



Developmental networks and professional identity: a longitudinal study

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Abstract

Purpose – This paper seeks to examine the relationship between individuals' developmental mentoring networks and a subjective career outcome, clarity of professional identity. How developmental network characteristics are related to professional identity over time is explored.

Design/methodology/approach – This is a three-wave, longitudinal survey study, covering a five-year span (1996-2001). The participants ($n = 136$), full-time MBA students at the inception of the study, provided complete developmental network data on each survey. The relationships between clarity of professional identity and three different measures of developmental network density were explored: early-career density; general density; and density dynamics (e.g. the change in density over time).

Findings – Developmental network density, which reflects the professional identity exploration process, is negatively related to clarity of professional identity.

Research limitations/implications – The study is limited by the use of graduating MBA students from a single, top-20 business school as participants.

Practical implications – The findings suggest that people might be able to improve their careers through changing their developmental networks, particularly during their early-career years.

Originality/value – This paper provides novel insights to the mentoring, identity, and careers literatures. Given the previously uncharted territory of understanding the dynamics of developmental networks and its relationship to career outcomes, this study opens avenues for future research, while also answering questions about developmental networks and the ways they function over time.

Keywords Mentoring, Career development, Careers

Paper type Research paper

Introduction

One of the most important functions of mentoring is the cultivation of professional identity (Kram, 1985). Yet the extent to which developmental relationships enhance the clarity of people's professional identity has not been examined. Consistent with recent conceptualizations of the mentoring support individuals receive during their careers, this paper focuses not just on dyads of mentoring support but on networks of developmental relationships (Higgins and Kram, 2001; Seibert *et al.*, 2001).

Careers researchers have begun to examine the effects of developmental networks on a variety of career outcomes (Higgins, 2001; Higgins and Thomas, 2001; van Emmerik, 2004). However, the dynamic nature of developmental networks has not been examined, and accordingly, the role that an evolving developmental network may play in enhancing the clarity of professional identity remains unexplored. This paper begins to address this gap by studying developmental network structures over time and the



relationship between these network dynamics and one important subjective career outcome, clarity of professional identity.

In the challenging career context of the new economy, it is critical that researchers develop a solid understanding of identity, particularly professional identity, and the factors that influence its development. Research has suggested that people develop their professional identities through the exploration of multiple selves, relationships, or organizations (e.g. Hall *et al.*, 1997; Ibarra, 1999; Kram, 1996). This view is consistent with Arthur and Rousseau's (1996) notion of boundaryless careers (see Sullivan, 1999, for a review). Compared to traditional organizational settings, boundaryless career environments act as weaker situations (Bell and Staw, 1989; Weick, 1996), thus allowing individuals' identities to serve as a key force in shaping their careers. Further, as recent work suggests, in order for people to successfully realize their career potential in the current career context, it is imperative to develop two metacompetencies: self-knowledge or identity awareness and adaptability; only with adequate identity awareness can this adaptability be utilized appropriately (Hall, 2002).

Professional identity development, such as through the exploration of possible new identities (Ibarra, 1999) or self-awareness processes (Hall, 2002), occurs over the course of time. Given that developmental networks deal with professional and psychosocial support in the context of careers, which by definition unfold over time, the element of time necessarily plays a key role. Thus, understanding the linkages between professional identity development and developmental networks necessitates a longitudinal view of their changes or stability over time, rather than taking a snapshot view of an individual's network and professional identity at a single point in time. Yet research has not examined how developmental network dynamics might relate to professional identity development. In part, this dearth of research stems from methodological constraints, such as the difficulty of studying both individuals and their networks over time. The majority of social network research centers on the consequences of existing network structures and/or employs cross-sectional designs (e.g. Burt, 1992; Burt and Minor, 1983; Granovetter, 1973; Higgins, 2001; van Emmerik, 2004).

The present research addresses these issues with a unique, longitudinal dataset of individuals' developmental networks. During the five-year timeframe of the study, the participants made the transition from graduate school into the workforce and spent several years working. This context allowed us to capture the most important phase of professional identity development, the early-career years (Ibarra, 1999; Schein, 1978), and so, examine the relationship between individuals' developmental networks and their professional identities. Thus, the research presented here addresses the following question: how are developmental network characteristics related to professional identity over time?

Theoretical background and hypotheses

Developmental networks

Traditionally, mentoring has been viewed as occurring between two people, a junior and senior person within a single organization. Recent work in this area has broadened this conceptualization of mentoring. Higgins and Kram (2001) put forth the developmental network perspective that suggests that individuals gather both professional and psychosocial support from a number of people who may be connected to one another. Thus, individuals receive career and psychosocial support from "the set of people a

protégé names as taking an active interest in and action to advance his or her career by providing developmental assistance” (Higgins and Kram, 2001, p. 268), rather than necessarily from one focal mentor. Multiple mentoring relationships can occur across hierarchical levels, including superiors, peers, and subordinates, as well as within and outside of the organizational context (de Janasz *et al.*, 2003; Higgins and Kram, 2001; Higgins and Thomas, 2001). Recent research has shed light on the relationship between multiple mentors and work satisfaction (van Emmerik, 2004), intentions to remain with a firm, organizational retention and promotion (Higgins and Thomas, 2001), career success (de Janasz *et al.*, 2003), protégé attitudes toward the work setting (Baugh and Scandura, 1999), and the decision to change careers (Higgins, 2001).

Professional identity

Organizational researchers have increasingly paid attention to the importance of career or professional identity – defined as “the relatively stable and enduring constellation of attributes, beliefs, values, motives, and experiences in terms of which people define themselves in a professional role” (Ibarra, 1999, pp. 764-765; Schein, 1978) – for achieving both objective and subjective success (Hall, 2002; Ibarra, 1999). Traditional adult development researchers (e.g. Levinson *et al.*, 1978; Super, 1957; Super *et al.*, 1996) suggested that people proceed through a fixed path of alternating stages and transitions. Accordingly, in this view, the development of professional identities occurs as a natural byproduct of a progression through each career phase.

In contrast to this passive notion of identity development, more recent career research has found that people actively develop their identities through acquiring the ability to process feedback about the self and achieve self-awareness (Hall, 2002) and through improving their capacity to interact with the complexities of their environments (Kegan, 1982; Kegan, 1994). A key example of this new line of careers research is Ibarra’s idea that people construct their professional identity by first experimenting with trial identities, or “provisional selves,” before fully developing their professional identities (Ibarra, 1999). In her discussion of the individual and situational antecedents of identity development, Ibarra calls for empirical, organizational research that investigates the connections between networks and identity (Ibarra, 1999; Ibarra, 2003). The present research aims to address this need.

Professional identity exploration and developmental network density

Developmental networks may provide a key means by which people can explore their possible selves and construct their professional identities. Specifically, the mutual trust, interdependence, and reciprocity that characterize relationships in the developmental network (Higgins and Kram, 2001, Kram, 1996) offer a powerful medium for reflecting and shaping the protégé’s professional identity (Cooley, 1902; Goffman, 1959; Mead, 1934; Swann, 1987). Ibarra noted that identity adaptation and change are most likely to occur during career transitions (Ibarra, 1999), such as during the transition from school to work or between jobs. Thus, career transitions are a prime opportunity for developmental networks to have a significant impact on a protégé’s professional identity development.

Research suggests that professional identity development may be influenced by the variety of assistance individuals receive in their careers. For example, Ibarra (1999) proposed that individuals who have a greater variety of role models gain a broader

repertoire of possible selves. Having a broad repertoire enables individuals to engage in tasks that can increase their likelihood of successful professional adaptation, including developing a professional identity that suits their present context. The breadth of the repertoire of possible selves that people have at their disposal is affected by numerous individual and situational antecedents (Ibarra, 1999). In addition, research has demonstrated that diversity in developmental mentors is associated with increased career-related cognitive flexibility and career change (Higgins, 2001). This further suggests that the amount of variety in individuals' developmental networks enables increased exploration of one's professional identity.

Therefore, as successful professional identity exploration and adaptation occurs, individuals should develop a clearer sense of their professional identity. When individuals are clear about their professional identity, they are clear about the "enduring constellation of attributes, beliefs, values, motives, and experiences in terms of which [they] define themselves in a professional role" (Ibarra, 1999; Schein, 1978). This clarity reflects a cognitive awareness of what one's core professional identity is, regardless of whether the individual knows how to translate this identity into action or not. The following quote, from a person about to make the school-to-work transition, highlights a clear sense of professional identity around being in real estate, even though the pragmatic plans for how to enact this identity are not articulated:

Although I am positive that I would like to have a career in real estate . . . [t]raditionally, it has been difficult to enter and to exit the real estate industry. Now is the perfect time to strengthen my experience in the industry. My professional history clearly points in the direction of real estate.

At the other end of the spectrum, an unclear sense of professional identity is exemplified by a lack of understanding, and so, confusion about one's professional identity. The following quote portrays an unclear sense of professional identity, along with the heightened anxiety surrounding taking action in light of this identity confusion:

I'm having a hard time narrowing my focus into a specific role. I am considering jobs in marketing for "lifestyle" companies like media, entertainment, fashion, or cosmetics . . . or working in the arts so that I can have enough free time to continue my work on [my entrepreneurial venture] . . . or at an auction house . . . or in new product development within a creative company. I know I want to be at a place where I can learn and grow, but I'm very nervous about taking the first step and winding up going in the wrong direction.

These quotes echo Ibarra's (1999) notion that professional identity reflects individuals' perceptions regarding a professional role. In this paper, we propose that the extent of clarity regarding one's professional identity will be related to the variety of support one receives from developmental others.

In social networks research, variety within a network is represented by the notion of network diversity. According to this view, a critical attribute of an individual's network is the degree to which it provides access to different kinds of resources and information. In particular, the more diverse one's network, the greater one's access to non-redundant resources and information (Burt, 1992; Burt and Minor, 1983; Granovetter, 1973). Network diversity is generally conceptualized either as: network range, the number of social systems from which the network members come; or network density, the extent to which the members of the network know and/or are

connected to one another (Brass, 1995; Burt and Minor, 1983; Higgins and Kram, 2001; Krackhardt, 1994).

Developmental network range and density are exemplified as follows: in a high-range developmental network, developers would be drawn from multiple social contexts, such as from an employer, an educational institution, a professional association, and a community organization, whereas a low-range developmental network would consist of developers coming from a single context, such as all from the employment setting. In a high-density developmental network, developers would know one another, whereas a low-density developmental network would consist of developers who do not know one another. Both range and density tap into the degree of redundancy in the network (Brass, 1995; Burt and Minor, 1983). The greater the range or the lower the density of the developmental network, the less redundant the network is and the greater the access to important information (Higgins, 2001; Higgins and Kram, 2001). In the present research, we employ density as our conceptualization of developmental network diversity. We chose to focus on density, rather than range, because of the precedent set by prior social network research (Wasserman and Faust, 1994).

Developmental network density and the breadth of one's repertoire of provisional selves fulfill similar functions in the development of professional identity. By providing access to non-redundant, career-related information, both low-density and hence high-breadth of repertoire networks facilitate professional identity exploration. Thus, we expect that our focus on developmental network density provides insight into professional identity exploration.

Hypotheses: developmental network density and professional identity

Ibarra proposed that the greater the variety of role models, the greater the opportunity for increased self-knowledge (Ibarra, 1999). A developmental network of highly varied mentors consists of members who do not know one another. In density terms, this example translates into a low density network. At the other end of the spectrum, a narrow group of mentors in which all members know one another is a high density network. Prior research suggests that greater diversity of developmental network structures is associated with greater variety in information and resources as well as greater cognitive flexibility (Higgins, 2001), which should enhance an individual's professional identity exploration. Thus, since, as Ibarra (1999) suggested, exploration leads to enhanced understanding of one's professional identity, overall, we expect that the relationship between developmental network density and clarity of professional identity will be negative.

In this study, we examine several aspects of the time and timing of developmental network density as it relates to professional identity clarity. First, *H1* investigates the relationship between early-career density levels and professional identity clarity several years into one's career. As previously argued, we expect to find a negative relationship, such that:

H1. Early-career density is negatively related to clarity of professional identity.

Early-career density represents a snapshot view of individuals' developmental network density at the beginning of their careers. In addition, we explore the relationship between general density – or the density level that characterizes a broader

timeframe of one's early career – and clarity of professional identity. In line with prior arguments, here, too, we expect to find a negative relationship:

H2. General density is negatively related to clarity of professional identity.

Finally, we examine a third view of density, density dynamics, and its relationship to clarity of professional identity. The importance of understanding identity as the product of an unfolding, dynamic process has been highlighted by careers researchers, including Hall's recent depiction of the relationship between self-awareness, identity, and leader development (Hall, 2004). More generally, careers researchers have proclaimed the need for understanding the evolution of career phenomena over time through longitudinal methods (e.g. Barley, 1989; Hall, 2002).

Examining how change in density relates to clarity of professional identity provides some insight into the professional identity exploration process. If the density of an individual's developmental network increases, such that the network is becoming more insular, this indicates that the exploration process is diminishing, yielding, we expect, a decreased sense of clarity with respect to professional identity. In contrast, if density decreases, such that the network is broadening, this reflects a greater engagement in the exploration process and so, should lead to increased clarity of professional identity. Hence, we hypothesize the following:

H3. Density dynamics are negatively related to clarity of professional identity, such that a positive change in density (e.g. density is increasing over time) is associated with a decrease in clarity of professional identity and such that a negative change in density (e.g. density is decreasing over time) is associated with an increase in clarity of professional identity.

Methods

Sample and procedures

Participants in this three-wave, longitudinal study were students from a top-20, East Coast, full-time MBA program. The first survey was administered during the spring of 1996, the peak career search and decision-making period for this group of individuals. After extensive survey development, including open-ended interviews and surveys and pilot testing, the final version of the first survey in the longitudinal study was administered in March 1996.

The 136 participants in study, all from the MBA class of 1996, were solicited through two different methods. One MBA section of 87 students was invited to participate ($n = 67$, 77 percent response rate) and 300 randomly selected students were mailed a survey ($n = 69$, 23 percent response rate). There were no statistically significant differences found with respect to any of the main variables of interest between these two subsets of participants, and they were thus pooled into a total of 136 initial participants (50 percent response rate). Of this sample, 28 percent were women, 34 percent were non-US citizens, 32 percent were married, and 24 percent had one or more graduate degrees when they entered business school. The average age of the respondents was 27 years ($SD = 2.23$), and their average full-time work experience was 3.85 years ($SD = 1.84$).

The second data collection in this longitudinal study occurred two years after the initial data collection, in Spring 1998 ($n = 108$, 78 percent response rate). The final survey was completed in 2001 ($n = 87$, 63 percent response rate). These second and

third surveys, which were sent to participants by mail, consisted of repeated measures from the initial survey, including measures of participants' developmental networks, and questions about up-to-date employment information. No significant differences between those who did and those who did not return these surveys were found along any of the main variables of interest, including developmental network characteristics.

Developmental network measures

The name-generator device used in this study asked respondents to list those people who "currently (i.e. at some time over the last year) [took] an active interest in and concerted action to advance [their] career[s] . . . [and who] may assist [them] in personal and professional development." Consistent with recent research that has encouraged researchers to examine both extraorganizational as well as intraorganizational helping relationships (Higgins and Thomas, 2001; Thomas and Higgins, 1996), respondents were given clear instructions to "think broadly" when they named individuals, including those they "work or have worked with, friends, or family members." On average, participants identified four people in their developmental networks, which is consistent with prior content-specific network research (Podolny and Baron, 1997). In total, detailed information was collected on 583 relationships.

Developmental network diversity: density. On the surveys, participants filled out a complete network chart. For each possible pair of people in the network, participants indicated whether the members of the pair knew one another or not. Consistent with social networks research, density was calculated as the number of these "knowing ties" divided by the number of possible ties in the entire developmental network (Anderson *et al.*, 1999).

Clarity of professional identity measure

We measured clarity of professional identity on both the second and third surveys in this longitudinal study. Measuring this construct at the end of the study (survey 3) allows us to view it as an outcome of the developmental network dynamics that occurred in the years preceding this measurement, while also controlling for professional identity in the previous time period (survey 2). Four items were used to measure clarity of professional identity:

- (1) "I have developed a clear career and professional identity."
- (2) "I am still searching for my career and professional identity" (reverse coded).
- (3) "I know who I am, professionally and in my career".
- (4) "I do not yet know what my career and professional identity is" (reverse coded).

These items were rated on a seven-point agreement scale, where 1 = strongly disagree, 4 = neutral, and 7 = strongly agree. These items reflect previous theory and research on identity (Markus and Nurius, 1986; Yost *et al.*, 1992).

The clarity of professional identity scale items were subjected to psychometric analyses to establish internal consistency reliability and discriminant validity from other career outcomes scales. The internal consistency reliabilities (Cronbach's alpha) for the four items was 0.90 on both survey 2 and survey 3. These values are well above the threshold of acceptability for scale consistency (Rosenthal and Rosnow, 1991).

Discriminant validity analyses examined whether the clarity of professional identity scale could be differentiated from three other potentially related scales measured in survey 3:

- (1) Career planning (e.g. “I have a strategy for achieving my career goals”).
- (2) Career self-efficacy (e.g. “I believe that I can do what I need to do in order to make my career successful”).
- (3) Perceptions of career success (e.g. rating “how successful my career has been” on a scale of “not at all” to “completely”).

The internal consistency reliabilities for these scales were all acceptable (0.94, 0.82, and 0.76, respectively), as were our discriminant validity analyses. In sum, these psychometric analyses showed that the clarity of professional identity scale was both internally consistent and distinct from other subjective outcomes, the latter two of which may reflect more general affective assessments regarding one’s career and prospects.

Statistical analysis

To investigate the longitudinal relationship between developmental network dynamics and professional identity, we utilized multiple regression models. The models for testing *H1*, *H2*, and *H3* included the following identical elements: the dependent variable was professional identity at time 3 and independent variables included professional identity at time 2 and controls for gender, years of work experience, age, self-esteem (items based upon Rosenberg’s (1965) scale), and post-MBA job industry (dummy variables for working in the financial services industry and the consulting industry). The model to test *H1*, which addresses the relationship between early-career developmental network density and professional identity, includes the measure of developmental network density at time 1 as the key predictor of interest. The model to test *H2*, which addresses the relationship between general developmental network density and professional identity, includes a measure of the average density at time 1 and time 2 as the key predictor of interest. Lastly, the model to test *H3*, which addresses the relationship between developmental network density dynamics and professional identity, includes a difference score between density at time 1 and time 2 as the key predictor of interest.

Results

Descriptive statistics for the control variables in these analyses are reported in Table I. Of all the control variables included in the analyses, the only significant predictor of clarity of professional identity was post-MBA job industry; in our *H3* model, the dummy variable for financial services was significantly and positively associated with clarity of professional identity ($\beta = 0.70$, $p = 0.03$) (see Table II).

Clarity of professional identity

The four-item scale of clarity of professional identity, measured on the time 3 survey, served as the dependent variable in the multiple regression analyses for *H1*, *H2*, and *H3*. On the seven-point scale, the mean clarity of professional identity score was 4.69 (SD = 1.36, $n = 76$). Thus, on average, the research participants felt a slight degree of professional identity clarity after they had been out of graduate school for about five

	X	SD	1	2	3	4	5	6	7	8	9	10
1. Gender ^a	0.26	0.44										
2. Self-esteem ^b	6.05	0.89	0.05									
3. Years of work experience (prior to MBA)	3.75	1.55	-0.33**	-0.15								
4. Age	27.78	2.14	-0.15	-0.17	0.65**							
5. Post-MBA job industry: financial services ^c	0.30	0.46	0.00	0.06	-0.10	-0.11						
6. Post-MBA job industry: consulting ^d	0.32	0.47	-0.02	0.03	0.02	0.02	-0.45**					
7. Clarity of professional identity at Time 2	4.00	1.50	-0.01	0.39**	-0.03	0.09	0.17	-0.13				
8. Clarity of professional identity at Time 3	4.69	1.36	-0.12	0.24*	0.08	0.11	0.18	-0.07	0.64**			
9. Early career developmental network density ^e	0.56	0.31	-0.14	0.10	0.05	0.01	0.03	-0.04	0.04	-0.06		
10. General developmental network density ^f	0.62	0.23	-0.05	0.17	-0.03	-0.04	0.16	0.05	0.01	-0.16	0.81**	
11. Developmental network dynamics ^g	0.11	0.36	0.18	0.04	-0.12	-0.06	0.16	0.13	-0.05	-0.09	-0.66**	-0.10

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; $n = 76$, the subset of the 136 participants who provided full responses across all three timepoints of data collection; ^a0 = male, 1 = female; ^b1 = lowest self-esteem, 7 = highest self-esteem; ^c1 = in financial services industry ($n = 23$), 0 = not in financial services industry ($n = 53$); ^d1 = in consulting industry ($n = 24$), 0 = not in consulting industry ($n = 52$); ^eDensity at time 1; ^fAverage of density at time 1 and density at time 2; ^gDifference between density at time 2 and density at time 1

Table I.
Means, standard deviations, and correlations

Table II.
Multiple regression
models for *H1*, *H2*, and
H3: the effects of
developmental network
density variables on
clarity of professional
identity at time 3

	Hypothesis 1		Hypothesis 2		Hypothesis 3	
	Parameter estimate	Standard error	Parameter estimate	Standard error	Parameter estimate	Standard error
Intercept	2.46	2.30	2.54	2.23	2.45	2.22
<i>Control variables</i>						
Gender ^a	-0.40	0.30	-0.38	0.28	-0.32	0.29
Self-esteem ^b	0.00	0.16	0.05	0.16	0.06	0.16
Years of work experience (prior to MBA)	0.09	0.11	0.08	0.10	0.07	0.10
Age	-0.01	0.08	0.00	0.08	0.00	0.08
Post-MBA job industry: financial services ^c	0.44	0.31	0.59	0.30	0.70	0.32
Post-MBA job industry: consulting ^d	0.24	0.31	0.35	0.30	0.44	0.31
Clarity of professional identity at time 2	0.57	0.10	0.55	0.09	0.54	0.09
<i>Developmental network density variables</i>						
Early career developmental network density ^e	-0.69	0.42			-1.60	0.55
General developmental network density ^f			-1.49	0.54		
Developmental network dynamics ^g					-1.22	0.50
R-square	0.44		0.48		0.48	
Adjusted R-square	0.38		0.41		0.42	

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; **** $p \leq 0.10$; $n = 76$, the subset of the 136 participants who provided full responses across all three time-points of data collection; ^a0 = male, 1 = female; ^b1 = lowest self-esteem, 7 = highest self-esteem; ^c1 = in financial services industry ($n = 23$), 0 = not in financial services industry ($n = 53$); ^d1 = in consulting industry ($n = 24$), 0 = not in consulting industry ($n = 52$); ^eDensity at time 1; ^fAverage of density at time 1 and density at time 2; ^gDifference between density at time 2 and density at time 1

years. The mean of clarity of professional identity at time 2, which was used as a control variable in these analyses, was 4.00 (SD = 1.50, $n = 76$). Overall, there was a statistically significant increase in professional identity clarity from time 2 to time 3 ($M = 0.69$, $SD = 1.22$, $t = 4.94$, $p < 0.0001$).

Hypothesis 1

The first hypothesis examined early developmental network density as a predictor of clarity of professional identity. The mean for early-career density was 0.56, and the standard deviation was 0.31, thus demonstrating that there was variance in early-career density across the participants in the study. We found weak, not statistically significant evidence for *H1*. Still, the results were in the predicted direction ($\beta = -0.69$, $p = 0.10$). This result provides weak and only suggestive evidence that the denser one's early-career developmental network, the less clear one's professional identity several years later.

Hypothesis 2

The second hypothesis focused on general developmental network density (the average of time 1 and time 2 density) as a predictor of clarity of professional identity. The mean for general density was 0.62 (SD = 0.23). This standard deviation again reflects the variance that exists in the participants' general density levels. There was a statistically significant and negative relationship between general density and clarity of professional identity five years later ($\beta = -0.49$, $p = 0.008$). Therefore, *H2* was supported.

Hypothesis 3

The third hypothesis tested whether developmental network dynamics, as measured by a difference score between time 1 and time 2 density, predict clarity of professional identity. The mean of 0.11 (SD = 0.36) for this difference score shows that on average, density increased from time 1 to time 2. Here, we found a statistically significant and negative relationship between density dynamics and clarity of professional identity five years later ($\beta = -1.22$, $p = 0.02$), controlling for initial density levels. The negative coefficient on the parameter estimate indicates that as the difference score increases (e.g. as density increases from time 1 to time 2), clarity of professional identity decreases. Thus, we found significant evidence to support *H3*.

In sum, the pattern of results is consistent across all three of these hypotheses: as density increases, clarity of professional identity decreases.

Discussion

Recent research has broadened traditional views of both mentoring and professional identity development. These new views, as exemplified by Higgins and Kram's (2001) conceptualization of developmental networks and Ibarra's (1999) notion of provisional selves, offer fascinating theoretical frameworks for approaching their respective topics. However, there has been no work to investigate the links between developmental networks and professional identity development. Furthermore, there has been a call for research that lends insight into the longitudinal nature of career-related phenomena (e.g. Barley, 1989; Hall, 2002). The present research engages in these lines of inquiry by

investigating how developmental network characteristics relate to professional identity over time using a unique longitudinal context.

The longitudinal study presented here began when the participants were second-year MBA students and followed them through the subsequent five years of their careers. Regarding the relationship with professional identity, we found that as developmental network density increased, suggesting less access to valuable, non-redundant resources, clarity of professional identity decreased. Specifically, our analyses showed a statistically significant and negative relationship between both general career density levels and density dynamics with clarity of professional identity several years later.

This study offers an important first glimpse into the uncharted territory of the longitudinal impact of developmental networks. In particular, since our longitudinal study spans our participants' transition from graduate school into the first few years of work, we gained insight into a critical, formative time period for professional identity exploration: the early-career stage (Ibarra, 1999; Schein, 1978). Further, our study makes a significant contribution through its focus on an interesting, but under-studied, subjective career outcome, clarity of professional identity.

Implications for theory

This study contributes to two main lines of research. The first is research on mentoring, and in particular, developmental networks, a relatively new perspective in mentoring research. Our underlying assumption – that people construct their identities through their developmental networks – constitutes a relational perspective, consistent with recent career theory (Hall *et al.*, 1996). We know little about the dynamics of identity development through the cultivation of important relationships over time.

Our research advances the understanding of developmental mentoring networks through examining these networks' connection with a salient career outcome. Whereas previous research has attempted to measure developmental networks and career outcomes either simultaneously (on the same survey) (e.g. Higgins, 2001; Higgins and Thomas, 2001; van Emmerik, 2004) or across two time points (Higgins and Thomas, 2001), this is, to our knowledge, the first empirical study that includes three time points of data. This amount of data allowed us the flexibility to examine network characteristics from time 1 alone ("early-career density"), the average of time 1 and time 2 ("general career density"), and the change between time 1 and time 2 ("density dynamics") as predictors of our outcome, clarity of professional identity, at time 3, controlling for this outcome at time 2. While our study cannot proclaim a causal link between increasing developmental network density and decreasing clarity of professional identity, our methods provide a much more rigorous initial step toward examining this question than pre-existing studies.

Additional research that examines why and how developmental networks change over time would lend insight into the dynamics of network structures, an area that remains open to future research. Furthermore, research that explores the content of help provided by developmental relationships along with developmental network structures would lend further insight into the proposed linkages between developmental network structures and identity development suggested here.

The second research stream to which our research contributes is professional identity development. In particular, our work builds on Ibarra's notion of provisional selves (Ibarra, 1999) by proposing that developmental network density is an indicator of one's breadth of professional role models. This breadth, or lack thereof, may represent the degree of one's opportunity for professional identity exploration through one's developmental network. The negative relationships we found between developmental network density and clarity of professional identity is in line with our conjecture that increased professional identity exploration is reflected in increased clarity of professional identity at a later point in time. Our research identifies that the link between developmental network density and clarity of professional identity exists, and encourages future research to examine underlying mechanisms, such as identity exploration, suggested here.

In the present study, we focused on clarity of professional identity, but did not account for the multiple dimensions that might comprise an individual's identity (e.g. Deaux, 1996). For example, given Ibarra's definition (Ibarra, 1999) that professional identity centers around understanding one's roles at work, then while one may have a clear sense of one's professional identity (e.g. as an academic), one's various roles (e.g. as a researcher, teacher, practitioner) could comprise several different dimensions of a clear sense of professional identity. Future research that empirically investigates how clarity of professional identity and dimensionality of professional identity are related could provide a more rich and nuanced view of how developmental network structures influence the evolution of professional identity over time.

At a broader level, our focus on professional identity builds on the recent trend in careers research to examine subjective career outcomes. Beginning their work in the late 1930s to 1950s, the pioneers of career theory – known as the Chicago School – developed the notion that careers comprise both objective and subjective elements (e.g. Hughes, 1937). In spite of this early, broad vision of careers, recent careers research has been limited in scope. For instance, Arthur and Rousseau found that of the careers articles published in major interdisciplinary journals between 1980 and 1994, more than 75 percent focused on objective perspectives (Arthur and Rousseau, 1996). Within the last several years, there has been a call for research that includes not only a subjective viewpoint of careers (e.g. Barley, 1989; Derr and Laurent, 1989; Hall, 2002), but also the extension of career research beyond the confines of a particular organization (Arthur and Rousseau, 1996; Higgins, 2005; Sullivan, 1999). Thus, the present research contributes to careers research by exploring a subjective element of careers, clarity of professional identity, which transcends organizational boundaries.

Limitations

As unusual as our dataset is, in terms of its longitudinal measurement of complete developmental networks, the present study is limited by our use of graduating MBA students from a single elite business school as our participants. Given the relative homogeneity of this population in terms of education and profession, we might have expected individuals' density dynamics to be strikingly similar to one another. We found just the opposite, however: not only was there variance in people's early-career density levels, but there was also variance in people's density dynamics. Still, future studies with other populations are warranted.

Second, although we explored the structure of developmental networks, we did not examine the exact content of the help that was provided to the protégé nor the help-giving interactions. Given this, we were not able to discern the actual processes through which developmental network density affects professional identity exploration. Such an investigation would advance the present research.

Implications for practice

This research takes a first step toward painting a picture of developmental networks over time, and thus offers several practical implications. While much remains to be understood about both why developmental networks change as they do and the relationship between developmental networks and a wide range of career outcomes, the fact that they do change and that we find a relationship between network density and clarity of professional identity offers the prospect that people might be able to improve their careers through changing their developmental networks.

This opportunity for intervention may be most striking during the early phases of people's careers. Our finding that general density is significantly associated with clarity of professional identity supports the overarching notion that beginnings are critical (e.g. Gersick, 1988; Lieberman, 1956). Building on the idea that less density in a network is associated with greater access to important, non-redundant resources and information (e.g. Burt, 1992), the present study provides additional support for advising young people to strive for diversity in their developmental networks. Not only can this diversity improve short-term outcomes, as described in previous research (e.g. Higgins, 2001; Higgins and Thomas, 2001; van Emmerik, 2004), but it can also lead to improved long-term outcomes, as our findings suggest.

At the same time, it is important to note that there may be substantial benefits to having other kinds of developmental network structures. For example, and related to work that has stressed the strength of strong ties (Krackhardt, 1992), the possibility remains that benefits may be derived from dense, more homogeneous developmental networks, such as the receipt of social support. Such an avenue also remains open for future research.

Conclusion

In summary, this study presents the results of a unique, longitudinal study of developmental networks and their relationship to a subjective career outcome, clarity of professional identity. We found that developmental network density, which we suggest reflects the professional identity exploration process, is negatively related to clarity of professional identity. This research provides novel insights to the mentoring and careers literatures. Given the previously uncharted territory of understanding the dynamics of developmental networks and its relationship to career outcomes, our study opens up avenues for future research, while also answering questions about developmental networks and the ways they function over time. It is our hope that future research will build upon the present study to examine how and why developmental networks evolve, and the impact of this evolution on multiple aspects of individuals' careers.

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