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Title: An application of the Resource-Based Dynamic Process model in the context of retirement planning

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Abstract

1
2 Retirement planning is a widely promoted activity to enhance wellbeing for ageing
3 populations. However, there is limited follow-up data to understand the antecedents of
4 multi-dimensional retirement planning activities, the resources such activities produce
5 or the explanatory mechanisms. This research draws on recent theorizing, which
6 suggests that retirement planning may play a mediating role in explaining how pre-
7 retirement antecedents are transformed into retirement resources. Antecedents,
8 planning and retirement resources were examined using three waves of follow-up data
9 collected in 2006, 2008 and 2014. Four hundred and thirty-five people originally
10 employed in 2008 and retired by 2014 participated in the study. Health, income, and a
11 positive retirement attitude (T1) were the strongest predictors of retirement planning
12 (T2), but job satisfaction and occupation also played smaller predictive roles.
13 Financial planning (T2) predicted health, psychosocial, and financial resources in
14 retirement (T3). However, health, lifestyle, and psychosocial planning played a
15 minimal role in explaining retirement resources, and only financial planning
16 demonstrated noteworthy evidence of mediation. Findings can help to inform policy
17 decisions by identifying those at greatest risk of not planning, and to isolate the
18 factors most likely to explain the longer-term effects of planning. Understanding
19 which resources are predicted by different domains of planning will also help inform
20 the targeting of interventions.

21 Unprecedented numbers of people will retire in the immediate future, but most remain
22 unprepared for the transition (Adams & Rau, 2011). Retirement planning, its
23 antecedents, and the resources resulting from planning have important implications
24 for organizations and social policy. Understanding the antecedents of retirement
25 planning supports employees to take preventative action prior to retirement and assists
26 organizations to identify those who are less likely to plan. Recognizing the outcomes
27 or resources derived from retirement planning supports planning activities and
28 highlights those areas most likely to lead to wellbeing post-retirement. To assist older
29 workers to prepare for retirement, employees, employers, and governments need
30 sound information about the most beneficial ways to approach retirement planning
31 and reliable evidence of its long-term benefits. A meta-analysis by Topa, Moriano,
32 Depolo, Alcover, and Morales (2009) made significant progression towards
33 understanding the antecedents and outcomes of retirement planning. The current
34 research builds on their analysis, using the Resource-Based Dynamic Process model
35 as the theoretical basis (Wang, Henkens, & van Solinge, 2011).

36 Topa et al. (2009) showed that the strongest predictors of retirement planning
37 were job dissatisfaction and high levels of work involvement. In contrast, health,
38 work conditions, and retirement attitudes showed no relationship with planning.
39 However, research has identified a much broader range of antecedents that fall within
40 one of four categories: socio-economic (Noone, O'Loughlin & Kendig, 2012), socio-
41 demographic (Humble, Keefe, & Auton, 2012), psychosocial (Noone, Stephens &
42 Alpass, 2010a) and health (Noone et al., 2012). Topa et al.'s analysis was also largely
43 based on cross-sectional data and did not consider economic resources derived from
44 planning or the effects of different types of planning on retirement resources. This is
45 important because in the years since their analysis, the benefits of "non-financial"

46 planning (e.g., psychosocial planning) are still largely unknown, and calls for research
47 into a broader range of planning outcomes using prospective methods (Wang &
48 Shultz, 2010) are still mainly unanswered. The current research therefore makes a
49 new empirical contribution to the retirement planning literature by drawing on eight
50 years of follow-up data to examine a more comprehensive array of retirement
51 planning antecedents, planning activities, and planning outcomes (resources).
52 Retirement planning is defined as the goal-directed thoughts and behaviors that
53 promote good health and provide financial security, fulfilling lifestyles, and
54 rewarding roles in retirement (Noone et al., 2010a, p. 522).

55 This research contributes to retirement theory by conceptualizing retirement
56 planning within the Resource-Based Dynamic Process model for retirement
57 adjustment (Wang et al., 2011). This model synthesizes five major theories of
58 retirement adjustment to better understand the complexity of retirement adjustment
59 process and quality. Adjustment quality is seen a function of six domains of resources
60 namely, physical, cognitive, motivational, financial, social, and emotional, whose
61 fluctuations affect adjustment quality over time. Although previous studies using
62 smaller samples (e.g., Leung & Earl, 2012; Yeung & Zhou, 2017) have pointed to a
63 three factor as opposed to a six-factor model, it is still possible that the theoretically
64 derived model proposed by Wang explains some outcomes better than others. The
65 advantage of exploring the six-factor model is that where relationships exist there
66 may be important implications for more tailored or nuanced interventions.

67 In Wang et al's model, retirement planning is labeled a "transition variable",
68 suggesting it may be a mechanism to explain how antecedents affect retirement
69 resources. Successful retirement planning may promote resource accumulation over
70 time and explain an increase in resources following the transition to retirement. In

71 contrast, a lack of planning could explain resource deficits. This means that the
72 outcomes or results of retirement planning can also be understood as the resources
73 described in Wang et al.'s model. Likewise, retirement adjustment is an outcome of
74 having sufficient resources. Expanding the Resource-Based Dynamic Process model
75 to capture a more specific mediation role for retirement planning opens up new lines
76 of inquiry.

77 Our review begins by examining the relationships between retirement planning
78 and its socioeconomic, socio-demographic, and psychosocial antecedents. We then
79 introduce the Resource-Based Dynamic Process model, outlining the physical,
80 emotional, financial and psychosocial resources that retirement planning is argued to
81 produce. Wang et al.'s theory and empirical findings are used to motivate the research
82 hypotheses, which are presented at the end of each sub section. An overall model for
83 testing is presented in Figure 1.

84 **Socioeconomic antecedents of retirement planning**

85 *Education.* The literature suggests a weak positive relationship between
86 education and retirement planning. Some research shows educational attainment is
87 associated with financial and health planning (Noone et al., 2012). An earlier study
88 also showed education was positively associated with aspects of health, lifestyle, and
89 psychological planning for Hong Kong women (Lee & Law, 2004). While other
90 scholars (Petkoska & Earl, 2009) have reported that education was a predictor of
91 health planning behaviors, it did not predict work or financial planning. Likewise,
92 Kopusko, Kiso, Hershey, & Gerrans (2015) found that education was not a predictor
93 of retirement savings.

94 *Income.* Much of the literature suggests that people with lower incomes tend to
95 undertake less financial planning (Chatterjee & Zahirovic-Herbert, 2010; Kock,

96 Yoong, & Fatt, 2012; Noone et al., 2012; Topa et al., 2012) and general retirement
97 planning (Curl & Ingram, 2013; Ellen, Wiener, & Fitzgerald, 2012; Mansor, Hong,
98 Abu, & Shaari, 2015). However, there are exceptions. An Australian study
99 (Blackmore & Prendergast, 2011) showed that household income was not a key
100 influencer in staying informed of financial matters (an aspect of financial planning).
101 There is also limited evidence linking income with the other three planning domains.
102 For example, Muratore and Earl (2010) found that household income was associated
103 with aspects of financial planning but was not associated with lifestyle and health
104 planning (labeled “Self-protection”). Similar results were reported by Noone et al.
105 (2010a). Considered together, the research suggests that any effect of income on
106 retirement planning may be restricted to the financial domain.

107 ***Occupation.*** There are relatively few studies that examine the direct link
108 between retirement planning and occupational status, but insights from research into
109 occupational status, education, income and retirement timing can inform hypotheses.
110 Fisher et al. (2016) argue that education is positively associated with later retirement.
111 Greater educational attainment promotes the uptake of higher status occupations with
112 greater remunerations benefits and better working conditions often associated with
113 “white-collar” work. However, there is also a group of higher status workers that
114 retire earlier because they can afford to. Lower status, blue-collar workers also tend to
115 retire early (Fisher et al., 2016), partly due to their physically demanding work
116 conditions (Johnson, Mermin, & Resseger, 2011) and higher rates of poor health
117 associated with their occupations (Clougherty, Souza, & Cullen, 2010). Critically,
118 blue-collar workers appear to have less control over the retirement decision, which is
119 associated with lower levels of general retirement planning (Noone et al., 2013; Wong

120 & Earl, 2009) and no evidence was found to suggest that this effect would be domain
121 specific.

122 Wang et al.'s (2011) resource theory posits that antecedents (e.g., education,
123 occupation and income) are directly related to their corresponding resources (e.g.
124 financial resources). However, it is worth noting that an antecedent may also *be* a
125 resource, for those who are not yet retired. For example, a worker's income represents
126 a resource for them at that point in time and an antecedent to their future financial
127 resources in retirement. Although this creates an element of circularity, it helps to
128 clarify the research hypotheses; people need certain resources to plan adequately for
129 retirement (Leung & Earl, 2012). However, income may not drive non-financial
130 forms of planning. This would explain the lack of empirical evidence for the
131 relationship (Muratore & Earl, 2010). In contrast, education and occupational status,
132 which could reflect multiple resources (cognitive, social or financial), may have
133 benefits for all forms of planning. Therefore, the following hypotheses are put
134 forward for testing.

135 *H1: Higher levels of education (H1.1) and greater occupation status (H1.2) will*
136 *have a positive effect on all planning domains. Higher income will have a positive*
137 *effect on financial planning only (H1.3).*

138 **Socio-demographic antecedents of retirement planning**

139 **Age.** The planning literature generally shows a positive relationship between
140 age and financial planning (Koposko et al., 2015; Ng, Tay, Tan, & Lim, 2011) and
141 general planning (Curl & Ingram, 2013; Moorthy et al., 2012; Yeung, 2013). One
142 study demonstrated a consistently increasing age gradient (age 30-80) across all four
143 dimensions of planning (Kornadt & Rothermund, 2014). However, there are
144 exceptions that show no relationship (Chou et al., 2014; Cochran, Crowne, &

145 Carpenter, 2012; Noone et al., 2010a), and some suggest that the relationship between
146 age and planning may be domain specific. For example, research found a significant
147 relationship between age and planning for social resources amongst retirees but not
148 financial, health, cognitive, emotional, or motivational resources (Leung & Earl,
149 2012). However, the weight of the evidence and the likelihood that retirement
150 increases with age suggests a positive relationship between age and planning.

151 **Caregiving.** Unpaid caregiving carries significant economic benefits for
152 societies (Feinberg, Reinhard, Houser, & Choula, 2011), but both benefits and
153 challenges for individuals (Roth, Fredman, & Haley, 2015). For example, caregiving
154 is associated with lower rates of paid employment, which impacts negatively on
155 retirement wealth accumulation (Nguyen & Connelly, 2014; O’Loughlin, Loh, &
156 Kendig, 2017). It is not surprising then that caregiving was negatively associated
157 with financial preparedness in studies of female caregivers. (Orel, Landry, & Spence,
158 2007). Caregivers also tend to undertake less general retirement planning compared
159 to those who do not have a caregiving role (Humble et al., 2012). Two qualitative
160 studies showed caregivers felt unable to financially plan for retirement due to
161 economic constraints, necessity to live day-to-day, and a perceived lack of control
162 over future events (Arksey & Glendinning, 2008; Pope, 2012). Yet, most of
163 caregivers in Pope’s study (Pope, 2012) were still preparing for retirement across non-
164 financial domains. Nevertheless, the relationships of caregiver burden with factors
165 such social isolation (Adelman, Tmanova, Delgado, Dion, & Lachs, 2014) and poor
166 health (Bauer & Sousa-Poza, 2015) are well established. This means that those with
167 more intensive caregiving roles may also lack the resources for health, lifestyle, and
168 psychosocial planning for retirement.

169 **Gender.** Evidence for gender differences in retirement planning is mixed.
170 Studies suggest that women undertake less financial planning than men in Japan
171 (Sekita, 2011), Russia (Klapper & Panos, 2011), and Australia (Ntalianis & Wise,
172 2011), and retire with significantly less personal wealth (Keegan, Harding, & Kelly,
173 2012). This is partly because women have historically spent more time out of paid
174 work due to caregiving commitments at both the start and end of their careers
175 (Charlesworth & Macdonald, 2015). However, women have also been shown to
176 undertake more health and lifestyle planning than men (Muratore & Earl, 2010;
177 Petkoska & Earl, 2009). Other research has found that women plan more than men
178 across all domains (Earl, Bednall, & Muratore, 2015), plan more for health
179 (Wijeratne, Peisah, Earl, & Luscombe, 2018), and plan more for social interaction
180 (Petkoska & Earl, 2009). Further studies have found no gender differences in
181 financial planning (Noone et al., 2012) or any domain of planning (Mansor et al.,
182 2015; Noone et al., 2010a).

183 Resource-Based Dynamic Perspective may shed light on the relationship
184 between gender and retirement planning. In terms of financial planning, men's
185 advantages in income and wealth accumulation provide a comparatively greater
186 resource for financial planning. Yet, as noted above, financial resources may have no
187 benefits for health, psychosocial, and lifestyle planning. In contrast, women tend to
188 have larger social networks than men (Stephens, Noone & Alpass, 2014), report more
189 positive health behaviors and leisure planning (Petkoska & Earl, 2009) and have
190 better health status (Peisah, Luscombe, Earl, & Wijeratne, 2017). This suggests
191 women have stronger social and health resources for non-financial forms of planning.

192 Wang et al.'s (2011) model can also be applied to the other socio-demographic
193 antecedents. For example, increasing levels of caregiving may prevent income

194 generation, depleting economic and health resources. Older people are likely to plan
195 more because they are closer to retirement. However, pre-retirees vary significantly in
196 their resources and proposed retirement timing, which would explain why the
197 relationship between age and planning can be relatively weak (Noone et al., 2010a).
198 Based on theory and empirical findings, the following predictions are made:

199 *H2: Age (H2.1) will have a positive effect, and caregiving a negative effect*
200 *(H2.2), on all planning domains. Men will report higher levels of financial planning*
201 *than women (H2.3), but lower levels across the other domains (H2.4).*

202 **Psychosocial antecedents of retirement planning**

203 *Job satisfaction.* Topa et al. (2009) showed that dissatisfied workers undertake
204 more general planning, perhaps so that they can leave the workforce sooner
205 (Kautonen, Hytti, Bögenhold, & Heinonen, 2012). However, more recent studies have
206 shown the opposite effect with respect to health planning, financial planning (Choi &
207 Choi, 2012), and general planning (Osman, Ahmad, Mohidin, & Sang, 2013). One
208 study found no relationship between satisfaction and planning (Cobb-Clark &
209 Stillman, 2009). Despite these recent findings, low job satisfaction was the strongest
210 predictor of retirement planning in Topa et al.'s meta-analysis, providing stronger
211 support for a negative relationship. Moreover, the small, industry specific sample
212 used by Choi and Choi (2012) suggests that their findings may not generalize to all
213 older workers.

214 *Perceived work involvement.* Work involvement is concerned with the
215 perceived value of work in one's life (Kanungo, 1982) and, for the purposes of this
216 review, encompasses similar constructs such as work centrality and work-role
217 identity. Increasing involvement with work is arguably detrimental for retirement
218 planning, as demonstrated in Topa et al.'s meta-analysis (Topa et al., 2009), one study

219 of general planning (McCullough, 2012), and two studies of financial planning (Choi
220 & Choi, 2012; Topa, Moriano, & Moreno, 2012). However, there are also exceptions
221 that show no relationship between work involvement and financial planning or
222 general planning (Noone, Stephens, & Alpass, 2010b). This may be because
223 perceptions of work involvement do not necessarily lead to negative experiences past
224 the early stages of retirement (Topa & Alcover; Wong & Earl, 2009). Nevertheless, the
225 majority of studies reviewed suggest a higher level of work involvement is
226 detrimental for planning activities.

227 ***Attitude to retirement.*** Topa et al. (2009) found no relationship between
228 retirement attitudes and planning after controlling for covariates. However, they did
229 identify a positive bivariate relationship and more recent research shows a positive
230 attitude towards retirement is associated with financial planning (Moorthy et al.,
231 2012), composite measures of planning (Griffin, Loe, & Hesketh, 2012), and general
232 planning measures (Cochran et al., 2012).

233 ***Locus of control.*** Wang et al. (2011) cite the lack of research into psychological
234 antecedents as a significant gap in the literature. This research therefore considers the
235 role of locus of control (Levenson, 1973) as an additional antecedent. Locus of
236 control and related constructs such as mastery and self-efficacy have been positively
237 associated with financial planning (Carr, Sages, Fernatt, Nabeshima, & Grable, 2015;
238 Davis & Hustvedt, 2012; Heraty & McCarthy, 2015a, 2015b) as well as lifestyle,
239 psychosocial, health, and composite measures (Earl & Archibald, 2014; Griffin et al.,
240 2012). In theory, those who feel less in control of their lives may be less inclined to
241 plan because these behaviors are likely to be perceived as futile.

242 Wang et al. (2011) argue that motivational resources in retirement are predicted
243 by low work involvement, low job satisfaction and retirement motivations (e.g.,

244 positive attitude). Given these relationships and our antecedent/resource argument,
245 these psychosocial antecedents may also function as pre-retirement motivational
246 resources. This means that job satisfaction and work involvement may be
247 motivational factors that encourage staying in work for longer and inhibit retirement
248 planning, whereas a positive retirement attitude and a high locus of control are
249 motivators of planning activities. The following hypotheses are therefore put forward.

250 *H3: Greater job satisfaction (H3.1) and greater work involvement (H3.2) will*
251 *have a negative effect on all planning domains. A positive retirement attitude (H3.3)*
252 *and higher locus of control (H3.4) will have positive effects on all planning domains.*

253 **Health**

254 ***Physical health.*** Topa et al. (2009) argue that the relationship between health
255 and retirement planning is ambiguous. Poor health could stimulate planning activities
256 (a negative relationship) and this is supported by studies of financial planning (Samsi
257 & Manthorpe, 2011; Topa et al., 2012) and general planning (Curl & Ingram, 2013;
258 Gupta & Larsen, 2010). Other research shows that poor health may be detrimental
259 with respect to financial planning (Choi & Choi, 2012; Cobb-Clark & Stillman, 2009;
260 Noone et al., 2012) and general planning (Chatterjee & Zahirovic-Herbert, 2010).
261 Topa et al. (2009) showed no relationship between health and planning. This finding
262 is consistent with a recent Australian study (Earl et al., 2015) and an earlier study in
263 New Zealand (Noone et al., 2010a). However, the association between poor health
264 with unintended early retirement (e.g., Australian Bureau of Statistics, 2017) and the
265 association between unintended retirement with less opportunity for planning (Noone,
266 O'Loughlin, & Kendig, 2013), suggest that better physical health will benefit all
267 forms of retirement planning.

268 **Psychological health.** Most studies exploring the relationship between
269 retirement planning and psychological health focus on planning promoting better
270 psychological outcomes. Less attention has been devoted to psychological health as
271 an antecedent of planning, although it would be expected that poor psychological
272 health might impede planning in several ways. It might be expected, for example, that
273 those with poor psychological health prefer more leisure time or they may attribute
274 work as a cause of psychological problems, and plan to withdraw as a consequence.
275 Other research has investigated the relationship between physical and psychological
276 health and preferences for retirement (Lee, Chen, Peng, Chiou, & Chou, 2016). They
277 reported that participants with depressive symptoms worried more about retirement
278 and were not eager for leisure time. This might in turn be explained by a concern for
279 financial security due to poorer earning capacity resulting from ill-health. As with
280 physical health, an early retirement due to poor mental health (Olesen, Butterworth, &
281 Rodgers, 2012) may limit opportunities to plan across all planning domains.

282 With respect to Wang et al's theory, health has a pivotal role in people's ability
283 to accumulate resources through retirement planning. Firstly, health plays a role in
284 determining workplace exit. Those who are forced to leave work early due to poor
285 health have less opportunity to save for retirement (financial planning) and socialize
286 with the retirement role (psychosocial planning). Secondly, poor health can limit
287 people's ability to stay active (health planning) and to develop the lifestyle they want
288 for retirement (lifestyle planning). As such, it is hypothesized that

289 *H4: Better physical health (H4.1) and better psychological health (H4.2) will*
290 *have a positive effect on all planning domains.*

291 **Retirement resources**

292 Topa et al.'s meta-analysis (2009) showed that retirement planning has a
293 positive effect on life satisfaction and health. However, one systematic review
294 suggests positive outcomes from planning occurred in only 13 of the 23 studies
295 reviewed (Barbosa, Monteiro, & Murta, 2016). To shed light on this discrepancy, this
296 section reviews the relationships between planning and resources in retirement that
297 reflect the six resource categories proposed by Wang et al. (2011). In the current
298 research, physical and emotional resources are reflected in health status (mental and
299 physical) and financial resources are captured by economic living standards.
300 Motivational, cognitive and social resources (relabelled psychosocial resources) are
301 captured by quality of life and self-perceptions of successful ageing. These particular
302 resources are put forward for testing because they represent the factors identified by
303 older people as the most important for a good life in retirement (Ipsos, 2015; Leung &
304 Earl, 2012). However, it should be noted that cognitive resources are relatively under-
305 represented in the current research.

306 ***Physical and emotional resources.*** Topa et al.'s meta-analysis (Topa et al.,
307 2009) showed that general retirement planning was positively associated with reduced
308 likelihood of mental and physical illness. Since then, Noone et al. (2009) used
309 longitudinal data from the Health and Retirement Study (HRS) to show that general
310 retirement planning is predictive of better health in retirement after controlling for
311 income, reason for retirement, and demographic variables. Financial planning has also
312 been linked to better psychological health (Irving, 2012) and general health
313 improvements in a U.S. follow-up study (Gubler & Pierce, 2014). However, a small
314 ($n=90$) longitudinal study did show that psychosocial planning was unexpectedly
315 associated with greater psychological distress (Yeung, 2013). Finally, the established
316 link between social participation and health for older people (Holt-Lunstad, Smith, &

317 Layton, 2010), suggests that lifestyle and psychosocial planning may also have health
318 benefits via the promotion of social roles in retirement.

319 ***Financial resources.*** Economic living standards are a direct measure of the
320 “consumption of goods and services necessary for wellbeing” and are affected by
321 factors such as income and asset holdings (Jensen, Spittal, & Krishnan, 2005; Tobias
322 & Mason, 2010, p. 6). A significant body of evidence suggests that financial planning
323 has positive benefits for living standards by increasing retirement wealth (Martin,
324 Guillemette, & Browning, 2016) and related factors such perceived savings adequacy
325 (Chou et al., 2014) and savings self-efficacy (Ellen et al., 2012). However, weak
326 correlations between non-financial planning domains and living standards found by
327 Noone et al. (Noone et al., 2010a), suggest that health, lifestyle, and psychosocial
328 planning will have no effect on future economic living standards.

329 ***Psychosocial resources.***

330 Wiggins et al. (2008) identify four QoL dimensions (Control, Autonomy, Self-
331 realization and Pleasure - CASP) that capture potential social and motivational
332 resources derived from retirement planning. For example, financial planning can
333 assist people to do the things they want to do (Autonomy), health planning may have
334 positive benefits for energy levels (Pleasure), lifestyle planning may promote a sense
335 that life is full of opportunities (Self-realization) and effective psychosocial planning
336 may prevent retirees from being left out (Control)(Hyde, Wiggins, Higgs, & Blane,
337 2003, p. 194).

338 The model of ‘successful aging’, described by John Rowe and Robert Kahn
339 (1987) shifted the focus of the study of aging from disease and decline to one
340 emphasizing health and growth. This influential model has shaped policy and
341 intervention toward supporting older people to avoid disease and disability, maintain

342 high mental and physical functioning, and remain socially engaged. Successful ageing
343 therefore captures all six of the resources put forward by Wang et al. (2011). The
344 emphasis on achieving “success” in older age has influenced “retirement lifestyles,
345 policy agendas, and anti-aging ideals” (Katz & Calasanti, 2014, p. 209). Pruchno and
346 Carr (2017) note recent developments that include paying attention to the subjective
347 assessments of successful ageing made by older people in order to understand how to
348 promote wellbeing in older age. Here, we consider how aspects of retirement
349 planning can contribute to older people’s own assessments of their ability to age
350 successfully post retirement.

351 *H5: Financial planning will have a positive effect on all retirement resources*
352 *(H5.1). Health planning (H5.2), lifestyle planning (H5.3) and psychosocial planning*
353 *(H5.4) will have a positive effect on all non-financial retirement resources.*

354 This literature review identifies a broad array of potential antecedents to
355 retirement planning and resources derived from planning activities, which have not
356 been tested in a single model using follow-up data (see Figure 1). The proposed
357 model builds on the strengths of Topa et al.’s meta-analysis and explores the role of
358 retirement planning as a mediator between antecedents and resources proposed in
359 Wang et al.’s (2011) model (*H6.1*).

360 INSERT FIGURE 1 ABOUT HERE

361

362

Materials and Methods

363 Participants and procedures

364 Participants were drawn from respondents to the 2006, 2008, and 2014 waves of
365 the New Zealand Health, Work, and Retirement study (Towers, Stevenson, Breheny,
366 & Allen, 2015). The study is a biennial postal survey of older persons in New
367 Zealand. In the initial 2006 survey, $n = 13,045$ persons aged 55-70 were randomly
368 selected from the New Zealand electoral roll and approached for participation via
369 post. An over-sample of persons identifying as being of Māori descent (Indigenous
370 New Zealanders) was undertaken to ensure adequate representation of this group. Of
371 the $n = 6,661$ persons who returned the 2006 questionnaire, $n = 3,135$ (47%) agreed to
372 longitudinal follow-up. Items regarding retirement planning were included in the 2008
373 ($n = 2,474$ respondents) and 2014 ($n = 1,688$ respondents) survey waves. Of the $n =$
374 1,562 who responded to the 2006, 2008, and 2014 survey waves, $n = 435$ were
375 selected for the current research. This represents people who were working for pay in
376 2008 but were fully retired by 2014. Data from 2014 was chosen over 2010 and 2012
377 in order to maximize the time since retirement. The study was approved by the
378 Massey University Human Ethics Committee.

379 Measures

380 **Antecedents.** All antecedents were measured in 2006, with the exception of
381 locus of control, which was measured in 2008.

382 *Gender* was measured with a dichotomous variable coded 1 for males (50.3% of
383 the sample) and 2 for females (49.7%). This is comparable to census data that
384 indicates women made up 51.6% of people aged 65-74 in 2013 (Statistics New
385 Zealand, 2013). *Age* was measured continuously in years and ranged from 62 to 79 in
386 2014.

387 *Education* was measured as participants' highest level of educational
388 attainment: No qualifications (1 [19.3%]); Secondary School (2 [17.5%]); Post-
389 secondary/trade (3 [43%]); and Tertiary education (4 [20.2%]).

390 *Income* was assessed by self-reported personal income before tax in the past 12
391 months. There was 38.4% missing data for personal income and missing values were
392 replaced with the mean.

393 *Occupation* was classified using the Australian and New Zealand Standard
394 Classification for occupation (Trewin & Pink, 2006). Participants were asked to
395 provide free text responses nominating their occupation (e.g., teacher) and responses
396 were coded into one of eight nominal single digit categories (i.e., managers [15.2%],
397 professionals [25.3%], technicians and trade workers [14%], community and personal
398 service workers [8.9%], clerical and administrative workers [17.1%], sales workers
399 [5.8%], machinery operators and drivers [4.7%], Laborers [8.9%]). The codes were
400 then transformed to occupational status score ranging from 18.5 (laborers) to 81.6
401 (professionals) approximating socioeconomic status of persons in that occupational
402 group using the McMillan, Beavis, and Jones (2009) approach. There was 41%
403 missing data for occupational SES and missing values were replaced with the mean.

404 *Physical and mental health* were measured using the physical and mental health
405 component summary scores of the Medical Outcomes Study Short Form (SF-12
406 version 2) (Ware, Kosinski, Turner-Bowker, & Gandek, 2002). Orthogonal physical
407 and mental health component scores were calculated using normative scores for an
408 older New Zealand population derived from the 2010 wave of the Health, Work, and
409 Retirement survey and factor score coefficients derived from the 1996/97 New
410 Zealand Health Survey (Ministry of Health, 1999). Factor score coefficients for
411 physical health scores give higher positive weights to physical health related sub

412 domains (e.g., physical functioning, role physical, bodily pain; sample item: ‘*Does*
413 *your health now limit you in... climbing several flights of stairs?*’) and coefficients for
414 mental health scores give higher weight to mental health related sub domains (e.g.,
415 mental functioning, role emotional, vitality; sample item: ‘*In past four weeks how*
416 *much of the time... have you felt downhearted and blue?*’).

417 The average physical health score at T1 (2006) was 51.97 (SD=8.80) and 47.82
418 at T3 (SD =7.50). The average mental health score at T1 was 49.60 (SD=7.50) and
419 50.57 at T3 (SD =7.80). With respect to representativeness, SF-36 scores for the
420 4,309 Health, Work and Retirement Study participants aged 55 to 64 were as follows.
421 For 55 to 59-year-olds, the mean score for physical health was 51.22 (SD=9.15) and
422 49.52 (SD=9.65) for mental health. For 60 to 64-year-olds the mean physical health
423 score was 50.00 (SD=9.22) and 49.94 (SD=9.55) for mental health (Stephens et al.,
424 2010). Although not directly comparable to the SF-12 scores used in this research, the
425 figures above suggest our sample is a reasonable representation of the entire study
426 sample, with respect to health in 2006 (T1). As the 2006 data collection was based on
427 a randomised sample of New Zealanders in this age group, we cautiously assume that
428 our sample did not differ substantively from the population with respect to health in
429 2006.

430 *Caregiving.* Caregiving intensity was assessed in two stages. Firstly,
431 participants indicated whether or not they were currently providing unpaid care for a
432 relative or friend. Caregivers indicated how often they provided care. Items were
433 coded to anchors as follows: Every day (5), 21.8%; Several times a week (4), 31.1%;
434 Once a week (3), 20.2%; Once every few weeks (2) 17.6%; or Less often (1) 9.2%.
435 Those that did not have a caregiving commitment were combined with the “Less
436 often” group. The variable was then dichotomized to reflect those providing care

437 several times a week or more (4 and 5) versus those providing care once a week or
438 less (1, 2 and 3).

439 *Locus of control* was assessed with 9 items eliciting participant agreement to
440 statements regarding their ability to influence the circumstances of their own life
441 (Sapp & Harrod, 1993) on a scale of (1) *Strongly agree* to (5) *Strongly disagree*
442 (coefficient alpha = .80; '*I feel like what happens in my life is mostly determined by*
443 *powerful people*'). A higher total score, calculated as the sum of items, indicates a
444 greater internal locus of control.

445 *Job satisfaction* was assessed using mean ratings of participant satisfaction with
446 different aspects of their job across 15 items (Warr, Cook, & Wall, 1979) on a scale of
447 (1) '*Extremely unsatisfied*' to (7) '*Extremely satisfied*' (coefficient alpha = 0.85;
448 sample item: '*The way the organization is managed*')

449 *Work involvement* was assessed by the Work Involvement Questionnaire
450 (Kanungo, 1982) using mean ratings of participant agreement to six items on the
451 importance of work in life on a scale of (1) '*Strongly disagree*' to (5) '*Strongly agree*'
452 (coefficient alpha = 0.75; sample item: '*Individual's personal goals group be work*
453 *oriented*').

454 *Positive Attitude to retirement* was assessed by mean ratings on the Expected
455 Adjustment Scale (Taylor & Shore, 1995) using three items related to positive
456 feelings about their capacity to adapt to retirement life on a scale of (1) '*Strongly*
457 *disagree*' to (5) '*Strongly agree*' (coefficient alpha = 0.86; sample item: '*I don't think*
458 *I will have any trouble handling retirement*').

459 **Retirement planning.** Retirement planning was measured in 2008 with a pilot-
460 study of the multi-dimensional Process of Retirement Planning Scale (PRePs) (Noone
461 et al., 2010a). The full scale conceptualizes retirement planning as a four-stage

462 process ranging from planning thoughts/cognitions to a final, behavioral or
463 “preparedness” stage. The items used in this research assess the final (‘preparedness’)
464 stage across domains of participants’ financial, health, lifestyle and psychosocial
465 planning (see Table 1). Items are endorsed by participants on a scale of (1) ‘*Not true*
466 *for me at all*’ to (5) ‘*Definitely true for me*’. Originally developed in New Zealand, the
467 scale has also demonstrated reliability and validity in Turkish (Gunay, 2013), Korean
468 (Kim, Kim, & Kim, 2012), and Brazilian samples (Rafalski & Andrade, 2016).

469 **Retirement resources.** All outcomes were measured in 2014.

470 *Physical health* and *mental health* were measured using the composite scores
471 from the SF-12 and calculated using the same method applied to the 2006 health
472 variables.

473 *Successful ageing* was by responses to the question, ‘*how successfully do you*
474 *consider yourself to be ageing?*’ on a scale of (1) *Extremely unsuccessfully* to (5)
475 *Extremely successfully*.

476 *Quality of Life (QoL)* was assessed with a 12-item version of the CASP
477 (Wiggins et al., 2008). The CASP-12 is non-health-based assessment of quality of life
478 developed for older persons and assesses aspects of control, autonomy, self-
479 realization and pleasure (sample item: ‘*I feel that the future looks good for me*’).

480 *Economic living standards* were measured with the Economic Living Standards
481 Index (ELSI, Jensen et al., 2005). The ELSI total score is categorized into seven
482 levels, with increasing values indicating a better economic living standard: (1) Severe
483 hardship (2) Significant hardship (3) Some hardship (4) Fairly comfortable (5)
484 Comfortable (6) Good (7) Very good.

485 **Analysis**

486 *Smart PLS 2.0* was used to test the psychometric properties of the PRePS scale
487 (reliability, discriminant and convergent validity, factor structure) to ensure it was
488 performing as intended. *AMOS v22* was then used to test the overall fit of the model
489 (model fit statistics are not available in *Smart PLS*) and to test the study hypotheses
490 with Structural Equation Modeling (SEM). The indirect unstandardized effects of the
491 antecedents on retirement resources via retirement planning were also examined for
492 statistical significance using bootstrapping techniques (2000 runs) (Hayes, 2009).

493 To test the factor structure of the PRePS, the proposed four-factor model (Table
494 1) was fitted to the data using *Smart PLS 2.0* (Ringle, Wende, & Will, 2005). PLS
495 works efficiently with small sample sizes and makes no assumptions about the
496 underlying data, such as data distributions. This estimation procedure is highly
497 recommended when the primary aims of applying SEM is to explain the variance of
498 the constructs (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). We also used the
499 bootstrapping method to test the significance of the items' loadings. Statistical
500 significance was established by bootstrapping 5000 samples with 435 cases, resulting
501 in a critical value of $t = 1.96$, $p < .05$.

502 According to the rules of thumb for the evaluation of measurement models,
503 outer (factor) loadings between .40 and .60 should be considered for removal (Hair et
504 al., 2014). Composite reliability is the preferred alternative to Cronbach's Alpha as a
505 measure of internal consistency, and the score obtained should be higher than .70.
506 Analysis showed that items for the health planning dimension showed inadequate
507 composite reliability. Two health planning measures assessing frequency of check-
508 ups and medical screening were removed due to low outer loading and because they
509 had performed sub-optimally in previous research (Noone et al., 2010a). Table 1
510 displays the results of the outer model, showing that the constructs of Financial

511 Planning, Health Planning, Lifestyle Planning, and Psychosocial Planning, exceed the
512 minimum requirements. Observed items' scores were used for the four factors.

513 INSERT TABLE 1 ABOUT HERE

514 *Convergent and discriminant validity:* These tests were undertaken to ensure
515 that items within each dimension (e.g., financial planning) converged sufficiently and
516 that each dimension adequately diverges from the others (e.g., financial planning
517 diverges from health, lifestyle and psychosocial planning). Average variance
518 extracted (AVE) is the recommended criterion and should be higher than .50 (Hair Jr
519 et al., 2014), although if composite reliability is higher than .60, the convergent
520 validity of the construct is adequate (Fornell & Larcker, 1981). As shown in Table 1,
521 the AVE combined with the composite reliability for each construct was satisfactory.
522 In regard to discriminant validity among constructs, the square root of AVE for each
523 construct is greater than its highest correlation with any other construct (Fornell &
524 Larcker, 1981, see Table 2) suggesting good discriminant validity between the
525 constructs assessed in the model.

526 Structural Equation Analysis was performed using AMOS.22 to test the
527 hypotheses. The fit of the model was assessed using chi-square and the goodness-of-
528 fit index (GFI), the adjusted goodness-of-fit index (AGFI) and the root mean square
529 error approximation (RMSEA). The procedure of re-specification of the model, taking
530 into account the critical ratios associated with the parameters and the modification
531 indexes, indicated that changes in the model that would improve its fit. The initial
532 model has nine endogenous variables and ten exogenous variables. The observed
533 values (age, gender, income, and occupation) or the mean of the scales have been
534 used as an indicator for the model.

535 Our initial model showed only a limited fit to the data, $\chi^2(87) = 818.37$,
536 CMIN/DF= 9,41; GFI = .79, AGFI = .54, RMSEA = .140. The statistical fit was
537 improved when we eliminated relationships without statistical significance, based on
538 their lower *critical ratios*. Also, we eliminated the antecedent locus of control and
539 caregiving, due to their non-significant statistical influence, and we imposed three
540 additional direct relationships between antecedents and resources: Physical health T1
541 → Physical health (T3), Mental Health (T1) → Mental Health (T3), and Gender →
542 Financial Wellbeing T3. The final model showed better statistical fit, $\chi^2(92) = 186.2$,
543 CMIN/DF=2,02; GFI = .96, AGFI = .92, RMSEA = .04. All remaining paths were
544 significant, and their standardized estimates are presented in Figure 2.

545 INSERT FIGURE 2 ABOUT HERE

546 Results

547 Correlation coefficients are presented in Table 2.

548 INSERT TABLE 2 ABOUT HERE

549 Hypotheses 1.1 – 1.3.

550 Income ($\beta=.29, p < .001$) and occupation ($\beta=.09, p < .05$) were associated with
551 financial planning, but not other domains of planning. Education was not associated
552 with any domain of planning.

553 Hypotheses 2.1 – 2.4.

554 Age was only associated with psychosocial planning ($\beta=.13, p < .01$). Gender
555 and caregiving showed no association with the retirement planning domains.

556 Hypotheses 3.1 – 3.4.

557 Decreased job satisfaction predicted only psychosocial planning ($\beta=-.10, p <$
558 $.05$). A positive attitude towards retirement predicted financial planning ($\beta=.10, p <$

559 .05), lifestyle planning ($\beta=.22, p<.001$) and psychosocial planning ($\beta=.10, p<.05$).
 560 Work involvement and locus of control did not predict any of the planning domains.

561 **Hypotheses 4.1 – 4.2**

562 Physical health predicted financial planning ($\beta=.13, p<.01$) and health planning
 563 ($\beta=.10, p<.05$). Mental health predicted health planning ($\beta=.12, p<.01$).

564 **Hypotheses 5.1 – 5.4.**

565 Financial planning predicted physical health ($\beta=.15, p<.001$), mental health
 566 ($\beta=.20, p<.001$), QoL ($\beta=.28, p<.001$), perceptions of successful ageing ($\beta=.20, p<$
 567 $.001$), and economic living standards ($\beta=.46, p<.001$). Health planning had a positive
 568 effect on physical health ($\beta=.10, p<.05$). Psychosocial and lifestyle retirement
 569 planning showed no independent relationships with retirement resources.

570 In addition, physical health at T1 predicted physical health at T3 ($\beta=.36, p<$
 571 $.001$), mental health at T1 predicted mental health at T3 ($\beta=.25, p<.001$) and female
 572 gender at T1 predicted lower economic living standards at T3 ($\beta=-.12, p<.01$).

573 **Hypothesis 6.1.**

574 In terms of the indirect effects, physical health had an indirect effect on all
 575 retirement resources ($p<.001$) except quality of life, via financial planning (see Table
 576 3 for unstandardized and standardized indirect effects). The same pattern of results
 577 was found for retirement attitude, but the relationships were only significant at the
 578 $p<.05$ level. Income had significant indirect effects on all resources via financial
 579 planning ($p<.001$). Finally, physical and mental health in 2006 had indirect effects on
 580 physical health in 2014 via health planning ($p<.05$).

581 INSERT TABLE 3 ABOUT HERE

582 **Discussion**

583 Findings provided some support for the proposed model of planning antecedents
584 and the resources that planning activities promote. Overall, income (H1.3), a positive
585 retirement attitude (H3.3), and physical health (H4.1) were notable antecedents to
586 retirement planning. However, mental health (H4.2), age (H2.1), occupation (H1.2),
587 and job (dis)satisfaction (H3.1) also played minor roles in predicting planning
588 behaviors. In turn, financial planning had a positive effect on all retirement resources
589 (H5.1) and health planning predicted better physical health resources in retirement,
590 partly supporting hypothesis 5.2. There was also partial evidence for the mediating
591 role of financial planning in explaining the relationship of physical health, income and
592 retirement attitudes with retirement resources (H6.1). However, the other domains of
593 planning showed no substantive mediation effects.

594 The pattern of antecedents differed to those found by Topa et al. (Topa et al.,
595 2009), but the resources that flowed on from planning are reasonably consistent
596 across the two studies. Financial planning and health planning (to a lesser extent) may
597 partly promote the transformation of pre-retirement antecedents into post-retirement
598 resources. This means that some people with limited socioeconomic resources and a
599 negative perception of retirement may need assistance with these planning activities
600 to promote resources in retirement.

601 **Antecedents of planning**

602 Findings suggest there are potential socioeconomic barriers to financial
603 planning, which is consistent with previous research (Chatterjee & Zahirovic-Herbert,
604 2010; Kock et al., 2012; Noone et al., 2012; Topa et al., 2012). However, the fact that
605 socioeconomic status (SES), health, and retirement attitudes only predicted 14% of
606 the variance in financial planning, suggests that a substantial proportion of people
607 experiencing financial disadvantage are still able to undertake planning behaviors.

608 Future research needs to better understand the factors that facilitate planning for lower
609 socioeconomic groups. In their study of financial literacy, Blackmore and Prendergast
610 (2011) found that financial planning activities were predicted by financial attitudes
611 (e.g., financial self-efficacy) after controlling for the effects of socioeconomic
612 variables. Moreover, the effects of financial attitudes on planning activities were more
613 consistent, and in most cases stronger, than the effects of SES. This means that a
614 positive sense of financial self-efficacy has the potential to facilitate financial
615 planning, even for those of lower SES.

616 In this research, planning behaviors were driven more by positive retirement
617 attitudes than perceptions of current employment and perceived control. Job
618 satisfaction and work involvement had virtually no effect on planning, which was
619 counter to our hypotheses (and Topa et al.'s meta-analysis), but not surprising given
620 similar findings in other research (Cobb-Clark & Stillman, 2009; Noone et al.,
621 2010a). The discrepant findings may be an artifact of different sampling techniques
622 (e.g., samples from organizations versus broader population samples), different
623 measures for the same antecedents, follow-up versus cross-sectional data, or using
624 domain-specific rather than general measures of planning. Therefore, differences
625 between the two studies should be taken with caution and explored further.

626 Good health is a potential antecedent for retirement planning, but its reach
627 appears to be relatively weak, domain specific, and its mechanisms remain unclear.
628 There was evidence to suggest good health was associated with higher levels of health
629 planning and financial planning, which is consistent with other studies (Choi & Choi,
630 2012; Cobb-Clark & Stillman, 2009; Noone et al., 2012; Topa et al., 2009). However,
631 health did not predict lifestyle or psychosocial planning. This is not surprising given
632 the ambiguity in the literature (Topa et al., 2009). Yet, as Topa et al. argue, poor

633 health may hinder or encourage planning and it is possible that other factors may
634 influence the direction of this relationship.

635 The null effects of locus of control on the planning domains were unexpected
636 given the relatively consistent findings in the literature (Davis & Hustvedt, 2012; Earl
637 & Archibald, 2014; Griffin et al., 2012). However, this may relate to the way control
638 was measured. Donaldson, Earl, & Muratore (2010) argue that measures of mastery
639 (Pearlin & Schooler, 1978) that place less emphasis on the perceived power of others,
640 are preferable over locus of control measures used in this research. Future research
641 would benefit from using locus of control variables more directly related to retirement
642 (Davis & Hustvedt, 2012; Griffin et al., 2012) as it would provide more specific
643 information for educational initiatives.

644 Of the other socio-demographic antecedents, gender, age, and caregiving had
645 limited influence on retirement planning. Although our gender hypotheses were not
646 supported, the null finding is consistent with other studies (Chou et al., 2014; Noone
647 et al., 2010a) suggesting that more detailed research is warranted. Future studies with
648 larger samples could determine if men and women undertake different levels of
649 financial, health, lifestyle, and psychosocial planning according to their
650 socioeconomic characteristics. The null finding for age was unexpected, however, this
651 may be because of the limited variability in age ($M= 61.6, SD=3.8$). Age effects could
652 have been identified if the sample represented people in their 40s and early 50s. The
653 level of care provided to others also had no impact on planning. One reason for this
654 lack of association could be the way caregiving was measured. Although the measure
655 captured the intensity of the caregiving role, it did not measure the potential burden
656 associated with caregiving nor its duration. It may be that caregiver burden is a
657 stronger (negative) predictor retirement planning than the intensity of the role.

658 **Retirement resources derived from planning**

659 Financial preparedness for retirement had positive effects on all resources,
660 supporting previous claims for the benefits of financial planning (Adams & Rau,
661 2011; Wang & Shultz, 2010). Health planning also had positive benefits for physical
662 health in retirement, which is a relatively novel finding in the literature, although the
663 benefits of health planning for retirement satisfaction have been noted previously (Lee
664 & Law, 2004).

665 There was insufficient evidence to conclude that lifestyle and psychosocial
666 planning have benefits in retirement. For psychosocial planning, this may be because
667 the measures were not specific enough to capture preparation for new social roles in
668 retirement. That is, two items captured exit from the worker role while the third
669 assessed the extent participants discussed retirement experiences with retirees.
670 Neither the psychosocial or lifestyle questions capture planning for change in social
671 networks, which given the known benefits of social contacts in older age (Holt-
672 Lunstad et al., 2010), may be a fruitful area for future research.

673 Another reason for the lack of association could be that expectations of
674 retirement lifestyle and social relationships derived from planning activities were not
675 realized when participants eventually retired. Although argued that retirement
676 planning functions by clarifying expectations (Earl et al., 2015), this may not be true
677 of everyone particularly given the planning data was collected just before the Global
678 Financial Crisis, which depleted retirement wealth. Alternatively, achieving good
679 health, quality of life and successful ageing may be too heavily dependent on wealth
680 in the New Zealand context for non-financial planning to have an effect. This
681 speculation is supported by strong positive association between economic living
682 standards and quality of life in this research. However, the financial context of older

683 New Zealanders also needs to be considered to better understand the non-significant
684 finding.

685 New Zealand adults aged 65+ are a materially advantaged group relative to
686 younger age cohorts (Perry, 2013), with around 7% reporting experiences of material
687 hardship (Krishnan, Jensen, & Ballantyne, 2002; Perry, 2013). A universal non-means
688 tested public pension scheme, NZ Super, set at around just 40% of the national
689 average wage, is available to adults aged 65+ who meet minimum residency criteria.
690 This represents a key source of income (Perry, 2018), with only 12% of adults aged
691 65+ deriving income from other pension schemes (Statistics New Zealand, 2015).
692 Average ELSI scores for the current participants (M=5.56, SD=1.30, range=1-7)
693 suggest that the majority of the sample were financially comfortable. It is therefore
694 also possible that resources which could have been gained through non-financial
695 planning activities, had already been accrued by virtue of being relatively financially
696 secure from earlier in life. This could explain why non-financial planning activities
697 did not have a significant impact on resource accrual. Future research is therefore
698 needed to better understand the mechanisms that link antecedents with planning and
699 planning with resources, for people who have fewer material resources.

700

701 **Limitations**

702 There are some limitations that should be considered. Although the research
703 uses follow-up data, it still cannot make claims of cause and effect. The research
704 could also not account for all known predictors of financial planning. Our sample was
705 also relatively small, the gender balance and levels of physical and mental health were
706 reasonably comparable to the older NZ adult population in the same age group
707 (Statistics New Zealand, 2013; Stephens et al., 2010). As this research considers the

708 effects of retirement planning on resources up to six years into retirement, it is also
709 not placed to understand the long-term benefits. We were also not able to determine
710 whether participants were forced (or not) into an early retirement. Future research
711 may be better placed if it can examine established and emerging antecedents of
712 retirement planning in context of choice around the decision to retire. We also note
713 that cognitive resources were not examined in this research. Cognitive decline is
714 related to early retirement (Hudomiet, Parker & Rohwedder, 2018) and reduced
715 physical functioning, life satisfaction and psychological well-being (Yeung, 2018),
716 suggesting that future research is warranted. Finally, this research was unable to
717 examine the quality of retirement adjustment as an outcome of retirement resources
718 due to sample size restrictions. We focused instead on the relationship between
719 planning and retirement resources, due to their relevance for policy and practice.
720 However, future research could explore, for example, the role of retirement resources
721 in mediating the relationship between planning and adjustment quality. An important
722 factor to consider in this analysis would be the moderating role of time since
723 retirement as it is likely to influence resources and how people adjust to retirement.
724 Recent research has shown either ambiguous findings (Barbosa et al., 2016) or treated
725 time since retirement as a control variable only (Wetzel, Bowen & Huxhold, 2019).
726 Further research is therefore needed.

727 **Implications**

728 An important aspect of financial preparedness considered in this research was
729 anticipated mortgage-free home ownership, a factor long promoted in New Zealand
730 policy (Murphy, 2014). Although housing ownership in many developed countries is
731 decreasing (Arundel & Doling, 2017), studies of housing tenure and health
732 consistently show that owner-occupants have better mental and physical health,

733 higher quality of life and wellbeing, more social ties, and a lower mortality rate than
734 renters and this becomes more important in older age (Szabo, Allen, Alpass, &
735 Stephens, 2017). Longitudinal research indicates that tenure becomes even more
736 important in older age (Howden-Chapman, Chandola, Stafford, & Marmot, 2011).
737 Wang et al. (Wang, Koo, & O'Hare, 2016) have argued that pre-retirees with fewer
738 socioeconomic resources will require more government support as retirement systems
739 shift towards self-funded retirements. Our findings support this argument, particularly
740 with respect to maintaining housing affordability and the protection of economic
741 living standards.

742 Findings support the continued provision of financial literacy education.
743 Financial literacy has been identified as a driver of financial planning behaviors
744 (Blackmore & Prendergast, 2011; Lusardi & Mitchell, 2006). However, financial
745 literacy interventions have questionable effectiveness, particularly over longer periods
746 of time (Fernandes, Lynch Jr, & Netemeyer, 2014). Xu and Zia (2012) argue that
747 interventions may be more effective if they focus initially on raising awareness of
748 financial products and services, promote positive attitudes towards financial matters,
749 and leverage social networks to promote spillover effects to peers. Not surprisingly,
750 interventions should be targeted to the specific needs of at-risk groups and specific
751 topics of interest (Xu & Zia, 2012).

752 The results also support strategies designed to promote positive attitudes
753 towards retirement at both the population- and, paradoxically, workplace-level.
754 Newman et al. (Newman, Jeon, & Hulin, 2013) identify 14 factors that influence
755 retirement attitudes including work, financial situation, family, level of social
756 interaction, and health. They suggest that a combination of positive and negative
757 attitudes creates a complex picture, which makes it difficult to produce generalized

758 intervention strategies. However, policy focus on affordable housing, health care,
759 aged care and guaranteed minimum retirement income levels could reduce retirement
760 anxieties, particularly for middle-income groups (Colic-Peisker, Ong, & Wood, 2015;
761 Mansvelt, Breheny, & Stephens, 2014). Organizations also have a role to play.
762 According to Cochran et al. (2012), age management policies such as the provision of
763 flexible work arrangements, additional training and phased retirement, promote
764 preparedness for retirement, which in turn leads to a more positive attitude towards
765 retirement. While this may actually lead to earlier retirements, which may be
766 problematic for some employers, effective age management policies could help to
767 attract older workers looking for more sustainable employment to fund their
768 retirement (Cochran et al., 2012).

769 Findings suggest that financial and health planning may facilitate the
770 transformation of pre-retirement antecedents and post-retirement resources. Here,
771 antecedents are directly related to their relevant resource (e.g., physical health prior to
772 retirement predict physical health resources in retirement). However, the mediatory
773 role of retirement planning also links antecedents with qualitatively *different* post-
774 retirement resources. For example, health at baseline (antecedent) predicted health
775 planning, which predicted health in retirement (physical resources). However,
776 financial planning appeared to promote all resources and was influenced by a range of
777 socio-economic, socio-demographic, and psychosocial antecedents. Although further
778 research is needed, findings suggest that financial retirement planning may play a
779 specific transitional role in the Resource-Based Dynamic Process model (Wang et al.,
780 2011).

781 This study sought to extend the earlier work by Topa et al. (2009) and explore
782 the role of planning as a transition variable. By knowing antecedents in advance, we

783 can use these to encourage planning and tailor interventions. Some types of planning
784 are more accessible to different groups than others. The challenge is to design
785 interventions that “engage” the “least engaged”. If, for example, positive attitude to
786 retirement is a predictor of planning, it may be necessary to start there rather than
787 assuming that all people will plan. Understanding the outcomes of planning can
788 improve engagement at a micro, meso, and macro level. If having a good financial
789 plan will influence a range of positive outcomes, then this provides the impetus for
790 planning programs to be provided by organizations and by government. The solution
791 to better retirement outcomes is not necessarily the exclusive domain of the
792 individual, solutions may also exist at the meso and macro level.

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1156 Figure 1: Path model of hypothesised relationships between the study variables

1157 * $p < .05$, ** $p < .01$, *** $p < .001$

1158 Figure 2: Path model of statistically significant relationships between the study variables

Table 1.

Measurement model: reliability and convergent validity for PRePS

<i>Latent variable</i>	<i>Indicator</i>	<i>Lambda</i>	<i>Composite Reliability</i>	<i>AVE</i>
Financial planning (T2)	By the time I retire I will have sufficient income, investments, and/or superannuation to ensure the standard of living I want in retirement	0.91	.84	.73
	By the time I retire I will own a house without a mortgage	0.79		
Health planning (T2)	I only eat foods that will benefit my long-term health	0.61	.73	.47
	I try to keep physically active. (e.g. by taking regular walks, playing sport, or doing yoga etc)	0.74		
	I avoid unhealthy behaviours such as excessive drinking and cigarette smoking	0.69		
Lifestyle Planning (T2)	I am actively developing ways to spend my time when or if I retire	0.82	.77	.53
	There are many things I could do with my time if I was forced to retire today	0.70		
	I have recently taken up new interests, activities, or hobbies	0.66		
Psychosocial Planning (T2)	I am separating myself from my work	0.78	.73	.48
	I am reducing or will soon reduce my work hours	0.66		
	I often speak to retired people about their experiences of retirement	0.63		

Table 2

Descriptive statistics and correlation matrix

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Age (T1)	61.57	3.80	1																			
2. Gender (T1)	-	-	-.07	1																		
3. Education (T1)	-	-	-.05	-.05	1																	
4. Income (T1)	35567.6	22795.6	-.14**	-.23**	.09**	1																
5. Occupation (T1)	-	-	.04	-.17**	.42**	.18**	1															
6. Physical Health (T1)	51.97	8.80	-.06	-.04	.08	.09	.05	1														
7. Mental Health (T1)	49.60	7.50	.11*	-.12*	.04	.10*	.08	.04	1													
8. Caregiving (T1)			.10*	.05	-.02	.00	.02	-.11*	.01	1												
9. Work involvement (T1)	2.66	0.51	.16**	-.07	-.13**	-.09	.00	-.05	-.07	.06	1											
10. Job Satisfaction (T1)	5.20	0.99	.14**	.00	.03	.09	.15**	-.02	.24**	-.03	.10*	1										
11. Positive attitudes (T1)	3.90	0.85	-.04	-.05	.07	.06	.07	.11*	.17**	.04	-.09	.11*	1									
12. Locus of control (T2)	29.20	3.80	-.06	.04	.07	.12*	.14**	.06	.11*	.02	-.14**	.10*	.15**	1								
13. Lifestyle plan (T2)	3.25	1.00	-.04	.03	.08	-.03	.07	-.02	.03	.01	-.03	.07	.23**	.04	.85							
14. Health plan (T2)	3.70	0.86	-.03	-.06	.08	.10*	.04	.09	.12*	-.01	-.05	.09	.10*	.07	.22**	.69						
15. Financial plan (T2)	3.73	1.20	-.01	-.05	.11*	.33**	.20**	.16**	.03	-.08	.02	.12**	.15**	.15**	.17**	.26**	.73					
16. Psychosocial Plan (T2)	2.32	0.75	.10*	.04	.11*	-.09	.09	-.05	.02	-.06	-.00	-.04	.11*	.00	.36**	.14**	.15**	.69				
17. ELSI 2014 (T3)	5.56	1.30	-.05	-.11*	.05	.21**	.14**	.21**	.20**	-.05	-.07	.19**	.25**	.22**	.10*	.12*	.47**	.04	1			
18. Physical health (T3)	47.82	10.10	-.10*	-.00	.09	.09	.14**	.45**	.15**	-.12*	-.13**	.03	.11*	.15**	-.00	.15**	.22**	.04	.36**	1		
19. Mental health (T3)	50.57	7.80	-.06	-.01	.08	.14**	.11*	.15**	.38**	-.03	-.07	.12*	.14**	.14**	.01	.10*	.20**	-.04	.32**	.14**	1	
20. Success aging (T3)	3.91	0.63	-.01	.06	.05	.11*	.08	.21**	.27**	.06	-.07	.18**	.17**	.10*	.13**	.13**	.26**	.04	.35**	.35**	.38**	1
21. Quality of life (T3)	28.99	5.40	-.09	.04	.15**	.16**	.18**	.26**	.28**	-.09	-.06	.14**	.19**	.21**	.07	.14**	.29**	-.04	.51**	.36**	.53**	.49**

Note: N=435; Gender coded as 1= Male, 2= Female; Income = Net personal Annual income, Wave 1; ELSI: Economic Living Standards Index.

Values in the diagonal for the four PRePS factors are the root square of Average Variance Explained.

Table 3: Unstandardized indirect effects, significance levels and standardized indirect effects

Indirect effects			Unstandardized estimate (<i>p</i>)	Standardized estimate	
T1 variable	→	T2 variable	→	T3 variable	
Physical health		Financial planning	Physical health	.021 (<i>p</i> <.001)	.0195
			Mental health	.021 (<i>p</i> <.001)	.026
			Quality of life	<i>ns</i>	
			Successful ageing	.002 (<i>p</i> <.001)	.029
			ELSI	.009 (<i>p</i> <.001)	.138
Physical health		Health planning	Physical health	.011 (<i>p</i> <.05)	.010
Mental health		Health planning	Physical health	.015 (<i>p</i> <.05)	.012
Income		Financial planning	Physical health	.000 (<i>p</i> <.001)	.042
			Mental health	.000 (<i>p</i> <.001)	.058
			Quality of life	.000 (<i>p</i> <.001)	.081
			Successful ageing	.000 (<i>p</i> <.001)	.067
			ELSI	.000 (<i>p</i> <.001)	.133
Occupation		Financial planning	Physical health	<i>ns</i>	
			Mental health	<i>ns</i>	
			Quality of life	<i>ns</i>	
			Successful ageing	<i>ns</i>	
			ELSI	<i>ns</i>	
Retirement attitude		Financial planning	Physical health	.166 (<i>p</i> <.05)	.015
			Mental health	.165 (<i>p</i> <.05)	.020
			Quality of life	<i>ns</i>	
			Successful ageing	.017 (<i>p</i> <.05)	.023
			ELSI	.071 (<i>p</i> <.05)	.046

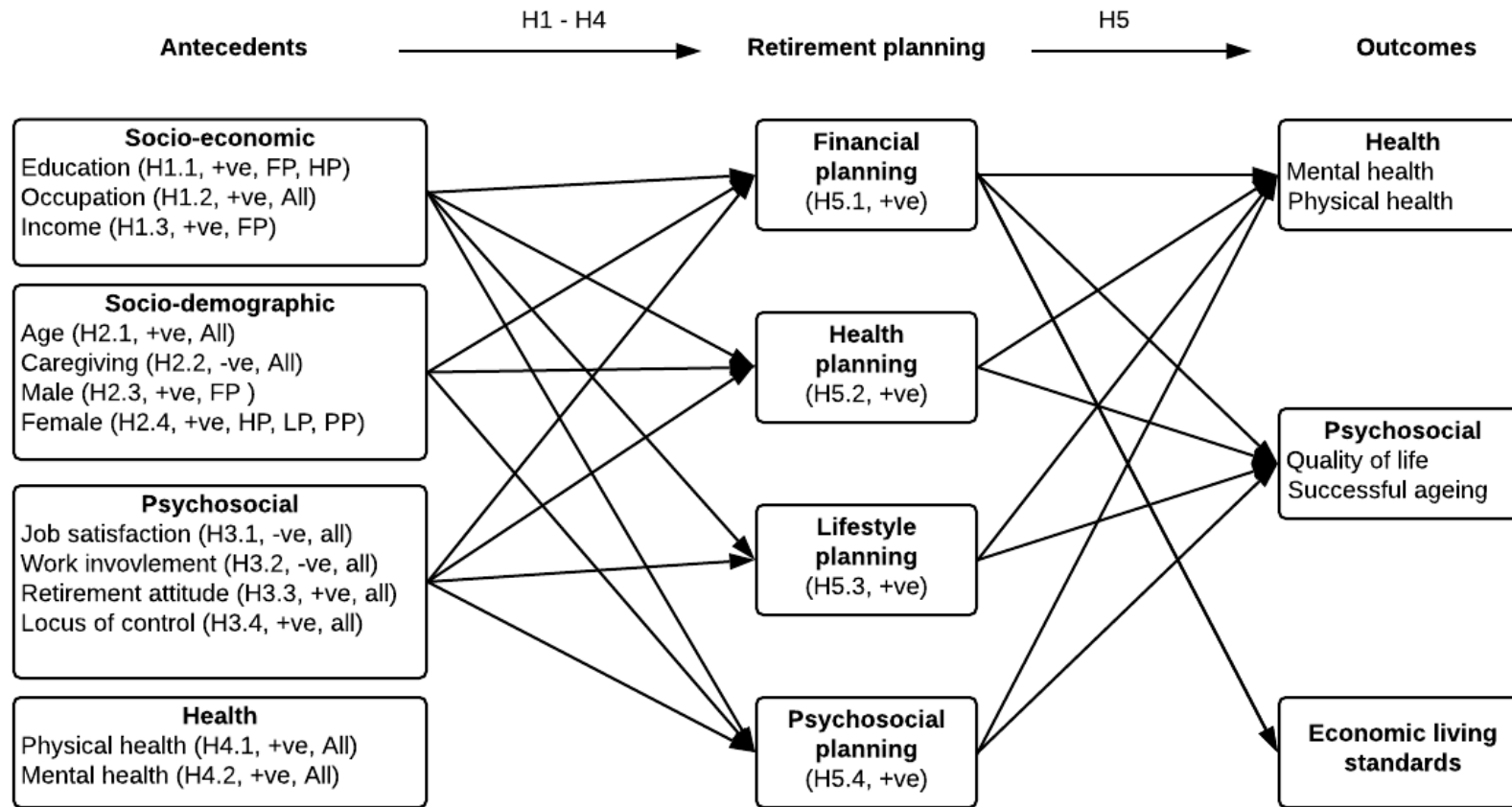


Figure 1.

Hypothesized relationships between the antecedents and outcomes of retirement planning

Note: FP=financial planning, HP=health planning, LP=lifestyle planning, PP=psychosocial planning, All=all planning domains

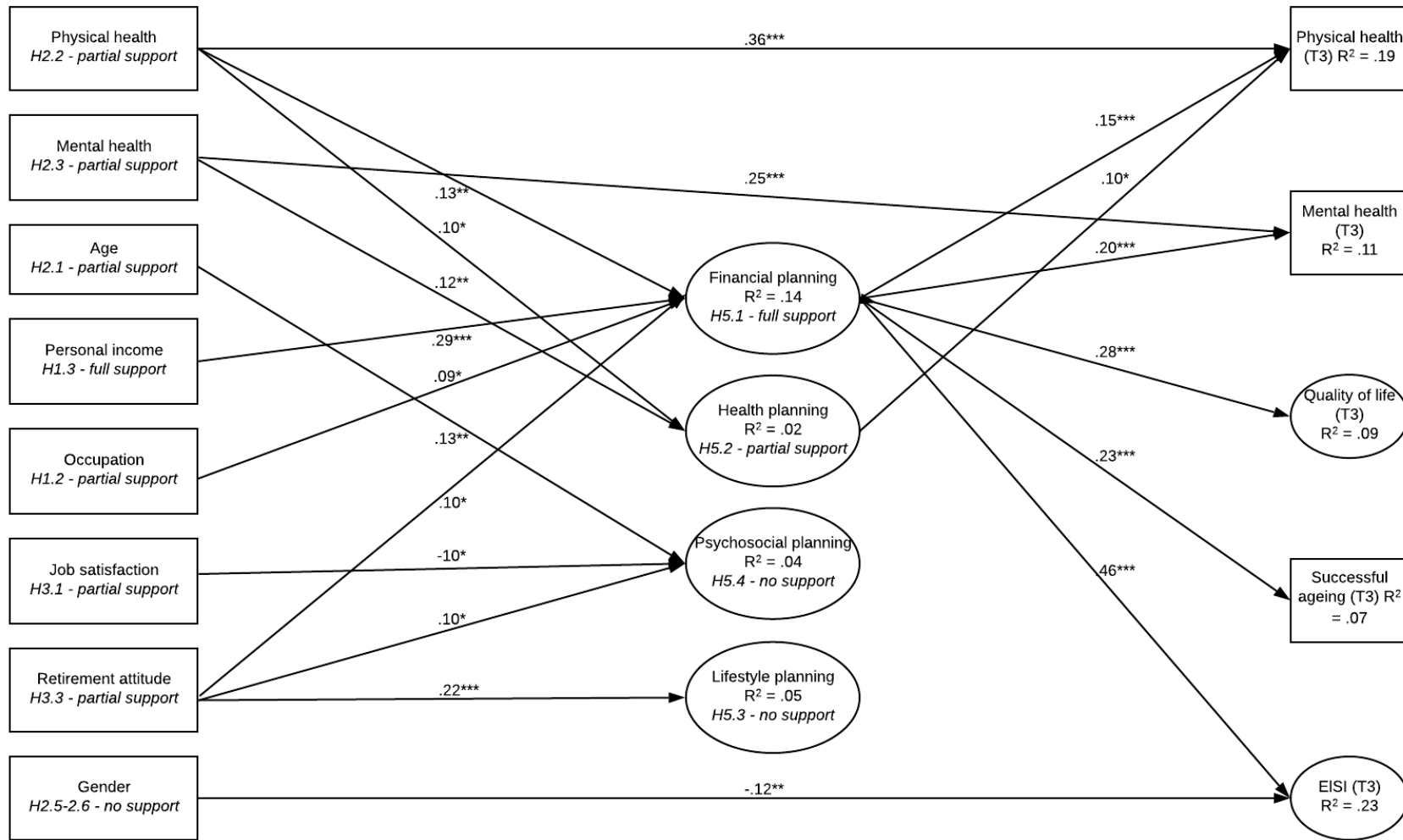


Figure 2.

Structural equation model showing significant standardized regression coefficients between the study variables.

Note: *** $p < .001$; ** $p < .01$; * $p < .05$; + $p < .10$. ELSI = Economic Living Standards.