\Delta \chi^2(6) = 42.27, p < .001$).

The findings for Model 4 are illustrated in Figure 3. The predicted changes were calculated for participants with average levels of life satisfaction at baseline and separated by low (one standard deviation below mean, or no for financial resources) and high (one standard deviation above mean, or yes for financial resources) resources at T1. The effects of self-esteem, autonomy, social support, self-rated physical health, and self-rated cognitive ability were calculated for those with basic financial resources and average scores on all other resource measures. Similarly, the effects of financial resources were calculated for those with average scores on the other measures.

Figure 3 inserted here

**Self-esteem.** Self-esteem at T1 predicted changes in life satisfaction only among workers (W) and participants retiring fully between waves (WtR). Higher self-esteem was associated with greater increase in participants retiring between waves, and the previously identified decrease for workers (see Figure 1) was true only for participants with low self-esteem. There was also a relatively strong but statistically insignificant effect for participants retiring from previous bridge employment (BtR), which may be related to the comparatively small group size ($n = 129$). No significant effects were found for bridge employees (B), retirees (R), or participants retiring or “un-retiring” gradually between waves (WtB, BtR, and RtB). Pairwise comparisons showed a significant difference in effect between workers and retirees ($\Delta \chi^2(1) = 7.78, p = .005$), and between retirees and participants retiring fully between waves ($\Delta \chi^2(1) = 8.12, p = .004$).
Autonomy. Autonomy at T1 was found to predict changes in life satisfaction for participants retiring fully between waves (WtR). Low autonomy before retirement was in fact associated with a larger increase after one year. Chi-square tests showed that the effect was significantly stronger for those retiring fully between waves than for workers (W; $\Delta \chi^2_{(1)} = 13.05, p < .001$), retirees (R; $\Delta \chi^2_{(1)} = 11.70, p < .001$), bridge employees (B; $\Delta \chi^2_{(1)} = 8.24, p = .004$), and participants retiring gradually between waves (WtB; $\Delta \chi^2_{(1)} = 7.98, p = .005$).

Social support. Social support at T1 predicted changes in life satisfaction only among bridge employees (B) and retirees (R). For both groups, lower levels of social support were associated with an average decrease in life satisfaction, and higher levels were related to an overall increase after one year. Pairwise comparisons revealed that the effects were significantly stronger for bridge employees and retirees than for workers (W vs. R, $\Delta \chi^2_{(1)} = 7.29, p = .007$; W vs. B, $\Delta \chi^2_{(1)} = 3.90, p = .048$). No significant effects were found for the other retirement groups.

Self-rated physical health. Self-rated physical health at T1 was related to changes in life satisfaction among bridge employees (B) and retirees (R), even though the effect was stronger (but insignificant) for those retiring from bridge employment (BtR), probably due to the relatively small group size ($n = 129$). Poor health at T1 was associated with an average decrease and good health with an overall increase after one year. However, a significant difference in effect was found only between workers and retirees ($\Delta \chi^2_{(1)} = 6.76, p = .009$).

Self-rated cognitive ability. In contrast to the insignificant effect of self-rated cognitive ability on levels and changes in life satisfaction in the sample overall, we found a significant effect for participants retiring fully between waves (WtR). High perceived cognitive ability before retirement was associated with a stronger increase in life satisfaction than low perceived cognitive ability. This effect was significantly stronger for this group than for retirees ($\Delta \chi^2_{(1)} = 6.45, p = .011$), bridge employees ($\Delta \chi^2_{(1)} = 5.10, p = .024$), and those retiring partially between waves (WtB; $\Delta \chi^2_{(1)} = 6.02, p = .014$).

Basic financial resources. Basic financial resources at T1 predicted significant changes in life satisfaction only for participants retiring partially (WtB) or fully (WtR) between waves. In contrast to the overall increase in life satisfaction for those retiring fully between waves (see Figure 1), there
was a relatively strong decrease in life satisfaction for participants with poor financial resources before retirement. A decrease in life satisfaction was also found for those without basic financial resources who retired partially between waves. There were no significant effects for the other groups. Pairwise comparisons showed that the effect for WtR was significantly stronger than for W ($\Delta \chi^2(1) = 20.32, p < .001$), B ($\Delta \chi^2(1) = 13.16, p < .001$), R ($\Delta \chi^2(1) = 17.22, p < .001$), WtB ($\Delta \chi^2(1) = 5.74, p = .017$), BtR ($\Delta \chi^2(1) = 8.47, p = .004$), and RtB ($\Delta \chi^2(1) = 7.70, p = .006$), whereas the effect for WtB was significantly stronger only compared to W ($\Delta \chi^2(1) = 4.81, p = .028$).

Discussion

This study was designed to investigate two aspects of the dynamic nature of retirement adjustment; the role of bridge employment and individual resources for changes in life satisfaction over one year. We assumed that the type of transition and individual differences in resource capability would account for a substantial proportion of the previously identified heterogeneity in the effect of retirement on well-being. Gradual retirement and more resources were expected to be beneficial for individual well-being and thus ease adjustment in retirement. Our findings show no overall effect for type of transition, but individual resources were associated with both levels and changes in life satisfaction. The effects of individual resources were also found to vary depending on type of transition.

We found the type of retirement transition to be related to changes in life satisfaction after one year; participants who retired (WtR) between waves showed a larger increase in life satisfaction than those who worked during both waves (W) and in fact experienced a decrease in life satisfaction. Abrupt retirement (WtR) was also associated with a larger average increase in life satisfaction than gradual retirement (WtB and BtR), even though the effects were insignificant. The prediction that gradual retirement would be associated with fewer changes in well-being than abrupt retirement (von Bonsdorff et al., 2009; Wang, 2007) is thus not supported. It may be argued, however, that the identified baseline differences between retirement groups speak to the suggested beneficial effects of bridge employment on individual well-being (Shultz & Wang, 2011; Wang & Shultz, 2010; Zhang & Wang, 2015). Participants engaged in bridge employment (B) did in fact report higher life satisfaction and autonomy at T1 than workers (W). A larger
proportion of bridge employees (B), and a smaller proportion of retirees (R), reported having basic financial resources than the total sample. These results indicate that bridge employment may increase both well-being and individuals resources. It is, however, possible that the opportunity to engage in bridge employment is determined by a person’s resource capability. The participants in this group were more educated than participants in the other groups. It is reasonable to assume that higher education is associated with higher paying jobs and positions with more autonomy, which in themselves may have positive effects on individual well-being. It is also likely that these pre-conditions are related to a greater opportunity to choose a preferred exit route, and bridge employment may be an outcome of resource capability rather than a determinant of well-being. It is therefore important to consider under which circumstances bridge employment can be beneficial for retirement adjustment.

Showing partial support for our predictions, individual differences in resource capability were associated with both levels and changes in life satisfaction. In line with the resource-based dynamic model (Wang et al., 2011); self-esteem, autonomy, social support, self-rated physical health, and basic financial resources were associated with life satisfaction at baseline. Contrary to our predictions, self-rated cognitive ability did not predict life satisfaction at baseline. Furthermore, high self-esteem, strong social support, good physical health, and basic financial resources were generally associated with increases in life satisfaction after one year. These findings are in line with previous research (e.g., Earl et al., 2015; Kim & Moen, 2002; Leung and Earl, 2012; Muratore & Earl, 2015; Reitzes & Mutran, 2004) showing that material resources such as health and basic finances are fundamental for well-being in the retirement transition. The relevance of social and emotional resources is also supported in previous research on retirement adjustment (e.g., Price & Balaswamy, 2009).

The effects of individual resources on changes in life satisfaction varied across retirement groups. In line with our expectations, individual differences in resource capability were found to account for a larger proportion of changes in life satisfaction among participants who retired fully (WtR, 27 %) than in those who retired gradually between waves (WtB, 17 %). A lack of basic financial resources before retirement was associated with decreased life satisfaction in those who retired partially (WtB) or fully
(WtR) between waves, but this effect was found to be less detrimental in gradual than in full retirement. These findings suggest that bridge employment may serve as a buffer against the negative effects of retirement on well-being for individuals with poor financial resources. In this sense, our results support the suggested beneficial effects of bridge employment on retirement well-being (Shultz & Wang, 2011; Wang & Shultz, 2010; Zhang & Wang, 2015). We also found a larger increase in life satisfaction for participants retiring fully (WtR) with basic financial resources than for those retiring gradually (WtB) with the same resources, which indicates that bridge employment may in fact hamper the positive effects of retirement.

Autonomy was related to changes in life satisfaction after one year only among those who retired fully between waves (WtR). In contrast to our expectations, low autonomy before retirement was associated with a stronger increase in life satisfaction the year after. This finding can be related to research showing the importance of personal control or mastery for well-being (e.g., Earl et al., 2015; Kim & Moen, 2002; Muratore & Earl, 2015; Price & Balaswamy, 2009; Reitzes & Mutran, 2004) and may be explained as an effect of released job demands (i.e., an increase in autonomy). Furthermore, self-rated cognitive ability was related to changes in life satisfaction only among those participants who retired fully between waves (WtR). This result indicates, in line with the resource-based dynamic model (Wang et al., 2011), that people with more resources are more likely to benefit from retirement.

**Limitations**

Retirement adjustment is preferably measured using a context-sensitive instrument with the ability to differentiate between adjustment and satisfaction (e.g., van Solinge & Henkens, 2008). The use of a global measure of well-being as an indirect estimate of retirement adjustment is therefore a limitation of this study. However, to study within-person changes across the retirement transition, it is necessary to include pre-retirement measures, and this requirement clearly limits the use of adjustment-specific indicators. Life satisfaction has previously been shown to be a reliable indicator of adaption to life events (e.g., Lucas, 2007), therefore we argue that the use of a standardized measure of global well-being is acceptable for the aim of the present study.
The selected resource indicators may also be considered limitations in this study. Self-rated single-item measures of physical health and cognitive ability cannot fully account for the multidimensional aspects of these resources, and subjective estimates are likely to differ from more objective measures. The fact that no overall effects were found for self-rated cognitive ability may reflect an inadequate measure of this resource domain. However, the relationship between cognitive ability and well-being has previously been shown to be relatively weak (Allerhand, Gale, & Deary, 2014; Llewellyn, Lang, Langa, & Huppert, 2008), and the inclusion of other resource domains with stronger impacts of life satisfaction may thus eliminate this effect. Subjective health measures have also frequently been shown to be better predictors of subjective well-being than more objective measures (Diener & Seligman, 2004; Wu et al., 2013) and they are believed to better capture discrepancies between perceived and anticipated capacity (Diener, Sapyta, & Suh, 1998). The measure of financial resources may also be considered somewhat insufficient as it was designed to capture a lack of adequate financial resources rather than the quantity of assets. However, because fundamental financial security is generally held to be more important for individual well-being than excessive wealth (Diener & Biswas-Diener, 2002; Diener, Oishi, & Lucas, 2003, Diener & Seligman, 2004; Veenhoven, 1991), we believe this measure is suitable for the aim of the present study.

We also caution that the reliability coefficient for the autonomy scale was found to be relatively low and the many statistical tests performed may have led to an overestimation of reliability in tests based on a .05 alpha level. It should also be noted that our findings are based on change across only two measurement points, which increases the of measurement errors (e.g., regression to the mean). For example, the observed decrease in life satisfaction among participants “un-retiring” between waves (RtB) may be related to the fact that they reported high life satisfaction at baseline and were thus more likely to lower their ratings at follow-up than participants who scored lower at baseline. Also, although latent change score models are assumed to provide more reliable change estimates (McArdle, 2009), additional measurements points would improve both the accuracy of the observed effects and our ability to identify within-person fluctuations over time.
Despite these limitations, we argue that the present study contributes to existing knowledge on retirement adjustment by integrating two central aspects of the transition that are likely to explain both between- and within-person differences in well-being.

Conclusions

Our findings demonstrate that the type of retirement transition and individual differences in resource capability are associated with changes in life satisfaction, but that the effects vary in relation to each other. Individual resources prior to retirement account for some of the previously identified heterogeneity in retirement adjustment. In the absence of adequate financial resources, bridge employment may serve as a buffer against negative effects of retirement.

References


### Table 1.
Frequency Distribution of Retirement Status at T1 and T2.

<table>
<thead>
<tr>
<th>Retirement Transition Group</th>
<th>Retirement Status T1</th>
<th>Retirement Status T2</th>
<th>n</th>
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<td>Bridge employee (B)</td>
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<td>343</td>
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<tr>
<td>Bridge employee to Retiree (BtR)</td>
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<tr>
<td>Retiree to Bridge employee (RtB)</td>
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<td>Bridge employee</td>
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<td>Retiree (R)</td>
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<td>Retiree</td>
<td>905</td>
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</table>
Table 2.
Baseline Differences Across Retirement Transition Groups.

<table>
<thead>
<tr>
<th></th>
<th>W (n = 1860)</th>
<th>WtB (n = 360)</th>
<th>WtR (n = 346)</th>
<th>B (n = 343)</th>
<th>BtR (n = 129)</th>
<th>RtB (n = 82)</th>
<th>R (n = 905)</th>
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<th>Group Differences</th>
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<tr>
<td></td>
<td>M (SD) %</td>
<td>M (SD) %</td>
<td>M (SD) %</td>
<td>M (SD) %</td>
<td>M (SD) %</td>
<td>M (SD) %</td>
<td>M (SD) %</td>
<td>M (SD) %</td>
<td></td>
</tr>
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<td>Life Satisfaction T1</td>
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<td>4.94 (1.25)</td>
<td>5.03 (1.24)</td>
<td>5.17 (1.22)</td>
<td>5.00 (1.38)</td>
<td>5.33 (1.11)</td>
<td>5.13 (1.35)</td>
<td>4.98 (1.30)</td>
<td>$F_{(6,3701)}$ = 6.74, $p &lt; .001$</td>
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<tr>
<td>Self-Esteem</td>
<td>3.48 (0.55)</td>
<td>3.49 (0.54)</td>
<td>3.46 (0.54)</td>
<td>3.51 (0.53)</td>
<td>3.50 (0.53)</td>
<td>3.51 (0.52)</td>
<td>3.45 (0.54)</td>
<td>3.48 (0.54)</td>
<td>$F_{(6,3707)}$ = 0.68, $p = .67$</td>
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<td>11.60 (2.10)</td>
<td>11.53 (2.09)</td>
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<td>11.88 (1.93)</td>
<td>12.41 (1.92)</td>
<td>12.22 (2.06)</td>
<td>11.68 (2.12)</td>
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<td>Social Support</td>
<td>22.85 (5.35)</td>
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<td>23.36 (4.72)</td>
<td>23.00 (4.94)</td>
<td>22.92 (5.27)</td>
<td>23.51 (5.02)</td>
<td>23.11 (5.35)</td>
<td>23.00 (5.23)</td>
<td>$F_{(6,3738)}$ = 0.66, $p = .68$</td>
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<tr>
<td>Self-Rated Physical Health</td>
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<td>4.86 (0.91)</td>
<td>4.81 (0.90)</td>
<td>4.93 (0.89)</td>
<td>4.77 (0.93)</td>
<td>4.88 (0.86)</td>
<td>4.77 (0.93)</td>
<td>4.81 (0.93)</td>
<td>$F_{(6,3920)}$ = 1.72, $p = .11$</td>
</tr>
<tr>
<td>Self-Rated Cognitive Ability</td>
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<td>4.90 (0.79)</td>
<td>4.84 (0.81)</td>
<td>4.96 (0.77)</td>
<td>4.91 (0.76)</td>
<td>4.81 (0.82)</td>
<td>4.85 (0.80)</td>
<td>4.86 (0.81)</td>
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</tr>
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<td>91</td>
<td>95*</td>
<td>96*</td>
<td>91</td>
<td>92</td>
<td>90*</td>
<td>92</td>
<td>$\chi^2_{(6)} = 18.10, p = .006$</td>
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</tbody>
</table>
Table 2.
Baseline Differences Across Retirement Transition Groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>W (n = 1860)</th>
<th>WtB (n = 360)</th>
<th>WtR (n = 346)</th>
<th>B (n = 343)</th>
<th>BtR (n = 129)</th>
<th>RtB (n = 82)</th>
<th>R (n = 905)</th>
<th>Total (N = 4025)</th>
<th>Group Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (SD) / %</td>
<td>M (SD) / %</td>
<td>M (SD) / %</td>
<td>M (SD) / %</td>
<td>M (SD) / %</td>
<td>M (SD) / %</td>
<td>M (SD) / %</td>
<td>M (SD) / %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td>63.52 (1.65)</td>
<td>63.66 (1.49)</td>
<td>64.64 (1.44)</td>
<td>64.73 (1.40)</td>
<td>65.11 (1.21)</td>
<td>65.00 (1.27)</td>
<td>63.24 (2.03)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
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<td>50</td>
<td>58</td>
<td>44*</td>
<td>53</td>
<td>46</td>
<td>59*</td>
<td>54</td>
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</tr>
<tr>
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<td>48</td>
<td>40*</td>
<td>50*</td>
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<td>48</td>
<td>37*</td>
<td>45</td>
<td>43.32, p &lt; .001</td>
</tr>
</tbody>
</table>

*Note. W = worker; WtB = worker to bridge employee; WtR = worker to retiree; B = bridge employee; BtR = bridge employee to retiree; RtB = retiree to bridge employee; R = retiree. 1Range 1–7; 2Range 1–4; 3Range 3–15; 4Range 4–28; 5–6Range 1–6; 7% With basic financial resources; 8Range 60–66; 9% Females; 10% Higher education. a–iValues with a common subscript are significantly different at p < .05 with Bonferroni adjustments. *Significantly different compared to the proportion in the total sample, p < .05.
Table 3.
Bivariate Correlations Among Resources.

<table>
<thead>
<tr>
<th></th>
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<th>A</th>
<th>SS</th>
<th>H</th>
<th>C</th>
<th>F</th>
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<td>Self-Esteem (SE)</td>
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<td>.30</td>
<td>.35</td>
<td>.06</td>
<td></td>
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<td>Autonomy (A)</td>
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<td>.34</td>
<td>.29</td>
<td>.14</td>
<td></td>
<td></td>
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<tr>
<td>Social Support (SS)</td>
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<td>.21</td>
<td>.09</td>
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<td>Self-Rated Physical Health (H)</td>
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<td>.14</td>
<td></td>
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<tr>
<td>Self-Rated Cognitive Ability (C)</td>
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<td>.06</td>
<td></td>
</tr>
<tr>
<td>Basic Financial Resources (F)</td>
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Table 4.
Estimates of Change in Life Satisfaction Across Retirement Transition Groups.

<table>
<thead>
<tr>
<th></th>
<th>Life Satisfaction T1</th>
<th>Change in Life Satisfaction T1–T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 1</td>
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<tr>
<td>Intercept</td>
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<tr>
<td>W</td>
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<tr>
<td>WtB</td>
<td>&lt;0.01</td>
<td>0.06</td>
</tr>
<tr>
<td>WtR</td>
<td>0.12</td>
<td>0.09</td>
</tr>
<tr>
<td>B</td>
<td>-0.01</td>
<td>0.06</td>
</tr>
<tr>
<td>BtR</td>
<td>0.07</td>
<td>0.09</td>
</tr>
<tr>
<td>RtB</td>
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<td>0.11</td>
</tr>
<tr>
<td>R</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>LS T1</td>
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</tr>
<tr>
<td>Age</td>
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<td>Gender(^a)</td>
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<td>0.04</td>
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<tr>
<td>Education(^b)</td>
<td>0.17</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Note. N = 4,025.
Fit indices Model 1: \( \chi^2(632) = 1474.44, p < .001, \) CFI = 0.976, TLI = 0.980, RMSEA = 0.048, 90% CI [0.045, 0.051], SRMR = 0.057, \( R^2_{\text{LS T1}} = 0.006–0.011, R^2_{\text{Change}} = 0.109–0.110. \)
Fit indices Model 2: \( \chi^2(626) = 1462.48, p < .001, \) CFI = 0.976, TLI = 0.980, RMSEA = 0.048, 90% CI [0.045, 0.051], SRMR = 0.055, \( R^2_{\text{LS T1}} = 0.006–0.011, R^2_{\text{Change}} = 0.111–0.114. \)
Chi-square test between Model 1 and 2: \( \Delta \chi^2(6) = 11.95, p = .063. \)
W = worker; WtB = worker to bridge employee; WtR = worker to retiree; B = bridge employee; BtR = bridge employee to retiree; RtB = retiree to bridge employee; R = retiree; LS = life satisfaction. \(^a\)Male = 0, Female = 1; \(^b\)Primary/secondary = 0, Higher = 1. ***p < .001.
Table 5.
Effects of Individual Resources on Change in Life Satisfaction Across Retirement Transition Groups.

<table>
<thead>
<tr>
<th></th>
<th>Life Satisfaction T1</th>
<th>Change in Life Satisfaction T1–T2</th>
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</thead>
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<td>WtB</td>
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<tr>
<td>WtR</td>
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<td>.08</td>
</tr>
<tr>
<td>B</td>
<td>-.15</td>
<td>.08</td>
</tr>
<tr>
<td>BtR</td>
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<td>.10</td>
</tr>
<tr>
<td>RtB</td>
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<td>.12</td>
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<tr>
<td>R</td>
<td>-.08</td>
<td>.07</td>
</tr>
<tr>
<td>LS T1</td>
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<td>Gender&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>Education&lt;sup&gt;b&lt;/sup&gt;</td>
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<td>.03</td>
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<td>Self-Esteem</td>
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<tr>
<td>W</td>
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<td>BtR</td>
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<td>RtB</td>
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Table 5. Effects of Individual Resources on Change in Life Satisfaction Across Retirement Transition Groups.

<table>
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<tr>
<th>Resource</th>
<th>Life Satisfaction T1</th>
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<td>Model 3</td>
</tr>
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</tr>
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<td>R</td>
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<tr>
<td>Self-Rated Physical Health</td>
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Table 5.
Effects of Individual Resources on Change in Life Satisfaction Across Retirement Transition Groups.

<table>
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<td>( b )</td>
<td>( SE )</td>
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<tr>
<td>BtR</td>
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<td>WtR</td>
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Table 5.
Effects of Individual Resources on Change in Life Satisfaction Across Retirement Transition Groups.

<table>
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<td>$R^2$</td>
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</tr>
<tr>
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<td>.58</td>
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<tr>
<td>R</td>
<td>.58</td>
<td>.13</td>
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</tbody>
</table>

Note. $N = 4,025$.

Fit indices Model 3: $\chi^2_{(1034)} = 2208.44, p < .001$, CFI = .970, TLI = .972, RMSEA = .044, 90% CI [.042, .047], SRMR = .040.

Fit indices Model 4: $\chi^2_{(998)} = 2129.70, p < .001$, CFI = .971, TLI = .972, RMSEA = .044, 90% CI [.042, .047], SRMR = .037.

Chi-square test between Model 3 and 4: $\Delta \chi^2_{(36)} = 78.74, p < .001$.

$W =$ worker; $WtB =$ worker to bridge employee; $WtR =$ worker to retiree; $B =$ bridge employee; $BtR =$ bridge employee to retiree; $RtB =$ retiree to bridge employee; $R =$ retiree; $LS =$ life satisfaction.

$^a$Male = 0, Female = 1; $^b$Primary/secondary = 0, Higher = 1.

***$p < .001$. 

---

```
Chi-square test between Model 3 and 4: ∆χ²(36) = 78.74, p < .001.
W = worker; WtB = worker to bridge employee; WtR = worker to retiree; B = bridge employee; BtR = bridge employee to retiree; RtB = retiree to bridge employee; R = retiree; LS = life satisfaction.

***p < .001.
```
Figure 1. Path-diagram for the estimated latent change score model. $sT1 =$ life satisfaction at T1; $sT2 =$ life satisfaction at T2; $chn =$ change score.
Figure 2. Changes in life satisfaction across the seven retirement transition groups. $W =$ worker; $WtB =$ worker to bridge employee; $WtR =$ worker to retiree; $B =$ bridge employee; $BtR =$ bridge employee to retiree; $RtB =$ retiree to bridge employee; $R =$ retiree.
Figure 3. Effects of individual resources on changes in life satisfaction across the retirement transition groups. Low = one SD below mean/no; High = one SD above mean/yes; W = worker; WtB = worker to bridge employee; WtR = worker to retiree; B = bridge employee; BtR = bridge employee to retiree; RtB = retiree to bridge employee; R = retiree.