Yong-Lyun Kim
Korea

The New Educational Review

Women's Career Development Towards School Superintendency: An Investigation into the Effect of Tacit Learning

Abstract

Career development can be discussed in two primary ways: 1) as a type of formal education and job preparation that a person receives; and 2) as a type of informal learning-related career experiences that a person encounters. This study investigates the effect of learning preparedness on female school administrators' career development. For the data analysis, this study uses the Structural Equation Modeling statistics. The findings from the analysis support the view that tacit learning from both direct and indirect job experiences has a greater effect on women's career development than formal learning. The effect of these factors, however, varies according to women's aspirations for superintendency.

Keywords: *school superintendency; women administrators; career development; tacit learning*

Introduction

Literature focusing on women in the school superintendency, the top leadership position in educational administration, has been growing for the past two decades. With the issues of women in the superintendency, many studies have produced findings related to job characteristics, leadership styles and to the professional perceptions of incumbents, rather than issues related to the career development towards the position (Brunner & Grogan 2007; Maienza 1986; Tallerico, 1999). In particular, studies that identify the relationship between determinant factors

and women's career development are rather unusual. With a blind eye toward the question of what constitutes superior preparation, differences between the ones who are in the superintendency and the others who are school administrators (except superintendents) could result in explicit variations in preparation profiles for the superintendency positions. For better elucidation of how the variation in career mobility patterns affects women's promotion to the superintendency, this study focuses on career development factors and their possible relationship with access to superintendency.

Career development can be discussed in two primary ways (learning preparation): 1) as a type of formal education and job preparation that a person receives; and 2) as a type of informal learning-related career experiences that a person encounters, including experiential or tacit learning (Author(s); Nestor-Baker & Hoy 2001; Reber 1989; Wagner 1987; Wagner & Sternberg 1985). Formal learning, such as receiving an educational credential, is generally assumed to have a positive impact on career development, particularly during the entry levels in an individual's career (Bills 1988; Spilerman & Lunde 1991; Useem & Karabel 1986; Wernick 1994). However, it is not clear whether formal learning has a consistent impact on the processes of career mobility as women move toward top leadership positions, such as school superintendency, which is the primary target group of this study.

As informal learning, the acquisition of tacit knowledge is considered to be effective for leadership practices as well as for career development (Bjork & Mueller 2006; Reber 1989; Wagner & Sternberg 1985). Previous studies have focused on discovering how tacit knowledge could be acquired from real-world experiences (Bjork & Mueller 2006; Nestor-Baker & Hoy 2001; Reber 1989); yet, it is rarely known which types of tacit knowledge are needed for leadership practice and career development. This study considers the acquisition process of tacit knowledge as informal learning that can develop one's knowledge structure for career development.

The aim of the study is to investigate what types of preparation and experiences (career mobility factors) differentiate women superintendents from women central (district) office administrators (except women superintendents) in their career development. In addition, this study identifies how the relationship between career mobility factors and women's career development varies depending upon whether women aspire to superintendency. For this purpose, career developmental factors are investigated by comparing women superintendents to women central office administrators who aspire to superintendency and who do not aspire to the position.

Four Career Mobility Factors

This study has four conceptual areas of career mobility factors: 1) *direct career experience on the job*, 2) *indirect career experience from professional relationships*, 3) *formal education and training* and 4) *personal perceptions of discrimination limiting administrative opportunities for women.*

First, *direct career experiences on the job,* generally refers to hands-on knowledge about enhancing a person's capability and opportunity for career development (Bjork & Mueller 2006; Wagner & Sternberg 1985). As asserted by Reber (1989), tacit knowledge is acquired through direct experiences on the job and moreover, the experiences can be fundamental resources for managing one's career. Action-oriented and real-world knowledge can be gained from work setting experiences, such as working directly with exemplary leadership, participating in high risk activities and being involved in career competitiveness (Bjork & Mueller 2006). In this study, the construct of *direct experience on the job* is estimated through the three indicators that represent an individual's career characteristics in school administration: women's career experience in education (including teaching and administration), the school level of their first administrative position and their experience as a principal.

Second, *indirect career experiences from professional relationships,* refers to the human network that is built through relationships with other people and participation in professional organizations. These activities are important components of tacit learning. Professional relationships are not always related to direct experience from real-world tasks; rather, the concept of tacit knowledge can be expanded to include the practical intelligence that is generally acquired through the socialization processes. In this study, the factor of *indirect career experiences* is estimated through two aspects of human networks for career development: mentorship experiences and the number of professional organizations to which school administrators actively belong.

Third, *formal education and training,* generally means learning opportunities in order to increase explicit knowledge for one's career development. While the previous two factors are concerned with tacit learning for career development, *formal education and training* refers to educational credentials and preparations which are acquired from formal educational settings and activities. Many studies have confirmed the strong positive relationship between educational credentials and career advancement (Bills 1988; Spilerman & Lunde 1991; Useem & Karabel 1986; Wernick 1994). Whether educational credentials are a critical factor for career mobility or simply a necessary qualification for top leadership positions in the

educational administration is investigated in this study. This conceptual factor is estimated through two indicators: highest academic degree and participation in professional training programs.

Last but not least, *personal perception of discrimination limiting administrative opportunities for women* refers to women administrators' views regarding the discriminatory policies and practices that are possibly held by school districts and/or school boards during women's career development in the educational administration. This factor includes women's perceptions about the existence of gender bias and a glass ceiling throughout the path of their career development. For example, women school administrators may think that school boards do not actively recruit women, and school board members do not perceive women as strong managers. The construct of this factor is estimated through three indicators: women administrators' perception about the glass ceiling, discriminatory practices and the school boards' perceptions regarding women's leadership.

In addition to the four conceptual factors, this study has a controlling variable: *district size*. Research has confirmed that the district size, which is measured by student enrollment, has a strong impact on the gender balance in school administration (Author(s); Brunner & Grogan 2007).

Methodology

Data Source

A large national data set, the *2002 National Study of Women Superintendents and Central Office Administrators* in the USA, was analyzed for the purposes of this study. The American Association of School Administrators (AASA) conducted Ten-Year Studies of the Superintendency since 1960, and the association completed the first nationwide study focusing *only* on women in the superintendency and central office positions. Their study provides the most up-to-date, comprehensive information on women and superintendency in the USA. For the purpose of the current study, the data analysis concentrates on specific portions of the survey including career experience, mobility, formal and information education and the perception of discrimination in the selection process.

Analysis and Hypotheses

Structural Equation Modeling (SEM) is used to identify the indirect effect that may occur via a mediator factor (*personal perception of discrimination*) as well as the direct effect of the factors on women's career development. To compare

group differences, three structural equation modeling (SEM) tests were conducted with the same predictors (four conceptual factors), but with different dichotomous dependent variables, which are three combinations of women's groups: Group A comprised women superintendents and the overall central office administrators, including women administrators aspiring and non-aspiring to superintendency. Group B consisted of women superintendents and aspiring women central office administrators, and Group C included women superintendents and non-aspiring women central office administrators. The hypotheses based on the relationships between the factors were as follows:

> Hypothesis 1. Four latent factors are directly or indirectly related to the current administrative position of women (being a superintendent or central office administrator).
> Hypothesis 2. All relationships and the effects of career mobility factors vary across the three targeted groups in this study; superintendents, aspiring women administrators and non-aspiring women administrators.

Validity and reliability tests were done in order to measure the model construct in this study. To consolidate the theoretical model, this study employed the theory of tacit knowledge (Bjork & Mueller 2006; Polanyi 1966; Reber 1989) and experts' opinions in the educational administration field. In addition, the result of the reliability test yielded adequate and marginal Cronbach's alpha coefficients ranging from .65 to .78.

Findings

Effects of Career Mobility Factors

All the values of the model that fit the indices in the model test for Group A are acceptable: χ^2 (45) = 150.8 (p < .001, Joreskog's value = 3.4); GFI = .98; NFI = .92; CFI = .94; RMSEA = .043. Examination of the beta coefficients indicates that three career mobility factors, including *direct experience on the job*, *indirect experience from human relationships* and *personal perception of discrimination,* have significant direct effects on women's career development (cf., Table 1). *Indirect experience* has the strongest positive effect on women's career development (β = .18, SE = .43, p = .014), whereas no significant effect of *formal education and training* has been found (β = .10, SE = .13, p = .101).

This result indicates that women superintendents have more mentorship experiences and belong to more professional organizations than women central

office administrators. Also, *personal perception of discrimination* has a significant but negative effect on women's career development, which means that women administrators have a stronger perception of discrimination than women superintendents. However, as far as the *formal education and training* for women's career development, women central office administrators have nearly the same level of education and training experience as women superintendents; hence, this factor does not explain the variation in the career difference between the groups.

Meanwhile, the model tests for the three women's groups also check the indirect relationship between career mobility factors and women's career development, which are mediated by their *personal perception of discrimination limiting administrative opportunities for women*. The study has found no statistically significant indirect effects of all factors including *indirect experience on the job.* This result implies that women's formal and tacit learning preparation for career development to the superintendency does not have a significant influence on their personal perceptions of discrimination that limits administrative opportunities for women in educational administration; in addition, it suggests that these perceptions do not mediate the relationship between women's learning preparation and their career development.

Finally, a partial support is provided for hypothesis one, where some factors have significant direct effects, but all the factors in the analysis have no significant indirect effects on women's career development. In addition, the *district size* (the controlling variable) has been found to have a strong negative effect on women's career development (β = – .39, SE = .007, p = .000); this indicates that while women central office administrators generally work in large school districts, women superintendents generally have their current positions in comparatively small school districts.

Table 1. Direct, indirect and total effects of career mobility factors

	Variable Name	Direct Effects	Indirect Path	Indirect Effect	Total Effect
Group A	Indirect Experience	.177*	Indirect Ex à Perception à Current Position	-.014	.163
	Direct Experience	.128**	Direct Ex à Perception à Current Position	.000	.128
	Formal Education	.102	Formal Ed à Perception à Current Position	.000	.102
	Personal Perception	-.102**			-.102
	District Size	-.393**			-.393

	Variable Name	Direct Effects	Indirect Path	Indirect Effect	Total Effect
Group B	Indirect Experience	.099	Indirect Ex à Perception à Current Position	-.008	.051
	Direct Experience	.059	Direct Ex à Perception à Current Position	-.016	.084
	Formal Education	.087	Formal Ed à Perception à Current Position	-.002	.085
	Personal Perception	-.190**			-.190
	District Size	-.330**			-.330
Group C	Indirect Experience	.172*	Indirect Ex à Perception à Current Position	.001	.176
	Direct Experience	.175**	Direct Ex à Perception à Current Position	-.005	.167
	Formal Education	.140*	Formal Ed à Perception à Current Position	.000	.140
	Personal Perception	-.035			-.035
	District Size	-.382**			-.382

Note: ** $p < .01$, * $p < .05$

Group Differences in the Relationships

The result of the model test for Group B indicates that some indices' values do not meet the general standard of the model fit: χ^2 (45) = 168.2 ($p < .001$, Joreskog's value = 3.7), GFI = .97; NFI = .86; CFI = .89; RMSEA = .053. On the contrary, all the indices' values of the model test for Group C are higher than the acceptable levels: χ^2 (45) = 152.7 ($p < .000$, Joreskog's value = 3.4); GFI = .98; NFI = .90; CFI = .93; RMSEA = .047. The squared multiple correlations (R^2) for the current position (dependent variable) in this analysis were .187 for Group B and .333 for Group C (cf., Table 2).

Table 2. Comparison of goodness-of-fit measures and R^2 **s**

Tests	χ^2 (df)	GFI	NFI	CFI	RMSEA	R^2
Test for Group A: (Supts + Aspiring + Non-aspiring)	150.8 (45) P = .000	.98	.92	.94	.043	.291
Test for Group B: (Supts + Aspiring)	168.2 (45) P = .000	.97	.86	.89	.053	.187
Test for Group C: (Supts + Non-aspiring)	152.7 (45) P = .000	.98	.90	.93	.047	.333

As an indicator of the direct effect, standardized regression weights (coefficients) of career mobility factors vary across the three targeted groups. In the model test for Group B, only the *personal perceptions of discrimination* are a significant factor among the four career mobility factors (cf., Table 3). This result indicates that aspiring central office administrators tend to strongly perceive a glass ceiling, discriminatory practices and gender-biased perceptions of school boards during the selection processes, while the group of superintendents does not.

The result of the model test for Group C shows an apparently opposite pattern to the previous analysis for Group B. The result finds three significant career mobility factors: *indirect experience, direct experience and formal education and training*. This result demonstrates that non-aspiring administrators have characteristics different from those of superintendents regarding the three career mobility factors pertaining to formal and tacit learning preparation for career development, whereas the *personal perceptions of discrimination* are not significant in this analysis.

Table 3. Group comparison with standardized regression weights

Coefficients (Direct Effects)	Group A	Group B	Group C	Critical Ratios		
				A – B	A – C	B – C
Indirect Ex	.177*	.099	.172*	.825	.056	.743
Direct Ex	.128**	.059	.175**	1.258	-.659	1.848
Formal Ed	.102	.087	.140*	.071	-.180	.237
Perception	-.102**	-.190**	-.035	1.444	-.1.524	2.884*
District Size	-.393**	-.330**	-.382**	-2.438*	-.884	-1.582

Note: If the critical ratio is greater than or equal to 1.96, then the coefficient is significant at the level of .05.

Finally, hypothesis two is partially confirmed, where the result shows that the effects of the career mobility factors on women's career development varies across the targeted groups. In particular, the model test for Group B has diminished coefficients (direct effects) of all the factors except for *personal perceptions of discrimination*, which means that the group of aspiring administrators generally has characteristics that are similar to the group of superintendents in terms of formal and tacit learning experiences for their career development; however, they have the strongest perceptions of discrimination in the selection processes. The model test for Group C, however, yields apparently different results from the test for Group B. The group of non-aspiring women administrators has characteristics different from those of the group of superintendents in formal and tacit learning preparation

for career development, whereas there is no significant difference between the two groups in the *personal perceptions of discrimination*.

Discussion and Conclusion

This study investigates the explicit variation in the profile of learning preparedness for the career development among groups of women administrators. The results provide a more complete understanding of women's career mobility towards school superintendency in terms of formal and informal learning for their career development. There are two major findings. First, tacit learning has a more powerful effect than formal learning on women's career development towards the superintendency. Second, however, the relationship between career mobility factors and women's career development varies across the groups according to their aspirations to the superintendency.

Tacit learning can explain why some women reach higher leadership positions (such as school superintendency) than others. This study confirms that women superintendents are more likely to acquire career management knowledge from their professional relationships and job-oriented experiences; thus, tacit learning becomes a more influential factor in women's career development. In fact, when applied to the top leadership position in the educational administration, tacit learning plays a stronger role than formal learning. However, this result does not necessarily mean that formal learning is insignificant in career development. Rather, the results imply that educational credentials and professional training are generally considered as qualifications required in the process of career mobility to the top leadership position.

Some studies have proposed a positive and strong relationship between formal education and career advancement (Spilerman & Lunde 1991; Useem & Karabel 1986; Wernick 1994). However, the results of this study suggest that the literature has overestimated academic intelligence, which is typically acquired from formal education settings and activities in the career developmental process (Nestor-Baker & Hoy 2001; Wagner & Sternberg 1985). In contrast, tacit learning has been underestimated, particularly in the process of career mobility to the top leadership position. Indeed, when considering that career development is a matter of well-balanced preparedness for future career mobility, tacit learning (in addition to formal learning) should be one of the primary ways to achieve career goals.

Finally, when preparing for career development, individuals must consider how to strategically develop their career by building effective human networks and

accelerating job-related experiences as well as accruing the required qualifications. For example, women's professional experience and knowledge in line-role positions (such as serving as a school principal) significantly improves their practical knowledge and job opportunities for career development.

References

Bills, D.B. (1988). Educational credentials and promotions: Does schooling do more than get you in the door? Sociology of Education, 61, 52–60.

Bjork, L.G., & Mueller, C. (2006). Tacit knowledge and the superintendency. Paper presented at the annual meeting of University Council for Educational Administration, San Antonio, TX.

Brunner, C.C., & Grogan, M. (2007). Women leading school systems: Uncommon roads to fulfillment. Lanham: Rowan and Littlefield.

Glass, T., Bjork, L. G., & Brunner. C.C. (2000). The study of the American superintendency 2000: A look at the superintendent in the new millennium. Arlington, VA: American Association of School Administrators.

Joreskog, K.G. (1969). A general approach to confirmatory maximum likelihood factor analysis. Psychometrika, 32, 443–482.

Klem, L. (2000). Structural equation modeling. In L. G. Grimm, and P. R. Yarnold (Eds.), Reading and understanding more multivariate statistics. Washington, DC: American Psychological Association.

Maienza, J. G. (1986). The superintendency: Characteristics of access for men and women. Educational Administrative Quarterly, 22(4), 59–79.

Nestor-Baker, N., & Hoy, W. (2001). Tacit knowledge of school superintendents: Its nature, meaning, and content. Educational Administration Quarterly, 37(1), 86–129.

Polanyi, M. (1966). The tacit dimension. London: Routledge and Kegan Paul.

Reber, A. (1989). Implicit learning and tacit knowledge. Journal of experimental psychology: General, 118, 219–235.

Shakeshaft, C. (1999). The struggle to create a more gender-inclusive profession. In J. Murphy and K. Seashore-Louis (Ed.), Handbook of research on educational administration (2nd ed., pp. 99–118). San Francisco, CA: Jossey-Bass.

Spilerman, S., & Lunde, T. (1991). Features of educational attainment and job promotion prospects. *The American Journal of Sociology,* 97(3), 689–720.

Tallerico, M. (1999). Women and the superintendency: What do we really know? In C. C. Brunner (Ed.), Sacred dreams: Women and the superintendency (pp. 29–48). New York: State University of New York Press.

Useem, M., & Karabel, J. (1986). Pathways to top corporate management. *American Sociological Review,* 51(2): 184–200.

Wagner, R.K. (1987). Tacit knowledge in everyday intelligent behavior. Journal of Personality and Social Psychology, 52(6), 1236–1247.

Wagner, R.K., & Sternberg, R. J. (1985). Practical intelligence in real-world pursuits: The role of tacit knowledge. Journal of Personality and Social Psychology, 49(2), 436–458.

Wernick, E.D. (1994). Preparedness, career advancement, and the glass ceiling. Paper posted DigitalCommons@ILR. Retrieved July 2009, from http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1129&context=key_workplace.

Weston, R., & Gore, P. A. Jr. (2006). A brief guide to structural equation modeling. The Counseling Psychologist, 34, 719–751.