Job Satisfaction Returns to Human and Social Capital

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Abstract

Human and social capital are personal investments, and the positive returns to an individual's career of investments into these forms of capital are well understood. Increased education and experience, human capital, as well as the structure of relations that form social capital, contribute to higher earnings and early promotions. I hypothesize that the dynamics of human and social capital can be applied to career returns less tangible than income and promotion, namely job satisfaction. I find evidence to support this and further show support for previous findings that suggest such returns are not uniform with regard to gender. Finally, I show that the returns to human and social capital are greatly affected by individual motivation.

Some people enjoy higher incomes than others do; some are promoted faster, or are leaders on more important projects. Human capital theory (e.g. Becker, 1975) explains inequalities like these by differences in individual ability resulting from different educational attainment. The theory predicts that individuals who are better educated and more experienced will enjoy higher returns for their efforts. However, although human capital (i.e. education, training, skills) is necessary to achieve success in an organization, it is useless without the social capital of opportunities in which to apply it (Burt, 1997). Social capital theory (e.g. Burt, 1992; Coleman, 1990) predicts that returns to human capital partly depend on a person's location in the social structure of an organization. Individuals with more social capital will receive higher returns to their human capital because they are positioned to identify and develop more rewarding opportunities. Previous studies have presented argument and evidence for the positive relationship between social capital and positive evaluations (e.g. Rosenthal, 1996), faster promotions (e.g. Burt, 1992), and higher salaries (e.g. Burt, 1997). The study presented here explored the combined effect of human and social capital on a personal, non-financial return, namely job satisfaction. I find evidence to support this relationship and further show that the job satisfaction returns to human and social capital are greatly affected by individual motivation.

There have been thousands of studies of job satisfaction and other attitudes toward work and reviews of this work have been presented elsewhere (e.g., Cranny, Smith & Stone, 1992; Locke, 1976; Miller, 1980; Spector, 1997). Studies that have focused on the antecedents of job satisfaction can be classified into two major categories: those that focus on the job environment or job characteristics and those that focus on individual factors that a person brings to the job such as personality or prior experiences. Much, if not all, of this literature has looked to individual psychology to understand underlying mechanisms of job satisfaction (Pfeffer, 1991; Salancik & Pfeffer, 1977). Typically, the argument that is made is that individuals have needs or preferences, and job environments are satisfying or not depending on how well the

characteristics of the job match the needs or preferences of the individuals (e.g. Hackman & Lawler, 1971; Kalleberg, 1977). The fit between the individual and the job characteristics has also been examined extensively and has been shown to be an important influence on employee job satisfaction (e.g. Edwards, 1991; Kristof, 1996; Tsang, Rumberger and Levin, 1991; Vroom, 1964).

The social environment (e.g. patterns of relationships) in which individuals perform their job can also be linked to variance in job satisfaction. For example, some studies have examined how social contagion or peer influence can sway affective reactions to the work environment. One example of this type of approach is the social information processing model proposed by Salancik and Pfeffer (1978). This model suggests that one's own attitudes are affected by the expressed opinions of others in the environment. Krackhardt and Porter (1985) offered an empirical example of this approach when they modeled turnover as a process that was socially influenced. These authors gathered data on friendship and interaction patterns of workers in fast food restaurants and showed that as soon as some of the friendship group began to leave, the others followed quickly. Another aspect of social structure that has been shown to affect job attitudes is the presence of co-workers in one's social network. Hurlbert (1991) showed that social networks of co-workers serve as a social resource which have a positive effect on job satisfaction through social support.

The model proposed here explores the combined effect of individual and structural characteristics on job satisfaction by framing the study within the robust foundations of human and social capital theories.

Human and Social Capital and Job Satisfaction

Human capital

Human capital is defined as an individual's stock of education, experience, skills and intelligence. In general, human capital refers to an individual's ability. According to human capital theory (Becker, 1975), education and experience develop skills that enable workers to be productive. Theories of job satisfaction suggest that an individual's education and experience (i.e. their human capital) is positively associated with their attitudes toward their job (e.g. Gruenburg, 1980). All other things held constant, higher levels of human capital will lead to higher levels of job satisfaction.

Hypothesis 1: *Individuals with higher levels of education, training and experience will recognize higher levels of job satisfaction.*

Social capital

Social capital refers to the wealth of an individual's connections with others. Certain patterns of relations with others can enhance an individual's ability to identify and develop opportunities. Whereas human capital resides within an individual, social capital describes the value of a relationship that exists between two people; it is shared equally by both and has no value without either (Burt, 1997; Coleman, 1990). Social capital theory predicts that returns to

intelligence, education, and seniority depend in some part on a person's location in the social structure of their organization. While human capital refers to individual ability, social capital refers to opportunity. Individuals with more social capital get higher returns to their human capital because they are positioned to identify and develop more rewarding opportunities. In a sense, the exchange of human capital across relations forms the substance of the social capital among individuals and others in their social network.

Thus, human capital alone enables a person to achieve some of their potential, but only within the limits and confines of a particular social setting. In a workplace setting, human capital allows a person to learn and adapt quickly to specific situations (e.g. a firm's culture) and social capital allows the individual to adjust their social setting in a way that the full potential of their human capital can be exploited. Rather than adapt their goals to fit the context, social capital provides the individual with the opportunities to change their context to fit their goals.

How this happens can be explained by Burt's structural hole theory (1992), which gives concrete meaning to the concept of social capital. The theory describes how social capital is a function of a person acting as a broker between two otherwise disconnected individuals. The metaphor is that the disconnected people stand on opposite sides of a hole in social structure. An individual who spans this structural hole via their relationship with each person will experience information and control benefits. Information benefits in terms of better access, timing and referrals; control benefits in that the individual who acts as the bridge between two otherwise disconnected contacts has say in whose interests are served by the bridge. Individuals with contact networks rich in structural holes are expected to know about and experience more rewarding opportunities. Empirical evidence is consistent with this prediction — individuals with networks rich in structural holes receive more positive evaluations (Rosenthal, 1996; Burt, Jannotta, and Mahoney, 1998; cf., Krackhardt and Stern, 1988; Fernandez and Gould, 1994), earlier promotions (Burt, 1992; Sparrowe and Popielarz, 1995; Gabbay, 1996; Podolny and Baron, 1997), and higher compensation (Burt, 1997; Burt, Hogarth, and Michaud, 1998).

Based on Burt's (1992) evidence of the returns to contact networks rich in structural holes, I argue that an individual's ability to convert the capabilities of their human capital into high job satisfaction is contingent upon their social capital. Contact networks rich in structural holes provide the individual with opportunities to exploit their human capital more effectively in order to achieve higher levels of satisfaction.

Hypothesis 2: *Individuals with contact networks rich in structural holes will have greater opportunity to leverage their human capital and will therefore experience higher levels of job satisfaction.*

Motivation

People are continuously surrounded by opportunities (as a function of their social surroundings) and the characteristics of the jobs they hold are the outcome of the process of identification, selection, and conversion of such opportunities. The importance of social capital on the variance of job satisfaction can be traced to two specific job characteristics inherent in the opportunities available to people: challenge and meaning. Herzberg (1968) argues that "the only way to

motivate the employee is to give him challenging work in which he can assume responsibility." Viktor Frankl (1984) suggests that motivation reflects people's search for meaning and that job satisfaction may reflect the degree to which people have found meaning in their work. Regardless of their amount of human capital, a person will not be able to achieve the optimal meaning they are capable of experiencing or maximize the challenges they are capable of handling if they are not able to discriminate and choose from the opportunities that surround them. Knowledge about and/or access to these opportunities is enhanced or inhibited by the individual's amount of social capital. Burt (1992, p.275) recognizes that the rate of conversion, or exploitation, of the opportunities available to an individual through their social capital is dependent upon their motivation, but does not test this link.

Studies of job satisfaction have shown that motivation is a critical component linking job characteristics to satisfaction (Hackman & Lawler, 1971; Gruenberg, 1980; Rose, 1994) by arguing that motivators are embedded in tasks and activities. Surprisingly, none of these studies treated motivation as an individual characteristic. The present study treated motivation as an important explanatory factor linking one's level of job satisfaction to one's human capital potential and social capital opportunities.

Hypothesis 3*: Individuals with higher levels of motivation will convert their human capital potential and social capital opportunities into higher levels of job satisfaction.*

Measures and Methods

The data describe employees at a real estate management company. Respondents filled out sociometric and job satisfaction/motivation questionnaires in the course of structured group interviews with the researcher. In all cases, participation was voluntary, and respondents were assured that their responses would be kept confidential. A total of 53 completed questionnaires were collected (87% response rate; see Table 1 for variable means, standard deviations and correlations).

Table 1
Variable Means, Standard Deviations and Correlation Matrix[a]

Variables	Mean	s.d.	1	2	3	4	5	6	7
1. Job Satisfaction	2.88	.64	¾						
2. Constraint	.51	.22	-.043	¾					

3. Gender (1=female)	.66	.48	-.442	.024	¾				
4. Manager (1=manager)	.49	.50	.354	-.147	-.492	¾			
5. Education	15.52	1.87	-.006	-.005	-.352	.377	¾		
6. Experience	23.87	9.26	.438	.098	-.251	.220	-.076	¾	
7. Hours Training	29.61	20.43	.148	-.291	-.079	.244	.141	-.008	¾
8. Motivation	3.04	.69	.508	.097	-.183	.292	.230	.057	.151

a N = 53. These numbers represent Pearson correlations. Numbers with absolute value greater than or equal to .35 are significant at the .01 level (two-tailed) and numbers with absolute value greater than or equal to .29 are significant at the .05 level (two-tailed).

Job satisfaction

Job satisfaction was measured by the respondent's answer to the following question: "I look forward to doing my job" (see Job Satisfaction Survey in Spector, 1997). Responses were recorded on a 4-point scale ranging by 1=Never, 2=Sometimes, 3=Often, and 4=Always. The overall average of job satisfaction was 2.88. However, on average managers were more satisfied than non-managers (t=2.7); average job satisfaction for managers was 3.12 while the average for non-managers was 2.67.

Human capital

Three variables were used to measure human capital: education, number of hours in work-related training in the last year, and an experience index constructed by averaging age and number of work years (alpha reliability of 0.93). Respondents had an average of approximately 24 years of experience and 30 hours of training in the last year with no significant differences between managers and non-managers. Most of the respondents (70%) had a 4-year college degree or graduate education, 15% had a high school degree and 15% had a 2-year college degree.

Social capital

On the sociometric questionnaire, respondents were asked to name (1)"who are the four or five people with whom you discussed matters important to you?" (2)"who are the three people

you have been with most often for informal social activities such as going out to lunch, dinner, drinks, films, visiting one another's homes, and so on?" (3) "who is your immediate supervisor?" (4) "of all the people working for the firm, who are your most valued work contacts in the sense that they have contributed most to your professional growth?" (5) "who are the three or four people you would name to your replacement as essential sources of buy-in for initiatives coming out of your office?" (6) "who is your single most important contact in the firm?" (7) "who among the people working for the firm has made it most difficult for you to carry out your job responsibilities?" (8) "if you decided to find a job with another firm doing the same kind of work you do in your firm, who are the two or three people with whom you would most likely discuss and evaluate your job options?" For each cited contact, respondents were asked about the contact's relations with the other cited contacts, contact age, gender, authority relation with the respondent, and whether the contact was a coworker, friend or family. The respondents' network measures were calculated using only co-worker contacts (friends and family were not included). The calculation was done in this way to obtain an accurate measure of the respondent's at-work social capital and to eliminate family and friend related social capital from the analysis. The cited work contacts vary from a total of 2 up to 15, with an average of 6.7 contacts.

Respondents were also asked to describe the strength of relationships. The respondent's relation with each contact was sorted into one of four categories: especially close, close, less close, or distant. Respondents indicated the relationship among their contacts by indicating whether each pair was especially close, distant, or somewhere between distant and especially close. From this, the strength of relation between each pair of contacts (including the respondent) was estimated. This measure is symmetric for each pair of relations and varies from a minimum of 0 (distant relation) up to 1 (close relation)[1].

Social capital was measured in terms of network constraint. Network constraint measures the extent to which the structure of a person's social network prevents them from accessing or exploiting the opportunities that may surround them, or, whether or not their network is rich in structural holes. An individual is constrained by a) a small number of contacts in his/her network, b) the extent to which network contacts are closely related to and dependent on one another, and c) the degree to which (s)he concentrates time on any one contact in the network. By examining the degree of constraint in an individual's network, networks are viewed as a social resource which affect job satisfaction through access to opportunities. Constraint ranges from a minimum of zero to a maximum of one[2] (Burt, 1992). Average constraint in the present sample was 0.51.

Motivation

For the motivation variable, an index (alpha reliability of 0.77) was constructed by averaging the respondent's answers to the following three questions: I am motivated to do my job because of (1) the responsibility/impact I have; (2) the rewards/recognition I get from others at work; and (3) the ability to overcome challenges/difficulty in my job. Responses were based on a 4-point scale where 1=Never true, 2=Sometimes true, 3=Often true, and 4=Always true. Average motivation for all respondents was 3.21.

Controls

				MODEL			
Variables	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**
Education	.002 (.045)						
Experience	.030*** (3.46)	.031*** (3.51)	.029*** (3.94)	.025*** (2.72)	.023*** (2.55)	.027*** (3.55)	.024*** (3.33)
Hours Training	.005 (1.17)						
Network Constraint		-.254 (-.68)	-.389 (-1.23)	-.064 (-.11)	-.677 (-1.15)	.064 (.14)	-.969** (-2.07)
Motivation			.494*** (4.63)			.468*** (4.19)	.463*** (4.58)
Gender					-.762* (-1.78)		-.890*** (-2.64)
Manager				.468 (1.07)		.532 (1.49)	
Gender*Constraint					.613 (.81)		1.04* (1.73)
Manager*Constraint				-.338 (-.44)		-.752 (-1.19)	
Constant	1.989*** (2.74)	2.280*** (8.09)	.806** (2.03)	2.180*** (5.98)	2.985*** (7.36)	.624 (1.41)	1.55*** (3.51)

R^2	.21	.19	.44	.23	.28	.47	.54
F	4.46***	6.22***	12.99***	3.49***	4.75***	8.34***	10.92***

Previous research on the returns to social capital has shown that the returns to social capital are not uniform (Burt 1997; 1998). Individuals who are outsiders in a given social context must supplement their own social capital by borrowing it from insiders by way of a hierarchical network. I include variables in the present analysis to test if this is also the case with job satisfaction returns to social capital. Two dummy variables are included: one for managers (manager=1) and another for gender (female=1). Two interaction variables are also included: manager x constraint, and gender x constraint. The control variables will show whether there is a baseline difference between the groups, the interaction variables will show if there is a slope difference. There were 26 managers, 27 non-managers, 18 men and 35 women in the sample of 53 respondents. However, it is important to note that there was an imbalance of men in managerial roles in the sample; 83% of the men were managers whereas only 30% of the women were managers[3].

Analysis and Results

Variable means, standard deviations and the correlation matrix is reported in Table 1. The correlations provide some preliminary support for the positive relationship between job satisfaction and experience as well as job satisfaction and motivation (correlations of 0.438 and 0.508 respectively). Furthermore, the correlations highlight significant differences between men and women and managers and non-managers. Specifically, managers are more likely to be male, better educated, more motivated and more satisfied with their job.

Hypothesis 1 predicted a positive relationship between job satisfaction and education, experience and hours training. As shown in Table 2, Model I, job satisfaction increases with experience (3.5 t-test), but the relationship with education and hours training is irrelevant. Still, reports of job satisfaction are higher for employees with more human capital – as indicated by experience.

I expected the effect of social capital (specifically, network constraint) to be negative. Model II tests this hypothesis directly. Although the sign of the reported effect is in the predicted direction, the result is not significant ($t = -0.68$, $p = .49$). There are two possible explanations for this insignificant result: 1) the effect of social and human capital on job satisfaction is evident only if motivation is added to the model; and/or 2) there are baseline or slope differences between the different groups in the sample that are watering down this effect. I tested each of these explanations and included the results below.

Table 2

Predictors of Job Satisfaction[a]

a N = 53. These are ordinary least squares estimates. The numbers in parentheses are t-statistics. * p < .10; ** p < .05; *** p < .01

Consider hypothesis 3 where I suggest that an individual's motivation will affect whether they convert their human capital potential and social capital opportunity into satisfying jobs. A highly motivated individual is more likely to convert human and social capital into high job satisfaction than an unmotivated individual. In Figure 1, the residuals from the Model II regression are plotted against motivation and we see a very strong positive relationship. This suggests that the conversion of social and human capital into high job satisfaction is dependent upon an individual's motivation.

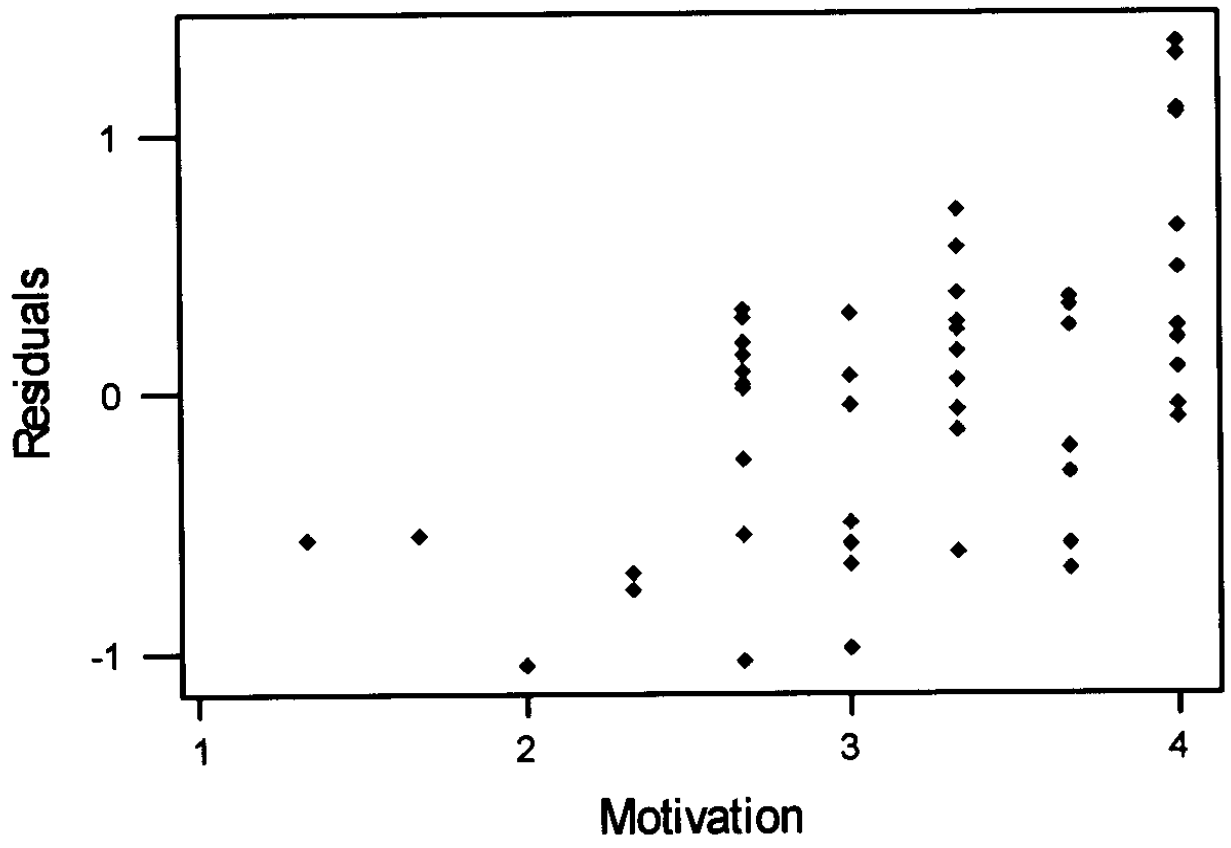


Figure 1
Model II Residuals and Motivation

The effect of human capital, social capital and motivation on job satisfaction is shown in Model III. There is a very strong effect for motivation (t = 4.63, p = .001). Although the effect

for constraint improved, it did not reach significance (t = -1.23, p = .20). Therefore, the only conclusion drawn from this model is that motivation is strongly associated with job satisfaction.

Models I – III assumed uniform returns to social capital. However, previous research has indicated that legitimacy affects the returns to social capital (Burt, 1998). Individuals who are not legitimate in a group do not receive positive returns to contact networks rich in structural holes, but legitimate members of the group do receive positive returns to such networks. Models IV – VII (Table 2) tested for legitimacy effects with women and non-managers. The idea is that either women or individuals in clerical roles are not considered legitimate in the company studied with this analysis.

Model IV tested the effects of social and human capital on job satisfaction while controlling for baseline and interaction effects for managers. Model V controlled for gender instead of manager effects. As shown in Table 2, neither of these models offered strong results. In both models, the effect for experience remained significant, but there was not a significant effect for constraint or any of the control/interaction variables. Thus, I concluded that the baseline or slope differences between these two groups do not account for the insignificant results reported for Model II.

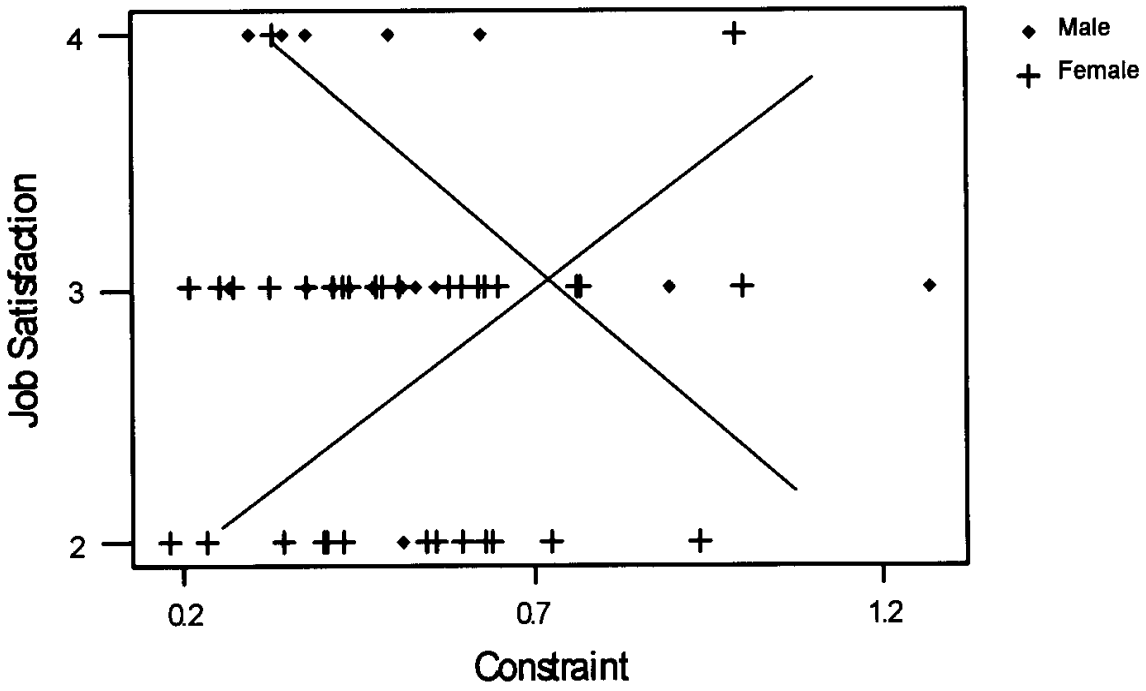
Again, consider hypothesis 3, where I suggest that the conversion of social and human capital opportunity into high job satisfaction is dependent upon an individual's motivation. Models VI and VII tested the effects of human capital, social capital and motivation while controlling for differential returns to managers and men. The strong results in Model VII provide evidence for hypothesis 3; motivation does matter in the conversion of social and human capital opportunity into job satisfaction4. However, this relationship is different for men and women in the company studied. Specifically, there is a positive relationship between constraint and job satisfaction for women and a negative relationship for men. This relationship is clearly displayed in Figure 2.

Discussion

Job Satisfaction and Human Capital

It is interesting to note that I do not find conclusive evidence for a positive relationship between human capital and job satisfaction. Previous research has indicated that higher levels of human capital do not always imply higher job satisfaction; in fact it could imply the opposite. For example, Tsang et. al. (1991) found that high levels of surplus schooling negatively impacts job satisfaction and leads to higher turnover, especially for male workers. Moreover, Miller (1980) showed that individuals with higher educational attainment were also less satisfied, and that this effect was substantially stronger for women. She posits that this could be due to higher aspirations or simply a worse fit between occupational skills and the ability to match these with job characteristics. The former argument could be due to a higher relative personal investment into the same amount of education for women. The latter argument could be due to the weaker control women have in their own career development, given the traditional priority given to their spouse's career as well as the inherent difficulties they face in male dominated workplace environments.

A recurring theme appears to be that a disparity exists between the expectations one has based on their skills and the challenges inherent in the tasks they perform. Flow theory (Csikszentmihalyi, 1990) argues that balance between skill and challenge is most likely to produce a sense of satisfaction, and that the degree of satisfaction is contingent upon the relative intensity of this balance. If true, this suggests a person will experience higher satisfaction when they are able to engineer the challenges present in job characteristics using their social capital to match their individual skills and human capital.



Regression Equation:
Job Satisfaction = (1.56 - .89Female) + (-.97 + 1.04Female)Constraint + .02Experience + .46Motivation + ε

Figure 2
Differential Job Satisfaction Returns

Still, the analysis reported here finds a stable and significant positive relationship between experience and job satisfaction. A possible explanation is that satisfaction is a learned condition and that greater experience reconciles expectations with reality. I conclude that human capital presents conflicting forces on a person's satisfaction in their job throughout the life cycle of their career, with educational expectations leading to lower satisfaction in the earlier years, and higher satisfaction predominating in later years after experience tempers earlier expectations.

Gender Effects of Social Capital

Burt (1998) clearly explains and predicts the differential returns to social capital. When an individual is an outsider, such as the only woman executive among "old-school" men, the means by which the woman achieves returns to her social capital are very different than those for a man. Whereas the man can build and leverage his own social capital, the woman must borrow hers from strategic partners. If an outsider tries to build their own social capital among insiders, they will be shut out. Thus, for illegitimate members of a group, such as women in the company studied here, social capital can inhibit rather than enhance the likelihood of achieving a desirable outcome (e.g. promotion, pay, satisfaction, etc.).

In the present sample, the relationship between network constraint and job satisfaction is positive for women and negative for men. Women are not able to leverage the opportunities of a contact network rich in structural holes into job satisfaction, whereas men can and do. This implies that women are outsiders in the company and in order to achieve returns to their social capital they must develop strategic alliances. However, I do not find evidence for women building hierarchical networks around strategic partners5. Thus, it may be that either the women in this company are not able to use strategic partners to get around the gender barrier, or that they have not figured out that a strategic partner could help them. A company representative has confirmed that my results mirror the traditional gender role profile in the industry, and elaborated that my finding suggests that his firm may not have found a way yet of meeting the needs of women in unconstrained roles.

Motivation Effects on Human and Social Capital

Social capital theory predicts that individuals with more social capital will receive higher returns to their human capital because they are positioned to identify and develop more rewarding opportunities. The present results suggest that the conversion of social capital opportunity and human capital potential into high job satisfaction is contingent upon motivation.

Researchers of motivation in the workplace typically distinguish between intrinsic and extrinsic motivation (see Staw, 1976, for a review of the distinctions between the two). Here, I do not make predictions based on this classification. It is interesting to note, however, that the questions I used to construct the index of motivation would be classified as intrinsic motivators. I had measures of extrinsic motivation in the study but found that these were not strongly associated with job satisfaction. However, additional research is needed to accurately attribute the effects I find exclusively to intrinsic motivation. Overall, the strong effect of motivation on job satisfaction also suggests that psychological factors play an important role in understanding behavior and attitudes in the workplace.

Conclusion

The present study combined and extended the use of rigorous frameworks to show that two forms of a person's stock of capital — human and social — can explain and partly determine one of their outcomes of working — their job satisfaction. The study further indicated that worker motivation was the key to determining job satisfaction — given their human capital

potential and social capital opportunities. Finally, while the study shows human capital effects to be contingent on social capital, it does not fully described why and how these two interact to produce a desired outcome, such as satisfaction. It would be interesting, for instance, to understand in greater detail how each form of capital is created, stored, exchanged, and valued - via the same rigorous lens through which accountants and financiers describe and evaluate more traditional forms of assets (liquid or otherwise), such as cash, securities, etc.

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End Notes

1 I obtained these quantitative values following Bur and Guilarte's (1986) use of the balance principle (friends of my friends are my friends and enemies of my friends are my enemies). I tabulated the four response categories describing the respondents' relations to each of their contacts by the three response categories describing the relationships between contacts. A loglinear model can be fit to the table in which the rows and columns are quantitative response positions on a single dimension of closeness (for example, see Burt, 1992). Fitting this model provides an adequate fit (2.5 chi-square with 2 d.f., P = .30) and the following scale values for respondent's relation with each contact: 0.292 for "especially close" relations, 0.256 for "close" relations, -0.381 for "less than close" relations, and -0.167 for "distant relations. The following scale values are obtained for the relations among the respondent's contacts: 0.465 for "especially close" relations, -0.226 for "less close" relations, and -0.238 for "distant" relations. These scale values are fixed relative to one another, permitting a transformation that preserves their relative magnitude. They are scaled for the analysis so that "distant" relations have a value of 0 and "especially close" relations have a value of 1. Relations between contacts are scaled as follows: relations strength between contacts j and k (Zjk) = (Sjk + 0.24) / 0.71, where Sjk is the raw scale value given above, and 0.71 is the distance from lowest to the highest scale value. The following values result for relations among the respondent's contacts:

especially close = 1.00
less close = 0.01
distant = 0.00

Relations from respondents to each contact are scaled as follows: Zjk = (Sjk + 0.38) / 0.67, where Sjk is the raw scale value given above, and 0.67 is the distance from lowest to the highest scale value. The following values result for relations among the respondent's contacts:

especially close = 1.00
close = 0.96
less close = 0.00
distant = 0.31

The values for "less close" and "distant" are reversed here because respondents classified their relationship with their contacts as "distant" so infrequently that I did not receive a straight signal. Thus, I see this reversal because "less close" was used much more frequently as an indication of a weak relation.

2 In instances where a respondent's network is considerably small and dense (only two contacts closely connected), the constraint measure is greater than one. In the data reported here, there is one such case and the individual's network constraint equals 1.27.

3 In addition to the imbalance of men in managerial roles, there is an imbalance of women in non-managerial roles. Only 3 men in our sample are non-managers. This unbalanced distribution of men and women across manager/non-manager made these two variables highly

correlated and thus it was impossible for us to include both of these variables together in our regression models.

4 Because of the strong, positive correlation between motivation and satisfaction, I also tested a model where I used as the dependent variable the residuals from a regression of job satisfaction on motivation (interpreted as the part of job satisfaction not explained by motivation). The coefficients in this regression were the same as those reported here, with the same significance levels.

5 I tested a model in which motivation, experience, a gender dummy, and network size, density, hierarchy and an interaction term between gender and hierarchy were regressed on job satisfaction. There was not a significant effect for any of the network coefficients (all t-statistics were less than 1) nor the interaction term ($t = 1.05$, $p = .3$).

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