Work patterns in later life: Work intentions and behaviours in older New Zealanders

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Abstract

The overarching goal of this study was to find positive predictors of workforce participation for older workers, therefore assisting in retaining and prolonging participation of this group in the labour force. This outcome is of prime importance to New Zealand in the future. The study consisted of three parts. The first explored the predictors of older New Zealand workers' intentions to remain in paid work 2 years later. The second assessed the accuracy of work intentions in terms of later work status and explored the predictors of divergence between the two. The third analysed the predictors of remaining in some form of paid work 2 years later. Gender differences were also assessed in each section. The sample, from the Health, Work and Retirement study, consisted of 1389 males and females, aged 53-76 years. Data from waves one (in 2006) and two (in 2008) of the HWR study was utilised.

Using logistic regression analysis, several significant predictors of intending to remain in paid work 2 years later were identified, including: demographics, health and wealth, and work-related factors. Gender differences were found in these predictors in that work-related factors were important in predicting intentions for males but not for females.

Work continuance intentions were more accurate than retirement intentions in predicting work status 2 years later. Female participants retired at a lesser rate and were less accurate in their retirement plans than male participants. Significant predictors of divergence between plans and subsequent behaviour included demographics, health and wealth and career commitment. No gender differences in these predictors were found.

Remaining in some form of paid work 2 years later was predicted by earlier work status, demographics, wealth, work-related factors, and previous work intentions for the total sample. Gender differences were also found in these predictors, in that work-related factors were important in predicting females work status but not males.

These findings extend previous research by focusing on factors that predict work continuance behaviour rather than retirement behaviour. This has important implications for organisations wishing to encourage continued work participation for older workers. Limitations and possible extensions of the research are discussed.

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Table of Contents

List of Tables

Chapter I: Introduction and Background

Population ageing is a major challenge to be faced by New Zealand, and many other countries worldwide, in the ensuing decades. This significant trend can be attributed to a number of factors, including the ageing of the baby boomer generation (a large cohort of people born post World War II between 1946 and 1964), as well as decreased birth/fertility rates and continuing longevity (Statistics New Zealand, 2004). As identified by Davey (2003), continued adult migration will also contribute to population ageing in the future. By 2046, it is projected that 54% of the New Zealand population will be 40 years old or over, with the 65+ age group making up a projected 24% of the population (Statistics New Zealand, 2007). In 2046, the median age of the New Zealand population is projected to increase to 43.2 years, compared to 35.8 years in 2006, and 31.4 years in 1991 (Statistics New Zealand, 2007).[1]

Labour force ageing is an inevitable consequence of population ageing. Using mid-range projection series 5M, it is projected that the New Zealand labour force aged 65+ will rise to 160,000 in 2021, from an estimated 62,000 in 2006 (Statistics New Zealand, 2008). In addition, the median age of the labour force is projected to rise from 36 years old in 1991 to 42 years by 2011 (Statistics New Zealand, 2008). The rate of labour force growth in New Zealand is also expected to decline in the ensuing decades. This decline is attributed to both the increasing proportion of older people as the baby boomer cohort ages (likely resulting in retirement for these groups) and lower levels of net migration (Statistics New Zealand, 2008). The labour force is projected to increase from 2.24 million in 2006 to 2.41 million in 2011, a growth of 170,000. However, between 2011 and 2016, this growth is expected to decline to around 100,000. Growth after 2016, particularly beyond 2020, is expected to decline further to only small increases (e.g. less than 15,000 per year) (Statistics New Zealand, 2008).

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[1] Projection series 5 was used for the projections reported here. Series 5 assumes medium fertility, medium mortality and a long-term annual net migration of 10,000 (Statistics New Zealand, 2007).

These trends have led to concerns over the possibility of labour and skill shortages in New Zealand in the coming decades (Alpass & Mortimer, 2007). Of particular importance is retaining older workers as labour force growth slows (Alpass & Mortimer, 2007). This will ensure valuable skills, experience and knowledge are preserved within organisations, occupations and the labour force. Hence, "maximising the potential of older workers is a macro-economic priority" (Davey & Cornwall, 2003, p. 13). Therefore, identifying factors related to both *intentions* to remain in paid work and subsequent *behaviours* for older workers are relevant and important research topics. This knowledge can then be used to encourage workforce participation of older workers, through the development of relevant policies and interventions that target the identified factors. However, little empirical research has been conducted on this important topic to date.

The present study seeks to fill significant gaps in the New Zealand literature and knowledge base in regards to older workers' workforce participation. As mentioned above, factors such as population ageing, labour force ageing and labour force growth decline have created potential problems for New Zealand workforce planning in future decades. The present study aims to begin to understand what factors are related to both older employees' *intentions* to remain in work and actual remaining *behaviour* at a later date. What factors are important when intentions do not match outcomes is also of interest. The practical significance of this is that such important factors can then be targeted by organisations and/or larger scale public policies to prolong, and increase rates of, workforce participation for older workers in New Zealand. As mentioned above, this is of importance to New Zealand, and many other countries worldwide, to reduce the risk of labour and skill shortages in the coming decades. Overall, if older workers can be retained in the workforce, their valuable skills, knowledge and abilities will not be lost and their potential can be maximised.

Thesis outline

In addressing these issues, the current thesis has been organised in the following way: Chapter two reviews the relevant literature surrounding *intentions* to remain in work

and remaining *behaviour* for older workers, including the literature on retirement intentions and behaviour. A focus of the present study is on gender differences in these relationships and this will also be a focus of the review. From this literature a theoretical framework is developed for the current research. Chapter three then provides a summary of the current research objectives and hypotheses. Chapter four outlines the method of the present study. Chapter five describes the analysis strategy and presents the findings of the study. Finally, Chapter six consists of a discussion of the present study's findings in relation to previous literature, examines the practical applications of these findings and highlights limitations and possible future extensions of the present study.

Chapter II: Literature Review and Theoretical Framework

As previously discussed, there has been little research to date on the predictors of remaining at work for older workers, whether that is *intentions* to remain, actual remaining *behaviour*, or the relationship between the two. Due to this, building a theoretical framework for the current study requires that research and theory on related topics be adapted to the current focus. Overall, developing a theoretical framework for the current study will follow the strategy of Shacklock, Brunetto and Nelson (2009), starting with the most related literature on *retirement* intentions and behaviour, and using this as a basis on which to build. Relevant articles and theories will be discussed in this chapter in order to provide justification for variable choice and to develop hypotheses for the current study. Thus, relevant theory and research articles will be summarised in this chapter. In the following chapter, the relevance of this literature to the current study will be highlighted, and hypotheses developed to guide the current research and analysis.

Predictors of retirement intentions

There have been a number of summaries of the retirement literature from an I-O psychology perspective over the previous decades, beginning with Beehr's (1986) article. As will be highlighted, there are a number of factors that have been well documented as predictors of retirement intentions over these summaries, as well as a number that require further investigation.

Beehr's (1986) review of the retirement literature focused on empirical findings in articles published before 1986. Beehr (1986) stated that at that time, predictors of voluntary retirement with empirical support included declining health, adequate projected financial resources in retirement and attitudes towards work. Beehr (1986) posited that there were two main types of potential predictors of retirement overall: personal factors (including health, economic wellbeing, skill obsolescence and Type A behaviour), and environmental factors (attaining occupational goals, job

characteristics, marital and family situations, and leisure pursuits). Beehr (1986) also identified a number of issues with the retirement research at that time, including that I-O psychologists had not given enough emphasis to the subject and that there were problems with the measurement of a number of variables in the research. Mainly this was because variables in previous studies had been poorly operationally defined, meaning that the same variable in two different studies could, in fact, be measuring completely different constructs. The result of this was that comparing study findings to make overarching conclusions about the predictors of retirement was difficult. This is still an issue in retirement research today. Since Beehr's (1986) summary and critique, there has been a wealth of literature published on retirement.

Talaga and Beehr (1989) extended Beehr's (1986) previous work. A benefit of their summary in terms of the current use is that the authors separated research on the predictors of both retirement *intentions* and *behaviour*. As Henkens and Tazelaar (1997) highlight, it is often assumed that both retirement intentions and retirement behaviour have the same predictors, as the two are logically linked. However, as will be covered below, intentions and behaviour do not necessarily relate perfectly with each other (Anderson, Burkhauser, & Quinn, 1986; Dwyer, 2001), and the predictors of the two differ (e.g., Talaga & Beehr, 1989; Wang & Shultz, 2009). Thus, it is important to consider both separately in analysis, investigating whether the two are in fact highly related, what factors are influential when there is incongruence between the two, and whether both share the same predictors. This is the strategy of the current study.

Talaga and Beehr (1989) concluded that individual/personal variables were still the main focus of the retirement research up to 1989, with less attention being paid to work/organisational factors and less again being paid to environmental/societal factors, which are difficult to operationalise and define. Overall, Talaga and Beehr (1989) concluded that age, health, education level, pension factors (e.g. age of eligibility) and work-related factors (e.g. work alienation) had the most evidence at that time as predictors of retirement intentions/plans. However, no research at the time had yet explored the specific relationship between work and environmental factors and retirement intentions/plans.

By the time of Feldman's (1994) review, the literature on retirement had grown and research had been extended. Feldman's (1994) article focused on factors that influence the decision to retire early and similar to Talaga and Beehr (1989) categorised predictors into three groups: individual level factors (including demographic variables (gender, ethnicity, marital status), health, work history patterns and individual's attitudes to work and retirement), organisational level factors (including wages and pensions, perceived discrimination against older employees and flexible work conditions), and environmental factors (including policy changes and growth rates).

Hansson, DeKoekkoek, Neece and Patterson (1997) supplemented the literature in 1997. In this review it was again emphasised that financial status has a critical role in the decision to retire. Important variables related to financial status included current assets, retirement savings, and expected retirement income. Physical limitations and health problems were also concluded to be vital, with both being related to increased retirement rates. In terms of psychological factors, variables such as job attachment, satisfaction with ones career attainment and anxiety about separation from work were also considered to be important in the decision to retire.

In 2009, Wang and Shultz (2009) completed a comprehensive review of the retirement literature that included consideration of the theoretical conceptualisations, theories, and research strategies utilised in retirement research, as well as a review of the empirical findings to date. Wang and Shultz (2009) highlighted that retirement research has followed four main theoretical conceptualisations, each utilising different theories, and each used for different research goals. Retirement as decision-making was the first conceptualisation identified. From this perspective retirement is seen as a motivated choice behaviour, decisions are based on the information an individual has (about individual, organisational and environmental factors), and individuals choose their best retirement date based on this. Theories generally associated with this conceptualisation include: rational choice theory, image theory, role theory, and the theory of planned behaviour (discussed below). Other theoretical conceptualisations identified by Wang and Shultz (2009) included: retirement as an adjustment process

(focusing on the transition between working life and retirement, and associated with theories such as life course perspective (also discussed below) and continuity theory), retirement as a career development stage (focusing on continued career development in retirement, mainly used when researching bridge employment) and retirement as a part of human resource management (emphasising managing retirement to reach organisational goals).

In terms of empirical findings, Wang and Shultz (2009) divided the predictors of retirement decision-making/planning into three groups: micro level (individual or personal level variables), meso level (work variables) and macro level (environmental or societal level variables). Hence, this categorisation reflects earlier categorisations. Overall, predictors with empirical support in the research to date included age, health, income and family/spouse characteristics at the micro level, work role characteristics, attitudes to work and retirement, and dissatisfaction with work at the meso level, and organisational policies, occupational norms, and perceived biases/stereotypes about older employees at the macro level (Wang & Shultz, 2009).

From this literature several conclusions regarding the predictors of retirement intentions can be drawn. Firstly, both health and financial factors have long and well-established relationships with retirement. Individual/personal factors clearly have been researched the most in regards to retirement intentions. Secondly, there is room to extend this research, through placing more emphasis on both meso level (organisational) and macro level (environmental) factors, which have some empirical support as predictors but have been researched to a lesser extent than personal variables.

Predictors of a preference for delaying retirement

Several previous studies have examined, each in differing ways, what factors are important in predicting a preference for later retirement ages. Both Adams (1999) and Taylor and Shore (1995) explored the predictors of expected retirement age, and both found that age had a positive relationship with expected retirement age (increasing

age resulted in older expected retirement ages in participants). This finding is consistent with the findings of other studies related to retirement *intentions* (e.g., Zappala, Depolo, Fraccaroli, Guglielmi, & Sarchielli, 2008), but contrasts with the findings related to retirement *behaviour* (where increasing age has been linked to increased likelihood of retirement) (Adams & Rau, 2004; Kim & Feldman, 2000; Wang, Zhan, Liu, & Shultz, 2008). Both Adams (1999) and Taylor and Shore (1995) also included career or work-related variables in their studies to extend previous research and models, such as Beehr's (1986). Adams (1999) found that higher career commitment scores would likely result in later retirement ages. Taylor and Shore (1995) found that organisational commitment was a significant predictor of expected retirement ages. Thus, both studies found evidence that work-related variables are important in predicting expected retirement ages, and in addition, found correlates of later (or delayed) planned retirement ages. Higher income satisfaction was also found to predict earlier planned retirement ages (Adams, 1999). Other significant predictors of planned retirement age included health and self-rated ability to adjust to retirement (Taylor & Shore, 1995).

Zappala et al. (2008) had a similar research focus to the studies above, however, looked at a preference to retire later than one expected to as the dependent variable, rather than simply planned retirement age. Thus, Zappala et al.'s (2008) focus more specifically tapped a preference for delaying retirement. As mentioned above, in line with the studies above, Zappala et al. (2008) found that increasing age significantly predicted a desire to retire later than expected. A preference for later retirement was also found to be related to having a negative attitude to retirement, being employed by a firm with policies supporting older workers, attributing more importance to ones job, and being in a job that did not require further development of skills. This final finding was opposite to what was expected by the researchers and contrasted with the findings of Lund and Borg (1999) (see below).

Litwin, Achdut and Youssim (2009) found an entirely different way to explore the predictors of a tendency towards delaying retirement in their study. At the time of surveying, a policy was being introduced in Israel that delayed the age of eligibility for

retirement. The researchers explored the predictors of a tendency to support this policy (and therefore delay retirement). It was found that 73% of the participants expressed some degree of disagreement with the reform (and hence, delaying retirement). Thus, overall the reform was unpopular among the sample. Factors related to the perceived social consequences of delaying retirement accounted for the most variance in agreement with the reform (and therefore delaying retirement). If participants believed older workers would lack stamina to reach the new ages of eligibility or had a welfare ideology favouring state responsibility, this predicted reduced agreement with the reform. In contrast, when participants believed delaying retirement would improve older workers health, increase their interest in life, and when participants were older, more educated, and had higher job security, this predicted a tendency towards agreement with the reform (Litwin et al., 2009).

A final study that tapped into a tendency to support delayed retirement was Mermin, Johnson and Murphy (2007). Mermin et al. (2007) again had a different focus to the studies above and explored generational trends in expectations around retirement ages. Using data from the 1992 and 2004 waves of the American Health and Retirement Study, Mermin et al. (2007) explored and compared the retirement expectations of workers aged 51-56 years born between 1948 and 1953 (early baby boomers) and workers of the same age group born twelve years earlier (the pre-war generation). The researchers aim was to identify changes in retirement expectations between the two cohorts (specifically expectations of working full-time past age 65) and explore what factors could account for such change. Mermin et al. (2007) found a significant increase in expectations of working full-time past age 65 in the two cohorts (from 27% of the pre-war sample to 33% of the baby boomer sample). Variables found to account for the majority of the change were lower rates of retiree health insurance offers from employers, higher levels of educational attainment and lower rates of defined benefit pension coverage.

Overall, from this group of studies it is evident that a number of correlates of a tendency towards supporting delayed retirement have been found, including work-related variables, which extends previous research. Factors such as age, health,

attitudes towards retirement, education level, career commitment and organisational characteristics and policies all have support as predictors of delayed retirement. These predictors have obvious relevance to work continuance behaviours. From this we can conclude that delayed retirement may be expected and therefore possible in generations now reaching traditional retirement ages. This is clearly of relevance to many countries worldwide as retaining these groups in the workforce is important (e.g., Alpass & Mortimer, 2007). Combining this knowledge with findings related to the predictors of work continuance behaviours is key to attaining this goal.

Predictors of intentions to continue paid work

While predicting intended retirement age and/or delayed retirement has been the focus of much previous research in this area, another approach is to conceptualise these intentions as a desire to remain in paid employment. Only one article was found which specifically focused on this topic, Shacklock et al. (2009). Shacklock et al.'s (2009) aim was to examine the impact of certain work-related variables on older workers intentions to continue paid work and assess whether the impact of these variables differed between males and females. Data was collected from 379 employees (aged 50 and over) from an organisation in Australia. Predictor variables included in the study were selected in line with previous related work and retirement research and included: attachment to work, importance of working to the individual, perception of personal autonomy at work, flexible work arrangements, interpersonal interaction at work, interests outside of work, and management or organisational variables (whether these support older workers, or age discrimination is evident). Shacklock et al.'s (2009) two main research questions were whether these seven work-related variables influenced older employees' intentions to remain at work, and whether the impact of these variables varied between men and women.

Several predictor variables were found to be significantly correlated with intentions to continue paid work, including importance of work, autonomy at work, flexibility at work, the work environment, and interests outside work. When males and females were considered separately, it was found that more variables were significantly

correlated with intentions to remain in paid work for the female participants than the male participants. Interpersonal relationships, autonomy, flexibility and interests outside work were significantly related to intentions for the female sample, where as only importance of work and interests outside work were significant for the male sample. Significant differences were found between the male and female participants on five variables: attachment to work, autonomy, flexibility, work environment and interests outside work (Shacklock et al., 2009).

Gender differences in the predictors of work intentions

As discussed above, Shacklock et al. (2009) investigated gender differences in the predictors of work intentions in their study and found that gender differences did exist in their sample. Shacklock et al. (2009) argued that there was a theoretical basis for exploring such gender differences in the predictors of work intentions due to men and women's differing experiences in the workforce, both in Australia and more widely. For example, Shacklock et al. (2009) reviewed evidence that women are more likely to have interrupted work histories (due to child rearing), may have differing perceptions of the meaning of work to men and overall are more likely to have lower earning potential and lower anticipated finances in retirement than men. Because there is a well-established link between financial and work factors and retirement intentions (Beehr, 1986; Wang & Shultz, 2009), these differing labour force experiences could potentially result in differences between the predictors of work intentions between men and women.

Turning to the New Zealand context specifically, similar trends in terms of differing experiences in the labour force for males and females are present. For example, overall female workforce participation rates at all age brackets are lower than that of male New Zealanders (Johnson, 2005). Women in New Zealand are more likely than men to have interrupted work histories due to child rearing and other household responsibilities, and in addition, are more likely to be employed in part-time work rather than full-time work than men at all age brackets (Johnson, 2005). New Zealand Census data shows that the female participation rate in the workforce peaks at 45-49

years (82%) and then steadily drops to almost half of this (42%) by 60-64 years (Johnson, 2005). These workforce participation trends have knock-on effects in terms of earning potential. In New Zealand, there is a decreasing but visible pay gap between males and females in the labour force (Johnson, 2005). This trend is evident in the public sector, where the gender pay gap is decreasing but is still apparent and exists even between men and women working in the same occupations (Gosse, 2002). Thus, there are similar trends in the New Zealand context in terms of differing labour force experiences between men and women as those highlighted in Shacklock et al.'s (2009) study. Therefore, similar gender differences in the predictors of work intentions could exist in New Zealand workers.

The relationship between retirement intentions and behaviour

Dwyer (2001), Anderson et al. (1986), Disney and Tanner (1999) and Henkens and Tazelaar (1997) all explored the accuracy of retirement *intentions* in relation to later retirement *behaviour* in their studies. Dwyer's (2001) research had several goals: to test the rationality of retirement plans in line with the assumptions of life cycle retirement models, to explore the accuracy of plans in relation to later retirement behaviour, and to investigate the role of health shocks in the relationship between intentions and behaviour.

To accomplish these research goals, Dwyer (2001) used the first four waves of the Health and Retirement Study. Analysing data from 5,102 participants, Dwyer (2001) made several interesting findings. In terms of the accuracy of retirement expectations in predicting later behaviour, Dwyer (2001) found that 38% of participants who expected to retire by wave four actually did so. In contrast, of those who expected to remain in work, 76.8% were still working by wave four. Of those who expected to continue working through to wave four, 11% retired fully and 9% retired partially by the end of the study. Thus, there is evidence from this study that expectations around remaining at work to some point in the future are fairly accurate in terms of predicting later behaviour. Intentions to retire were less accurate at predicting later behaviour. These findings are by and large consistent with the findings of the other studies

summarised here (Anderson et al., 1986; Disney & Tanner, 1999; Henkens & Tazelaar, 1997).

Life cycle retirement models assume that people are rational in their planning; thus, they take into account important factors (e.g. health, finances) and make plans according to these. However, there can be uncertainty surrounding such factors when making plans and forming expectations. As such, between the time of making plans and those plans coming to fruition, there can be changes in circumstances. Therefore, if people are rational in their planning/expectations, changes in important variables should be related to changes to one's plans. This is the basis Dwyer (2001) used to test the rationality of retirement plans. Dwyer (2001) posited that when there was divergence between participants' plans and their behaviour, this would be matched by change in important environmental variables, especially health. Overall, Dwyer (2001) found that when retirement plans did not accurately predict later retirement behaviour, this could be linked to changes in important variables, particularly health. Thus, this provided support for both the rationality of plans/expectations and evidence as to why plans/expectations are not completely accurate in predicting behaviour at some point in the future.

Anderson et al. (1986) utilised data from the American Retirement History Study (RHS), following their participants from 1969 through to 1979 to measure actual retirement behaviour. The aim of Anderson et al.'s (1986) research was to test the predictive ability of retirement plans in terms of behaviour at a later date, and to assess the effects of unanticipated events on the relationship between intentions and behaviour. Thus, the researchers compared planned retirement age, measured in 1969, with actual retirement age over the next 10 years, and then analysed the effects of unanticipated events on plans/behaviour. Overall, Anderson et al. (1986) found that retirement plans accurately predicted behaviour 40% of the time. There were major unanticipated environmental changes for the participants during the follow-up time, including social security increases and a recession in the United States of America (USA), and this may have affected the accuracy of intentions in relation to later behaviour.

In terms of these unanticipated events, Anderson et al.'s (1986) analysis found that such changes did account for some of the discrepancy between retirement plans and later behaviour. For example, unexpected changes to participants' health significantly increased the probability of early retirement and reduced late retirement. In contrast, increases in the local unemployment rate increased late retirement and decreased early retirement. Social security increases were related to increased early retirement. Therefore, Anderson et al. (1986) found that actual retirement age is likely to deviate from planned retirement age when there are unexpected changes to an individual's health, wealth or economic environment. Thus, Anderson et al. (1986) concluded that policy changes have the power to affect retirement behaviour.

Disney and Tanner (1999) used data from the first two waves of the United Kingdom (U.K.) Retirement Survey in their research. Data was collected in 1988-1989 from participants aged 55-69. The second wave of measurement occurred in 1994. Similar to the research summarised above, Disney and Tanner's (1999) research focus was to assess the predictive accuracy of retirement plans in terms of later behaviour, and to identify which factors could account for divergence between the two. Disney and Tanner's (1999) research was unique, however, in that participants who gave 'don't know' responses to the question of when they expected/planned to retire were included in the analysis. Disney and Tanner (1999) argued that this response could be legitimate, and reported when one faces more uncertainty in making plans. However, others posit this response is merely the result of lack of thought or planning (e.g., Anderson et al., 1986). Disney and Tanner (1999) found that almost half their sample retired when they expected to, a figure similar to those reported thus far. Nearly two-thirds of the sample retired within one year of their planned age. However, as with Anderson et al.'s (1986) research, a recession was experienced in the U.K. between the two measures, which Disney and Tanner (1999) concluded made a high correlation between expectations and behaviour less attainable. Male participants tended to retire earlier than they expected on average. Changes in health and marital status were linked to divergences between expectations and behaviour.

A sizable chunk of Disney and Tanner's (1999) sample gave a 'don't know' response to the question of when they expected to retire. One third of the female participants in the sample gave this response. Overall, evidence for the hypothesis that this response is related to more uncertainty for these participants was provided in the analysis. Those participants that gave 'don't know' responses were likely to be younger (and thus, further away from 'normal' retirement ages), less likely to have occupational pensions, more likely to be in poorer health, and for the male participants, were more likely to be divorced or widowed. Thus, overall, Disney and Tanner (1999) found that retirement expectations were a reasonable predictor of later retirement behaviour and that unexpected changes or shocks (especially in health and marital status) could account for divergence between plans and behaviour.

Henkens and Tazelaar (1997) used data from 1,015 participants within one year of eligibility for early retirement from the Survey of Dutch Civil Servants. Again, the goal of Henkens and Tazelaar's (1997) research was to investigate whether retirement intentions accurately predicted retirement behaviour, and which factors were important when intentions and behaviour did not match. This research was unique in that it was conducted on a sample from the Netherlands, which has much higher pensions and lower labour force participation of those aged 60 – 64 years than other countries. Thus, it would be expected that retirement intentions would much more accurately predict later retirement behaviour in this sample than in other samples, as obstacles to retirement (such as finances) are less relevant. In line with this, Henkens and Tazelaar (1997) found 93% of their sample that intended to retire did so by the end of their study. Thus, Henkens and Tazelaar (1997) found that retirement intentions were a good predictor of later retirement behaviour in their Dutch sample. A further finding from the study was the influence of social support; those with higher social support were more likely to retire when they intended to.

Therefore, there has been quite a variety of research on the relation between retirement *intentions* and later retirement *behaviour*. Overall, it seems fair to conclude from this research and theory that retirement plans are rational, in that the evidence shows participants overall take into account important factors that would affect their

ability to, and the possible timing of, retirement. Also, retirement intentions are a fairly good predictor of later retirement behaviour, however this prediction is not completely accurate. When the two are incongruent, change in certain factors (especially health and finances) is likely to be influential, giving further evidence for the rationality of plans. Overall, as Henkens and Tazelaar (1997) suggest, such plans or intentions will be most accurate at predicting behaviour when there is little uncertainty involved in the decision, the decision is not dependent on others and there is little time between the measurement of intentions and behaviour. While this research is not directly related to the current focus, intentions to remain and actually remaining in paid work, it does suggest similar assumptions may apply to the current study.

The attitude-intention-behaviour relationship

General research on the relationship between attitudes and behaviour began in the 1930s, and resulted in the finding that there was inconsistency between the two (Liska, 1984). Further research in the 1960s and 1970s showed that the relationship was dependent on other variables, explaining why the prediction of behaviour by attitudes is not completely accurate (Liska, 1984). From this research, various general models of the attitude-behaviour relationship were formed, the most significant of these being Fishbein and Ajzen's model (Liska, 1984). Overall, social psychology has been interested in explaining why intentions do not always accurately predict behaviour (Henkens & Tazelaar, 1997).

Ajzen and Fishbein's theory of reasoned action is a summary of the hypothesised relationships between subjective norms, attitudes, intentions and behaviour (R. P. Bagozzi, 1992). The theory posits that behaviour is directly determined by intention to perform that behaviour, and that both subjective norms and attitudes indirectly determine behaviour through their influence on intention (R. P. Bagozzi, 1992). Attitude refers to the positive or negative evaluation of performing the behaviour and subjective norm refers to the perceived social pressure associated with performing, or not, the behaviour (R. P. Bagozzi, 1992). The anticipated consequences of the

behaviour also affect both attitude and subjective norms (R. P. Bagozzi, 1992). As Bagozzi (1992) highlights, this theory has both theoretical and practical appeal, and this has resulted in the theory's longevity as well as the wealth of research conducted on it. An important point to note about this theory is that it was intended to be applied to behaviours under ones control (R. P. Bagozzi, 1992).

A wealth of research studies has been aimed at testing the main premises of the theory and extending its complexity. Thus the theory has evolved over the years to become more complex, for instance, now including moderator and mediator effects (as covered above) (R. P. Bagozzi, 1992). For example, Bagozzi (1981) tested the hypothesised relationships between attitudes, intentions, and behaviours, with a longitudinal field study of 157 students, faculty and staff at a university in the USA. The criterion was actual blood giving behaviour at two points in time. Bagozzi (1981) found that attitudes did influence behaviour, but did so indirectly through their impact on intentions. In addition, past behaviour tended to lessen the impact of intentions on behaviour (R. P. Bagozzi, 1981). Overall, the study found that attitudes and intentions accounted for 8 – 22% of variance in proximal behaviour and 30 – 32% of variance in distal behaviour (R. P. Bagozzi, 1981). Ajzen and Fishbein (1974) conducted a study in 1974 that aimed to predict communicator/compliance behaviours in participants. They found that participants' intentions to perform behaviours correlated highly with their attitudes towards the behaviours and their normative beliefs about the behaviours, multiplied by their motivation to comply with norms. Numerous other studies have also provided support for, and extended, the theory (e.g., Ajzen, 1991; Jemmott & Jemmott, 1991).

Gender differences in the relationship between intentions and outcomes

There are a number of sources of evidence that suggest gender differences could exist in the relationship between work intentions and outcomes. First, Disney and Tanner (1999) found differences between men and women in the relationship between retirement intentions and behaviour. For example, the male participants in the sample

were more likely to retire earlier than expected on average, and the female participants were much more likely to give 'don't know' responses when asked when they expected to retire. Such differences in *retirement* intentions and behaviour highlight the possibility that differences in *work* intentions and behaviour also exist.

As previously discussed, there are gender differences in labour market experiences in New Zealand, such as women having lower earning potential and more interrupted work histories compared to men (Gosse, 2002; Johnson, 2005). Such differences could be related to differences in work intentions and behaviour. For example, there is a well-established link between adequate finances and retirement (Wang & Shultz, 2009). As women are less likely to have adequate finances, this could result in women being more likely to plan to continue working (rather than retiring) compared to males of a similar age. However, research has shown that women are likely to retire when their husbands retire, regardless of age or finances, and because of general age differentials in such relationships (e.g., women are usually younger than their male partners), women are actually more likely to retire at younger ages than men (Statistics New Zealand, 2006). The theory and research surrounding more general intentions, expectations and behaviour also highlights the importance of moderator variables, such as gender, in these relationships (Liska, 1984).

Predictors of retirement behaviour

While there has been a wealth of research on both the predictors of retirement *intentions,* and the relationship between such intentions and later behaviour, another field of research has focused on the predictors of retirement *behaviour*. As mentioned above, it is often assumed that factors that predict retirement intentions will therefore also predict the later retirement behaviour; however, this is not necessarily the case (Henkens & Tazelaar, 1997). Literature reviewed above reveals that retirement intentions are not always accurate in terms of predicting later retirement behaviour, due to the influence of moderator and mediator variables and change in personal circumstances (Anderson et al., 1986; R. P. Bagozzi, 1992; Disney & Tanner, 1999; Dwyer, 2001; Henkens & Tazelaar, 1997). In addition, previous research has shown

that the predictors of retirement intentions and behaviour are not the same (e.g., Talaga & Beehr, 1995; Wang & Shultz, 2009). Due to this, it is important that both retirement *intentions* and *behaviours* are considered separately, including when exploring their respective predictors.

With regards to the predictors of retirement *behaviour*, as mentioned above, at the time of Beehr's (1986) review of the retirement literature, there was empirical evidence for the predictive value of declining health, adequate projected finances in retirement and attitudes towards work on voluntary retirement. Beehr (1986) also hypothesised that other factors could be related to retirement, including attaining occupational goals, job characteristics, marital and family circumstances and leisure pursuits.

Talaga and Beehr's (1989) later review of the literature on retirement categorised the research into that on retirement *intentions* and that on retirement *behaviour*. In relation to retirement behaviour, Talaga and Beehr (1989), in line with other reviews, divided predictors into three groups: personal factors, work-related or organisational factors and environmental or societal factors.

Talaga and Beehr (1989) highlighted that personal factors were considered the most important predictors of retirement behaviour and these remain the most often investigated factors. Personal finances and declining health were found to be the most influential predictors of retirement behaviour. Attitudes had been explored as predictors at that time but with variable results. Demographic variables were considered influential, especially age, which was found in studies to be a significant predictor even when controlling for other important variables (such as finances). An important point to note here is while increasing age has been linked with later planned retirement ages in the literature on retirement *intentions*, research on retirement *behaviour* shows that older individuals are more likely to retire (Adams & Rau, 2004; Kim & Feldman, 2000; Wang et al., 2008). Talaga and Beehr (1989) listed gender as a potential moderator in the relationship between other predictor variables and retirement behaviour. Education level was also concluded to have a complicated

relationship with retirement at the time, with its effect potentially due to its relationship with occupational level. In relation to work-related factors, Talaga and Beehr (1989) concluded there was a good theoretical basis for a potential relationship with retirement behaviour, but at that point there was not enough research on these factors to draw conclusions. The same conclusion was drawn in relation to environmental and societal factors.

Feldman (1994) emphasised that demographic variables (gender, ethnicity, marital status), health status (major physical illness, functional impairment, psychosomatic illness), pension and wage factors, attitudes to work and retirement, and work history patterns (years of service, number of exits and entries, number of layoffs) were important potential predictors of early retirement. In addition to these, Feldman (1994) identified several other potentially important factors including perceived discrimination against older employees and flexible work arrangements at the organisational level and growth rates and programmes to help older people to find jobs at the environmental level. Hansson et al. (1997) also stated that financial status (including current assets, retirement saving, and expected retirement income) had a critical role in the decision to retire. Physical limitations and health problems were also deemed important. Potential psychological predictors listed included job attachment, satisfaction with career attainment, and anxiety about separation from work.

Wang and Shultz (2009) completed the most recent review of the retirement literature. A comprehensive list of the potential predictors of retirement decision-making and behaviour empirically explored to date was provided. The list was separated into four categories: individual attributes, job and organisational factors, family factors and socio-economic factors. Individual attributes explored included demographic characteristics, needs and values, personality, knowledge, skills and abilities, attitudes towards retirement, health and financial circumstances. Increasing age was found to increase the likelihood of retirement, as covered above. Higher education was found to increase the likelihood of working in either full-time or part-time work to later ages, due to increased employment opportunities for more highly

educated groups (e.g., in consultancy roles). A link between declining health and increased likelihood of retirement was also highlighted (Wang & Shultz, 2009).

Job and organisational factors included employment history, job characteristics, job attitudes, career attachment, age stereotypes at work, flexible job options, and financial incentives. Higher career attachment and organisational commitment were found to decrease the likelihood of retirement. Job dissatisfaction, on the other hand, was found to increase the likelihood of retirement, however, as Wang and Shultz (2009) note, other studies have found no significant relationship between the two.

Family factors included family support, marital and dependent care status, marital quality and spouses working status. Wang and Shultz (2009) concluded that evidence for the importance of such factors to retirement behaviour has been inconsistent. Finally, socio-economic factors included social norms about retirement, current economic conditions, future economic trends, social security system, and government policies and programmes. As with the research on family factors, research on such variables has been sparse, and as a result, drawing conclusions in regard to the influence of such variables on retirement is difficult (Wang & Shultz, 2009). The object of the current study is to combine this knowledge with that on work continuance behaviour to explore how a number of these factors relate to/predict work status, thus extending the research to date.

Predictors of remaining at work

As with the research on the predictors of *intentions* to remain at work, only one research study was found which explored the predictors of remaining at work directly, Lund and Borg (1999). Similarly with the predictors of retirement intentions versus work continuation intentions, the predictors of remaining at work need to be distinguished from the predictors of ceasing work (e.g., retiring), as the two do not necessarily correlate (Lund & Borg, 1999). As Lund and Borg (1999) highlight, the factors that motivate individuals to cease work are not the same as the factors that motivate individuals to remain at work.

Lund and Borg (1999) explored the predictive ability of work environment factors and self-rated health on remaining in work 5 years later for Danish employees 35-59 years of age. In 1990, participants were interviewed regarding their psychosocial work environment, health and job satisfaction. Then in 1995, participants were interviewed again regarding their present work status. The study was based on the hypothesis that as with retirement, positive predictors of remaining at work could be identified, by considering remaining at work as its own important outcome. The same hypothesis guides the current study.

Predictor variables included in the Lund and Borg (1999) study were based on the retirement literature, as with Shacklock et al. (2009), and included: self-rated health, varied/repetitive work, job satisfaction, musculoskeletal problems (in shoulders, neck, upper back, lower back, hips, knees and feet within the previous 12 months), stress, and psychosocial factors at work (job demands, decision authority, social support, developmental possibilities for the employee within the job (e.g., skills), conflicts at work, and insecurity). The dependent variable was remaining at work 5 years later, and included self-employment and those unemployed or on sick leave for less than 2 months (Lund & Borg, 1999).

Lund and Borg (1999) found that 71% of the males in the sample remained in work in 1995, ranging from 84% of the youngest 5-year age group to 31% of the oldest 5-year age group. Of the females, 67% remained in work in 1995, ranging from 82% of the youngest 5-year age group to 23% of the oldest 5-year age group. Predictors significantly related to remaining at work in the full model for males included very good self-rated health and high developmental possibilities. For females, predictors significantly related in the full model included very good self-rated health, high developmental possibilities, high decision authority, medium level social support, and absence of musculoskeletal problems in the knees (Lund & Borg, 1999). It is important to note here that this study was based on a fairly young sample (aged 35-59 years), meaning the participants would generally be expected to continue in paid work in 5 years time if possible. Therefore, the findings of this study do not necessarily relate to

the present study, which is more specifically focused at older workers continuing in work, as opposed to retiring.

Gender differences in the predictors of work status

There are several sources of literature that suggest there could be possible gender differences in the predictors of work status. An important point to note here is work status in this context refers to employment or retirement status (e.g., full-time employment, part-time employment, full-time retired), and more specifically in the present study, the work status of older individuals. With regard to evidence of potential gender differences in the predictors of such work status, reviews of the literature on retirement behaviour list gender as a potential moderator in the relationship between predictors and retirement behaviour (e.g. Talaga & Beehr, 1989). In addition, literature was reviewed above which highlighted the possibility of gender differences in the predictors of work intentions (Shacklock et al., 2009). This lends further support for the notion of potential gender differences in work status. While it has been noted previously that the predictors of work/retirement intentions and behaviour are not necessarily the same (Henkens & Tazelaar, 1997), authors such as Dwyer (2001) and Disney and Tanner (1999) highlight the link between intentions and behaviour. Considering the evidence for gender differences in the predictors of work intentions of older adults, it is probable that gender differences also exist in the predictors of work status for older adults.

As previously reviewed, male and female labour force experiences in New Zealand are also different (e.g. Gosse, 2002; Johnson, 2005), and these differing experiences (e.g. females having more interrupted work histories, more responsibilities outside of work and lower earning potential) could result in differing predictors of work status between males and females. Both Feldman (1994) and Wang and Shultz (2009) support this notion, listing work history patterns (e.g. number of exits and years of service) as potential predictors of retirement behaviour. Therefore, differing work history patterns between men and women could lead to potential gender differences

in work status. As noted above, Lund and Borg (1999) also found differences in the predictors of work status between their male and female participants.

Summary

The literature reviewed above reveals some consistent findings in relation to what factors influence older workers work continuation *intentions* and *behaviours*; however, significant gaps in this knowledge are also evident. A number of variables have been consistently found to predict *intentions* to remain in work such as health, wealth, and demographics, and gender differences have also been found. In addition, research on the relationship between *retirement* intentions and retirement behaviour provides insights into the possible relationships between *work* continuation intentions and subsequent behaviour. From the literature to date there is evidence for a relationship between intentions and later behaviour, however, this relationship is influenced by moderator variables (e.g., gender) and change overtime to circumstances. Finally, research on retirement *behaviour* and work continuation behaviour reveals a number of important predictor variables. Similar to the research on retirement *intentions*, factors such as health, wealth and demographics have been shown to be important in predicting retirement and work *behaviour*. However, it is important to note that the predictors of the two are not necessarily the same and both should therefore be considered separately. The small amount of research exploring the importance of work-related variables on both work intentions and behaviour also provides evidence for their importance. Overall, further research is needed in each of these three areas to extend these previous findings, especially in a New Zealand context.

Chapter III: Research Design

Based on the review above, the current study seeks to answer the following broad research questions:

- What factors predict intentions to remain in paid work 2 years later for older New Zealand employees? Are there gender differences in these predictors?
- Are intentions related to actual behaviour 2 years later for older New Zealand employees? What factors predict divergence between the two? Are there gender differences in these predictors?
- What factors predict continued paid employment 2 years later for older New Zealand employees? Are there gender differences in these predictors?

Longitudinal data from the Health, Work and Retirement (HWR) study will be used in the current research (wave one in 2006 and wave two in 2008). Potential predictor variables will be chosen in relation to previous research, literature and theory as discussed below. Thus, overall, the study will explore positive predictors of older New Zealand workers' *intentions* to remain in paid work, as well as the predictors of remaining in some form of paid work, at a later date. In addition, how well intentions predict later work outcomes will be assessed and what factors predict incongruence between the two identified.

The following section proposes hypotheses based on the previous literature reviewed in order to examine the research questions identified above.

Hypotheses

Work intentions

From the literature above, a number of potential predictor variables of work intentions can be identified.

There is a long and well-established link between poorer health and retirement in the literature (Beehr, 1986; Feldman, 1994; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009). Given this strong relationship, good health should, in turn, be related to intentions to remain in paid work.

> *Hypothesis one: Physical and mental health will significantly predict work intentions and higher scores on these variables will increase the likelihood of participants planning to continue paid work in the future.*

As with health, financial wealth has a strong relationship with retirement intentions (Beehr, 1986; Feldman, 1994; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009), and thus it is proposed that if adequate finances are related to intentions to retire, inadequate or poorer financial situations will be related to intentions to remain in paid work. In relation to retirement attitudes and work intentions, a number of sources above identified a relationship between attitudes and retirement intentions (Beehr, 1986; Feldman, 1994; Wang & Shultz, 2009). Both Feldman (1994) and Wang and Shultz (2009) also highlighted evidence for a relationship between attitudes towards retirement and retirement intentions. It is proposed that participants with more negative attitudes towards retirement will be more likely to plan to continue in paid work (therefore delaying or avoiding retirement).

> *Hypothesis two: Both wealth (living standards, total assets and anticipated retirement finances) and retirement attitudes (retirement adjustment) variables will significantly predict work intentions, with poorer wealth and more negative attitudes towards retirement being related to intentions to continue paid work in the future.*

With regards to the hypothesised relationship between work intentions and demographic variables, there is support in the literature for a link between such variables and both retirement intentions and intentions to remain in work (Feldman, 1994; Shacklock et al., 2009; Talaga & Beehr, 1989; Wang & Shultz, 2009). For example,

evidence for a relationship between age and retirement intentions is provided by a number of sources (Adams, 1999; Talaga & Beehr, 1989; Taylor & Shore, 1995), such that older workers are more likely to have later planned retirement ages. Education level has also been identified by sources above as a predictor of retirement intentions (Talaga & Beehr, 1989). It is hypothesised that more highly educated workers are more likely to plan to continue working in the future.

> *Hypothesis three: Demographic variables (age, gender, occupation, education level and marital status) will significantly predict intentions to continue paid work in the future.*

In addition to these hypotheses, a number of research questions will be explored relating to gender, work-related variables and future work intentions.

Women in New Zealand have lower participation rates in the workforce, more interrupted work histories and lower earning potential than men (Gosse, 2002; Johnson, 2005). In addition, Shacklock et al. (2009) found evidence of differing predictors of work intentions between the male and female participants in their Australian based study. Thus, evidence of differing predictors of work intentions between men and women will be explored in the present study.

> *Research question one: Are there gender differences in the predictors of work intentions?*

Given the evidence cited above that shows differences in life-course work experiences between men and women, it is proposed that gender will interact with both career commitment and living standards in predicting work intentions. Thus, these interactions will be explored and if significant, separate analyses on the male and female sub-samples will be undertaken, as in Shacklock et al.'s (2009) research, in order to further explore the differences between the predictors of work intentions between men and women.

Research question two: Does gender interact with career commitment and living standards on work intentions?

The reviews above relating to retirement discussed relationships between work-related variables and retirement intentions (Beehr, 1986; Feldman, 1994; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009). In addition, the aim of Shacklock et al.'s (2009) research was to explore the relationships between work-related factors and intentions to remain in paid work. As work-related variables appear influential on intentions to retire (and therefore cease paid work) it would be appropriate to investigate the relationships between selected work-related variables and intentions to remain in paid work. A number of work-related variables that have support from the previous literature will be examined in the current study (for example, leisure orientation and career commitment, Shacklock et al., 2009). To extend previous research, further work-related variables will be investigated (e.g., work involvement, total job satisfaction and job stress).

Research question three: Are work-related variables related to intentions to remain in paid work?

Work intentions and work behaviours

In line with both general theories of the relation between attitudes, intentions and behaviour and the research on retirement intentions and behaviour, it is proposed that intentions regarding continuation in paid work at wave one (2006) of the HWR study will be related to work status at wave two (2008). We can conclude from the literature that intentions are a reasonable predictor of future behaviour. Dwyer (2001) provided evidence that intentions to remain at work could potentially be more accurate in predicting later work status than retirement intentions.

Hypothesis four: Work continuation intentions in 2006 will be related, at the bivariate level, to work behaviour in 2008.

Key factors measured in 2006 will be explored in relation to their ability to discriminate between participants whose intentions in 2006 matched their work outcomes in 2008 (planned to continue working and did, planned to retire and did) and those whose intentions in 2006 did not match their work outcomes in 2008 (planned to continue working but retired, planned to retire but continued working) (labelled 'group membership 2008'). Factors such as demographics, health and wealth have been shown to consistently discriminate between those who continue in paid work and those who retire (Beehr, 1986; Feldman, 1994; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009), and will also be examined in the present research in relation to divergence between intentions and behaviour. In addition, this research extends previous research by including factors such as retirement attitudes and work quality of life measures.

Hypothesis five: Demographic (age, gender, marital status, occupation, education level), wealth (living standards, total assets, anticipated finances in retirement), health (physical and mental Sf36 component scores), work quality of life (career commitment, work involvement, leisure orientation, total job satisfaction, job stress) and retirement attitudes (retirement adjustment) variables will significantly predict group membership in 2008.

As stated above, there are a number of reasons to conclude there could be possible gender differences in the predictors of group membership in 2008. For example, Disney and Tanner (1999) found gender differences in their sample in regards to retirement intentions and behaviour. In addition, there are key differences between men and women's labour market experiences in New Zealand on key factors known to have an important impact on both work intentions and behaviour (for example, women have lower earning potential than men).

Research question four: Are there gender differences in the predictors of group membership in 2008?

As noted earlier (research question two) gender could potentially interact with both career commitment (due to women generally having more interrupted work histories and more responsibilities outside of work than men) and living standards (due to women having lower earning potential than men) when predicting group membership in 2008. Again, if these interactions are significant, separate analyses on the male and female sub-samples will be undertaken to further explore these gender differences.

Research question five: Does gender interact with living standards and career commitment on group membership in 2008?

Work status

As covered above, in line with both general theories of the relation between attitudes, intentions and behaviour and the research on retirement intentions and behaviour, it is proposed that intentions regarding continuation in paid work at wave one (2006) of the HWR study will significantly predict work status at wave two (2008), over and above the effects of other influential variables. We can conclude from the literature that intentions are a reasonable predictor of future behaviour.

Hypothesis six: Work continuation intentions in 2006 will significantly predict work status in 2008 over and above the effects of other influential variables, and intending to continue in paid work will increase the likelihood of being in some form of work in 2008.

As noted above, health and wealth are two of the most consistent predictors of work and retirement status. In relation to health status, Beehr (1986), Talaga and Beehr (1989), Feldman (1994), Hansson et al. (1997), and Wang and Shultz (2009) reported a link between declining health and retirement. Consequently, it is proposed that good or excellent health should be linked to remaining at work. This conclusion is supported by Lund and Borg's (1999) research, which found an association between very good self-rated health and remaining in work 5 years later for both their male and female participants.

Hypothesis seven: Health status in 2006 will significantly predict work status in 2008 with higher scores increasing the likelihood of being in some form of employment as opposed to being retired in 2008.

Similarly with financial status, Beehr (1986), Talaga and Beehr (1989), Feldman (1994), Hansson et al. (1997) and Wang and Shultz (2009) reported a relationship between adequate finances and retirement. Thus, it is proposed that poorer finances will be related to remaining at work. In relation to retirement attitudes (retirement adjustment variable), both Feldman (1994) and Wang and Shultz (2009) highlighted evidence of a relationship between attitudes towards retirement and retirement. There is also evidence that other related variables have an association with retirement behaviour, such as anxiety about separation from work (Hansson et al., 1997). Thus, there is evidence that attitudes towards retirement are related to retirement behaviour. It is therefore proposed that those with more positive attitudes towards retirement will be less likely to avoid/delay retirement and therefore be less likely to remain in paid work 2 years later.

Hypothesis eight: 2006 living standards, anticipated finances in retirement and retirement adjustment variables will significantly predict work status in 2008 and higher scores will decrease the likelihood of being in some form of employment as opposed to being retired in 2008.

In relation to demographic variables, there is also evidence regarding an association with retirement (Feldman, 1994; Talaga & Beehr, 1989; Wang & Shultz, 2009). Talaga and Beehr (1989), for example, reported that age had been found to be a significant predictor of retirement even when other influential variables (such as health) were controlled for. While a link between increasing age and later *planned* retirement ages has been found (e.g., Talaga & Beehr, 1989), research on retirement *behaviour* has found that older individuals are more likely to retire (Adams & Rau, 2004; Kim & Feldman, 2000; Wang et al., 2008). Therefore, it is hypothesised that older participants will be more likely to retire by 2008 than younger participants.

While less research has been conducted on the association between work-related variables and retirement, there is some empirical evidence for a relationship between the two. Beehr (1986) hypothesised a relationship between retirement and work factors such as job characteristics, attaining occupational goals and leisure pursuits. Hansson et al. (1997) highlighted a relationship between psychological factors and retirement, including job attachment, satisfaction with career attainment, and anxiety about separation from work. Wang and Shultz (2009) also reviewed research showing a relationship between factors such as job characteristics and career attachment and retirement. In addition to this, Lund and Borg (1999) found a relationship between high developmental possibilities and high decision authority at work and remaining at work 5 years later. Thus, there is a basis for the hypothesis that the work factors listed below will significantly predict remaining at work 2 years later.

Hypothesis nine: Both demographic (age, gender and education level) and work quality of life (career commitment, leisure orientation and job stress) variables will significantly predict work status in 2008.

The evidence for potential gender differences in the predictors of both retirement behaviour (Talaga & Beehr, 1989) and work intentions (Shacklock et al., 2009) suggest there could also be gender differences in the predictors of work status. In addition, male and female labour force experiences in New Zealand differ (e.g. Gosse, 2002; Johnson, 2005), meaning the factors that keep men and women in the labour force may also differ. Finally, the most similar research to the current section, Lund and Borg's (1999), which explored the predictors of remaining in work 5 years later in a Danish sample of older workers, found there were gender differences in the predictors of work status between the male and female participants in their sample. Thus, there is literature support for exploring gender differences in the predictors of work status in older workers.

Research question six: Are there gender differences in the predictors of work status in 2008?

Potential interactions between gender and both career commitment and living standards will again be explored.

Research question seven: Does gender interact with living standards and career commitment on work status 2008?

From a review of the literature a number of hypotheses have been proposed to address the broad research questions outlined above. The following chapter will describe the method of the present study to test these hypotheses.

Chapter IV: Method

__Study design__

The current study is a secondary analysis of data from the Health, Work and Retirement (HWR) study. This is a large-scale longitudinal study of New Zealanders aged 55-70 years (Towers, 2006). To ensure the base sample was representative, participants were randomly selected from the New Zealand electoral roll. Around 96% of citizens who are eligible to vote (over 18 years old) are registered on the roll. Individuals in institutions such as nursing homes, prison and dependent care were excluded from the study.

Dillman's (2000) Tailored Design method, a five stage posting schedule, was used for participant recruitment. In March 2006 a letter was sent to participants informing them of the study and their random selection. A week later, the questionnaire and information sheet was posted to the participants. After another three weeks, remainder cards were sent to participants who had not responded. If participants had still not responded three weeks after this, a second survey was posted. After another five weeks, a second reminder card was sent to participants who had still not responded. This resulted in a base sample of 6,662 individuals, which was an overall response rate of 53%. Additional waves of surveying are to be carried out every 2 years.

Individuals of Māori decent were over-sampled to maximise participant recruitment in the study, due to the likelihood of drastically reduced Māori participation rate. Because of this, a post-stratified weighting variable was calculated to account for known discrepancies between the sample and the population (Towers, 2006).

The survey content can be broken into seven main areas: health, physical activity, social support, work status and attitudes, retirement status and attitudes, socio-demographic information and whakapapa/whanaungatanga (genealogy/relationships). Only sections relevant to the present study will be described here.

Participants

Data from the 2006 and 2008 waves (waves one and two) of the HWR study was utilised in the current research. Only those participants surveyed in both waves were included in the analyses. Participants reporting themselves as 'full-time employed' or 'part-time employed' in 2006 were included in the sample for analysis. Thus, full-time retired participants in 2006 were excluded from the study. Four participants reporting an intended retirement year before 2006, and therefore before the year of first surveying, were also excluded from the sample. In addition, three participants reporting an intended retirement age of 100 years and over were excluded from the analyses as potential outliers. After these exclusions, 1389 participants were eligible for inclusion in the sample.

Total sample demographic characteristics

Table 1 shows the demographic characteristics of the total sample. As can be seen in the table, the majority of the sample (87.8%) reported themselves full-time employed in 2006 as opposed to part-time employed. Participants intended retirement year ranged from 2006 to 2050 (m = 2013, SD = 5.9). The sample ranged in age at wave one from 53 to 76 years, with a mean age of 59.3 years (SD = 3.8)[2]. Just over half the sample was male (51.3%). With regards to ethnicity, 50.9% of the sample identified themselves as primarily New Zealand European, 45.4% identified themselves as primarily of Māori decent, and the remaining 3.7% identified themselves as Pacific (.6%), Asian (.7%), Middle Eastern/Latin American/African (MELAA) (.1%) or other (2.3%). The majority of the sample participants were partnered or married (72.6%), and 45.7% were professionals (including managers) in 2006. In regards to education level, 45.2% of the sample had post-school level qualifications, 23.8% had attained school-level qualifications and the remaining 31% held no recognised qualifications at wave one. By 2008, the majority of the remaining sample (61%) was employed in full-time paid work, 22.2% were employed in part-time work and 6.8% were fully retired.

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[2] This age range does not match the age range stated above because participants were selected from the electoral roll based on their birth year, not their actual birth date.

The remaining 10% of the sample was made up of homemakers, students, those unemployed and seeking work and those unable to work due to a health or disability issue.

Table 1: *Summary of biographical information for the total sample (N = 1389)*

	Number of respondents	Percentage of respondents	Valid percent
Work status 2006			
Full-time work	1219	87.8	87.8
Part-time work	170	12.2	12.2
Intended retirement year			
2006-2010	446	32.1	32.1
2011-2020	830	59.8	59.8
2021-2030	85	5.9	5.9
2031-2040	14	1.1	1.1
2041-2050	14	1.1	1.1
Gender			
Male	709	51.1	51.3
Female	674	48.5	48.7
Missing	6	.4	
Ethnicity			
NZ European	702	50.5	50.9
Māori	626	45.1	45.4
Pacific	8	.6	.6
Asian	10	.7	.7
MELAA	1	.1	.1
Other	32	2.3	2.3
Missing	10	.7	
Age (years)			
53-55	250	18.0	18.1
56-60	673	48.5	48.5
61-65	360	26.0	26.0
66-70	102	7.2	7.3
71-76	1	.1	.1
Missing	3	.2	
Marital Status			
Married/Partnered	1006	72.4	72.6
Single/widow/widower/ divorced/separated	379	27.3	27.4
Missing	4	.3	
Education Level			
Post-school level qualifications	611	44.0	45.2
School-level qualifications	321	23.1	23.8
No recognised qualifications	418	30.1	31.0
Missing	39	2.8	

Note: Table continues on the following page.

Table 1 continued

	Number of respondents	Percentage of respondents	Valid percent
Occupation			
Professional/manager	553	39.8	45.7
Non-professional	657	47.3	54.3
Missing	179	12.9	
Employment status 2008			
Full-time employment	778	56.0	61.0
Part-time employment	283	20.4	22.2
Full-time retired	87	6.3	6.8
Other	127	9.1	10.0
Missing	114	8.2	

Measures

Biographical information: Information was sought on participants' age, gender, marital status, occupation, and education level. Questions were modelled on the 2001 New Zealand Census of Population and Dwellings (Statistics New Zealand, 2001).

Wealth measures: Three measures of wealth were used in the present study. The Economic Living Standards Index short form (ELSI-SF) is a reliable and valid survey tool, developed in New Zealand, which measures individual's economic standard of living (Jensen, Spittal, & Krishnan, 2005). 'Economic standard of living' is a construct that encompasses the material side of wellbeing, which is reflected in individual's personal possessions (e.g., clothing, household durables, access to medical services and recreation) and consumption (Jensen et al., 2005). The scale measures four different areas of this, including: restrictions in social participation (6 items), restrictions in ownership of assets (8 items), the extent respondents economise (8 items) and self-rated standard of living (3 items) (Jensen et al., 2005). This measure takes 4-6 minutes to administer and scores on the items are combined to create a continuous variable (ranging from 0 – 31), with higher scores reflecting higher standards of living. Jensen et al. (2005) report a Cronbach's alpha of .88, and the alpha in the present sample was .81. The mean score on the scale in the present sample was 23.13 (SD = 5.87).

The second measure of wealth was anticipated finances in retirement. This scale was developed by Adams (1999) and consists of 5 items. Two items assess whether

respondents are financially able to retire and the remaining three items assess the level of anxiety respondents have about their anticipated standard of living or income in retirement. Adams (1999) calculated a Cronbach's alpha of .81, and the alpha for the present sample was .91. The mean score on the scale for the present sample was 13.28 (SD = 5.35), with a range of 5 – 29. Higher scores represent higher anticipated retirement income satisfaction. The third measure of wealth was total assets, which was a calculation the monetary value of participants' total assets.

Health measures: Health was assessed using the SF-36 Health Survey, version 2 (Ware, Kosinski, & Dewey, 2000). This is a widely used, valid and reliable short form measure of generic health, or self-reported functional health and wellbeing. The SF-36 has 36 items and provides scores on eight health domains and two component summaries: the Physical Component Summary (PCS) and the Mental Component Summary (MCS) (Ware et al., 2000). These component summaries were used in the present study as measures of mental and physical health. Scores on each of the eight health domains are summed and then transformed to a 0 - 100 scale. Scoring algorithms are then used to produce the PCS and MCS scores. An advantage of the two component summaries is that they are norm based, with reduced floor and ceiling effects. Both the PCS and MCS are scored in such a way that lower scores imply poorer physical or mental health (Ware et al., 2000). Cronbach's alpha for the PCS for the current sample was .88 and for the MCS was .85. The mean score on the PCS for the present sample was 51.33 (SD = 8.3) and for the MCS was 49.63 (SD = 9.05).

Work quality of life measures: A number of variables related to work quality of life were also used in the current study.

The career commitment scale is an 8-item measure developed by Blau (1985). Career commitment is defined as one's attitude towards their profession or vocation. The scale items specifically assess how satisfied respondents are in their career choice and whether respondents would prefer to pursue a different career or remain in their present occupation. Higher scores on the scale indicate higher levels of career commitment. Blau (1985) reported a Cronbach's alpha for the scale of .85, and the

alpha in the present sample was .76. The mean score on the scale in the present sample was 36.33 (SD = 9.72), ranging from 8 – 56.

The work involvement scale is a 7-item measure developed by Kanungo (1982). Kanungo (1982) defined work involvement as a historically caused normative belief. The scale items assess the importance respondents' attribute to their working lives, in terms of its centrality to their overall life and importance in reaching personal goals. Higher scores on the scale imply higher levels of work involvement. Kanungo (1982) reports a Cronbach's alpha for the scale of .75, and the alpha in the current sample was .62. The mean score on the scale in the present sample was 15.93 (SD = 4.05), and scores ranged from 6 – 30.

The leisure orientation scale is a 4-item measure developed by Taylor and Shore (1995). Taylor and Shore (1995) defined this construct as the extent respondents' look forward to retirement as a means to pursue and enjoy leisure activities. The scale items assess the extent to which respondents' believe their work lives hinder their pursuit of leisure and whether they feel retirement will allow more time to spend on leisure. Higher scores on the scale indicate a higher orientation towards leisure in respondents. Taylor and Shore (1995) report a Cronbach's alpha for the scale of .75, and the alpha in the present sample was .76. The mean score on the scale in the current sample was 15.03 (SD = 2.68), and scores ranged from 4 – 20.

The total job satisfaction scale is a 15-item scale developed by Warr, Cook and Wall (1979). The total job satisfaction scale reflects the degree respondents report satisfaction with both the intrinsic and extrinsic features of their job. Thus, the scale items assess the respondent's level of satisfaction with both intrinsic and extrinsic aspects of their occupation (e.g. physical work conditions, autonomy, colleagues, responsibility level and remuneration). Higher scores on the scale represent higher levels of total satisfaction. Warr et al. (1979) report a Cronbach's alpha for the scale of .85 - .88, and the alpha for the present sample was .92. The mean score of the scale for the current sample was 77.39 (SD = 11.08), and scores ranged from 15 – 105.

The job stress scale was developed for the HWR study. Items were adapted from a number of previous scales (for example, the Generic Job Stress Questionnaire (Hurrell & McLaney, 1988) and the Occupational Stress Indicator (Cooper, Sloan & Williams, 1988)), ensuring all factors linked to work stress in these scales were represented in the present scale. The scale consists of sixteen items measured on a five-point likert scale (1=agree - 5=disagree) and scores can total 16 to 80. Higher scores indicate higher levels of job stress. The alpha for the 2006 HWR sample (N=6,662) was .76, and the alpha for the current sample was .98. The mean score on the scale for the present sample was 43.03 (SD = 4.89), ranging from 23 - 73.

Retirement attitudes measure: One measure of retirement attitudes was used in the present study. Retirement adjustment is a 4-item measure developed by Taylor and Shore (1995). This scale measures respondents' beliefs about their ability to make the retirement transition successfully. Thus, the scale items assess levels of confidence, and conversely, anxiety and depression, associated with thoughts of retirement for respondents. Higher scores on the scale reflect higher levels of anticipated adjustment to retirement (e.g. more confidence in one's ability to make the transition). Taylor and Shore (1995) report a Cronbach's alpha for the scale of .86, and the alpha for the present sample was .89. The mean score on the scale for the current sample was 16.26 (SD = 3.93) and scores ranged from 4 – 22.

Means, standard deviations, minimum and maximum scores on all continuous variables measures in 2006 can be seen in Table 2.

Table 2: *Means, standard deviations, minimum and maximum scores on continuous variables measured in 2006 for the total sample (N = 1389)*

Variables	Mean	SD	Minimum	Maximum
Age	59.25	3.82	53.00	76.00
Living Standards	23.13	5.87	.00	31.00
Total Assets	466856.37	9.29	.00	12350000.00
Anticipated Finances	13.28	5.35	5.00	29.00
Physical Health	51.33	8.30	18.34	71.21
Mental Health	49.63	9.05	-2.27	66.72
Career Commitment	36.33	9.72	8.00	56.00
Work Involvement	15.93	4.05	6.00	30.00
Leisure Orientation	15.03	2.68	4.00	20.00
Total Job Satisfaction	77.39	11.08	15.00	105.00
Job Stress	43.03	4.89	23.00	73.00
Retirement Adjustment	16.26	3.93	4.00	22.00

Chapter V: Results

All data analyses were conducted with SPSS version 17.0.

Data coding and preparation

A number of coding decisions were made before data analyses were undertaken.

Demographic variables:

Gender: Male participants were assigned a value of 0 and female participants a value of 1. Group 0 was entered as the reference category.[3]

Marital status: Married or partnered participants were assigned a value of 0 and those without partners (single, widow/widower, divorced or separated) a value of 1. Group 0 was entered as the reference category.

Occupation: Professionals (including managers) were assigned a value of 0 and non-professionals (including technicians, trade, community, clerical, administrative, and sales workers, machinery workers, labourers and those in unrecognised occupations) a value of 1. Group 0 was entered as the reference category.

Education level: Two dummy variables were created to reflect education level. The no qualifications variable was coded so participants with no qualifications were assigned a value of 1 and those with school level qualifications and post-school qualifications were assigned a value of 0. The school qualifications variable was coded so participants with school qualifications were assigned a value of 1 and those with no qualifications or post-school qualifications were assigned a value of 0. Both of these variables were entered with the last category as the reference category.

Work Intentions: Participants intended retirement year was calculated from their year of birth and intended retirement age stated in 2006. A new variable was then created with a cut point at 2008 to create two groups: those intending to retire, or cease paid

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[3] This refers to the reference category for the binary logistic regression analyses.

work, before 2008 (1, <2008) and those that intended to remain in paid work past 2008 (2, 2009+).

Group Membership: Participants were divided into two groups based on their reported Work Intentions at time one and Work Status at time two: those whose outcomes in 2008 matched their intentions in 2006 (1) and those whose outcomes in 2008 did not match their intentions in 2006 (2). Participants who were homemakers, students, unemployed and seeking work or unable to work due to a health or disability issue were excluded.

Work Status: Work status in 2008 was divided into three groups for the purposes of analysis: those employed in full-time work (1), those employed in part-time work (2) and those who reported themselves as full-time retired (3). Again, participants who were homemakers, students, unemployed and seeking work or unable to work due to a health or disability issue were excluded.

Control variable (Work Status 2006): A variable was created to control for any effects due to work status in 2006 (full-time employees versus part-time employees). Participants reporting themselves as full-time employed were assigned a value of 0 and those part-time employed a value of 1. Group 0 was entered as the reference category.

Prior to main analyses, data was screened for accuracy of data entry, missing values, and fit between variable distributions and the assumptions of multivariate analysis. A number of variables had missing data, however, an inspection of patterns of missing data suggested a random pattern. Due to the large sample size, the series mean was used to replace missing values on the following variables: anticipated finances in retirement, the physical and mental health component summary scales, career commitment, work involvement, leisure orientation, job stress, total job satisfaction and retirement adjustment. Tabachnick and Fidell (2007) state that this is a conservative way to deal with missing data and list several attractive aspects of using this strategy. For example, the mean for the distribution does not change and the

researcher is not required to impute missing values (Tabachnick & Fidell, 2007). However, there are also disadvantages to this strategy. Most notably, it reduces the variance of the variables involved (Tabachnick & Fidell, 2007). For the current study, listwise deletion during multivariate analysis due to missing data reduced the sample N by at least half, and it was decided that this conservative strategy should be employed. Checks for multivariate outliers are described below.

Analyses

Bivariate analyses: Pearson's r correlations were used to evaluate relationships between variables. Independent samples *t*-tests (for continuous variables) and chi-square tests (for categorical variables) were used to evaluate the differences between two groups (e.g., males and females). Levene's test for equality of variances were undertaken, and where significant, appropriate statistical information was provided. In addition, one-way between groups Analysis of Variance (ANOVA) was used to evaluate differences between groups of three or more (e.g., full-time employed, part-time employed and full-time retired). Levene's test for equality of variances were undertaken and where significant, Welch's F statistic was reported.

Multivariate analyses: Binary logistic regression analyses (BLR) were undertaken to explore the predictors of membership in two groups (e.g., work intentions at time one and group membership at time two). BLR is appropriate because it is used to predict membership into two discrete groups or categories (Tabachnick & Fidell, 2007). Predictor variables entered into a BLR can be continuous, discrete, dichotomous or a mix (Tabachnick & Fidell, 2007). BLR is also more flexible then other related techniques (such as discriminant analysis), as it has no assumptions about predictor variable distribution (e.g., predictor variables do not have to be normally distributed, have equal variance within each group or be linearly related) (Tabachnick & Fidell, 2007). These features of BLR make it the appropriate method of analysis for the stated uses in the present study.

Multinomial logistic regression (MLR) was undertaken to explore predictors of membership into three groups (e.g., work status at time two). MLR is appropriate because it is used when predicting membership into three or more groups (Tabachnick & Fidell, 2007). MLR has the same advantages as BLR (e.g., entered predictors can be a mix of continuous, discrete and/or dichotomous variables and there are no assumptions about the distribution of these predictor variables) (Tabachnick & Fidell, 2007). Therefore, MLR is the appropriate method of analysis for the stated uses in the present study.

Analyses were undertaken in three parts based on the research questions and hypotheses.

Part 1: Work intentions

Bivariate analyses

All 1389 participants were included in these analyses (refer to Table 1 in previous method chapter for statistics for the sample). With regards to the dependent variable, the majority of the sample (84.6%) reported an intention to continue in paid work past 2008 (2009+ group), leaving only 15.4% who intended to cease paid work, or retire, before 2008 (<2008 group). As Table 3 shows, group differences were found between these two dependent variable groups. The group intending to cease paid work before 2008 (<2008) was on average older $t(1384) = 15.81$, $p < .001$, and more likely to be part-time employed χ^2 (1, N=1389) = 34.26, $p < .001$, than the group intending to remain in paid work past 2008 (2009+). The <2008 group also had a higher proportion of individuals with no recognised qualifications than the 2009+ group χ^2 (2, N=1389) = 6.59, $p < .05$, however, both had similar post-school qualification proportions. The 2009+ group had lower mean scores than the <2008 group on two wealth variable measures, including living standards $t(1384) = 2.42$, $p < .05$, and anticipated finances in retirement $t(1384) = 7.68$, $p < .001$.

Table 3: *Means and standard deviations on 2006 continuous variables for the two Work Intentions in 2006 groups*

Variables	<2008 group		2009+ group	
	Mean	*SD*	*Mean*	*SD*
Age	62.66	3.68	58.51	3.41
Living standards	24.32	5.16	23.42	5.42
Anticipated Finances	15.98	5.67	12.64	5.41
Physical Health	50.81	9.08	52.14	7.60
Mental Health	49.81	8.89	50.02	8.49
Career Commitment	34.15	9.33	36.39	10.21
Work Involvement	15.81	4.15	15.79	4.17
Leisure Orientation	15.48	2.42	15.06	2.80
Total Job Satisfaction	76.94	10.61	77.37	11.62
Job Stress	42.74	4.98	43.12	5.27
Retirement Adjustment	17.02	3.77	16.19	4.12

Multivariate analyses

A binary logistic regression (BLR) was run using the total sample to explore which variables were associated with membership in the two dependent variable (DV) groups: those that intended to retire (or cease paid work) before 2008 (<2008) and those that intended to remain in paid work past 2008 (2009+). Independent variables were entered into the regression in four blocks. The first block included the control variable (work status in 2006) and demographic variables (age, gender, marital status, occupation and education level). The second block included predictor variables that already have well-established relationships with retirement and work intentions: wealth variables (living standards, total assets and anticipated finances in retirement) and health variables (mental and physical component summary scores). The third block of variables included work quality of life variables (career commitment, work involvement, leisure orientation, total job satisfaction and work stress) and retirement attitudes (retirement adjustment). The final block included two interaction effects: an interaction between gender and living standards and an interaction between gender and career commitment. Forced entry was selected as the method of entry and indicator contrast was used for all categorical variables.

These two interaction effects were entered into the analysis in order to identify potential gender differences. If the interaction terms were significant, separate analyses based on the male and female sub-samples would be undertaken. The aim of

these separate analyses is to further investigate the differences between the predictors of intentions to remain in work between males and females.

The same variables described above were entered into a linear regression with only multicollinearity and mahalanobis distance statistics requested. The multicollinearity statistics showed that this assumption was not violated (all tolerance values were well above 0.1 (Menard, 1995) and all VIF values were well below 10 (Myers, 1990)). The probabilities of the mahalanobis distances were then calculated using the Cdf.Chisq function, and seven cases with probability values less than or equal to 0.001 were excluded. The BLR was then re-run to assess whether the outliers were overly influential in the regression results. Excluding the seven outliers did not significantly change the results (e.g. the same predictors were significant in the final model in both analyses and correct classification rates did not change considerably between the two outputs). Therefore, the outliers were not excluded from the final results. The assumption of linearity of the logit was tested using the Box-Tidwell Transformation test, whereby the natural log transformation is calculated for each continuous variable and then an interaction between the log and the original variable is entered into a BLR using the same variables as the original analysis. None of the interactions were significant (p > .05) and therefore it was concluded that the assumption was also not violated (Field, 2009).

Results

Total sample binary logistic regression results

The step one model with the demographic variables entered was statistically reliable, χ^2 (7, N=1174) = 191.71, p < .001, indicating the model was able to distinguish between participants who intended to retire before 2008 and those who intended continuing working. The model as a whole explained between 15.1% and (Cox and Snell R square) and 25.9% (Nagelkerke R square) of the variance in work intentions and correctly classified 84.5% of cases. Table 4 shows odds ratios (ORs) and 95% confidence

intervals for ORs for each of the predictors in step one. Age was the only variable significantly contributing to the model (β = -.294, p < .001).

The health and wealth variables were added to the model at step two, and the full model was significant, χ^2 (12, N=1174) = 231.73, p < .001. The model as a whole explained between 17.9% (Cox and Snell R square) and 30.7% (Nagelkerke R square) of the variance in work intentions and correctly classified 84.6% of cases. As shown in Table 4, age remained significant (β = .-289, p < .001), and the school qualifications (β = .-523, p < .05) and anticipated finances (β = .-100, p < .001) variables were also significantly related to work intentions.

Work quality of life and retirement attitudes variables were entered at step three and the full model was also significant, χ^2 (18, N=1174) = 274.47, p < .001. The model as a whole explained between 20.8% and (Cox and Snell R square) and 35.8% (Nagelkerke R square) of the variance in work intentions and correctly classified 86.4% of cases. Variables making a statistically significant contribution to the model at this stage included age (β = -.323, p < .001), school qualifications (β = -.561, p < .05), anticipated finances in retirement (β = -.115, p < .001), physical health (β = .024, p < .05), career commitment (β = .046, p < .001) and leisure orientation (β = -.085, p < .05).

The final block of the model introduced the two interaction effects and again the full model was significant, χ^2 (20, N=1174) = 282.417, p < .001. The model as a whole explained between 21.4% and (Cox and Snell R square) and 36.7% (Nagelkerke R square) of the variance in work intentions and correctly classified 86.7% of cases. Hosmer and Lemeshows test for goodness of fit was non-significant at the final step (p = .464) indicating an appropriate level of fit. Variables making a statistically significant contribution to the model at the final block included age (β = -.326, p < .001), school qualifications (β = -.529, p < .05), anticipated finances (β = -.113, p < .001), physical health (β = .024, p < .05), career commitment (β = .067, p < .001) and leisure orientation (β = -.086, p < .05). In addition, the interaction between gender and living standards (β = .095, p < .05) and gender and career commitment (β = -.042, p < .05) were also significant.

Table 4: *BLR of demographic variables, health and wealth variables, work quality of life variables and interaction effects on Work Intentions in 2006 showing ORs and 95% confidence intervals for ORs for the total sample*

	Steps			
Variables	*1*	*2*	*3*	*4*
Work Status 06	0.71 (0.42 -1.20)	0.89 (0.52 -1.52)	0.86 (0.49 -1.51)	0.84 (0.48-1.49)
Age	**0.75** (0.71 -0.78)	**0.75** (0.71 -0.79)	**0.72** (0.66 -0.77)	**0.72** (0.68 -0.76)
Gender	0.87 (0.60 -1.24)	0.76 (0.52 -1.10)	0.73 (0.50 -1.09)	0.31 (0.04 -2.60)
Marital Status	1.44 (0.95 -2.20	1.35 (0.87 -2.07)	1.30 (0.83 -2.05)	1.37 (0.86 -2.16)
Occupation	1.19 (0.82 -1.73)	0.90 (0.60 -1.34)	1.14 (0.74 -1.75)	1.15 (0.75 -1.76)
No Qualification	1.01 (0.66 -1.53)	0.97 (0.63 -1.50)	1.00 (0.64 -1.57)	1.01 (0.64 -1.59)
School Qualifications	0.65 (0.40 -1.07)	**0.59** (0.36 -0.98)	**0.57** (0.34 -0.95)	**0.60** (0.35 -0.99)
Living Standards		1.01 (0.97 -1.05)	1.01 (0.96 -1.05)	0.95 (0.88 -1.02)
Total Assets		1.00 (1.00 -1.00)	1.00 (1.00 -1.00)	1.00 (1.00 -1.00)
Anticipated Finances		**0.91** (0.87 -0.94)	**0.89** (0.86 -0.93)	**0.89** (0.86 -0.93)
Physical Health		1.02 (0.99 -1.04)	**1.02** (1.00 -1.05)	**1.02** (1.00 -1.05)
Mental Health		1.02 (0.99 -1.04)	1.02 (0.99 -1.04)	1.02 (0.99 -1.04)
Career commitment			**1.05** (1.02 -1.07)	**1.07** (1.04 -1.10)
Work Involvement			1.03 (0.98 -1.08)	1.03 (0.98 -1.08)
Leisure Orientation			**0.92** (0.85 -0.99)	**0.92** (0.85 -0.99)
Job Satisfaction			1.01 (0.99 -1.03)	1.01 (0.99 -1.03)
Job Stress			1.05 (0.97 -1.06)	1.02 (0.97 -1.06)
Retirement Adjustment			0.97 (0.91 -1.02)	0.97 (0.91 -1.02)
Living Standards x Gender				**1.10** (1.01 -1.93)
Career Commitment x Gender				**0.96** (0.92 -0.99)
Cox & Snell R^2	.151	.179	.208	.214
Nagelkerke R^2	.259	.307	.358	.367

Note: Bold figures significant at $p < .05$, $p < .01$ or $p < .001$ levels.

Hypotheses

Hypothesis one: Physical and mental health will significantly predict work intentions and higher scores on these variables will increase the likelihood of participants planning to continue paid work in the future.

This hypothesis was partially supported by the data. The mental health variable did not statistically significantly contribute to the model ($p = .18$); however, the physical health variable was statistically significantly related to work intentions ($\beta = .024$, $p < .05$). The physical health variable OR of 1.02 indicates that for every unit increase in this variable, the likelihood of belonging to the second group (or intending to remain in work past 2008) increased by 1.02 times. Thus, the physical health variable did significantly predict work intentions and increases on the variable did increase the likelihood of participants intending to remain in paid work past 2008, however, this effect was small.

Hypothesis two: Both wealth (living standards, total assets and anticipated retirement finances) and retirement attitudes (retirement adjustment) variables will significantly predict work intentions, with poorer wealth and more negative attitudes towards retirement being related to intentions to continue paid work in the future.

This hypothesis was also partially supported by the data. The retirement attitudes variable (retirement adjustment) did not make a statistically significant unique contribution to the model ($p = .22$). Only one of the three wealth variables made a statistically significant unique contribution to the model, anticipated finances ($\beta = -.113$, $p < .001$). The OR associated with anticipated finances was .89, indicating that for every unit increase in this variable, participants were .89 times less likely to belong to the second group (intend to continue in paid work past 2008). Thus, one of the wealth variables did significantly predict work intentions and higher scores on this variable did decrease the likelihood of intending to continue in paid work past 2008.

Hypothesis three: Demographic variables (age, gender, occupation, education level and marital status) will significantly predict intentions to continue paid work in the future.

This hypothesis was generally supported by the data. Age was a statistically significant predictor of work intentions (β = -.326, p < .001). Age had an OR of .72, indicating that for every unit increase in age, participants were .72 times less likely to plan to continue working past 2008. The school qualifications variable also made statistically significant unique contributions to the model (β = -.529, p < .05). The OR of .60 for the school qualifications variable indicated that those with school level qualifications (as opposed to no recognised qualifications or post-school level qualifications) were .60 times less likely to plan to continue working past 2008. Thus, both age and one education level dummy variable were statistically significant predictors of work intentions. Younger workers were more likely to plan to continue in paid work in the future. The findings in relation to education level are more complicated than hypothesised, showing a U-shaped relationship. Participants with both a higher education (post-school level) and with no recognised qualifications were more likely to plan to continue in paid work than those with mid-range qualifications (school level qualifications), who were less likely to plan to continue in paid work.

Research question one: Are there gender differences in the predictors of work intentions?

Research question two: Does gender interact with career commitment and living standards on work intentions?

The significant interaction between gender and career commitment (β = -.042, p < .05) and gender and living standards (β = .095, p < .05) indicate there are gender differences in the predictors of work intentions and answer research question two. The interaction between gender and career commitment shows that those low in career commitment are more likely to intend leaving work earlier but commitment has a much stronger effect for men on intentions. This is further clarified in the following

separate analyses on the male and female sub-sample separately, where career commitment is a significant predictor of work intentions for the males but not the females. The interaction between gender and living standards shows that those with lower living standards are more likely to intend working past 2008 but this is slightly more true for men. Separate analyses based on the male and female sub-samples are described below and provide further data in regards to research question one.

Research question three: Are work-related variables related to intentions to remain in paid work?

Of the work quality of life variables, both career commitment (β = .067, p < .001) and leisure orientation (β = -.086, p < .05) made statistically significant unique contributions to the model. This indicates that those with higher career commitment and lower leisure orientation are more likely to report intentions to remain in paid work.

Further multivariate analyses

As both interaction effects (gender by career commitment and gender by living standards) were significant in the final block of the BLR based on the total sample, two further BLRs were undertaken: one based on the male sub-sample and the other based on the female sub-sample. This was in order to further investigate the differences between the predictors of intending to remain in paid work between the male and female participants. These analyses were identical to the original analysis, with the exception of omitting gender as a predictor variable and the two interaction terms for obvious reasons. Outlier analysis using mahalanobis distance significance again showed outliers did not have undue influence on the final models and therefore in both analyses the outliers were not excluded in the final results. There were nine cases with mahalanobis significance equal to or less than 0.001 in the male sub-sample and four cases in the female only sub-sample.

Bivariate analyses

709 male participants and 674 female participants met the criteria for inclusion in the two analyses. The two subgroups were similar in age, the mean age for the males was 59.3 years (SD = 3.8) and for the females was 58.9 years (SD = 3.8). The two groups were also similar on work status in 2006, with 88.3% of the male sample and 87.1% of the female sample reporting themselves as full-time employed as opposed to part-time employed. The male sample was significantly more likely to be married or partnered, with 80.8% of the group belonging to this category, and a lesser 64.1% of females reporting themselves as married or partnered, χ^2 (1, N=1382) = 48.44, p < .001. The male sub-sample also had a slightly higher mean score on the living standards variable (m = 24.3, SD = 4.7) than the female sub-sample (m = 22.8, SD = 5.9), and this mean difference was statistically significant, t(1381) = 5.29, p < .001. Finally, the male sample had markedly higher mean total assets (m = \$633, 445.35, SD = 1.1) than the female sub-sample (m = \$324, 106.06, SD = 5.8), and this difference was also statistically significant, t(1381) = 6.42, p < .001.

Male only binary logistic regression results

The step one model with the demographic variables entered was statistically reliable, χ^2 (6, N=613) = 93.52, p < .001, indicating the model was able to distinguish between male participants who intended to retire before 2008 and those who intended to continue working. The model as a whole explained between 14.1% and (Cox and Snell R square) and 24.1% (Nagelkerke R square) of the variance in work intentions and correctly classified 83.5% of cases. Table 5 shows ORs and 95% confidence intervals for ORs for each of the predictors in step one. Age was the only variable significantly contributing to the model (β = -.284, p < .001).

The health and wealth variables were added to the model at step two, and the full model was significant, χ^2 (11, N=613) = 122.15, p < .001. The model as a whole explained between 18.1% (Cox and Snell R square) and 30.8% (Nagelkerke R square) of the variance in work intentions and correctly classified 84.0% of cases. As shown in

Table 5, age remained significant (β = .-278, p < .001), and anticipated finances (β = -.099, p < .001) was also significantly related to work intentions.

The final block of the model introduced work quality of life and retirement attitudes variables and again the full model was significant, χ^2 (17, N=613) = 161.69, p < .001. The model as a whole explained between 23.2% and (Cox and Snell R square) and 39.5% (Nagelkerke R square) of the variance in work intentions and correctly classified 86.1% of cases. Hosmer and Lemeshows test for goodness of fit was non-significant at the final step (p = .782), indicating an appropriate level of fit. As can be seen in Table 5, variables making a statistically significant contribution to the model at this stage included age (β = -.337, p < .001), anticipated finances in retirement (β = -.122, p < .001), career commitment (β = .066, p < .001) and leisure orientation (β = -.168, p < .01).

Table 5: *BLR of demographic variables, health and wealth variables, and work quality of life variables on Work Intentions in 2006 showing ORs and 95% confidence intervals for ORs for the male sub-sample*

Variables	Steps		
	1	**2**	**3**
Work Status 06	0.79 (0.39 – 1.62)	1.02 (0.48 – 2.18)	0.80 (0.35 – 1.86)
Age	**0.75** (0.70 – 0.81)	**0.76** (0.71 – 0.81)	**0.71** (0.66 – 0.78)
Marital Status	1.33 (0.69 – 2.56)	1.17 (0.59 – 2.31)	1.05 (0.51 – 2.18)
Occupation	1.15 (0.70 – 1.88)	0.79 (0.46 – 1.35)	1.09 (0.62 – 1.95)
No Qualifications	0.89 (0.50 – 1.56)	0.79 (0.45 – 1.44)	0.87 (0.46 – 1.62)
School Qualifications	0.71 (0.37 – 1.36)	0.61 (0.31 – 1.21)	0.63 (0.30 – 1.29)
Living Standards		0.96 (0.89 – 1.03)	0.94 (0.87 – 1.02)
Total Assets		1.00 (1.00 – 1.00)	1.00 (1.00 – 1.00)
Anticipated Finances		**0.91** (0.86 - 0.95)	**0.89** (0.83 – 0.94)
Physical Health		1.02 (0.99 – 1.06)	1.03 (0.99 – 1.06)
Mental Health		1.03 (0.99 – 1.06)	1.02 (0.98 – 1.06)
Career Commitment			**1.07** (1.03 – 1.10)
Work Involvement			1.01 (0.95 – 1.08)
Leisure Orientation			**0.85** (0.75 – 0.96)
Total Job Satisfaction			1.00 (0.97 – 1.03)
Job Stress			1.01 (0.95 – 1.08)
Retirement Adjustment			0.99 (0.91 – 1.07)
Cox & Snell R	.14	.18	.23
Naglekerke R	.24	.31	.39

Note: Bold figures significant at p < .05, p < .01 or p < .001 levels.

Female only binary logistic regression results

The step one model with the demographic variables entered was statistically reliable, χ^2 (6, N=561) = 99.43, p < .001, indicating the model was able to distinguish between female participants who intended to retire before 2008 and those who intended continuing working. The model as a whole explained between 16.2% and (Cox and Snell R square) and 28.1% (Nagelkerke R square) of the variance in work intentions and correctly classified 86.5% of cases. Table 6 shows ORs and 95% confidence intervals for the ORs for each of the predictors in step one. Age was the only variable significantly contributing to the model (β = -.308, p < .001).

The health and wealth variables were added to the model at step two, and the full model was significant, χ^2 (11, N=561) = 114.86, p < .001. The model as a whole explained between 18.5% (Cox and Snell R square) and 32.0% (Nagelkerke R square) of the variance in work intentions and correctly classified 84.0% of cases. As shown in Table 6, age remained significant (β = .-305, p < .001), and anticipated finances (β = -.101, p < .001) was also significantly related to work intentions.

The final block of the model introduced work quality of life and retirement attitudes variables and again the full model was significant, χ^2 (17, N=561) = 126.27, p < .001. However, both the step and block statistics were non-significant at this stage (p = .077), indicating that the addition of these variables did not significantly contribute to the model. The model as a whole explained between 20.2% and (Cox and Snell R square) and 34.9% (Nagelkerke R square) of the variance in work intentions and correctly classified 87.9% of cases. Hosmer and Lemeshows test for goodness of fit was non-significant at the final step (p = .589) indicating an appropriate level of fit. As expected, age (β = -.331, p < .001) and anticipated finances (β = -.105, p < .001) remained the only significant predictor variables in the model (shown in Table 6).

Table 6: *BLR of demographic variables, health and wealth variables, and work quality of life variables on Work Intentions in 2006 showing ORs and 95% confidence intervals for ORs for the female sub-sample*

	Steps		
Variables	*1*	*2*	*3*
Work Status 06	0.63 (0.29 – 1.36)	0.77 (0.36 – 1.69)	0.78 (0.35 – 1.73)
Age	**0.74** (0.68 – 0.79)	**0.74** (0.68 - 0.79)	**0.72** (0.66 – 0.78)
Marital Status	1.55 (0.89 – 2.71)	1.51 (0.84 – 2.71)	1.45 (0.79 – 2.66)
Occupation	1.25 (0.69 – 2.25)	1.07 (0.57 – 1.99)	1.25 (0.64 – 2.43)
No Qualifications	1.17 (0.61 – 2.24)	1.19 (0.61 – 2.34)	1.15 (0.57 – 2.30)
School Qualifications	0.61 (0.29 – 1.29)	0.59 (0.27 – 1.27)	0.52 (0.24 – 1.16)
Living Standards		1.04 (0.98 – 1.09)	1.05 (0.99 – 1.11)
Total Assets		1.00 (1.00 – 1.00)	1.00 (1.00 – 1.00)
Anticipated Finances		**0.90** (0.86 – 0.96)	**0.90** (0.85 – 0.96)
Physical Health		1.01 (0.97 – 1.04)	1.02 (0.98 – 1.05)
Mental Health		1.02 (0.99 – 1.05)	1.02 (0.99 – 1.05)
Career Commitment			1.03 (0.99 – 1.06)
Work Involvement			1.05 (0.98 – 1.13)
Leisure Orientation			0.99 (0.88 – 1.09)
Total Job Satisfaction			1.01 (0.98 – 1.03)
Job Stress			1.02 (0.96 – 1.08)
Retirement Adjustment			0.95 (0.87 – 1.03)
Cox & Snell R	.16	.19	.20
Naglekerke R	.28	.32	.35

Note: Bold figures significant at $p < .05$, $p < .01$ or $p < .001$ levels.

With regard to research question one, gender differences were found in the predictors of work intentions. The first BLR on the total sample provided preliminary evidence of gender differences, with the interactions between gender and career commitment (β = -.042, $p < .05$) and gender and living standards (β = .095, $p < .05$) making statistically significant unique contributions to the model. Further evidence of gender differences was then obtained through the separate analyses on the male and female sub-samples. In the final block of the BLR based on the male sample, four predictors (age (β = -.337, $p < .001$), anticipated finances in retirement (β = -.122, $p < .001$), career commitment (β = .066, $p < .001$) and leisure orientation (β = -.168, $p < .01$)) made unique statistically significant contributions to the model. In contrast, only two predictors (age (β = -.331, $p < .001$) and anticipated finances in retirement (β = -.105, $p < .001$)) made unique statistically significant contributions to the final BLR model based on the female sample. Age was the strongest predictor of intending to remain in paid

work past 2008 for both the male (OR = .71) and female (OR = .72) sub-samples, however.

Part 2: Work intentions and work behaviours

Bivariate analyses

As previously mentioned, participants were divided into four groups based on Work Intentions in 2006 and Work Status in 2008: those who intended to continue working past 2008 and were working full-time or part-time in 2008 (1), those who intended to continue working past 2008 and actually retired before 2008 (2), those who intended to retire before 2008 and retired before 2008 (3) and those who planned to retire before 2008 but were working either full-time or part-time in 2008 (4). The sample N after exclusions (only those full-time employed, part-time employed or full-time retired included) and without missing data on either variable was 1148. Of this 931 participants (81.1%) were categorised into group 1 (intended to remain at work and did so), 39 participants (3.4%) were categorised into group 2 (intended to remain but actually retired), 48 participants (4.2%) were categorised into group 3 (intended to retire and did so) and 130 participants (11.3%) were categorised into group 4 (intended to retire but continued working).

Due to the small numbers in two of these groups, for the purposes of multivariate analysis these four groups were further combined into two groups: those whose intentions in 2006 matched their outcomes in 2008 (1) and those whose intentions in 2006 did not match their outcomes in 2008 (2). Means and standard deviations for these two groups and the sample as a whole on the continuous predictor variables measured in 2006 can be seen in Table 7. The sample N after listwise exclusion was 1016. The group whose work intentions in 2006 matched their outcomes in 2008 was significantly younger than the group whose intentions in 2006 did not match their outcomes in 2008, $t(964) = -5.94$, p < .001 and had a significantly lower mean score on the anticipated finances in retirement variable, $t(964) = -2.70$, p < .01.

Table 7: *Means and standard deviations on 2006 continuous predictor variables for the two Group Membership 2008 groups and the total sample*

Variables	Outcomes matched intentions (N=874)		Outcomes did not match intentions (N=142)		Total sample (N=1016)	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
Age	58.61	3.51	62.27	3.97	59.12	3.79
Living Standards	23.77	5.22	24.68	4.45	23.89	5.13
Total Assets	493906.75	9.09	611338.02	1.20	510319.38	9.55
Anticipated Finances	12.90	5.59	16.24	5.70	13.37	5.72
Physical Health	52.57	7.14	51.05	9.43	52.35	7.51
Mental Health	50.62	8.07	49.99	8.12	50.53	8.07
Career Commitment	36.44	10.21	35.06	9.39	36.25	10.11
Work Involvement	15.71	4.11	15.67	4.32	15.70	4.14
Leisure Orientation	15.12	2.87	15.12	2.48	15.12	2.81
Total Job Satisfaction	77.42	11.63	76.92	11.22	77.34	11.57
Job Stress	42.99	5.26	42.94	4.45	42.98	5.15
Retirement Adjustment	16.23	4.10	17.00	3.74	16.34	4.06

The relationship between work intentions and outcomes 2 years later

Of the full sample, 84.5% stated an intention to continue in paid work past 2008, leaving 15.5% who stated an intention to retire before 2008. In 2008, only 7.6% reported themselves as retired, leaving 92.4% who reported themselves as working either full-time or part-time. This indicates a discrepancy between intentions in 2006 and outcomes in 2008. As Table 8 shows, of the whole sample, only 26.9% of those who planned to retire before 2008 fulfilled this intention. Therefore the majority (73.1%) of those intending to retire before 2008 reported themselves as working full-time or part-time in 2008. However, of those who intended to remain in work past 2008, 95.9% fulfilled this intention. Of those who planned to continue working past 2008, 4.1% reported themselves as retired in 2008. Overall, 85.3% of the samples outcomes in 2008 matched their intentions in 2006. The differences on work status in 2008 between the two work intentions in 2006 groups (intended to retire before 2008 and intended to remain in paid work past 2008) were statistically significant, χ^2 (1, N=1148) = 113.06, p < .001.

Table 8: *Cross-tabulation of Work Intentions in 2006 by Work Status in 2008 for the total sample*

	Full-time or Part-time employed in 2008	Full-time retired in 2008	Total
Intended to retire before 2008	130 (73.1%)	48 (26.9%)	178
Intended to work past 2008	931 (95.9%)	39 (4.1%)	970
Total	1061	87	1148

Differences in the relationship between intentions in 2006 and outcomes in 2008 between the female (N = 521) and male (N = 623) sub-samples were examined. Of the female sub-sample, 14.6% stated an intention to retire before 2008 (leaving 85.4% who intended to continue working). In 2008, only 5.6% of the female sub-sample reported their status as retired, with 94.4% working either full or part-time. As can be seen in Table 9, of those intending to retire before 2008, 25% met this intention and retired before 2008. Of those reporting an intention to remain in paid work past 2008, 97.3% were still working in 2008. Overall, intentions in 2006 matched outcomes in 2008 for 86.8% of the female sample. There was a statistically significant difference on work status in 2008 by work intentions in 2006 for the female sub-sample, χ^2 (1, N=521) = 57.70, p < .001.

Table 9: *Cross-tabulation of Work Intentions in 2006 by Work Status in 2008 for the female sub-sample*

	Full-time or Part-time employed in 2008	Full-time retired in 2008	Total
Intended to retire before 2008	57 (75.0%)	19 (25.0%)	76
Intended to work past 2008	433 (97.3%)	12 (2.7%)	445
Total	490	31	521

Of the male sub-sample, 16.4% reported an intention to retire before 2008 and 8.9% reported their status as retired in 2008, with 91.1% working either full or part-time in 2008. As can be seen in Table 10, of those intending to retire before 2008, 28.4% met their intention and retired before 2008. In contrast, 94.8% of those intending to remain in work past 2008 met this intention. Overall, intentions in 2006 matched

outcomes in 2008 for 83.9% of the male sample. These differences between the two work intentions in 2006 groups on work status in 2008 were statistically significant for the male sub-sample, χ^2 (1, N=623) = 56.36, p < .001.

Table 10: *Cross-tabulation of Work Intentions in 2006 by Work Status in 2008 for the male sub-sample*

	Full-time or Part-time employed in 2008	Full-time retired in 2008	Total
Intended to retire before 2008	73 (71.6%)	29 (28.4%)	102
Intended to work past 2008	494 (94.8%)	27 (5.2%)	521
Total	567	56	623

Multivariate analyses

Data from waves one and two of the HWR study were utilised in the analyses for Part 2. Only those reporting their work status in 2008 as full-time employed, part-time employed or full-time retired were included in the sample. Participants who reported themselves as homemakers, students, unemployed and seeking work or unable to work due to a health or disability issue were excluded from the sample. As noted above, participants were initially divided into four groups based on their work intentions at wave one and work status at wave two. Due to the unequal sample sizes in these four groups and the low numbers in two of the groups, these groups were further combined into two groups: those whose intentions matched their outcomes 2 years later (N = 874) and those whose intentions did not match their outcomes 2 years later (N = 142). However, there was still a large difference between group sizes, which can affect the accuracy of classifications in the final model (Field, 2009; Peng, Lee, & Ingersoll, 2002).

A direct BLR was run to examine which 2006 variables predicted membership into these two dependent variable groups in 2008. In the final analysis variables were entered in 3 blocks: the first block included control and demographic variables (work status 2006, age, gender, marital status, occupation and the two dummy education level variables), followed by health (mental and physical component summary scores)

and wealth variables (living standards, total assets and anticipated finances in retirement) and finally work quality of life variables (career commitment, work involvement, leisure orientation, total job satisfaction and work stress) and the retirement attitudes variable (retirement adjustment) were entered. Indicator contrast was selected for all the categorical variables.

The two interaction terms entered in Part 1 (gender by living standards and gender by career commitment) were also entered into a BLR in order to again assess whether there was grounds for separate analyses based on the male and female sub-samples. These interaction terms were non-significant in the final model ($p = .124$ and $p = .903$ respectively, not shown) and therefore were excluded in the final analysis (ensuring they did not suppress the main effects of the variables involved). Separate analyses on the male and female sub-samples were hence not undertaken.

Outlier analysis was conducted in the same way as in Part 1. Mahalanobis distance statistics were requested through running a linear regression with the same variables as in the BLR. The Cdf.Chisq function was then used to calculate the probabilities of the mahalanobis scores. Finally, all participants with a probability score 0.001 or lower were excluded from the analysis. This procedure again revealed seven multivariate outliers. The BLR was then re-run in exactly the same way as the original analysis to assess whether the outliers had undue influence on the original results. The output excluding the seven outliers was notably different from the original analysis (e.g. correct classification rates changed between the two outputs as well OR statistics and the confidence intervals for these) and because of this the outliers were excluded from the final results. The listwise N after outlier removal was 1016.

Both the multicollinearity and linearity of the logit assumptions were assessed in the same way as in Part 1. Multicollinearity statistics were requested through running a linear regression analysis and showed this assumption was again not violated (all tolerance values were well above 0.1 (Menard, 1995) and all VIF values were well below 10 (Myers, 1990)). The linearity of the logit assumption was tested using the Box-Tidwell Transformation test. This is achieved by calculating the natural log

transformation for each continuous variable and then running a BLR which includes all the original main effects and in addition an interaction between each continuous predictor and its log. None of the interactions were significant (p > .05) and therefore it was concluded that the assumption was also not violated (Field, 2009).

Results

The step one model with the demographic variables entered was statistically reliable, χ^2 (7, N=1016) = 114.54, p < .001, indicating the model was able to distinguish between participants whose work intentions in 2006 matched their work outcomes in 2008 and those whose intentions in 2006 did not match their work outcomes in 2008. The model as a whole explained between 10.7% and (Cox and Snell R square) and 19.2% (Nagelkerke R square) of the variance in group membership and correctly classified 85.8% of cases. Table 11 shows ORs and 95% confidence intervals for ORs for each of the predictors in step one. Age was the only variable significantly contributing to the model (β = .240, p < .001).

The health and wealth variables were added to the model at step two, and the full model was significant, χ^2 (12, N=1016) = 145.96, p < .001. The model as a whole explained between 13.4% (Cox and Snell R square) and 24.1% (Nagelkerke R square) of the variance in group membership and correctly classified 86.1% of cases. As shown in Table 11, age remained significant (β = .230, p < .001), and school qualifications (β = .538, p < .05), anticipated finances in retirement (β = .096, p < .001) and mental health (β = -.026, p < .05) were also significantly related to group membership.

The final block of the model introduced work quality of life and retirement attitudes variables and again the full model was significant, χ^2 (18, N=1016) = 161.67, p < .001. The model as a whole explained between 14.7% and (Cox and Snell R square) and 26.5% (Nagelkerke R square) of the variance in group membership and correctly classified 85.4% of cases. Hosmer and Lemeshows test for goodness of fit was non-significant at the final step (p = .535) indicating an appropriate level of fit. Age (β = .253, p < .001), school qualifications (β = .554, p < .05), anticipated finances in

retirement (β = .096, p < .001), physical health (β = -.027, p < .05), and career commitment (β = -.025, p < .05) were significant predictors of group membership in the final model.

Table 11: *BLR of demographic variables, health and wealth variables and work quality of life variables on Group Membership in 2008 showing ORs and 95% confidence intervals for ORs for the total sample*

	Steps		
Variables	*1*	*2*	*3*
Work Status 06	1.51 (0.84 – 2.73)	1.17 (0.64 – 2.14)	1.15 (0.62 – 2.15)
Age	**1.27 (**1.21 – 1.34)	**1.26** (1.19 – 1.33)	**1.29** (1.22 – 1.36)
Gender	0.96 (0.65 – 1.42)	1.07 (0.71 – 1.61)	1.09 (0.71 – 1.67)
Marital Status	0.69 (0.43 – 1.11)	0.75 (0.46 – 1.22)	0.79 (0.48 – 1.29)
Occupation	0.98 (0.65 – 1.48)	1.29 (0.83 – 2.00)	1.16 (0.73 – 1.84)
No Qualifications	1.11 (0.69 – 1.76)	1.14 (0.70 – 1.83)	1.13 (0.69 – 1.85)
School Qualifications	1.58 (0.94 – 2.67)	**1.71 (**1.00 – 2.93**)**	**1.74 (**1.01 – 2.99**)**
Living Standards		0.99 (0.95 – 1.05)	1.01 (0.96 – 1.06)
Total Assets		1.00 (1.00 – 1.00)	1.00 (1.00 – 1.00)
Anticipated Finances		**1.10** (1.06 – 1.15)	**1.10 (**1.05 – 1.15)
Physical Health		0.98 (0.96 – 1.01)	**0.97** (0.95 – 0.99)
Mental Health		**0.98** (0.95 - 0.99**)**	0.98 (0.95 – 1.00)
Career Commitment			**0.98** (0.95 – 0.99)
Work Involvement			0.96 (0.91 – 1.01)
Leisure Orientation			1.00 (0.92 – 1.09)
Total Job Satisfaction			1.00 (0.98 – 1.02)
Job Stress			1.02 (0.97 – 1.07)
Retirement Adjustment			1.05 (.98 – 1.11)
Cox & Snell R	.11	.13	.15
Naglekerke R	.19	.24	.27

Note: Bold figures significant at p < .05, p < .01 or p < .001 levels.

Hypotheses

Hypothesis four: Work continuation intentions in 2006 will be related, at the bivariate level, to work behaviour in 2008.

This hypothesis was supported by the data. Differences on work status in 2008 between the two 2006 work intentions groups (intended to retire before 2008 and intended to continue in paid work past 2008) were statistically significant for the total sample χ^2 (1, N=1148) = 113.06, p < .001, the female sub-sample χ^2 (1, N=521) = 57.70, p < .001 and the male sub-sample χ^2 (1, N=623) = 56.36, p < .001. For the total sample,

female sub-sample, and male sub-sample, work continuation intentions were more accurate at predicting later work status than retirement intentions. For example, of the total sample, 95.9% of participants who reported an intention in 2006 to remain in paid work past 2008 were still employed in full or part-time work in 2008. In contrast, only 26.9% of those reporting an intention in 2006 to retire before 2008 were, in fact, retired in 2008. Similar statistics were obtained for the male and female sub-samples. Therefore, those intending to remain in paid work past 2008 fulfilled this intention at a much higher rate than those who intended to retire before 2008. A gender difference in these statistics was also found. Retirement intentions were realised more often for the male sub-sample than the female sub-sample. Of the male sub-sample, 28.4% of those intending to retire before 2008 met this intention and retired before 2008. In contrast, a lesser 25% of the female sub-sample intending to retire before 2008 realised this intention. Gender did not significantly predict group membership in 2008 (outcomes matched intentions versus outcomes did not match intentions) in the full BLR model, however (p = .69). Further information (at the multivariate level) regarding the relationship between work intentions in 2006 and work status in 2008 will be gained in the Part 3.

Hypothesis five: Demographic (age, gender, marital status, occupation, education level), wealth (living standards, total assets, anticipated finances in retirement), health (physical and mental Sf36 component scores), work quality of life (career commitment, work involvement, leisure orientation, total job satisfaction, job stress) and retirement attitudes (retirement adjustment) variables will significantly predict group membership in 2008.

This hypothesis was partially supported by the data. In the final BLR model, age (β = .253, p < .001), school qualifications (β = .554, p < .05), anticipated finances in retirement (β = .096, p < .001), physical health (β = -.027, p < .05), and career commitment (β = -.025, p < .05) made unique statistically significant contributions. Younger participants, those with no recognised qualifications or post-school level qualifications, those with lower anticipated finances in retirement and those in better

physical health and with higher career commitment were more likely to have fulfilled their work intentions two years later.

Research question four: Are there gender differences in the predictors of group membership in 2008?

Research question five: Does gender interact with living standards and career commitment on group membership in 2008?

The two interaction terms entered into a BLR were non-significant (gender by career commitment p = .903 and gender by living standards p = .124, not shown). Gender was also not a significant contributor to the final BLR model (p = .69). Because of this separate analyses on the male and female sub-samples were not undertaken, and it was concluded there were no gender differences in the predictors of group membership in 2008.

Part 3: Work status

Bivariate analyses

As in Part 2, only those participants reporting themselves as employed either full-time or part-time or those full-time retired in 2008 were included in the analyses for Part 3, reducing the sample N to 1148. After listwise exclusion the N was further reduced to 1023 for the final analyses. Means and standard deviations for the three dependent variable groups (full-time employed, part-time employed and full-time retired) on the continuous predictor variables measured in 2006 can be seen in Table 12 (for means and SDs for the total sample refer to Table 7 in the previous section). As shown in Table 12, participants full-time employed in 2008 had the youngest mean age as compared to those working part-time and those fully retired in 2008, and this difference was statistically significant, Welch $F_{(2, 213)}$ = 57.7, p < .001. There was also a significant increase in mean scores between the three groups on the anticipated

finances in retirement scale, $F_{(2, 1145)} = 18.5$, $p < .001$, and the retirement adjustment scale, Welch $F_{(2, 230)} = 4.0$, $p < .05$.

Table 12: *Means and standard deviations on 2006 continuous predictor variables for the three Work Status 2008 groups*

Variables	Full-time employment (N=714)		Part-time employment (N=244)		Full-time retirement (N=65)	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
Age	58.48	3.51	60.14	3.90	62.38	3.94
Living Standards	24.04	4.94	23.05	5.69	25.67	4.09
Total Assets	524489.49	1.01	455500.00	7.01	568153.85	1.05
Anticipated Finances	12.79	5.43	14.09	6.04	17.01	5.90
Physical Health	52.72	7.22	51.24	8.28	52.79	7.13
Mental Health	50.53	8.05	50.39	8.13	51.25	7.86
Career Commitment	36.50	10.08	36.12	10.16	34.52	9.59
Work Involvement	15.83	4.07	15.29	4.26	15.78	4.37
Leisure Orientation	15.25	2.77	14.58	2.95	15.71	2.35
Total Job Satisfaction	77.51	12.01	77.18	10.59	76.20	9.55
Job Stress	43.32	5.23	41.99	4.77	42.82	5.16
Retirement Adjustment	16.12	4.06	16.64	4.12	17.67	3.36

Differences between the three groups on the categorical predictors from 2006 were also found. In relation to work status in 2008, 96.9% of participants working full-time in 2008 also reported themselves as 'full-time employed' in 2006 (as opposed to 'part-time employed). In contrast, 77.4% of those working part-time in 2008 reported their status as 'full-time employed' in 2006. Finally, 71.3% of those fully retired in 2008 reported their status as 'full-time employed' in 2006. This difference was statistically significant, Welch $F_{(2, 184)} = 41.2$, $p < .001$. Notable gender differences were also found between the three groups. Of the full-time employees in 2008, 59.8% were male. In contrast, a lesser 36.7% of the part-time employees in 2008 were male. Of the retired participants in 2008, 64.4% were male. This difference was also statistically significant Welch $F_{(2, 221)} = 25.5$, $p < .001$.

In regards to education level, the largest inconsistency between the three groups was in relation to the proportions with no recognised qualifications. Of those working full-

time in 2008, 26.1% held no recognised qualifications, of the part-time employees, 32% held no recognised qualifications, and of the retired participants in 2008, 38.6% held no recognised qualifications, and these differences were statistically significant, Welch $F_{(2, 205)} = 3.6$, $p < .05$. In line with this trend, both proportions of school level qualifications and post-school level qualifications decreased throughout the groups (school qualifications proportions were 24.9%, 23.4% and 19.3% respectively and post-school qualifications proportions were 49%, 44.6% and 42.1% respectively). In relation to the three groups work intentions in 2006, significant differences were also found Welch $F_{(2, 193)} = 52.8$, $p < .001$. Of those working full-time in 2008, 92.2% intended to remain in paid work until this time, 75.6% of those working part-time in 2008 intended to remain in paid work until this time, and 44.8% of the retired participants in 2008 had intended in remain in paid work until that time.

Multivariate analyses

Data from both waves one and two of the HWR study were also utilised in the analyses for Part 3. The dependent variable for this section of analysis was Work Status 2008, which was made up of three groups: full-time employees, part-time employees and full-time retired participants. Thus, participants who reported themselves as homemakers, students, unemployed and seeking work or unable to work due to a health or disability issue were again excluded from the sample. This exclusion was made for two reasons: (1) these groups were extremely small (together they made up only 10% of the total sample) which would affect the results of the MLR, especially in relation to classifications, and (2) the work intentions variable which was entered as a predictor into the analysis did not encompass these groups, making interpretation difficult. Because there were more than two groups in the dependent variable, multinomial logistic regression (MLR) was run to explore the 2006 predictors of work status 2 years later. The last category of the dependent variable (full-time retired) was set as the reference category in the MLRs.

A number of the 2006 predictor variables were excluded from the final models in this section to enhance the final model. Variable choice was based on both bivariate

relationships between the predictor variables and the dependent variable (predictor variables with a significant Pearson correlation with Work Status 2008 were included in the analyses as potentially important predictors) and the results of earlier analyses (e.g. significant predictors of Work Intentions in 2006 (Part 1) were included in the analyses as potentially important predictors of Work Status 2008). In the final model the following 2006 predictor variables were entered: the control variable (work status in 2006), age, gender, education level variables (no qualifications and school qualifications), physical health, living standards, anticipated finances in retirement, career commitment, leisure orientation, job stress, retirement adjustment (retirement attitudes variable) and work intentions. The interactions between gender and career commitment and gender and living standards were also entered. If these interactions were significant in the final model, separate analyses on the male and female subs-samples would be undertaken to further explore gender differences.

Outlier analysis was undertaken in the same way as in the previous two sections, through running a linear regression and requesting mahalanobis distance statistics. The Cdf.chisq function was then used to calculate the probability of the mahalanobis distance statistics and any case with a probability equal to or less than 0.001 was excluded. The original MLR was then re-run to assess whether the one outlier discovered through this technique had undue influence on the results. The results of the second analysis excluding the outlier did not change significantly from the original model and therefore the outlier was not excluded from the final results. Multicollinearity statistics were requested through a linear regression and these showed this assumption was not violated (all tolerance values were well above 0.1 (Menard, 1995) and all VIF values were well below 10 (Myers, 1990)). The linearity of the logit assumption was tested using the Box-Tidwell transformation test, where the log of each of the continuous predictor variables is calculated, and then a MLR is run including all the original main effects as well as the interaction between each continuous predictor and its log. None of these interactions were significant ($p < .05$) and therefore it was concluded this assumption was also not violated (Field, 2009).

Results

Total sample multinomial logistic regression results

The full model containing all the predictors was statistically significant, χ^2 (30, *N* = 1109) = 364.37, p < .001, indicating that the model was able to distinguish between participants belonging to the three work status groups (full-time employed, part-time employed and full-time retired). Both the Pearson (p = .755) and Deviance (p = 1.00) statistics were non-significant, indicating that the predicted values from the model did not differ significantly from the observed models, and therefore that the model had adequate fit to the data. The model as a whole explained between 28% (Cox & Snell R Square) and 35% (Nagelkerke R Squared) of the variance in the dependent variable (work status in 2008).

The predictor variables measured in 2006 that significantly contributed to the model included: the control variable (or work status in 2006) (p < .001), age (p < .001), anticipated finances (p < .01), leisure orientation (p < .05), retirement adjustment (p < .05) and work intentions in 2006 (p < .001). In addition, the two interaction effects were significant in the final model (gender by career commitment p < .05 and gender by living standards p < .05). In relation to classification rates, 93.6% of full-time employees, 29.3% of part-time employees, 14.5% of retired participants and 71.7% of cases overall were correctly classified. ORs and 95% confidence intervals for ORs for the full-time and part-time employed groups, with the full-time retired group as the reference category, can be seen in Table 13.

The OR statistics show that being in full-time work in 2006, being younger, having lower anticipated finances, higher career commitment and intending to work past 2008 (in 2006) predicted whether participants were in full-time employment in 2008 rather than retired. Examining the interaction effects, for men career commitment seems to be unrelated to whether they were in full-time employment rather than retirement, however, women with low career commitment were much more likely to be full-time retired rather than be full-time employed. This effect is given further

clarity in the following separate analyses on the male and female sub-samples, where career commitment is a significant predictor of work status for the female sub-sample but is not significant for the male sub-sample. Females with higher standards of living were also more likely to be in full-time retirement than full-time employment compared to men. This effect is also given further clarity in the following separate male and female analyses, where males with higher living standards are more likely to be employed in full-time work than be retired, where as females with higher living standards are more likely to be full-time retired, rather than part-time employed.

Examining the ORs for the part-time versus full-time retired categories, younger age, lower living standards, lower leisure orientation and intending to work past 2008 (in 2006) were significant predictors of being in part-time work rather than retirement.

Table 13: *MLR of demographic variables, health and wealth variables, work quality of life variables and interaction effects on Work Status in 2008 showing ORs and 95% confidence intervals for ORs for the total sample*

	Work Status in 2008 Group	
Variables	*Full-time employed*	*Part-time employed*
Work Status 06	**6.66** (3.20 – 13.88)	1.02 (0.53 – 1.95)
Age	**0.83** (0.77 – 0.89)	**0.88** (0.82 – 0.96**)**
Gender	0.37 (0.02 – 9.00)	0.25 (0.01 – 6.35)
No Qualifications	1.54 (0.85 – 2.81)	1.49 (0.81 – 2.76)
School Qualifications	1.00 (0.49 – 2.04)	1.03 (0.50 – 2.13)
Living Standards	0.94 (0.85 – 1.04)	**0.89** (0.80 – 0.98)
Anticipated Finances	**0.92** (0.87 – 0.98)	0.97 (0.91 – 1.03)
Physical Health	0.99 (0.96 – 1.03)	0.99 (0.95 – 1.02)
Career Commitment	**1.07** (1.02 – 1.12)	1.05 (0.99 – 1.10)
Leisure Orientation	0.97 (0.87 – 1.08)	**0.89** (0.79 – 0.99)
Job Stress	0.99 (0.94 – 1.06)	0.96 (0.91 – 1.02)
Retirement Adjustment	0.93 (0.86 – 1.01)	0.99 (0.91 – 1.09)
Work Intentions 06	**0.16** (0.09 - 0.29)	**0.46** (0.25 – 0.86**)**
Career Commitment x Gender	**0.93** (0.88 - 0.99)	**0.93** (0.88 – 0.99)
Living Standards x Gender	**1.17 (**1.04 – 1.32)	1.13 (0.99 – 1.28)

Note: The reference category is Full-time retired. Bold figures significant at p < .05, p < .01 or p < .001 levels.

Hypotheses

Hypothesis six: Work continuation intentions in 2006 will significantly predict work status in 2008 over and above the effects of other influential variables, and intending to continue in paid work will increase the likelihood of being in some form of work in 2008.

This hypothesis was supported by the data. Work intentions in 2006 did make a statistically significant unique contribution to the model (p < .001) and in addition was a strong predictor of both full-time and part-time employment in 2008. In regards to full-time employment, work intentions had an OR of .16, indicating that participants who belonged to group one in 2006 (intended to retire before 2008) were .16 times less likely to be working full-time in 2008 as opposed to being retired than those who did not intend to cease paid work before 2008, controlling for all other variables in the model. Work intentions in 2006 was also the strongest predictor of working part-time in 2008 as opposed to being retired, with an OR of .46. This indicates that participants who intended to cease paid work (or retire) before 2008 were .46 times less likely to be working part-time in 2008 than be retired than those who intended to remain in paid work past 2008, controlling for all other variables in the model.

Hypothesis seven: Health status in 2006 will significantly predict work status in 2008 with higher scores increasing the likelihood of being in some form of employment as opposed to being retired in 2008.

This hypothesis was not supported by the data. The physical health variable did not make a statistically significant unique contribution to the model (p = .528).

Hypothesis eight: 2006 living standards, anticipated finances in retirement and retirement adjustment variables will significantly predict work status in 2008 and higher scores will decrease the likelihood of being in some form of employment as opposed to being retired in 2008.

This hypothesis was generally supported by the data. Both the anticipated finances in retirement and retirement adjustment variables made unique statistically significant contributions to the model (p < .01 and p < .05, respectively), and the interaction between living standards and gender was significant in the model (p < .05). The living standards variable also significantly predicted being employed part-time in 2008 as opposed to retired, with an OR of .89. This indicates that unit increases in living standards reduced the likelihood of working part-time in 2008 as opposed to being retired by a factor of .89, controlling for all other variables in the model. Anticipated finances had an OR of .92 in relation to full-time work in 2008 versus retirement. This indicates that unit increases in anticipated finances reduced the likelihood of working full-time in 2008 as opposed to being retired by a factor of .92, controlling for all other variables in the model. However, retirement adjustment did not have significant ORs in relation to either full-time or part-time employment in 2008 versus retirement.

Hypothesis nine: Both demographic (age, gender and education level) and work quality of life (career commitment, leisure orientation and job stress) variables will significantly predict work status in 2008.

This hypothesis was partially supported by the data. In relation to demographic variables, age made a statistically significant unique contribution to the model (p < .001). Increasing age also significantly decreased the likelihood of working both full-time (OR = .83) and part-time (OR = .88) in 2008 as opposed to being retired. Both of the interaction terms including gender were also significant (gender by career commitment p < .05 and gender by living standards p < .05). However, neither education level dummy variable made a statistically significant contribution (p = .360 and p = .989). In regards to the work quality of life variables, leisure orientation made a unique statistically significant contribution to the model (p < .05), and as previously mentioned the interaction term including career commitment was significant (p < .05). Job stress did not make a statistically significant contribution to the model, however (p = .089).

Research question six: Are there gender differences in the predictors of work status in 2008?

Research question seven: Does gender interact with living standards and career commitment on work status 2008?

The two interaction terms were significant in the final model (gender by career commitment, $p < .05$ and gender by living standards, $p < .05$), meaning gender did interact with both living standards and career commitment on work status 2008. This shows there are gender differences in the predictors of work status. As mentioned above, the interaction between gender and career commitment shows career commitment is unrelated to work status for the males, whereas for the females higher career commitment significantly increased the likelihood of being in full-time employment rather than retirement. The interaction between gender and living standards shows that females with high living standards are much more likely to be in full-time employment rather than full-time retirement, compared to males. The following separate analyses based on the male and female sub-samples will provide further data in regards to these gender differences.

Further multivariate analyses

As both interaction terms were significant in the final model (gender by career commitment, $p < .05$ and gender by living standards, $p < .05$) two further analyses were undertaken: a MLR on the male sub-sample and a MLR on the female sub-sample. This was in order to further explore the differences between the predictors of work status 2 years later between the male and female participants. Both analyses were run in exactly the same way as the original analysis based on the total sample, with the exception that gender was omitted as a predictor and the two interaction terms were excluded for obvious reasons. Outlier analysis was carried out in the same way as previously, and revealed two multivariate outliers in the male analysis and five multivariate outliers in the female analysis. Again, re-running the MLRs excluding these outliers did not significantly change the results and therefore the outliers were not

excluded from the final results in either analysis. Tests for the both multicollinearity and the linearity of the logit assumption also revealed that neither was violated.

Bivariate analyses

Differences were found between the male and female sub-samples on both work status in 2008 and a number of the 2006 predictor variables. In relation to work status in 2008, 74.4% of the male sample reported their work status as full-time employment, 16.8% were categorised as in part-time employment and 8.7% were fully retired. In contrast, 59.4% of the female sample reported their work status as full-time employment, 34.6% as part-time employment and 6% were fully retired. Thus, the female participants were more likely to be in part-time employment and less likely to be full-time employed or full-time retired than the male participants, and these differences were statistically significant, χ^2(2, N=1144) = 48.26, p < .001. In relation to differences on the 2006 predictors, the female participants had significantly lower mean scores on both the living standards (m = 22.9, SD = 5.8 versus m = 24.4, SD = 4.7), t(1142) = 4.94, p < .001, and the anticipated finances scales (m = 12.6, SD = 5.5 versus m = 14.1, SD = 5.6), t(1142) = 4.53, p < .001, than the male participants. The female sub-sample also had lower mean scores on the retirement adjustment scale (m = 15.9, SD = 4.1) than the male sub-sample (m = 16.6, SD = 3.9), and this difference was statistically significant, t(1142) = 2.72, p < .01.

Male only multinomial logistic regression results

The full model containing all the predictors was statistically significant, χ^2 (24, *N* = 606) = 192.55, p < .001, indicating that the model was able to distinguish between male participants belonging to the three groups. Both the Pearson (p = .722) and Deviance (p = 1.00) statistics were non-significant, indicating that the predicted values from the model did not differ significantly from the observed models, and therefore that the model had adequate fit to the data. The model as a whole explained between 27.2% (Cox & Snell R Square) and 35.4% (Nagelkerke R Squared) of the variance in the dependent variable (work status in 2008).

The predictor variables measured in 2006 that significantly contributed to the male only model included: the control variable (or work status in 2006, p < .001), age (p < .001), living standards (p = .001), anticipated finances (p < .01), and work intentions in 2006 (p < .001). In relation to classification rates, the model correctly classified 96% of male participants working full-time in 2008, 19.6% of male participants working part-time in 2008 and 15.1% of retired male participants in 2008. Overall, 76.1% of cases were correctly classified. ORs and 95% confidence intervals for ORs for the full-time and part-time employed male groups, with the full-time retired male group as the reference category, can be seen in Table 14. The OR statistics show that younger males, those who were full-time employed in 2006, with higher living standards, lower anticipated finances in retirement and who intended to remain in paid work past 2008 (in 2006) were more likely to be in full-time employment in 2008 rather than be retired. In relation to part-time employment versus retirement, only younger age significantly predicted being part-time employed rather than retired in 2008 for the male sub-sample.

Table 14: *MLR of demographic variables, health and wealth variables, and work quality of life variables on Work Status 2008 showing ORs and 95% confidence intervals for ORs for the male sub-sample*

Variables	Work Status in 2008 Group	
	Full-time employed	*Part-time employed*
Work Status 06	**5.77** (2.33 – 14.28)	1.24 (0.54 – 2.84)
Age	**0.79** (0.71 – 0.87)	**0.89** (0.80 – 0.99)
No Qualifications	1.39 (0.66 – 2.95)	1.18 (0.54 – 2.58)
School Qualifications	1.17 (0.47 – 2.92)	0.92 (0.35 – 2.41)
Living Standards	**1.12** (1.02 – 1.22)	1.01 (0.92 – 1.10)
Anticipated Finances	**0.89** (0.83 – 0.96)	0.95 (0.88 – 1.03)
Physical Health	0.99 (0.95 – 1.04)	0.99 (0.95 – 1.03)
Career Commitment	0.99 (0.95 – 1.03)	0.98 (0.94 – 1.02)
Leisure Orientation	0.94 (0.81 – 1.09)	0.87 (0.74 – 1.01)
Job Stress	0.97 (0.89 – 1.05)	0.95 (0.87 – 1.03)
Retirement Adjustment	0.94 (0.84 – 1.05)	0.99 (0.89 – 1.13)
Work Intentions 06	**0.19** (0.09 - 0.44)	0.69 (0.31 – 1.52)

Note: The reference category is Full-time retired. Bold figures significant at p < .05, p < .01 or p < .001 levels.

Female only multinomial logistic regression results

The full model containing all the predictors was statistically significant, χ^2 (24, *N* = 503) = 143.89, p < .001, indicating that the model was able to distinguish between female participants belonging to the three work status groups. Both the Pearson (p = .371) and Deviance (p = 1.00) statistics were non-significant, indicating that the predicted values in the model did not differ significantly from the observed models, and therefore that the model had adequate fit to the data. The model as a whole explained between 24.9% (Cox & Snell R Square) and 30.5% (Nagelkerke R Squared) of the variance in the dependent variable (work status in 2008).

The predictor variables measured in 2006 that significantly contributed to the female only model included: the control variable (or work status in 2006, p < .001), living standards (p < .01), career commitment (p < .05), job stress (p < .05), and work intentions in 2006 (p < .001). In relation to classification rates, the model correctly classified 93.3% of female participants working full-time, 35.1% of those working part-time and 10% of those retired in 2008. Overall, 68.2% of cases were correctly classified. ORs and 95% confidence intervals for ORs for the full-time and part-time employed groups, with the full-time retired group as the reference category, can be seen in Table 15.

The OR statistics show that female participants who were full-time employed in 2006, those with higher career commitment and those who intended to remain in paid work past 2008 (in 2006) were significantly more likely to be employed in full-time work in 2008 than be retired. In relation to part-time employment versus retirement, both lower living standards and intending to remain in paid work past 2008 (in 2006) significantly increased the likelihood of female participants being employed in part-time work rather than be retired in 2008.

Table 15: *MLR of demographic variables, health and wealth variables, and work quality of life variables on Work Status 2008 showing ORs and 95% confidence intervals for ORs for the female sub-sample*

	Work Status in 2008 Group	
Variables	*Full-time employed*	*Part-time employed*
Work Status 06	**11.04** (2.83 – 43.10)	1.06 (0.34 – 3.31)
Age	0.89 (0.79 – 1.00)	0.90 (0.80 – 1.01)
No Qualifications	1.89 (0.67 – 5.32)	2.01 (0.71 – 5.65)
School Qualifications	0.83 (0.26 – 2.68)	1.06 (0.33 – 3.42)
Living Standards	0.91 (0.81 – 1.03)	**0.87** (0.78 – 0.98)
Anticipated Finances	0.97 (0.88 – 1.06)	1.00 (0.91 – 1.09)
Physical Health	1.00 (0.94 – 1.07)	0.98 (0.93 – 1.05)
Career Commitment	**1.07** (1.01 – 1.13)	1.05 (0.99 – 1.11)
Leisure Orientation	0.99 (0.83 – 1.18)	0.91 (0.77 – 1.09)
Job Stress	1.04 (0.96 – 1.14)	0.99 (0.91 – 1.08)
Retirement Adjustment	0.93 (0.81 – 1.06)	0.99 (0.86 – 1.14)
Work Intentions 06	**0.11** (0.04 – 0.31)	**0.26** (0.09 – 0.70)

Note: The reference category is Full-time retired. Bold figures significant at $p < .05$, $p < .01$ or $p < .001$ levels.

In relation to research question six, gender differences were found in the predictors of work status in 2008. Preliminary evidence of these was provided by the total sample MLR where both the interactions between gender and career commitment and gender and living standards were significant ($p < .05$ and $p < .05$ respectively). Additional information regarding these gender differences was provided by the results of the separate MLRs based on the male and female sub-samples separately. The 2006 predictor variables that made unique statistically significant contributions to the models differed between the male and female sub-samples. Significant predictors for the male sub-sample included: the control variable (or work status in 2006, $p < .001$), age ($p < .001$), living standards ($p < .001$), anticipated finances ($p < .01$), and work intentions in 2006 ($p < .001$). In contrast, the control variable (or work status in 2006, $p < .001$), living standards ($p < .01$), career commitment ($p < .05$), job stress ($p < .05$), and work intentions in 2006 ($p < .001$) were significant contributors to the female model.

The two sub-samples also differed in relation to which predictors had significant ORs in regards to both full-time and part-time employment versus retirement in 2008. For the male sub-sample, age ($p < .001$), living standards ($p < .05$), work status 2006

(control variable) (p < .001) and work intentions in 2006 (p < .001) had significant ORs in relation to predicting full-time employment versus retirement in 2008. For the female sub-sample, career commitment (p < .05), work status 2006 (control variable) (p < .001) and work intentions in 2006 (p < .001) had significant ORs in relation to predicting full-time employment versus retirement in 2008. However, for both the male and the female samples, work status in 2006 was the strongest predictor of employment status in 2008 followed by work intentions in 2006. In relation to predicting part-time employment versus retirement in 2008, only one predictor had a significant OR for the male sample, and this was age (p < .05). For the female sample, both living standards (p = .018) and 2006 work intentions (p < .01) significantly predicted part-time employment versus retirement in 2008. As mentioned above, higher living standards also increased the likelihood of male participants being full-time employed rather than retired, whereas higher living standards increased the likelihood of female participants being retired rather than part-time employed in 2008.

Chapter VI: Discussion

The current study had three main parts, each with differing goals. The first part explored the predictors of intentions to remain in work 2 years later among older New Zealand workers. Gender differences in these predictors were also assessed. The second part focused on the relationship between work intentions and work outcomes 2 years later. Of importance in this section was the accuracy of plans in terms of outcomes and whether there were any gender differences in this relationship. The second focus of this section was to explore the predictors of divergence between plans and outcomes. The third part explored the predictors of work status 2 years later among older New Zealand workers. Again of interest in this section were potential gender differences in predictors. This chapter will discuss the present study's findings in the context of previous literature for each part of the study separately. The practical applications of the findings, the limitations of the current study and possible future extensions of the research will then be considered.

Part 1: Work intentions

The goal of this part of the study was to identify what factors significantly predicted older New Zealand workers' intentions to remain in paid work 2 years later and, in addition, to explore potential gender differences in such predictors. Thus, this section aimed to explore the factors that influence older workers desire to remain at work.

The findings showed that a number of different factors significantly predicted work intentions. Of the demographic variables, age and one education level dummy variable (school qualifications) were significant main-effects contributors to the final model based on the total sample. Adams (1999) and Taylor and Shore (1995) found that increasing age predicted later planned retirement ages. This finding is inconsistent with the current study's findings, as increasing age was found to decrease the likelihood of participants planning to remain in paid work 2 years later (thus, increasing the probability of participants intending to retire within 2 years) in all three analyses undertaken (based on the total sample, male sub-sample and female sub-sample).

Differing age ranges between the three studies provides a possible explanation for this inconsistency in findings. Adams' (1999) sample ranged in age from 45 to 67 years, with a mean age of 51.7 years. Taylor and Shore's (1995) sample ranged in age from 19 to 71 years, with a mean age of 47 years. As covered above, the present sample ranged in age from 53 to 76 years, with a mean of 59.3 years. Earlier studies (e.g., Quinn & Burkhauser, 1990) have found that younger respondents generally report younger planned retirement ages. As both Adams (1999) and Taylor and Shore (1995) included younger participants than the present study, this may explain why the findings differed. The link between increasing age and older planned retirement ages may therefore be due to younger participants reporting unrealistically young retirement ages.

Both Mermin et al. (2007) and Litwin et al. (2009) found a link between higher education level and a tendency towards agreeing with delaying retirement or planning to work full-time past 'normal' retirement ages (e.g. 62 or 65 years) in their studies. The finding of the current study suggested that those with school level qualifications were more likely to plan to retire within two years than those with post-school level or no recognised qualifications. Therefore, this finding supports the previous data and extends it, as in the sample both those with higher education and those with no recognised qualifications were less likely to plan to retire within 2 years than those with school level qualifications. Those with no recognised qualifications may be more likely to plan to remain in paid work due to a lack of financial resources reducing the possibility of retirement in the near future. Those with higher qualifications may be less likely to plan to retire due to higher levels of involvement and commitment to work and increased work opportunities (e.g., in consulting roles). These conclusions are supported by the findings of Wang and Shultz (2009). In contrast, those with school level qualifications may be financially secure enough to plan for retirement, and have lower level occupations removing the incentives to remain in work which are present for those with higher level qualifications.

Occupation and marital status were not significant predictors in the final model based on the total sample, but have been identified as potential predictors of retirement

intentions elsewhere (e.g. Adams, 1999; Wang & Shultz, 2009). These variables were dichotomized to reduce the number of dummy variables entered. This may have made it harder to detect differences between occupational and marital status groups and offers a possible explanation for the inconsistency between the study findings and previous findings.

Health and wealth variables are perhaps the best-researched and most well validated predictors of retirement intentions in the literature to date (e.g. Beehr, 1986; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009). Mental health was not a statistically significant predictor of work intentions in any of the three analyses (based on the total sample, male sub-sample and female sub-sample), however, previous studies have pointed more towards physical health and physical limitations as important predictors of retirement intentions (e.g. Beehr, 1986; Feldman, 1994; Talaga & Beehr, 1989; Wang & Shultz, 2009). Physical health was a significant predictor of work intentions, but only in the analysis based on the total sample, with higher physical health scores related to increased likelihood of participants planning to continue working 2 years later (therefore, decreasing the probability of retirement within 2 years). As would be expected, those in good health expect to be *able* to continue working in the future. Perhaps those in poorer health anticipate a decline in their future working potential and hence plan for an earlier exit from the workforce. Some researchers have identified related health status issues such as physical limitations (Hansson et al., 1997) as potentially important in predicting retirement intentions suggesting that other health related variables, such as levels of disability, could yield different results.

A variety of financial status variables have also been emphasised as important in predicting retirement intentions, including adequate projected finances in retirement, current assets and income (Beehr, 1986; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009). Each of these variables was entered into the three analyses, however, only anticipated finances in retirement made a statistically significant unique contribution to the three models. As expected, higher anticipated finances in retirement was found to decrease the likelihood that a participant would plan to

continue in paid work in 2 years in the three analyses, thus, making participants more likely to plan to retire within 2 years. A possible explanation for these findings is related to the temporal nature of these variables. Both current income and assets relate to a participant's current environment, however, anticipated retirement finances relates to what is expected in the future. Forward anticipation would be expected to be related to forward planning.

Work-related variables have long been emphasised as potentially important in predicting work/retirement intentions, however, research on such variables has lagged behind research on personal variables such as health and wealth (Beehr, 1986; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009). Hansson et al. (1997) identified factors such as job attachment and satisfaction with ones career attainment as potentially important predictors. Wang and Shultz (2009) also identified a number of potentially important work-related variables, including factors such as dissatisfaction with work and work role characteristics.

Of the work-related factors entered into the three analyses, career commitment and leisure orientation significantly predicted work intentions in both the analysis based on the total sample and the analysis based on the male sub-sample. Career commitment increased the likelihood that participants would plan to continue in paid work in 2 years time in both analyses. This is in line with Adams' (1999) finding that increased career commitment was related to later expected retirement ages. Leisure orientation, on the other hand, decreased the likelihood that participants would plan to continue in paid work in 2 years time, thus increasing the likelihood participants would plan to retire within 2 years. Shacklock et al. (2009) also found that 'interests outside work' was a significant predictor of work intentions suggesting that leisure interests and pursuits play a part in older worker's plans regarding work and retirement.

Both Beehr (1986) and Wang and Shultz (2009) identified attitudes to work and retirement as potentially important in predicting work/retirement intentions. Zappala et al. (2008) also found that a preference for retiring later than one expected to was related to more negative attitudes towards retirement. Due to these findings, a

variable representing anticipated retirement adjustment was entered as a potential predictor variable in the three analyses. However, this variable was not significantly related to work intentions 2 years later in any of the three analyses. It may be that the measure used in the current study did not fully capture individuals' attitudes towards retirement. An alternative explanation for the non-significant result is that for some participants' retirement seemed too far away to raise any concerns covered in the measure.

Shacklock et al. (2009) found strong gender differences in the predictors of intending to remain in work in their sample. Significant predictors for the male sample included importance of work and interests outside work. For the female sample, interpersonal relationships at work, autonomy at work, flexibility at work and interests outside work were significant predictors. The current study also found gender-based differences in the predictors of work intentions; however, these differed somewhat from the findings of Shacklock et al. (2009). Shacklock et al. (2009) found that a larger number of work-related variables significantly predicted work intentions for their female participants than their male participants. However, in the current study no work-related variables significantly predicted female participants' work intentions. In addition, fewer variables significantly predicted work intentions for the female sub-sample than the male sub-sample. As noted above, significant predictors for the female participants included only age and anticipated finances in retirement. In contrast, significant predictors for the male participants included age, anticipated finances in retirement, career commitment and leisure orientation.

As discussed above, there are differences in labour market experiences between men and women in New Zealand. Mainly, females in New Zealand tend to have lower labour market participation rates at all age brackets, have more interrupted work histories, have greater responsibilities outside of work and have lower earning potential than males (Gosse, 2002; Johnson, 2005). These experiences may mean that for older females, issues such as career commitment and leisure pursuits are less important in making plans for retirement than obtaining adequate resources for a secure retirement. Men, whose labour force experiences are likely to have been less

interrupted and who are thus afforded greater opportunity to acquire resources, may have the leisure to consider other aspects of their work and non-work lives in making plans for retirement.

Overall, the findings from this section of the study show that demographic, health, wealth and work quality of life variables are related to the work intentions of older New Zealand workers. These findings reflect both the literature on the predictors of *retirement* intentions and previous research on the predictors of *work* intentions. In addition, the findings showed gender differences in the predictors of work intentions between older male and female workers. This also supports previous research on the predictors of work intentions and may reflect gender-based differences in the New Zealand labour market.

Part 2: Work intentions and work behaviours

The goal of this part of the study was to assess how accurately work intentions related to work behaviour 2 years later and to explore which variables were influential when there was a discrepancy between intentions and behaviour. Possible gender differences in the relationship between intentions and behaviour were also of interest. Overall, the results of this section of the analysis showed intentions to remain in work were much more accurate in terms of predicting work outcomes 2 years later than intentions to retire, and that there were some gender differences in this relationship. Significant predictors of divergence between intentions and behaviour included: age, education level, anticipated finances in retirement, physical health and career commitment. It should be noted that the final step of the model (with the work quality of life variables entered) had a slightly lower overall correct classification rate than the previous step (including demographic, wealth and health variables). However, both the Cox and Snell R Square and Nagelkerke R Squared statistics increased between these two models, indicating that the introduction of these variables explained additional variance in the dependent variable. In addition, one of the work-related variables was a significant contributor to the overall model (career commitment). Therefore, the addition of these variables was justified.

A number of studies have previously explored the relationship between retirement intentions and behaviour. An American study by Dwyer (2001) found that 38% of participants who expected to retire did so by the end of their study. In contrast, 76.8% of those who intended to remain in paid work were still working at the end of the study. Of those intending to remain in paid work, 11% had fully retired, and 9% had partially retired, by the end of the study. Another American based study by Anderson et al. (1986) found that retirement plans were accurate 40% of the time. A U.K. based study by Disney and Tanner (1999) found that nearly half of the participants retired when they expected to and nearly two thirds retired within one year of their expected retirement date. Finally, a study by Henkens and Tazelaar (1997) based on a Dutch sample contrasted with these findings when 93% of their sample planning to retire did so by the end of their study. However, as mentioned earlier, this higher percentage may be due to the differing characteristics of the Dutch sample in comparison to those from the USA and the U.K. (in that financial factors are less of a concern in planning to retire in Holland due to high pension rates and little eligibility issues).

In the current study, 26.9% of participants who planned to retire by 2008 retired by this date. In contrast, 95.9% of participants who intended to remain in paid work were working full-time or part-time in 2008. Overall, intentions matched work behaviour 2 years later for 85.3% of the sample. As can be seen, the findings of the current study are consistent with earlier findings on samples with similar characteristics to the sample used (e.g. the USA and U.K. based study's findings). The finding that intentions to remain in paid work were more accurate in predicting work status 2 years later than retirement intentions was also consistent with previous findings. Dwyer (2001) assessed the accuracy of work intentions in terms of behaviour and found a similar trend but a lower overall percentage in terms of accuracy of work plans. This could be due to sample characteristic differences between the two studies. For example, Dywer's (2001) sample was, on average, older than the current study's sample, increasing the likelihood of retirement in the sample.

However, the accuracy of retirement plans in the current sample was lower than rates reported in previous studies. This may be due to the short follow-up period in the

study. Participants were not followed past 2008, therefore those who retired shortly after their planned retirement date would have been missed, potentially underestimating how accurate these plans were in the sample. As mentioned above, in line with this conclusion, Disney and Tanner (1999) found a significant proportion of participants planning to retire did so with in one year of their planned retirement date.

There was some evidence provided in the previous literature of possible gender differences in how accurately work intentions predict later work behaviour. For example, Disney and Tanner (1999) found that the male participants in their study retired earlier than they had planned to on average and that female participants were more likely to give 'don't know' responses when asked for an expected retirement age. This indicates the women in their sample had more uncertainty in their retirement plans. In addition, the gender differences outlined in New Zealand labour market experiences could lead to gender differences in the relationship between work intentions and behaviour. For example, is has been well documented that women in the New Zealand labour force are economically worse off than men, which could have implications for their retirement planning and behaviour. However, evidence shows that, regardless of this, women are more likely to exit the labour force at earlier ages than men due to the age differential in relationships (e.g., men are usually older than their female partners) to provide care and companionship in retirement years (Statistics New Zealand, 2006).

The present study found that female participants retired at a significantly lower rate (5.6% by 2008) than the male participants of a similar mean age (8.9% by 2008). In addition, the female participants were slightly less accurate than the male participants in their retirement plans. Of the female participants, 25% of those planning to retire by 2008 retired by this date. In contrast, 28.4% of male participants planning to retire by 2008 did so. Hence, there is some evidence for gender differences in the relationship between work intentions and subsequent behaviour. A number of factors may have contributed to these findings. For example, nearly 40% of the female participants were single, removing the ability to rely on a partner for retirement income and therefore possibly reducing retirement rates among this group. In addition, the female

participants had significantly lower anticipated retirement finances and living standards compared to the males, which has important implications in planning for retirement and retirement behaviour (e.g., Beehr, 1986; Wang & Shultz, 2009). This is consistent with the findings of Disney and Tanner (1999), where female participants had more uncertainty in their retirement plans.

The current study had a follow-up period of only two years, which is somewhat shorter than previous studies that have investigated incongruence between work/retirement intentions and subsequent behaviour (e.g. Anderson et al., 1986; Disney & Tanner, 1999; Dwyer, 2001; Henkens & Tazelaar, 1997). However, knowledge gained from these previous studies guided the current analysis. For example, Anderson et al. (1986), Disney and Tanner (1999) and Dwyer (2001) found that changes to health were especially important when there was divergence between retirement plans and later behaviour. Other variables found to be important included changes to local unemployment rates (Anderson et al., 1986) and marital status (Disney & Tanner, 1999). These findings are in line with both theory and research surrounding more general attitudes, intentions and behaviour, which stresses that intentions do not predict later behaviour completely accurately because of the influence of a number of moderator and mediator variables (R. P. Bagozzi, 1992; Liska, 1984).

Due to the short follow-up period in the current study, analyses were undertaken to explore which 2006 variables significantly predicted incongruence between intentions and behaviour, rather than the influence of change in these predictors overtime. Factors found important in the previous studies, such as health and marital status, were entered as possible predictor variables. The findings showed that age, education level, anticipated finances in retirement, physical health and career commitment significantly predicted divergence between work intentions in 2006 and work outcomes in 2008. Thus, in line with previous research, health was found to be important to the relationship. Higher physical health scores were found to decrease the likelihood of divergence between plans and outcomes. Those in better health in 2006 were more likely to meet their intentions in 2008 than those in poorer health. This is in line with the findings of previous studies (e.g., Dwyer, 2001). Being in better

health undoubtedly provides more freedom for individuals to exercise choice in regards to working or retiring. Clearly those in poorer health have less ability to work (particularly those in labour intensive jobs), which may reduce an individual's ability to choose when to retire.

Overall, the findings from this section of the study show that intentions to remain at work were more accurate in predicting behaviour than retirement intentions. Some gender differences were also found in this relationship; female participants (of a similar mean age to the male participants) retired at a lesser rate and were less accurate in their retirement plans than the male participants. Significant predictors of divergence between intentions and outcomes included age, education level, anticipated finances in retirement, physical health and career commitment. A change to health status has also been found in other studies to be related to incongruence between retirement intentions and behaviour (e.g., Dywer, 2001). Health status is clearly an important factor to consider when exploring the relationship between retirement and work intentions and later work outcomes.

Part 3: Work status

The aim of this part of the study was to identify what factors significantly predicted work status 2 years later, and in addition, to explore potential gender differences in these predictors. Therefore the aim of this section was to identify what factors predicted older New Zealand workers remaining in the workforce. The findings showed that a number of different factors significantly predicted work status 2 years later for the total sample, including: work status in 2006, age, anticipated finances in retirement, leisure orientation, anticipated retirement adjustment and work intentions at time one.

Of the demographic variables entered as potential predictors in the three models, work status in 2006 and age made statistically significant unique contributions to the total sample final model and the male final model. Only work status in 2006 made a statistically significant unique contribution to the female final model. Work status in

2006 was, in fact, the strongest predictor of participants working full-time in 2008 as opposed to being retired in each of the three analyses. However, work status in 2006 did not significantly predict participants being employed in part-time work versus being retired in 2008 in any of the three analyses.

The total sample analysis results showed that participants who reported themselves as 'full-time employed' in 2006 (as opposed to being part-time employed) were over 6 times more likely be working full-time in 2008 than be retired, controlling for all other variables in the model. In the male only model a similar trend was observed, with male participants 'full-time employed' in 2006 being over 5 times more likely to be working full-time in 2008 than be retired, controlling for all other variables in the model. The results of the female model again showed a similar trend, with female participants 'full-time employed' in 2006 being around 11 times more likely to be working full-time in 2008 rather than be retired. These findings are probably due to the fact that work status in 2006 and work status in 2008 are essentially the same measure, two years apart.

Several sources have emphasised the importance of age in predicting retirement status (e.g., Beehr, 1986; Talaga & Beehr, 1989; Wang & Shultz, 2009). In contrast to the findings on the relationship between age and retirement *intentions,* research on retirement *behaviour* has found a link between increasing age and increased retirement rates (Adams & Rau, 2004; Kim & Feldman, 2000; Wang et al., 2008). As mentioned earlier, age is also a logical predictor of work status, as there are both societal norms and expectations surrounding 'normal' retirement ages (e.g. 65 years), and these generally coincide with eligibility for Superannuation or pensions. Thus, increasing age should decrease the likelihood of working in some form of employment. The findings supported this notion, with age significantly predicting both full-time employment and part-time employment versus retirement in the total sample model and the male model. In addition, increasing age decreased the likelihood, to varying degrees, of working in either full-time or part-time work versus being retired in both of these models. Surprisingly however, as mentioned above, age was not a significant predictor of work status in the female final model. As mentioned above, women are

likely to retire when their husbands retire, regardless of their age (Statistics New Zealand, 2006). This offers a possible explanation for the non-significance of age in predicting work status for the female participants, as the majority of the female sample was married or partnered.

Education level was not a significant predictor of subsequent work status in any of the three analyses undertaken. While education level has been previously found to have an association with both retirement intentions and behaviour (e.g., Litwin et al., 2009; Mermin et al., 2007; Wang & Shultz, 2009), authors such as Talaga and Beehr (1995) have emphasised that this relationship is complicated, with its effect possibly being due to its relationship with occupation level. This may explain why education level was not related to work status. Education level was also dichotomized to reduce the number of dummy variables, which may have made it more difficult to detect differences between the education level groups. Occupation and marital status were not entered into the final models because neither had significant bivariate correlations with work status in 2008 and neither significantly predicted work intentions in 2006.

Only *physical* health was included as a potential predictor in the final analyses. Mental health was excluded as a potential predictor because it also did not have a significant bivariate correlation with work status in 2008 and did not significantly predict work intentions in 2006, as with the variables above. Health status and health related variables have long been linked with retirement status (e.g., Beehr, 1986; Feldman, 1994; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009). In addition, Lund and Borg (1999) found very good self-rated health was a significant predictor of work status 5 years later for both their male and female participants. However, in regards to the current study, physical health was not a significant predictor of work status 2 years later in any of the three analyses. There are several possible reasons for this non-significant result. First, the group was generally healthy when measured in 2006. As factors such as physical limitations (Hansson et al., 1997) are important to retirement intentions and behaviour, those in generally good health are not likely to be affected in terms of ability to work. The relatively short follow-up period (two years) may also have contributed to the findings. Declining health has consistently

been shown to be important in retirement status (e.g., Beehr, 1986; Disney & Tanner, 1999; Dwyer, 2001), and therefore would be captured more accurately over longer periods of time.

Two of the original three wealth variables were entered into the three analyses: living standards and anticipated finances in retirement. Total assets was excluded as a potential predictor variable in the analyses for the same reasons as the variables above. Wealth variables have also long been emphasised as strong predictors of retirement status (e.g., Beehr, 1986; Feldman, 1994; Hansson et al., 1997; Talaga & Beehr, 1989; Wang & Shultz, 2009). The current study found that living standards was a significant predictor of work status 2 years later in all three analyses undertaken. In addition, anticipated finances in retirement was a significant predictor of work status 2 years later in both the analysis based on the total sample and the analysis based on the male only sub-sample. Therefore, these findings were consistent with previous research.

However, there was variation in the OR findings in relation to the living standards variable. For example, in both the model based on the total sample and the female sub-sample, living standards only significantly predicted part-time employment status versus retirement in 2008. In both analyses increases in living standards decreased the likelihood that participants would be employed part-time rather than be retired in 2008. In contrast, for the male participants, living standards did not significantly predict part-time employment status versus retirement in 2008. Instead, living standards was a significant predictor of participants working full-time versus being retired in 2008. Increases to living standards also increased the likelihood the male participants would be working full-time rather than be retired in 2008.

Thus, a gender difference was found in that male participants with higher standards of living were more likely to remain in paid work whereas female participants with higher living standards we more likely to retire. The finding in relation to the female participants is consistent with previous research, which has found a link between greater financial resources and increased retirement rates (e.g., Beehr, 1986; Wang &

Shultz, 2009). A possible explanation for the findings in relation to the male sample is that males with higher standards of living are therefore probably employed in higher-level occupations. As mentioned above, those with higher education and those in higher-level occupations are more likely to be committed to their work and remain in paid work for longer than the norm due to increased employment opportunities (Wang & Shultz, 2009).

A further gender difference was found in how anticipated finances related to work status in 2008. In the total sample and male-only sample models, increases to anticipated retirement finances decreased the likelihood participants would be working full-time versus be retired in 2008, which is consistent with previous findings (e.g., Beehr, 1986; Wang & Shultz, 2009). However, no such effect was found in the female-only model. This may again relate to the importance of a partner's plans in the retirement behaviour of women. If women are likely to retire when their partner retires regardless of factors such as age (Statistics New Zealand, 2006), financial factors may also be of less relevance in their behaviour than it is for men.

A number or sources have emphasised the link between work-related variables and retirement status, however, research on such variables has lagged behind that on personal variables (e.g. health and wealth factors) (Beehr, 1986; Feldman, 1994; Hansson et al., 1997; Wang & Shultz, 2009). The current study found that, on the whole, work-related variables had a role to play in predicting work status 2 years later for older workers in New Zealand. For the total sample, both career commitment and leisure orientation were significant predictors of work status 2 years later. For the female sub-sample, both career commitment and job stress made significant contributions to the final model. However, none of the work-related variables were significant predictors of work status 2 years later for the male participants. Increases to career commitment increased the likelihood that participants would be working full-time rather than be retired in 2008 for the total sample and the female-only sample. As mentioned above, this was the expected relationship and this finding is in line with previous findings related to work intentions (e.g., Adams, 1999). Increases in leisure orientation decreased the likelihood participants would be working part-time rather

than be retired for the total sample. This is also in line with previous findings (e.g., Shacklock et al., 2009).

This is the opposite of what was found in relation to work *intentions*. No work-related variables significantly predicted work intentions for the female sample but both career commitment and leisure orientation significantly predicted work intentions for the male sample. The finding that the predictors of work *intentions* and *behaviour* differ is in line with previous literature, as mentioned above. For example, Henkens and Tazelaar (1997) emphasised the importance of considering both of these factors separately due to the possibility of varying predictors. In addition, research on the relationship between more general intentions and behaviour highlights how the two can differ and the importance of moderator and mediator variables in the relationship (e.g., R. P. Bagozzi, 1981; Liska, 1984). These conclusions are supported by the findings of research relating to retirement intentions and behaviour (e.g., Anderson et al., 1986; Dwyer, 2001), which overall shows the relationship between the two is not completely accurate and change in key variables can lead to divergence between the two. Finally, previous research has found the predictors of both retirement *intentions* and *behaviour* differ (e.g., Talaga & Beehr, 1989; Wang & Shultz, 2009).

Attitudes to both work and retirement have been identified as potentially important in predicting retirement status (Feldman, 1994; Hansson et al., 1997; Wang & Shultz, 2009). Again, research on such variables has lagged behind that on more personal and more easily measured variables, such as demographics or wealth. In addition, research on such variables in relation to *work* status, as opposed to *retirement* status, is even sparser. The current study included attitudes to retirement (labelled retirement adjustment) and found that this variable did significantly contribute to the total sample model. This is in line with previous findings relating to retirement status (e.g., Feldman, 1994; Wang & Shultz, 2009).

Work intentions in 2006 was the final variable explored as a potential predictor of work status 2 years later in the sample. As discussed in detail above, there is both a logical and an empirically supported link between retirement intentions and later

retirement behaviour (e.g., Disney & Tanner, 1999; Dwyer, 2001). In addition, considerable research has been conducted on the relationship between more general intentions and behaviour (R. P. Bagozzi, 1992; Liska, 1984). Intentions are a strong predictor of later behaviour; however, this prediction is not completely accurate due to the influence of moderator variables that affect the relationship. In part two, the data showed there was a link at the bivariate level between the participants' intentions in 2006 (e.g., to continue working past 2008 or retire before 2008) and work status in 2008.

Work intentions in 2006 was a significant predictor of work status in 2008 in all three multivariate analyses (based on the total sample, male sample and female sample). Work intentions significantly predicted full-time and part-time employment versus retirement in 2008 in the models based on the total sample and the female sample. For the male sub-sample, work intentions significantly predicted full-time employment versus retirement in 2008, but not part-time employment versus retirement in 2008. Overall, intending to retire by 2008 decreased the likelihood participants would be employed in some form of work rather than be retired in 2008 in all three analyses, to varying degrees. Thus, as one would expect, those who intended to remain in paid work past 2008 were more likely to be working in some form of employment in 2008 than those who planned to retire by 2008.

In relation to gender differences in the predictors of work status, as previously mentioned, there is evidence in the literature that these exist. For example, Lund and Borg (1999) found gender differences in their sample in the predictors of work status 5 years later. The literature on the predictors of retirement status and work intentions also supported the possibility of gender differences (Talaga & Beehr, 1995; Shacklock et al., 2009). In addition, both Feldman (1994) and Wang and Shultz (2009) identified employment history factors such as years of service and numbers of exits, as important in predicting retirement status. As has been discussed previously, differences in the New Zealand labour force between men and women with regard to these very factors exist (e.g. women generally have shorter and more interrupted work histories than

men) (Gosse, 2002; Johnson, 2005). As covered above, in line with this evidence, gender differences in the predictors of work status were found in the present study.

Overall, the findings from this section of the study showed that a variety of variables from a number of areas were important in predicting work status 2 years later for the total sample, including previous work status, age, anticipated retirement finances, orientation towards leisure, attitudes towards retirement, and previous work intentions. These findings both support and extend the findings of previous research. The findings show that variables important in predicting work intentions are not necessarily important in predicting later work status. However, work intentions were influential in predicting later work status. There were inconsistencies in the predictors of both work intentions and work status for the total sample, male sub-sample and female sub-sample. This shows that work *intentions* and work *behaviour* need to be considered separately. Strong gender differences were also found in the predictors of work status. Age and financial factors were less influential and work quality of life variables were more influential in predicting work status 2 years later for the female participants compared to the male participants. This contrasts with the findings in relation to the predictors of work intentions.

Practical applications

There are concerns of labour and skill shortages in the coming decades in New Zealand due to a number of factors including population ageing and labour force growth decline. Due to this, optimising the potential of older New Zealand workers is of prime importance (Davey & Cornwall, 2003). Enhanced and prolonged participation of these workers will result in this group's valuable skills and knowledge being retained in organisations and the labour market. A secondary benefit of such an outcome for organisations is reduced selection and training costs due to lower turnover rates.

The findings of part one could be used to enhance older workers' desires to remain in work, and therefore prolong participation in work. As has already been discussed, desires and intentions are not completely accurate predictors of later behaviour;

however, targeting intentions is an important first step in encouraging future prolonged participation in older workers. Work intentions were a strong predictor of later work status in all three analyses undertaken, over and above the effects of other influential factors (such as health and wealth). It was found that those who intended to remain in work usually did.

In terms of improving employees' desires to remain at work, several factors identified in the findings could be targeted. For example, higher career commitment scores were found to predict intending to remain in work. Thus, organisations looking to retain older employees could target career commitment levels in such workers to increase desires to remain at work. Providing opportunities for further development, and therefore to reach career goals, is one possible strategy of fostering career commitment in older workers. Targeting the work environment with the aim of making it more accommodating for older workers could also be important. For example, higher leisure orientation scores were found to predict intentions to retire within two years. Thus, modifying the work environment to allow older employees to pursue outside leisure interests more readily could aid in fostering desires to remain at work. Introducing job sharing and part-time working arrangements are possible strategies to achieve this. The findings also showed that there were gender differences in the predictors of work intentions; therefore, directing different strategies towards male and female employees could enhance the overall outcome.

The goal of the second part of the study was to assess how well work intentions related to work outcomes 2 years later (e.g., whether they accurately predicted work status 2 years later). Overall, it was found that work intentions were much more accurate at predicting later work status than retirement intentions. This indicates a focus on work continuance intentions as opposed to retirement intentions may be of benefit. This is in line with continuance theory as opposed to disengagement theory (Wang & Shultz, 2009).

The female participants retired at lower rates and were less accurate in their retirement plans than the male participants of a similar mean age. This may indicate

that retirement planning initiatives are traditionally targeted at men, where as a greater focus on the differences in the experiences of men and women that may result in differences in planning experiences would be more appropriate.

The second part of this section explored the predictors of divergence between intentions and later behaviour. The strongest predictors of divergence were age and education, with health and finances also playing a part. Older participants were more likely to have divergence between their plans and later behaviour. This seems to support the finding of Adams (1999) and Taylor and Shore (1995) that increasing age relate to later planned retirement ages. Perhaps these older participants, upon reaching their intended retirement age, decided they were not ready for the transition. Those with school level qualifications and higher anticipated retirement finances were also more likely to experience inconsistency between their retirement plans and later behaviour. Overall this seems to support the notion that participants were less realistic in their plans than the situation may have warranted, as factors such as increased finances would be expected to be related to increased accuracy between plans and subsequent behaviour (e.g., Dwyer, 2001). Therefore, ensuring employees are given timely and accurate information regarding retirement planning is imperative.

Finally, those in poorer health were more likely to experience divergence between intentions and subsequent behaviour, which supports the findings of previous studies (e.g., Anderson et al., 1986; Dwyer, 2001). However, as mentioned above the short follow-up period in the present study prevented analysis of the effects of change in these key factors in the relationship between intentions and later behaviour. Thus, further research is required investigating how, for instance, health and wealth 'shocks' influence the relationship between intentions and later behaviour.

The goal of the third part of the study was to identify what factors were related to older New Zealand workers actually remaining in some form of paid employment 2 years later. Previous work intentions were the strongest predictor of subsequent work behaviour. Participants who intended to remain in paid work were highly likely to do so. Those intending to retire were less successful in achieving their goals. This again

suggests that some people may be less realistic in their planning than perhaps their situation warrants. As previously mentioned, this indicates that ensuring employees are offered timely and comprehensive advice on work or retirement planning is advisable. Gender differences were also found in those factors that predicted work status in 2008, suggesting that planning advice may need to be modified for both groups. Employers need to be aware that the factors that motivate men and women to remain in (or exit) work may differ.

Overall, employers aiming to foster prolonged participation in work for older employees could target a number of factors. For example, career commitment levels were found to be important in predicting work status 2 years later as they were in predicting work intentions for the total sample. Thus, similar strategies as those highlighted above (e.g., providing opportunities for further development) to foster career commitment could be employed to retain employees. Leisure orientation was also again found to be important in predicting work status 2 years later for the total sample. Thus, offering flexible work arrangements (e.g., job sharing and part-time work) could also foster prolonged participation in work for older employees.

Limitations

The length of the follow-up period (2 years) resulted in two separate limitations in the current study. First, the short follow-up period meant that the second part of the analysis could not adequately follow the analysis strategy of previous studies and explore divergence between work intentions and later work behaviour in relation to changes to key variables (e.g. health, wealth or marital status). Thus, it is unclear how change in these factors affected the relationship between intentions and subsequent behaviour. The second limitation due to the length of the follow-up period was potentially underestimating the accuracy of retirement plans. This is because participants who planned to retire by 2008 and then did so shortly after the second survey were missed, thus the accuracy of such plans could have been underestimated. As noted above, the accuracy of retirement plans in the present sample was lower than previous findings and therefore this could have been an issue.

The work involvement scale had a low Cronbach's alpha (.62) in the present study. This variable was not a significant predictor in any of the analyses undertaken, which may be a result of its low internal consistency. However, this scale was adapted from a previous source (Kanungo, 1982) where it had an acceptable alpha level (.75).

The data utilised in the current study was collected through a self-report format. A possible limitation of such a format is the possibility of social desirability bias, where respondents modify answers to questions to reduce supposed negative perceptions of their true circumstances. Such a bias could, for example, occur on measures relating to an individual's income or standard of living. However, both anonymity and confidentiality were assured with the HWR study, reducing factors that would trigger such a bias. In addition, authors such as McCrae and Costa (1983) emphasise that claims of a need to correct for this bias are unsubstantiated. Hence, the possibility that social desirability bias affected the results is minimal.

The final limitation of the current study is with regard to the amount of missing data. As noted previously, data was missing for hundreds of cases on a number of variables. Because of this, group means were used to replace the missing values for these variables. However, as previously discussed, Tabachnick and Fidell (2007) state that while this is a conservative way to treat missing data (as it does not alter series means and does not require guess work by the researcher) there are also detriments of this strategy. Most notably, using this strategy to deal with missing data reduces the variance of the variables involved (Tabachnick and Fidell, 2007). Thus, this may have altered the findings and therefore is another potential limitation of the current study.

Possible extensions

A number of possible extensions of the current study are evident when considering the limitations of the research. For example, participants could be followed for longer periods through additional waves of the HWR study in order to assess actual retirement rates over an extended time (and therefore reduce issues with underestimating these rates and the accuracy of intentions). A longer follow-up period

would also allow the researcher to follow the strategy of previous studies in terms of assessing divergence between intentions and plans in relation to change to important key factors. This would extend the literature to date as previous studies have focused on retirement plans and behaviour and not specifically on work intentions and behaviour. A longer follow-up period would also allow the researcher to assess the accuracy of work intentions in relation to behaviour longer term (e.g. longer than 2 years).

Additional predictor variables could also be included in analyses to extend the current research. For example, both Henkens and Tazelaar (1997) and Lund and Borg (1999) found a link between social support and retirement/work behaviour. As mentioned above, other health and wealth variables (e.g., physical limitations, marital income) could also be included as both have support as potentially important predictors of retirement/work behaviour (Feldman, 1994; Hansson et al., 1997).

Conclusion

The findings of the current study begin to fill gaps in the literature and knowledge about work continuation behaviour in older New Zealand adults and have the potential to aid in developing strategies to retain these workers in the labour force. As has been discussed, this is an important outcome for both organisations and the wider New Zealand labour force due to potential issues in the coming decades with labour and skill shortages. Retaining older workers' valuable skills and knowledge over this time is imperative and an important step in maximising the potential of older workers (Alpass & Mortimer, 2007; Davey & Cornwall, 2003). The current study sought to assist in attaining this outcome.

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