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Chapter 4

ON THE RELATIONSHIP BETWEEN CAREER SELF-MANAGEMENT AND CAREER OUTCOMES: DO CAREER CHOICES MATTER?[8]

Abstract

This three waves longitudinal study examined (1) the causal direction of the relationship between employees' career capital (as reflected through the "three ways of knowing") and indicators of career outcomes (i.e. career satisfaction, salary and organizational commitment), and (b) whether these relationships differed across career choices, by comparing the results for those employees who customize or not their career profile (through the use of an organizational career management). The results for the total sample revealed significant continuous effects between career capital and career outcomes only for the cross-sectional relationships. Nevertheless, this study was the first one to find reversed effects of career satisfaction and organizational commitment on career capital development. Furthermore, significant career choices differences were found in the level of investments in three ways of knowing, career satisfaction and salary, both across time as well as in the cross-lagged effects. The results suggest that the one-directional view on the link between career capital development and career outcomes proposed in the "intelligent career" framework does not apprehend the full picture. More longitudinal design research is needed to take a dynamic perspective.

Keywords: Career Self-Management; Three Ways of Knowing; Career Outcomes; Career Choices; Organizational Career Management; Mass Career Customization.

[8] This is an original work. An adapted version of this paper is currently in preparation for submission to the *Journal of Career Development*.

Introduction

In the current rapidly changing work environment, it has been repeatedly emphasized that contemporary employees should be investing in their careers, by taking responsibility on managing them (Arthur et al., 1995; Hall & Mirvis, 1996; King, 2001; Sturges et al., 2000). This career behavior individuals engage in has been extensively studied under the notion of career self-management (Sturges et al., 2010). Recent empirical studies found that those who self-manage their careers, through the proactive development of career capital will be more successful (Eby et al., 2003; Inkson & Arthur, 2001).

While the individual benefits are indisputable, career researchers have been inquisitive regarding the consequences of career self-management on individuals' loyalty to their firms. Consequently, organizational researchers have recognized the importance of organizations in being part of this conversation (Kossek, Roberts, Fisher, & Demarr, 1998; Orpen, 1994), thus becoming partners and collaborators in managing their employees' careers (Baruch, 2006). In practice, firms began introducing different career management practices to increase commitment, as well as provide employees with career support.

Furthermore, recent studies have simultaneously looked at career management from both individual and organizational perspectives. This line of research promotes the idea that these are two complementary sides, rather than mutually exclusive. Accordingly, it is suggested that both organizational and career self-management could have an impact on individual and organizational outcomes. For example, evidence shows that the development of career capital, through the use of organizational career management practices, have an effect on employees' development, attitudes, commitment and performance (Eby et al., 2005; Sturges et al., 2005). However, the vocational literature gives very little attention to the impact of employers and organizations on managing individuals' career (Inkson & King, 2011).

Lately, it has been suggested that empowering employees to proactively investing in the development of career capital is important for employees' employability in the internal labor market (Fugate et al., 2004; Van der Heijde & Van der Heijden, 2006). In fact, taking career self-management initiatives (by developing career capital) can lead to higher employees' expectations for career support (De Vos, Dewettinck, et al., 2009). However, the question that still remains is how, through career capital development, employees make use of organizational career management; what are the choices employees make while using these career management practices? How it affects career outcomes? And how long it will take for these effects to take place?

Whereas previous research has addressed the multifaceted dynamics between career self-management and organizational career management, this study investigates the impact of career choices (through the use of organizational career management) on the relation between career capital development and employees' career outcomes. Career choices are important decision-making processes people engage in with regard to their vocational development. From vocational perspective, these are psychological processes, which concern individual-occupation congruence, time-based phases of career development, and occupational choice decision-making (D. Brown & Associates, 2002). In the work context, career choices may have effect on employees' success, performance, and career as well as organizational commitment (C. Brown, George-Curran, & Smith, 2003; D. Brown, 2002; Chung, 2002; Earl, Minbashian, Sukijjakhamin, & Bright, 2011; Kieffer, Schinka, & Curtiss, 2004; Krumboltz, 1994; Tokar et al., 1998).

In this study we further identify the importance of organizational perspective when considering individual career choices. Given the inter-relatedness of individual and organizational career management activities, the main assumption is that employers facilitate employees' career choices and use of organizational career practices, which are associated

with career capital development, commitment and performance (Sturges et al., 2005). Hence, we expect that a successful organizational career management tool should allow employees to take decisions, given their career desired outcomes, jointly with their managers regarding the pace, workload, schedule, location and responsibilities at work. This in turn would determine employees' success and commitment.

Finally, this study makes a methodological contribution by using a longitudinal design. Although career capital are often regarded as a key determined of career outcomes, studies examining these links relied on cross-sectional data designs (e.g., Abele & Wiese, 2008; De Vos & Soens, 2008; Eby et al., 2003; Kuijpers et al., 2006; Murphy & Ensher, 2001). This challenges any casual inferences that could be drawn from the data, subsequently overlooking the effects of time on how people develop, behave and grow (Ployhart, Holtz, & Bliese, 2002). Drawing on data from 478 Dutch workers, the present study was designed to fill this gap by examining the longitudinal relationships among career self-management and career related outcomes in the context of career choices.

In the following section we first start with defining career outcomes. We then refine the idea of career self-management to describe the relationship of career capital development and career outcomes over time. We further extend this bidirectional relationship by looking at it from an organizational career management perspective. We continue with developing our empirical setting and finally discuss our key findings. The main key concepts covered in this chapter are portrayed in figure 4.1 and include career self-management (i.e. career capital development), career outcomes and organizational career management (i.e. career choice).

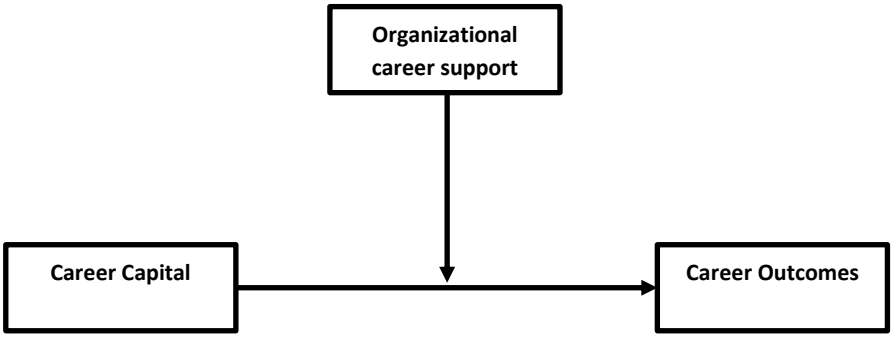

Figure 4.1 Overview of study's concepts

Career capital development and career outcomes

Career outcomes are work-related and psychological accomplishments stemming from one's work experiences over time (Arthur et al., 2005; Judge, Cable, Boudreau, & Bretz, 1995). It is the positive outcome of one's career experiences, and is based on the assessment of both objective social comparisons and subjective feelings. The first includes tangible career outcomes such as salary, promotion, and job level indices, whereas the latter involves affective and attitudinal indicators such as career satisfaction, organizational commitment and turnover intentions (Dries, Pepermans, & Carlier, 2008; Heslin, 2005; Seibert, Kraimer, & Crant, 2001). Considering the importance of both domains for one's success, we address career satisfaction and organizational commitment (subjective), as well as salary (objective).

Given the increased individualism in employment relations, scholars have suggested that success is highly driven by the initiatives individuals take to manage their own careers (Briscoe et al., 2006; DiRenzo & Greenhaus, 2011). DeFillippi and Arthur (1994) propose that these career self-management initiatives are manifested through the development of career capital. Conceptualized under the intelligent career framework, Arthur and his colleagues distinguish among three distinct career capital, also known as the three ways of knowing. The development of this career capital involve the "accumulation of information

and knowledge embodied in skills, expertise, and relationship networks that are acquired through an evolving sequence of work experiences over time" (Bird, 1996, p. 150). Thus, accumulating career capital over time provides developmental opportunities through which individuals' employability and success are affected. We further refine this definition and differentiate between two components - reflective and behavioral (De Vos & Soens, 2008).

Reflective career capital concerns the development of career insight (knowing-why), as it relates to one's motivational energy and aspirations. It reflects an individual's response to the question *"Why you work?"* and involves one's openness to explore new opportunities (DeFillippi & Arthur, 1994). As such, knowing-why captures individual's proactive engagement and self-steering in planning and motivating career goals (Arthur et al., 1999; Singh et al., 2009). Meeting these professional expectations should in turn enhance one's own career identity and ambition, thus driving higher success (Eby et al., 2003; Seibert et al., 1999; Tharenou & Terry, 1998; Wayne, Liden, Kraimer, & Graf, 1999). Thus, those who score high on knowing-why are more ambitious, open for professional growth and on the lookout for developmental opportunities.

The behavioral career capital involves the initiatives taken to develop and manage one's core capacities (knowing-how) and professional relationships (knowing-whom). Knowing-how reflects an individual's response to the question *''How do you work?"* (DeFillippi & Arthur, 1994). It is broadly covered by the term "human capital" (Becker, 1964) and includes the repertoire of knowledge, skills, and expertise developed through continuous vocational learning, education and training in the work environment (Tharenou, 1997). By developing a broad transferable skill base, which can be applied across organizational boundaries, individuals increase their value and in turn their success (Eby et al., 2003; Igbaria & Chidambaram, 1997; Judge, Kammeyer-Mueller, & Bretz, 2004; King, Burke, & Pemberton, 2005; Tharenou, 2001; Wayne et al., 1999).

Finally it is through knowing-whom investments that individuals are able to develop and maintain vital relationships in the work environment (DeFillippi & Arthur, 1994). It reflects an individual's response to the question *"With whom do you work?"* and it captures the value embedded within, available through and derived from one's "social capital" (Nahapiet & Ghoshal, 1998). This involves developmental relationships and career communities nested within this competence, which are key sources for psychosocial and career support, and may influence career outcomes (Ensher et al., 2001; Forret & Dougherty, 2001, 2004; Higgins & Kram, 2001; Polly Parker, Arthur, & Inkson, 2004).

The association of the career capital and career outcomes has been widely studied. A growing body of empirical studies, including meta analyses, have found that there is a relationship between the development of all forms of career capital and both objective and subjective career success (Allen et al., 2004; Colakoglu, 2011; De Janasz & Sullivan, 2004; Eby et al., 2008, 2003; Kammeyer-Mueller & Judge, 2008; Nabi, 2003; Ng et al., 2005; Raabe et al., 2007). Although less researched, recent empirical evidence demonstrates the association of career capital and employees attitudes towards the organization, such as commitment (De Vos, Dewettinck, et al., 2009; Sturges et al., 2002). Nevertheless, much of this research is limited by cross-sectional design, preventing us from establishing whether the association with career outcomes relates to pre-existing differences in individuals' knowing-why, -how or -whom (e.g., Eby et al., 2003). Longitudinal designs could also accommodate for other moderating effects such as organizational career practices. This is imperative to help us understanding the mechanisms through which contemporary career management encourages the development of career capital and facilitates career outcomes.

In line with the abovementioned theoretical and empirical advancements, in this study we consider the career capital development-career outcome premise supported when: (i) *High investments in the three ways of knowing are related to more salary earned* (**Hypothesis 1a**),

(ii) *High investments in three ways of knowing are related to more career satisfaction* (**Hypothesis 1b**), and (iii) *High investments in three ways of knowing are related to more organizational commitment across time* (**Hypothesis 1c**) (cf. the paths A in Figure 4.2). Furthermore, as we want to examine the effects of continuous exposure to the three ways of knowing, we will control for the stability of these measures in our analyses.

Shaping career capital over time

Along with the "normal" causal effects of career self-management on career related outcomes across time, we want to provide the first longitudinal test for the possible "reversed" effects of salary, career satisfaction and organizational commitment (cf. the paths B in Figure 4.2) on career capital development. In line with self-regulation theory (Carver & Scheier, 1982), we argue that employees' objective and subjective achievements are not just a mere "outcome" of proactive initiatives, rather a stimuli that provide feedback on one's career activities (Raabe et al., 2007). In this cognitive process (Bandura, 1989), a person can interpret and act upon this information, thus further shaping his or her career behavior.

According to career scholars, the time factor could elucidate the mechanisms through which a sequence of successive learning experiences shapes subsequent career behavior (cf. Khapova et al., 2007). Consistent with this reasoning, we expect that employees who are more successful will be more effective in developing their career capital than employees who exhibit less success. Through higher confidence and positive evaluation of their career outcomes, successful employees will be better in crafting developmental opportunities by investing in the three ways of knowing. For example, those who score high on career satisfaction tend to have higher ambitions or knowing-why (Cartwright, 1978). Thus, objective and subjective career success may also lead to changes in career capital development.

The direction of a possible reversed effect of organizational commitment on career capital development is less clear. For example, committed employees may be more effective in identifying developmental opportunities, suggesting they will invest more in the three ways of knowing across time. However, they may also attempt to take actions, which are more employer-oriented, thus encouraging specific job-related investments, rather than career-related (Sturges et al., 2002). So, being more committed to organization means being less open to new opportunities, thus less career ambition (lower knowing-why). Thus, it is difficult to hypothesize about the direction of the effects of organizational commitment on the development of career capital.

Although used mainly as dependent, rather than independent, factors in career self-management models, recent studies suggest that individuals' evaluations of their career progress may influence future career behavior (King, 2004; Tice & Wallace, 2003). Thus, experiencing positive career outcomes can drive people to achieve higher levels of success by further enacting their careers at work (Weick, 1996). Consistent with these notions, we will therefore examine whether we can find evidence for *reciprocal relations between the development of career capital and career satisfaction* (**Hypothesis 2a**), *salary* (Hypothesis 2b), and *organizational commitment* (**Hypothesis 2c**; Figure 4.2, paths B).

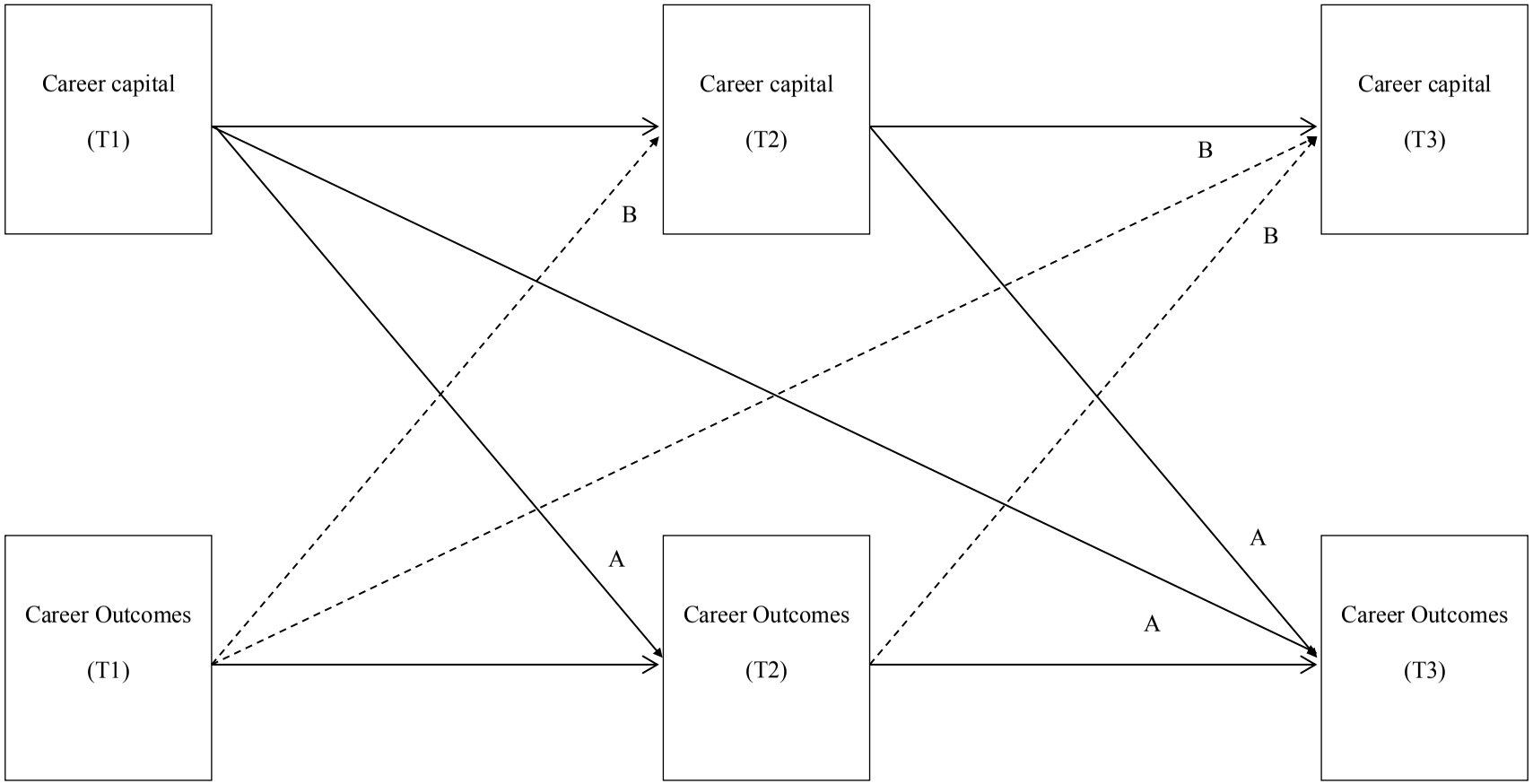

Figure 4.2 Research model

Organizational career management: Career choices and the relationship between career capital development and career outcomes

Recent studies have also examined the role of organizational career management in the relationship between career capital development and career outcomes. For example, Sturges and colleagues (Sturges et al., 2002) found that organizational career management activities are associated with increased organizational commitment and investments in career capital. Results of a study of six large organizations in Belgium show that the interaction of career capital development and organizational career management has an effect on career outcomes (De Vos, Dewettinck, et al., 2009). These studies suggest that individual and organizational career management reinforce each other and are complementary, rather than substitutes. The success of organizational career practices then largely depends upon the way they are used, and the ability to customize jobs and tailor them to employees' desires (Baruch, 2006; Cappelli, 2000), while attracting and retaining valued talent (Herriot & Pemberton, 1996; Holtom, Mitchell, Lee, & Eberly, 2008).

Nevertheless, none of these studies provided arguments of why or how the choices employees make would affect the relationship between career capital development and career outcomes. Given the participative role of organizational career management in assisting individuals to make reasoned and appropriate career decisions (Greenhaus et al., 2009), a career choice perspective appear to be more than relevant when studying the relationship between individuals' career capital and career outcomes. Rather than examining employees' perceived experience, such perspective can offer the opportunity to better understand the way individuals realize their vocational interests and goals when participating in career management practices (N. Kim, 2005). In this study we therefore examine the impact of career choices on the relation between career capital development and career outcomes (i.e. salary, career satisfaction and organizational commitment).

Career choices differences, career capital and career outcomes

Career related choices are important decisions people make with regard to their vocational development. Ever since the conceptual framework developed by Parsons (F. Parsons, 1909), career development theorists have laid the foundations for the way people make choices in the work they seek (Holland, 1958; Krumboltz, 1979; Strong, 1943). Researchers have found that these choices significantly influence individuals' lifestyles, emotional welfare, economic and social status, sense of personal productivity and contribution to society in the long-term (Gati & Tal, 2008).

While many employees can take part in organizational career management, in this study we recognize that differences relates to the way employees choose to use it. Specifically, throughout this paper we make a distinction between career choices that are personally customized, and career choices that follow organizational career paths. Although almost all people make career choices, for many people this is a challenging task (Amir, Gati, & Kleiman, 2008). The core distinction is therefore not whether employees take part in the one practice or the other, but rather how they make choices related to their professional development.

Earlier research on career development has found that career choice processes are related to one's personality (Tokar et al., 1998), vocational preferences (Rosenbloom, Ash, Dupont, & Coder, 2008), intrinsic motivation (Quigley & Tymon, 2006) and internal work values (Sullivan et al., 1998). Accordingly, vocational decisions involve one's readiness to take these decisions (Krieshok, Black, & McKay, 2009). Self-managing careerists experience greater reasonability for their career choices and opportunities, which guides them when making career decisions (Hall, 2002). Because of their high sense of adaptability to work situations, they are able to make meaningful choices that may lead to higher success (e.g., De Vos & Soens, 2008; Hall & Mirvis, 1995). The outcomes of previous career choice and

developmental changes are the inputs for future career decisions (Gati & Tal, 2008). We therefore expect that *employees with customized career choices to report on higher career capital development* (**Hypothesis 3**) *and career outcomes* (**Hypothesis 4**).

Organizational Context

Sample

The study was initiated in 2009 by a big professional service firm in the Netherlands in order to study the implementation of an organizational career management program and its consequences for employees' work behavior and attitudes. We obtained access to the participating firm through personal contacts of one of the co-authors[9]. As a large-scale program, a total of 5,605 employees were initially invited to take part in a web-based survey. Data were collected in three phases, using an intervention design of one pre-test (T1) and two post-tests (T2 and T3). The pre-test was held in August of 2009. The post-tests were held with in June 2010 and May 2011, as a follow up on employees' participation in the program. Earlier studies on the length of the time lags suggest that a 1-year time lag is appropriate for examining psychosocial and psychological relationships in the work context (de Lange et al., 2003).

Organizational career management: The Mass Career Customization

In this paper we examine one career management program called the Mass Career Customization (MCC) (Benko & Weisberg, 2007b). Employing a talent management approach, the MCC is an integrated work-life initiative differentiating organizations as "employer of choice" (Harrington & Ladge, 2009). The program encourages a continuous partnership between the employer and employee in career development. The core idea is to allow both the employer and employees adapting to the dynamic changing needs in their

[9] We are in debt to Deloitte (i.e. M. van Kleef) for providing access to their data.

environment, with the purpose of designing personalized career paths. Thus, it aligns employee's current and future career development options with current and future requirements of the business in ways that are sustainable for both parties.

In 2005, an implementation of the MCC has resulted in improved satisfaction with career-life balance (Benko & Weisberg, 2007b). In addition, employees' morale has enhanced, which in turn influenced productivity and the decision to remain with the organization (Benko & Weisberg, 2007a). By creating a collaborative environment, the MCC can offer structured benefits for employers and inspire employees to take more responsibility for their careers. MCC is centered on the increasing view that the steady advancement up the career ladder of many employees in knowledge-driven organizations has long passed (Baruch, 2004b; Cohen & Mallon, 1999; Donnelly, 2009; Sullivan & Arthur, 2006). Instead, the norm of continuous full-time employment is replaced with a set of variable non-linear career trajectories.

In order to address this reality, the MCC identifies four core career dimensions, namely Pace, Workload, Location/Schedule and Role and provides a structure to articulate and manage customized paths. In collaboration with their managers, employees customize their careers by periodically selecting options along each of the dimension based on their career aspirations and current life circumstances within the context of the needs of the business. Allowing employees to dial up and down along the four career dimensions leads to optimization of their career paths at varying life stages and to different MCC profiles. Besides the periodic conversations about the MCC profiles, all employees and managers followed training, workshops and videoconferencing about performance counseling and conversation techniques regarding the program. The chosen profile provides a snapshot of each employee's career choice at a given point and can be adjusted over time. Consistent with our research design, in our analysis we use the employees' profiles according to the

career decisions made during the first employee-manager conversations in the October 2009. This allows us to study the longitudinal effects of career choices.

Method

Subjects

Of the 5,605 invited employees, only 2,393 (43% per cent) completed the self-reported pre-intervention survey (T1), which included concepts such as attitudes at work, career-life balance conditions, working conditions, as well as career-related behavior and background factors (all variables were measured at each of the three waves). The response rates were relatively consistent and varied from 43% per cent (N = 2393) at T1 to 42% per cent (N = 792) at T3 (see Table 4.1). Non-response analysis revealed that dropouts tended to be senior managers, partners or older employees who did not participate in the program, as it is not straightforwardly directed towards these groups. Total amount of 553 surveys were completed at all three waves (average age = 35 years, 33% females). Our selected sample focuses only on those employees who participated in the MCC career program and completed the surveys at all waves (N = 496). After listwise deletion of missing values the sample included 478 respondents.

Table 3.1 Response rate at each wave

Time of data collection	Invitations sent (A)	Turnover (B)	Completed response (C)	Percentage response (C / (A-B))
Pre-test (August 2009)	5605	N/A	2393	43%
Post-test (June 2010)	2393	230	1037	48%
Post-test (May 2011)	2393	518	792	42%

Measures

Career capital was measured with an adapted version of Khapova and Arthur's (2006) Three Ways of Knowing Scale (Khapova, Arthur, et al., 2009). The 18-item measure includes three sub-scales, each with 6 items: (a) knowing why (e.g., "I navigate my own career, based on my personal priorities, as opposed to my employer's priorities") (b) knowing how (e.g., "I continuously invest in improving my professional skills"), and (c) knowing whom (e.g., "I regularly network with individuals outside my organization"). Responses range from "totally disagree" (= 1) to "totally agree" (= 5). Confirmatory factor analysis and reliability analysis were used to confirm the number of factors and loadings of the three measured scales. As shown in table 4.2, the final reliability scores (Chronbach's α) of these sub-scales varied from .62 to .82. While the commonly cut-off point is Alpha ≥ .70 (Cortina, 1993; Pallant, 2007), scholars have suggested that values near .60 can also be recognized and accepted (Hair et al., 2006; Hatcher & Stepanski, 1994), particularly when the factor have only few items. Given the relative stability, as well as the incremental increase in Alpha values (in Time 3, both values are nearly .70) of knowing-why and knowing-how measurements over time, we accept these for our statistical consideration.

Table4.2 Reliability scores of Three Ways of Knowing across 3 waves

Career capital sub-scales	**Alpha Cronbach**			
	T1	T2	T3	Median α
Know-why	0.62	0.63	0.69	0.63
Know-how	0.61	0.66	0.69	0.66
Know-whom	0.80	0.82	0.82	0.82

Career satisfaction was measured using an adapted version of the scale by Greenhaus, Parasuraman and Wormley (1990). The scale consists of six items (e.g., "I'm satisfied with the success I have achieved in my career", 1 = "very unsatisfied", 5 = "very satisfied"). The reliability ranged from .87 to .89 (median α = .88)

Salary was measured by asking participants to indicate on a yearly basis their gross current income, on an interval scale ranging from €15,000 to €200,000.

Organizational commitment was measured using Allen and Meyer's (1990) 8-item scale of affective organizational commitment (e.g., "This organization means a lot to me", 1 = "totally disagree" to 7 = "totally agree"). The reliability of this scale ranged from .86 to .88 (median $\alpha = .87$)

Career choices: The MCC career profiles. Using the four core career dimensions (Pace, Workload, Location/Schedule and Role), we were able to identify two main MCC profiles, customized and common. Dummy variables were used to indicate each profile, representing the career choice of employees. The customized profile includes those employees, who together with their managers, proactively made decisions on at least one of the core dimensions. This results in a personalized designed career profile for each employee considering their personal and professional circumstances. The central notion is that the employee made a conscious career choice and was liable to follow it. On the contrary, the second profile is a standardized or common career profile set beforehand by the organization's management. The profile follows the prescribed assumptions of what employees generally should do at different career stages, based on each dimension. Although they participated in the program, the common profilers chose not to implement any personal changes to the organizational career profile.

Covariates like demographics and socio economic statues are important indicators in work context (e.g., Bakker et al., 2005, 2007), and therefore we controlled for the influence of age, gender and job tenure.

Statistical analysis

In order to test and compare various competing models for the relationships among knowing-why, knowing-how, knowing-whom, career satisfaction, salary and organizational

commitment across time, we used Structural Equation Modeling (SEM; Jöreskog & Sörbom, 1993). Using the global measures of fit, a comparative analysis was performed among the competing models to determine which model fitted the data best. Seeing that estimating all observed items and latent variables could cause issues such as low statistical power and model under-identification (Bentler & Chou, 1987), we assumed the scale and latent variables to be identical. To avoid any methodical problems, we first tested the measurement models for each of the variables before fitting the structural models (see two-step approach: Anderson & Gerbing, 1988; James, Mulaik, & Brett, 1982). These analyses showed that the factor structures of the research variables were consistent across time ($\chi 2 = 12608.22$, NNFI, CFI $\geq .90$ and RMSEA $\leq .05$). Finally, we report the standardized results, based upon an analysis of the covariance among the variables.

To examine the causal relationships between career capital development and career outcomes (Hypotheses 1 and 2) we tested a baseline model versus several competing nested models. To avoid "over-fitting" data, we tested the proposed standardized cross-lagged effects for each career outcome separately:

(M_0) Baseline model/stability model: Includes temporal stabilities and synchronous effects (e.g., career capital measures were allowed to correlate with one another within the same time wave) of variables over time and controls for the influence of the covariates age, gender and job tenure. This model is used as the reference model.

(M_1) Normal causation model: M_0 extended with cross-lagged structural paths from the Time 1 and Time 2 Career Capital to Time 2 and Time 3 Career Outcomes variables (i.e. career satisfaction, salary and organizational commitment).

(M_2) Reversed causation model: M_0 extended with cross-lagged structural paths from Time 1 and Time 2 Career Outcomes (i.e. career satisfaction, salary and organizational commitment) to the Time 2 and Time 3 Career Capital variables.

(M_3) Reciprocal causation model: M_0 extended with reciprocal cross-lagged structural paths (i.e., the regular paths included in model M1 as well as the reversed paths included in model M_2)[10].

Career choice effects

To test whether the proposed reciprocal causal model differed as a function of career choice (Hypotheses 3 and 4), a multiple-group analysis using SEM is applied (Jöreskog & Sörbom, 1993). This method is useful to test simultaneously all cross-lagged effects in figure 4.2, thus identifying differences between the two MCC career profiles. We first tested the proposed standardized cross-lagged effects for each profile separately, then for invariance across the MCC profiles. All model tests were based on the covariance matrix and using maximum likelihood estimation. To assess the fit of models we evaluated the χ^2-value and other fit measures, including the global fit index (GFI), the non-normed fit index (NNFI), the comparative fit index (CFI), and the root-mean square error of approximation (RMSEA). Acceptable fit are denoted when levels of .90 or higher for GFI, NNFI and CFI and levels of .05 or lower for RMSEA (Byrne, 1998).

[10] This model only includes cross-legged effects, thus the cross-sectional reciprocal paths between predictors and outcomes are not included. To ensure we account for these relations, we allowed all variables from the same time period to correlate.

Table4.3 Demographic characteristics across MCC groups

Variables	Common (*N* = 388)	Customized (*N* = 90)	T-test	Chi-square test
Age	33.7 (8.85)	34.3 (9.27)	0.68 (494, -.59)	
Job tenure	2.68 (3.62)	3.09 (4.41)	2.53 (494, -.93)	
% Men *	73.2%	55.9%		10.75 (1, 0.01)
Working hours (per week) **	44.93 (7.62)	40.94 (9.13)	8.86 (494, 3.91)	
Work experience	10.11 (9.08)	10.40 (9.92)	1.51 (494, -.27)	
Level of education				1.94 (3, 0.59)
1: Secondary education	5.9%	6.7%		
2: Secondary or middle vocational	4.6%	7.8%		
3: Higher vocational	31.1%	26.7%		
4: College/University	58.4%	58.9%		
% Family situation				1.29 (1, 0.21)
1: Single, not living together	26.8%	33.3%		
2: Married or living together	73.2%	66.7%		
% Children at home (yes)?	32%	41.9%		2.90 (1, 0.0
% Number of kids				3.45 (5, 0.63)
0	68.2%	59.1%		
1	11.2%	12.9%		
2	15.6%	21.5%		
3	3.7%	5.4%		
4	1%	1.1%		
>4	0.2%	0.0%		

Note: Means and standard deviation scores are presented between brackets. All variables are measured on Time 1.

* Significant differences between groups ($p < .05$).

** Significant differences between groups ($p < .01$).

Results

Prior to the (multi-group) SEM analyses, preliminary analyses were carried out to gain insight into the data, and to examine meaningful differences among the common and customized groups. Table 4.3 shows that the MCC career profiles differed significantly regarding gender and working hours. The results show that more women with children chose the customized profile, and this group worked on average 4 hours less per week compared to the common group. This suggests that the customized profile might be chosen to adapt work to life. No significant differences emerged for age, job tenure, work experience, educational level, family situation, number of kids and the presence of children at home among the MCC groups.

Table 4.4 presents the correlations and descriptive statistics for the key variables under study for the total group of respondents. Concerning the across-time stability of variables, the Time 1–Time 2 test–retest correlations ranged from .60 (for Knowing-why), and .55 (Knowing-how) to .74 (Knowing-whom, all p's < .01); the Time 2–Time 3 test–retest correlations ranged from .57 (for Knowing-why), and .30 (Knowing-how) to .72 (Knowing-whom; all p's < .01), and the Time 1–Time 3 test–retest correlations ranged from .53 (for Knowing-why), .52 (Knowing-how), .67 (Knowing-whom), .53 (Career satisfaction), to .62 (Organizational commitment; all p's < .001). Finally, the test-retest correlations of Salary ranged from .94 to .96 across time. Except for the measurements of knowing-why and knowing-how as discussed before, the stability and reliability of all measures were satisfactory.

Table4.4 Correlations and descriptive statistics for MCC

		M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Gender	*1.33*	*0.47*	-														
2	Age	*34.91*	*9.74*	.01	-													
3	Education	*3.35*	*0.9*	-.21**	-.20**	-												
4	Job tenure	*3.15*	*4.28*	.58**	.58**	-.13**	-											
5	Org tenure	*7.79*	*8.58*	.72**	.72**	-.14**	.63**	-										
6	MCC	*1.19*	*0.39*	.15**	.03	-.02	.04	0	-									
7	Why T1	*3.54*	*0.59*	-.10*	-.11**	.29**	-.10*	-.12**	.05	-								
8	Why T2	*3.53*	*0.57*	-.12**	-19**	.29**	-.17**	-.15**	.09*	.60**	-							
9	Why T3	*3.57*	*0.61*	-.09*	-.21**	.25**	-.19**	-.19**	.08	.53**	.57**	-						
10	How T1	*3.91*	*0.51*	-.08	.09*	.11**	.02	.04	0	.32**	.24**	.16**	-					
11	How T2	*3.89*	*0.52*	-.12**	.05	.16**	.02	.04	-.05	.24**	.38**	.23**	.55**	-				
12	How T3	*3.89*	*0.53*	-.10*	.10*	.16**	.02	.06	-.03	.26**	.28**	.35**	.52**	.30**	-			
13	Whom T1	*2.98*	*0.87*	-.16**	.17**	.18**	.08	.08	.01	.37**	.34**	.27**	.37**	.31**	.30**	-		
14	Whom T2	*2.98*	*0.87*	-.16**	.12**	.22**	0	.03	.03	.33**	.39**	.26**	.28**	.31**	.30**	.74**	-	
15	Whom T3	*3.06*	*0.88*	-.21**	.10*	.22**	-.01	.01	.01	.30**	.32**	.33**	.26**	.26**	.36**	.67**	.72**	-
16	CS T1	*3.58*	*0.67*	-.09*	.15**	.04	.16**	.19**	-.02	-.04	.01	-.02	.17**	.12**	.13**	14**	.10*	.14**
17	CS T2	*3.55*	*0.66*	-.06	.06	.04	.09*	.15**	.01	-.04	.05	-.03	.14**	.21**	.15**	.14**	.16**	.16**
18	CS T3	*3.56*	*0.64*	-.13**	.07	.07	.13**	.14**	-.01	-.02	0	-.01	.12**	.13**	24**	.10*	.08	.15**
19	Salary T1	*8.36*	*4.29*	-.27**	.55**	.36**	.25**	.44**	-.10*	.11**	.06	.02	.17**	.17**	.15**	.33**	.33**	35**
20	Salary T2	*8.7*	*4.25*	-.28**	.51**	.40**	.22**	.40**	-10*	.12**	.08	.04	.19**	.18**	.17**	.32**	.33**	.35**
21	Salary T3	*9.25*	*4.19*	-.31**	.44**	.45**	.19**	.37**	-.10*	.15**	.11**	.08	.19**	.21**	.17**	.33**	.34**	.36**
22	Com T1	*4.36*	*0.99*	-.91*	.10*	-.03	.11*	12**	-.04	-.13**	-.05	-.02	.33**	.23**	.21**	.21**	.17**	.17**
23	Com T2	*4.35*	*1.01*	-.11*	.14**	-.02	.12**	.16**	.02	-.12**	-.06	-.09*	.22**	.29**	22**	.18**	.21**	.17**
24	Com T3	*4.33*	*1.02*	-.08	.16**	-.02	.14**	.16**	.01	-.07	-.05	-.05	.19**	.22**	.27**	.18**	.18**	.18**

Notes: N's range from 478 to 496 due to occasional missing data.

For gender, 1 = male, 2 = female.

For MCC profile, 1 = common, 2 = customized profile.

* $p < .05$.

** $p < .01$.

		M	*SD*	16	17	18	19	20	21	22	23
16	CS T1	*3.58*	*0.67*	-							
17	CS T2	*3.55*	*0.66*	.62**	-						
18	CS T3	*3.56*	*0.64*	.53**	.62**	-					
19	Salary T1	*8.36*	*4.29*	.29**	.27**	.25**	-				
20	Salary T2	*8.7*	*4.25*	29**	.27**	.24**	.96**	-			
21	Salary T3	*9.25*	*4.19*	.28**	.27**	.26**	.94**	.95**	-		
22	Com T1	*4.36*	*0.99*	.31**	.34**	.25**	.15**	.14**	.11*	-	
23	Com T2	*4.35*	*1.01*	.24**	.41**	.28**	.19**	.17**	.15**	.73**	-
24	Com T3	*4.33*	*1.02*	.21**	.31**	.35**	.22**	.20**	.19**	.62**	.72**

Notes: N's range from 478 to 496 due to occasional missing data.
* $p < .05$.
** $p < .01$.

Hypotheses 1 and 2 concern the reciprocal cross-lagged relationships between knowing-why, knowing-how, knowing-whom, and indicators of career outcomes. In order to examine these hypotheses, the fit of three competing structural models (see Method section) was compared to baseline model M_0. Tables 4.5-4.7 (N = 478) show that M_3 fitted the data significantly better, also when compared to the other nested structural models ($M_1 – M_3$) (GFI, NNFI, CFI ≥ .90 and RMSEA ≤ .05). Thus, the three career capital and career outcomes were related.

Table 5 Fit indices for different nested models for Satisfaction

Model	χ2	df	GFI	NNFI	CFI	RMSEA
M0: Baseline model (stability effects only) [a]	269.71	87	0.94	0.94	0.96	0.07
M1: Normal causality [a]	246.70	75	0.94	0.94	0.96	0.07
M2: Reversed causality [a]	262.19	78	0.94	0.93	0.96	0.07
M3: Reciprocal causality [b]	68.51	54	0.98	0.99	1.00	0.02

[a] All χ2 values are significant at p <.001.

[b] All χ2 values are significant at p <.01.

Table4.6 Fit indices for different nested models for Commitment

Model	χ2	df	GFI	NNFI	CFI	RMSEA
M0: Baseline model (stability effects only) [a]	348.48	7	0.9	0.92	0.94	0.08
M1: Normal causality [a]	240.52	75	0.94	0.94	0 9 6	0.07
M2: Reversed causality [a]	341.99	78	0.92	0.91	0.94	0.08
M3: Reciprocal causality [b]	77.36	54	0.98	0.99	0.99	0.03

[a] All χ2 values are significant at p <.001.

[b] All χ2 values are significant at p <.05.

Table4.7 Fit indices for different nested models for Salary

Model	χ2	df	GFI	NNFI	CFI	RMSEA
M0: Baseline model (stability effects only) [a]	300.54	87	0.93	0.95	0.96	0.07
M1: Normal causality [a]	261.42	78	0.94	0.95	0.97	0.07
M2: Reversed causality [a]	290.91	78	0.93	0.94	0.96	0.08
M3: Reciprocal causality [a]	117.42	54	0.97	0.97	0.99	0.05

[a] All χ2 values are significant at p <.001.

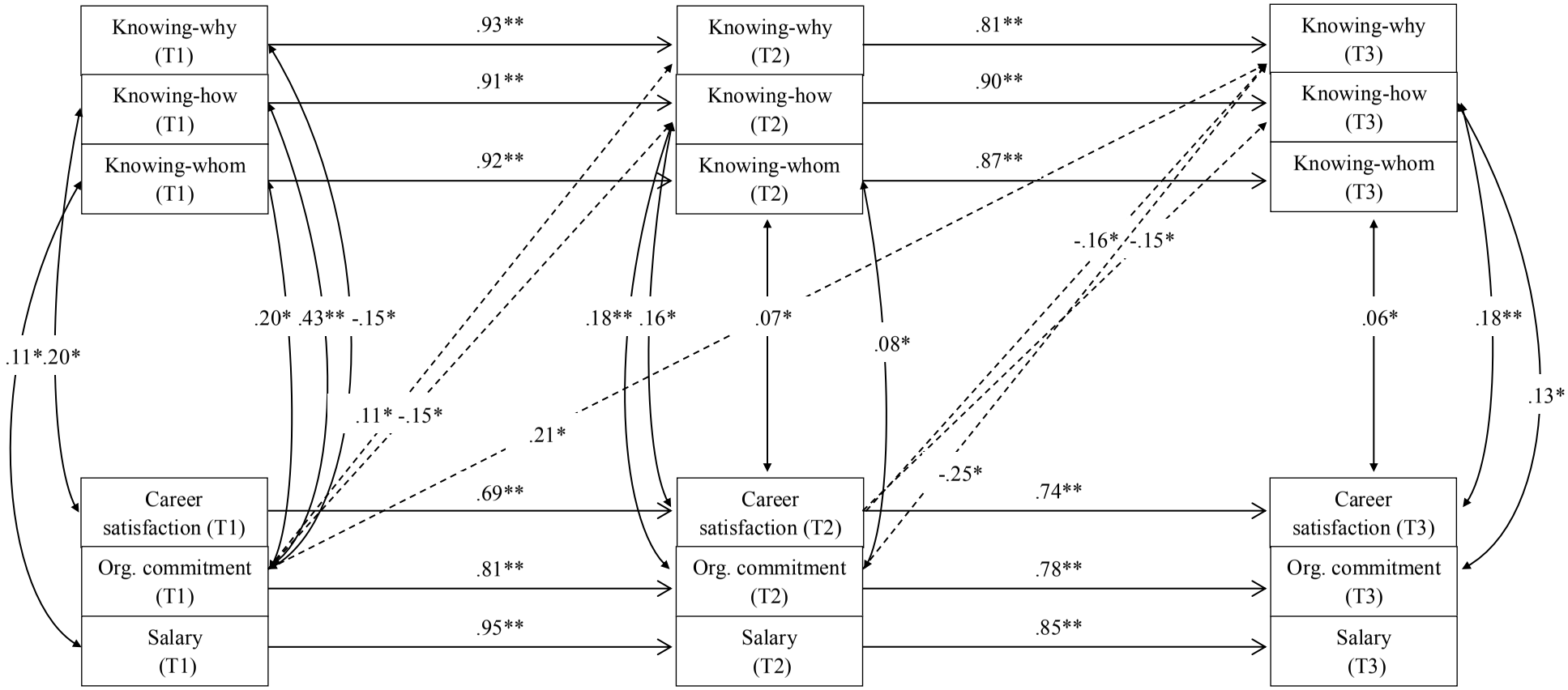

Figure 4.3 Best fitting reciprocal causal model without MCC

Figure 4.3 portrays the significant results of the best fitting reciprocal causal model (M_3). In particular, for Time 1 career satisfaction and organizational commitment positive cross-sectional links were found of Time 1 knowing-how (β = .20 and .43 respectively). For Time 1 commitment cross-sectional relations were also found of Time 1 knowing-why (β = -.15) and knowing-whom (β = .20), and for Time 1 salary of Time 1 knowing-whom (β = .11). For both Time 2 career satisfaction and organizational commitment positive cross-sectional relations were found of Time 2 knowing-how (β = .16 and .18 respectively), and knowing-whom (β = .07 and .08 respectively). For Time 3 career satisfaction and organizational commitment positive cross-sectional relations were found of Time 3 knowing-how (β = .18 and .13 respectively). Results also show positive cross-sectional relations of Time 3 knowing-whom (β = .06) for Time 3 career satisfaction. Despite this affirmative evidence, no significant cross-lagged effects of career capital development in predicting career outcomes across time were found (**Hypotheses 1a, 1b, and 1c not supported; Hypothesis 2 partially supported**).

On the other hand, figure 4.3 presents significant reversed effects of Time 1 and Time 2 career outcomes on the reported three ways of knowing across time. Contrary to our expectations, positive effects were only found for Time 2 and for Time 3 knowing-why of Time 1 commitment (β = .11 and β = .21 respectively). We found also significant negative reversed effects. Specifically, for Time 2 knowing-how negative effects were found of Time 1 commitment (β = -.15). For Time 3 knowing-why negative effects were found of Time 2 commitment (β = -.25) and of Time 2 satisfaction (β = -.16). Finally, negative effects of Time 2 satisfaction were also found for Time 3 knowing-how (β = -.15).

Concerning the covariates, we controlled for each predictor at Time 1 in order not to clutter the model. Given the significant stability of career capital development and outcomes across time, we ensure that the covariates effects are also accounted in the following paths.

The results show significant effects of age and education in predicting all three ways of knowing (β's ranging from -.12 for age ($p < .05$) to .30 for education ($p < .01$)). Significant effects of gender were found for knowing-whom (β = -.15, $p < .05$) and salary (β = -.16, $p < .01$), suggesting that women invest less in developing their networks and have lower salary changes. No significant effects were found for career satisfaction and organizational commitment.

Besides the positive effects of organizational commitment at Time 1 on knowing-why across time, the overall results show that Time 1, 2 and 3 career satisfaction and organizational commitment were related to fewer investments in knowing-why and knowing-how competencies across time. Nevertheless, we did not find effects of career capital development on career outcomes across time, thus **hypotheses 2a, 2b and 2c are not supported**.

Hypotheses 3 and 4 concern the career choices differences, suggesting that those who chose a customized MCC profile would report on significantly higher levels of knowing-why, knowing-how, knowing-whom, career satisfaction and organizational commitment than their colleagues with the common MCC profile. To do so, we first need to examine whether the reciprocal relations (including the cross-sectional) are casually predominant within each of the MCC profile groups. Therefore, the normal and reversed coefficients were tested in two separate additional structural models: with and without equality of the customized versus common group (Tables 4.8-4.10). While table 4.9 show that the χ^2-difference between the models with and without equality constraints was not significant for organizational commitment ($M_{3\ equality}$ versus $M_{3\ without\ equality}$: $\Delta\ \chi^2$ (60, $N = 478$) = 70.04, $p > .05$), tables 4.8 and -4.10 show the χ^2-differences were significant for career satisfaction ($M_{3\ equality}$ versus $M_{3\ without\ equality}$: $\Delta\ \chi^2$ (60, $N = 478$) = 82.05, $p < .05$), and for salary ($M_{3\ equality}$ versus $M_{3\ without\ equality}$: $\Delta\ \chi^2$ (60, $N = 478$) = 92.40, $p < .05$).

Table4.8 Fit Indices for χ^2 differences tests using multi-group analysis for Satisfaction

Model	χ2 N	χ2 S	df	NNFI	CFI	RMSEA
M3: Equal a	214.81	221.21	180	0.99	0.99	0.04
M3: Unequal b	133.92	143.22	120	0.99	0.99	0.18
Delta[11]	82.05		60			
Sig	0.03					

[a] χ2 value is significant at p <.05.

[b] χ2 value is non-significant at p = .18.

Table4.9 Fit indices for χ^2 differences tests using multi-group analysis for Commitment

Model	χ2 N	χ2 S	df	NNFI	CFI	RMSEA
M3: Equal [a]	215.02	238.80	180	0.98	0.99	0.04
M3: Unequal [b]	145.08	157.83	120	0.98	0.99	0.06
Delta	70.04		60			
Sig	0.18					

[a] χ2 value is significant at p <.05.

[b] χ2 value is significant at p <.10.

Table4.10 Fit indices for χ^2 differences tests using multi-group analysis for Salary

Model	χ2 N	χ2 S	df	NNFI	CFI	RMSEA
M3: Equal	279.03	286.26	180	0.98	0.98	0.05
M3: Equal[12]	277.69	285.69	181	0.98	0.98	0.05
M3: Unequal	186.57	197.82	120	0.97	0.99	0.05
M3: Unequal[3]	189.65	205.92	122	0.97	0.99	0.05
Delta	92.40		60			
Significance	0.00					
Delta[3]	87.56					
Significance[3]	0.01					

[a] χ2 value is significant at p <.001

[11] Delta: (χ2 S.p – χ2 S.q) * (df.p – df.q) / (df.p* χ2 S.p/ χ2 N.p – df.q* χ2 S.q/ χ2 N.q). p is the model which has more restrictions (larger df) and q the other one. χ2 S = simple; χ2 N is the Normal theory weighted LS.

[12] Due to estimation issues, we had to drop one relationship out (knowing-whom T1 with Salary T3). However, we compared it to the model, which includes all relationships, and this was the most influential one. Post-hoc tests reveled that this relationship is non-significant, and thus taking it out allowed us to use more reliable estimations.

Following these findings, post-hoc T-value tests reveled significant differences between the common and customized MCC career profiles in the relationships of the three ways of knowing with career satisfaction and salary. Figure 4.4 shows that most significant differences for career satisfaction were related to the reciprocal cross-sectional relationships. In particular, employees in the customized group reported negative associations between Time 1 knowing-why and career satisfaction (β = -.24). So, more career satisfaction is associated with less career ambition and openness for career growth (or more career ambition with less satisfaction) before the MCC intervention. However, after choosing to customize their MCC profile, they reported positive associations between for Time 3 knowing-why and career satisfaction (β = .18). This suggests that MCC does have an effect in the relationship between knowing-why and career satisfaction, however this is not a cross-lagged.

Considering the across-time effects between career capital development and salary, figure 4.4 shows that significant effects were found for the customized group of knowing-why and knowing-how on salary. The customized group reported negative effects of Time 1 knowing-why on Time 2 salary (β = -.17), and positive effects on Time 3 salary (β = .56). The customized group also reported positive effects of Time 1 knowing-how (β = .20) on Time 2 salary. Significant results were also found for the cross-sectional relationships Time 2 knowing-why and salary, with small negative effects for the common group (β = -.03) and positive for the customized group (β = .08).

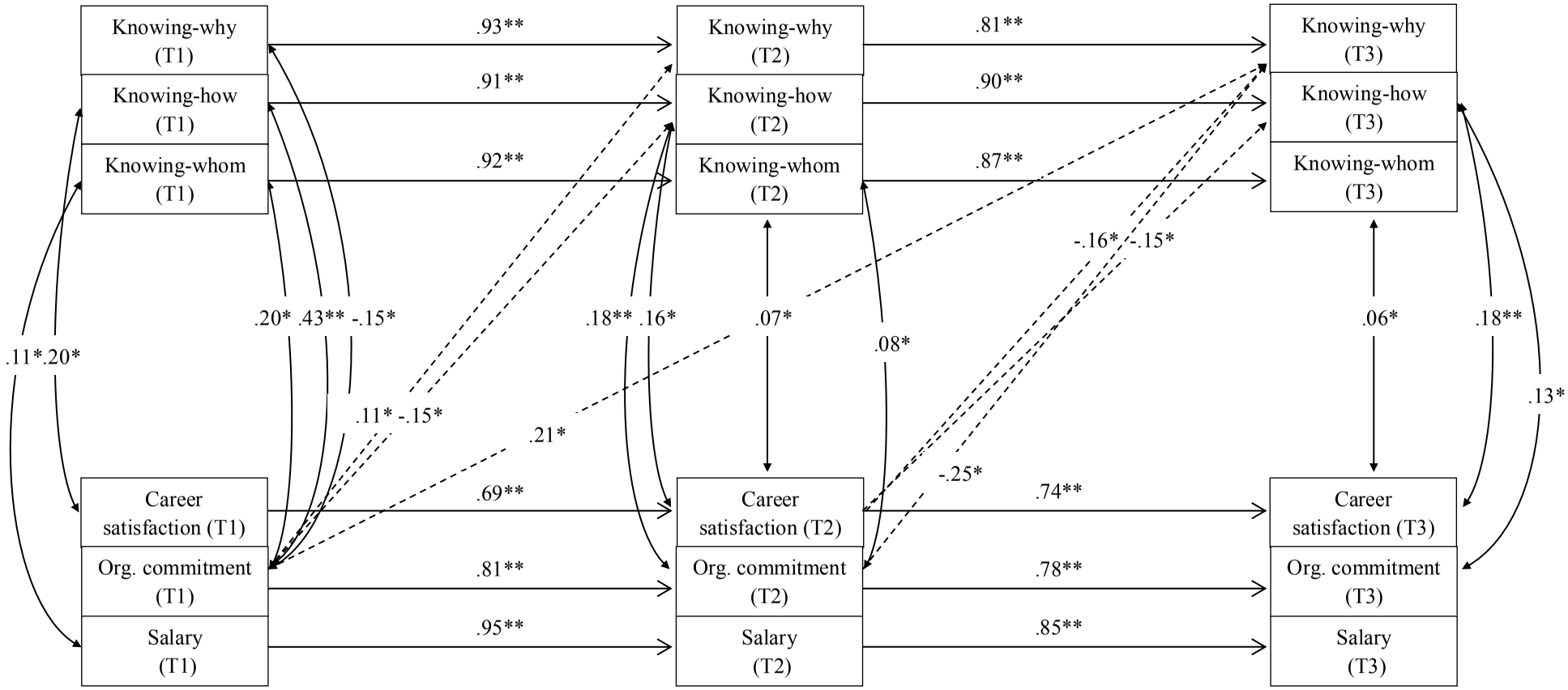

Figure 4.4 Differences between the MCC career profiles

Further examining the effects of the covariates, the post-hoc T-value tests also revealed differences between the two MCC career choices for age (career satisfaction and salary) and for job tenure (salary). Results showed that both MCC groups reported positive effects of age for salary (β = .78, common; β = .53, customized). However, only the common group reported significant results of age for career satisfaction (β = .15), and of job tenure for salary (β = -.18). This means that within the common group, older people tend to report on higher career satisfaction. On the other hand, those who work longer at their position (high job tenure) report on less or no change in their salaries.

In sum, we found significant MCC career choices differences in the effects of career capital development, career satisfaction and salary, with the effects for the customized profile being the strongest (**Hypotheses 3 and 4 partially supported**).

Discussion

The aims of this 3-waves study were to test whether: (a) high investments in career capital development, through knowing-why, -how, and -whom, predict later reported career outcomes, (b) whether there is evidence for reversed effects of career outcomes on knowing-why, -how, and -whom, and (c) whether there are meaningful career choices difference in the aforementioned relations. Despite our hypothesized causal direction, the bidirectional analyses revealed continuous associations between the three ways of knowing and career outcomes only for the cross-sectional relations (Hypothesis 1 not supported). While this proposes confirmation for the importance of career capital development for success, it also suggests that the causal relationships may not be as straight forward as earlier assumed (Arthur et al., 1999; Eby et al., 2003). Our longitudinal research design reveals a potential reciprocal nature of the relationships under study (Hypothesis 2 partially supported).

One possible explanation for the difference between the across-time reversed effects and the cross-sectional effects may be that the highly mean correlation among the three ways

of knowing makes it harder to distinguish from each other (cf. multicollinearity; Good & Hardin, 2012). At the same time, the career outcomes predictors have a higher explanatory power and thus are easily detected in the model. In general, this does not reduce the predictive power of the model as a whole, as it only affects estimation of individual predictors. We further discuss this issue under study limitations.

Nevertheless, this study was the first one to find reversed effects of career satisfaction and organizational commitment on reported career capital development (knowing-why and knowing-how). The results suggest that prior to the implementation of the MCC program, higher commitment is associated with higher ambition and openness for career growth. However, after the implementation these effects appear to transform, and committed and satisfied employees focus less on developing their career capital. It appears then, that the career support offered by the organization could in fact increase the overall job security feeling, thus reducing the need to stay employable and look for potential opportunities outside the current employer (DiRenzo & Greenhaus, 2011).

First and foremost, these results provide evidence for the intelligent career framework (P. Parker et al., 2009). The association of the development of career capital with career outcomes is in line with recent career studies advocating that taking control and investing in one's career have consequences for career outcomes. Furthermore, the causal relationships between career outcomes and career capital development offer an interesting avenue for better understanding the complex nature of the three ways of knowing. Our findings are also in line with the self-regulation theory (Carver & Scheier, 1982). More specifically, the results suggest that the one-directional view on the link between the three ways of knowing and career outcomes proposed in the career capital model does not apprehend the full picture. In line with the notions of cognitive development (Bandura, 1989), our results show that

employees actively interpret and act upon their career outcomes, rather than just passively acknowledging those psychological and psychosocial cues.

Furthermore, the results show that career choice effects matter in the relationship between career capital development, career satisfaction and salary. Our multiple-group analyses revealed an interesting relationship transformation between career choices, knowing-why, career satisfaction and salary, such that the negative linear relation reported initially has positively altered after the implementation of the MCC career program. In line with previous studies, career satisfaction is found to be associated with less ambition and openness for career growth (or more ambition with less satisfaction) before the MCC intervention (Judge et al., 1995; Nabi, 1999). With time though, those who customized their career choices reported on higher knowing-why investments, as well as career satisfaction. Career choices differences were further found in cross-lagged relationships between knowing-why, knowing-how and salary, in such way that employees with the customized career profile reported on positive effects across time. In particular we found that those who were more ambitious (higher knowing-why) had lower salaries, but after they used MCC to make career choices, they reported on higher salaries. Thus, the career choices, through the use of organizational career management, helped them to 'cash on' their career ambitions.

We also found that a negative association between job tenure and salary change for the common group. While this at first may seem odd, we actually know that most salary changes originate on the account when employees move to another job (internally or externally), as they have leverage in negotiation (e.g., Mannix, Thompson, & Bazerman, 1989; Seidel, Polzer, & Stewart, 2000; Sondak & Bazerman, 1991). Finally, the relationship between career capital development and organizational commitment was not found to differ across the MCC career choices (partially supporting Hypothesis 3 and 4). All in all, employees who chose the customized career profile stand out prominently regarding their

high level of investments in knowing-why and knowing-how, and their overall career satisfaction and salary change.

Possible explanations for these effects may be that the new dynamics in the work situation, introduced through the MCC program, have encouraged the customized group to focus on developing their career capital (Kuijpers & Scheerens, 2006). Thus, these employees have experienced greater desire to shoulder the responsibility for their own career development, whereas the common group has not shared this burden. Another explanation is that the customized group is more proactive in identifying developmental opportunities (knowing-how) and exploring different professional possibilities (knowing-why). Meeting their goals and aspirations lead to higher perceived satisfaction and earnings (Ashby & Schoon, 2010; Eby et al., 2003). Hence, career ambition plays an important role in shaping individuals career outcomes.

A final explanation is the different perspective the work environment holds regarding the customized and the common group. Research have pointed out that managers positively perceive initiative taking (Berg et al., 2010) and proactive behavior (Crant, 2000) at work. Usually they act as *Gatekeepers* or *Intermediaries*, shaping employees' opportunities and career actions (Bosley, Arnold, & Cohen, 2009). Furthermore, managers' interpretations of the way employees use career practices can impact organizational commitment and career success (Leslie, Park, Mehng, & Flaherty Manchester, 2012). These insights suggest that the customized group is in a favorable position to be recognized and rewarded for their career agency (Tams & Arthur, 2010).

Limitations

Like many other empirical studies, we acknowledge several important limitations in our study. First, the findings reported in this study were based on self-reported data and may be subject to bias. Nevertheless, scholars have recently suggested that the common method

variance issue might be overrated, in particular since it is more of a measurement bias rather than a method bias issue (Doty & Glick, 1998; Spector, 2006). Furthermore, besides two measurements (knowing-why and knowing-how) all our reliability scores are higher than .80. We also recognize that Alpha values lower than .70 are to be expected when dealing with psychological constructs due to the diversity of the construct being measured (Kline, 2000). Thus, given the satisfactory reliability scores and model fit measures across time, we assume that the measurement bias is relatively small. Moreover, the longitudinal design allowed us to assess the level of predictor and criterion variables at different times, thus minimizing the potential common method variance (Lindell & Whitney, 2001; Podsakoff et al., 2003).

The second limitation of this study relates to the longitudinal design of this study. Recognizing the potential benefits for studying causal and moderated relationships, calls for longitudinal research have become common (Ployhart & Vandenberg, 2010; Ployhart & Ward, 2011). It has been further suggested that the time lag between study waves should fit the process and etiology of the relationships among the variables (de Lange, Taris, Kompier, Houtman, & Bongers, 2004). In our study the time lag of about approximately 1 year in between each wave allowed us to find the relatively strong reversed effects across 1 and 2 years. Furthermore, we were able to measure all variables during all three measurements, thus allowing us to control for simultaneous effects and auto correlations (Zapf, Dormann, & Frese, 1996). Nevertheless, we are also aware that the chosen time lag may be too short in revealing the true dynamics of our hypothesized model. This may be particularly correct for the relationship between career capital development and salary. As the results showed, for most of the employees in our sample salary stayed more or less the same, thus change is hard to be measured. Although we identified effects, they are small and not significant. Long time lags spread over an extended period of time may reveal larger effects of the three ways of knowing in predicting salary change (Jansen & Vinkenburg, 2006).

Another limitation concerns the aforementioned multicollinearity issue. Our path analysis showed relatively small effect sizes (and not significant) for the cross-legged relationship between career capital, and career satisfaction and organizational commitment. This may result due to the high correlation among the predictor operationalization variables, the three ways of knowing, as mentioned earlier. This is to be expected given the high interdependence among the three ways of knowing (P. Parker et al., 2009; Sullivan & Arthur, 2006). Prior psychometric testing (factor analysis) and multidimensional scaling (MDS; Borg & Groenen, 1997) revealed that these three components are indeed distinct dimensions, and therefore should be treated separately. Additionally, multicollinearity does not reduce the predictive power of the model as a whole, as it only affects estimation of the individual predictors (Gujarati, 2004). A possible solution would be to obtain more data in order to achieve accurate parameter estimates.

Theoretical and practical implications

In spite of the abovementioned limitations, this study has several important theoretical and practical implications. Using longitudinal data, this study is the first one to examine the causal direction as well as the effects of career choices in the relationships between career capital development and career outcomes across time. The surprising results open a path for new research to investigate why and how these effects develop or do not develop over time. Particularly, we call for the following research agenda.

Longitudinal studies: In the efforts to better understand mechanisms underlying career success, one is well advised to consider the temporal nature of careers (Bailyn, 2004). Building on this advice, we call for longitudinal studies that accommodate time as an important aspect of studying the relationships between career capital, career outcomes and career choices. This will not only allow us stepping away from the predominant cross-sectional research, but also to study a phenomenon happening to a particular object across

time interval(s) (Roe, 2008). We should further ask when does the effect occur, for how long, or why might it change over time? For example, a recent study found that the impact of career goals (related construct to knowing-why) on career satisfaction would take longer than on salary (Abele & Spurk, 2009a). Benefiting from the longitudinal design, researchers will be able to further examine the potential moderating and/or mediating effects of, for example, organizational career management in these relationships across time.

Reversed effects of career outcomes: Although it might be too early to draw strong conclusions based on one study, our results reveal interesting reversed effects of career outcomes on the development of career capital. Till today, career outcomes was studied as an outcome of predictor variables (e.g., attitudes, behavior). We believe that this study showed the potential for a different dynamic between career capital and career outcomes. In particular, we see that while most research has focused on how career capital development shape career outcomes, we recognize the need to look at this relationship differently. Given that evaluations of self-performance lead to behavioral intentions and behaviors (Ajzen, 1991), a fascinating avenue for future research is to further examine how do career capital arise. Further research should investigate whether feelings about one self or career reinforce the development of the three ways of knowing more than the other way around.

Career choices and the subjective-objective interrelatedness: While much research has been done on the link between career self-management and subjective career outcomes (such as career satisfaction), very little support has been given to the relationship between career self-management and objective career outcomes (e.g., salary and other objective indicators) (e.g., Abele & Wiese, 2008; De Vos, Dewettinck, et al., 2009). The assumption is that there is an imperative conceptual interdependency between subjective and objective career success, and therefore empirically we should not separate between the two (Hall & Chandler, 2005). The study suggests that this relationship may be further studied in other

contextual factors, such as individual career choices and organizational practices. Our findings show that MCC helped employees 'cash on' their ambition (knowing-why). However, this relationship might be different if a person decides to customize their career path upwards or downwards (i.e., higher vs. lower customized profile). For example, customizing down (i.e., lower pace, workload and reasonability) may have positive impact on subjective career success or commitment, but negative on objective success and career ambition. Future research therefore should not only incorporate objective indicators of career success, but also examine the role of organizational career management, as well as how long and in which intervals do these effects take place.

Managers as career shapers: We hope that our results will also motivate researchers to develop theory-based, longitudinal, or interventional studies on the role of managers in organizational career management. As our results suggest, supervisors may have impact on how and to what extent employees make use of organizational practices. Our findings associated with the MCC program demonstrate that not all employees who utilize organizational career management will benefit from it. Further research is necessary in order to study what is the appropriate level of three ways of knowing and how organizations can facilitate that. Others could investigate to what extent managers can shape these career investments and help employees ripping the potential benefits of organizational career management.

With regard to practice, our findings suggest that practices such as MCC are appropriate tools to inspire contemporary employees' career self-management, while adapting work to life. Providing career support could externally attract more talented employees and internally encourage the passive employees to focus more on managing their own careers (J. C. Hughes & Rog, 2008). It will also focus employees' efforts in keeping their employability through the development of transferable career competencies (Arthur et

al., 1999). Nevertheless, it appears that the levels of career investments in career capital are reduced, as people feel more committed and satisfied. Therefore the challenge for managers is then to deal with getting people out of this comfort zone. One way to achieve this is to socially engage employees in the program, and to provide them with the awareness of what they want and of the career paths they should choose. Programs such as MCC could engage employees socially to take such initiatives, encourage them to get in touch with their supervisors, and share their experiences with other employees who make similar career choices. Another way is to create a learning environment, in which a dialogue can be developed to reflect upon experiences and future plans, so the development of career capital can be facilitated (Kuijpers et al., 2011). By employing alternative employment practices that provide for different options as careers unfold, employers can generate both greater productivity and greater career satisfaction for the workers involved (Valcour, Bailyn, & Quijada, 2007). While companies cannot shield their employees from attractive external opportunities, they can at least try to influence who leaves and when (Cappelli, 2000; Lewis & Heckman, 2006).