

# Analysis of Statistical Data on Social Resources Dimension of Occupational Status Attainment: A Rational Choice Approach

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**Abstract**—The aim of the present study is to analyze empirical researches on the social resources dimension of occupational status attainment process and relate them to the rational choice approach. The analysis suggests that the existing data on the strength of ties aspect of social resources is insufficient and does not allow any implication concerning rational actor's behavior. However, the results concerning work relation aspect are more encouraging.

**Keywords**—Social resources, status attainment, rational choice, weak ties, work-related ties.

## I. INTRODUCTION

IN the past several decades, numerous studies have been made to investigate the role of personal relationships in occupational status attainment. One of the core lines of research relates this process to the strength of ties possessed and mobilized by job-seekers. The significance of weak ties in job mobility was first highlighted by Granovetter in [2], [3]. He argued that ties inside a social clique are likely to be strong (defined as frequent, intimate, emotionally intense and characterized by reciprocal services) while outside ties are likely to be weak. These weak ties often link socially distant cliques and thus provide a source of unique information and resources.

An extension of weak tie theory soon followed. Social resources theory by Lin et al [5] considers weak ties in the framework of hierarchical society structure. The theory argues that the weakness of a tie conveys advantage due to the fact that only such kind of ties is likely to reach contacts higher up in the hierarchy. These contacts have greater access and control to positions and therefore can easier benefit ego's interest.

Subsequent empirical analysis provided mixed support for the importance of weak ties advocated by Granovetter and his followers. Some researchers even conclude that "the net effect of the social resource variables here (for wage outcome of an instrumental action) can be summarized simply: there are none" [7]. Inconsistency in statistical evidences is not only problem in

these empirical studies. Statistical analysis often does not include control for attained resources variables, different outcomes of instrumental action are *a priori* considered as proxies, statistical hypotheses and their rational actor strategy implications are randomly substituted for each other. The aim of our analysis is to find out which exactly facts are proven and how they can be interpreted.

We pick five the most cited researches on the role of personal relationship in occupational status attainment targeting developed Western societies (USA, Germany, the Netherlands) which allows us to avoid problems related to cultural differences. Other types of societies can demonstrate a reverse pattern when strong ties are used by job-seekers more frequently (for example, in China and Singapore [9]). We formulate then three hypotheses on which microlevel mobility research rests. The corresponding statistical evidences are collected in Fig. 1 and 2. The analysis conducted suggests that only one of the hypotheses is statistically supported after controlling for attained resources variables (work experience, prior prestige, prior wage). The statistical support for the others virtually disappears after control. Analogous comparisons were also made by other authors (see for example [6]). The distinctive features of our study are 1) cultural similarity of targeted societies; 2) differentiation of outcome types of instrumental action; 3) control for attained resources variables.

Then we turn to the relation between the hypotheses and its possible strategy implications for a rational actor. The latter is crucial for developing a rational choice model of the process. We demonstrate that this relation is vague by producing a series of society models where a hypothesis fails whereas the corresponding strategy implication holds, and vice versa. All the models can be easily turned into mathematical models.

Our analysis of statistical data reveals no net effect of the strength of tie on the outcome of an instrumental action after controlling for achieved status variables. Meanwhile, the researches targeting another aspect of social resources, work relation of ties, give more encouraging results. We formulate the corresponding hypothesis and its implication for a rational actor and provide sufficient statistical evidence for the former. Moreover, we show that unlike the previous cases, here the hypothesis suggests its strategy implication.

Work relation aspect of social resources can be used also to explain inconsistency between theoretical findings and statistical evidence in social resources theory. The corresponding model is provided.

Manuscript received September 21, 2007. This work was supported in part by the Center for the Study of Social Stratification and Inequality under the 21st Century COE Program.

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Finally, we point out two important questions on the subject with controversial answers. One of the questions is particularly important for those who intend to develop a mathematical model of occupational status attainment process since it relates the prestige to easily modeled income/wage.

Our findings clearly demonstrate distinction between statistical hypotheses and its strategy implications. Moreover, we conclude that the existing data on the strength of ties aspect of social resources and its interpretation are insufficient and give us little information about occupational status attainment. More detailed data sets and more thorough analysis are needed. At the same time, our study reveals the significance of the work relation aspect of social resources.

## II. HYPOTHESES, ITS IMPLICATIONS AND STATISTICAL SUPPORT

Two central hypotheses in Lin's social resources theory are the following.

**SOCIAL RESOURCES PROPOSITION (H-I)** *Higher level contacts reached provide higher level job* or, in more general form, *social resources exert effect on the outcome of an instrumental action.*

**STRENGTH OF TIES PROPOSITION (H-II)** *Weaker ties tend to reach contacts at higher level* or, in more general form, *the use of weaker ties exerts effect on the social resources.*

We complete the picture with Granovetter's hypothesis on the direct effect of tie strength on the attained status.

**DIRECT EFFECT PROPOSITION (H-III)** *Weaker ties tend to provide job at higher level* or, in more general form, *the use of weaker ties exerts effect on the outcome of an instrumental action.*

TABLE I  
RESULTS FOR H-I AND H-III

	Outcome	Control for attained resources variables	H-I	H-III
Lin, Ensel, Vaughn	prestige	—	yes	yes
Mardsen, Hurlbert	prestige	prior prestige	yes	no
	wage	—	yes	yes
	wage	prior wage, experience	no	no
Bridges, Villmez	income	—	—	yes
	income	experience	—	no
Wegener	prestige	—	yes	no
	prestige	prior prestige, experience	yes	no
De Graaf, Flap	prestige	—	yes	—
	prestige	prior prestige	yes	—
	income	prestige	no	—

TABLE II  
RESULTS FOR H-II

	Control for attained resources variables	H-II
Lin, Ensel, Vaughn	—	yes
Mardsen, Hurlbert	—	yes
	prior prestige	no

Now we state the corresponding rational choice strategy implications of these hypotheses.

**S-I** *To get a higher level job, ego gains more by reaching*

*higher level contacts.*

**S-II** *To reach higher level contacts, ego gains more by using weak ties.*

**S-III** *To get a higher level job, ego gains more by using weak ties.*

A hypothesis concerning work relation aspect of social resources and its strategy implication can be stated as follows.

**WORK RELATION PROPOSITION (H-IV)** *Work-related ties comparing to communal ties tend to provide job at higher level* or, in more general form, *the use of work-related ties exerts effect on the outcome of an instrumental action.*

**S-IV** *To get a higher level job, ego gains more by using work-related ties rather than communal ties.*

## III. SOCIAL RESOURCES THEORY HYPOTHESES

### A. Social Resources Proposition

From the three hypotheses, H-I for prestige as an outcome of instrumental action is the only one that obtained a statistical support after controlling for attained resources variables. Let us consider consequences connected with the use of ex-post data here. We know that the higher the level of the *mobilized* contact, the higher the level of the position attained. We will show that H-I has quite limited implications for a rational actor, in particular, it does not generally imply that "when seeking a job an individual will gain more by contacting someone upward in the hierarchical structure" (reformulation of S-I) as it is stated in [5]. To illustrate this "paradox", consider the following model.

**Model 1.** In this model, we employ the notion of contact cost. We assume that a rational actor possesses a limited resource (time, money, need for social contact etc.) which can be allocated to his/her contacts according to their "costs".

Suppose that the higher the contact level, the higher the level of job which *can* be obtained through this contact (H-I holds). Suppose also that the higher the contact level, the less the probability of contact mediation. If this probability decreases sharply enough for higher level contacts, a rational actor actually gains more from low level contacts if the contact cost matters (S-I fails). A similar picture can be observed if the contact cost sharply increases for higher level contacts.

### B. Strength of Ties Proposition

We can see from Fig. 2 that H-II is provided with a statistical support only without control for attained resources variables. After controlling for prior prestige, which is required in order to exclude spurious relationship between the variables, the negative effect of tie strength is reduced to insignificance. Therefore we can conclude that H-II does not hold. Meanwhile, reformulating this proposition, Lin et al. argue that "an individual can most easily reach upward in a structure if he or she uses weak ties" [5] which clearly indicates S-II. The following model can illustrate the distinction.

**Model 2.** Suppose that most contacts have a relatively low level of prestige with equally distributed weak and strong ties, whereas a relatively small number of high level contacts enjoys only weak ties. Then H-II fails but S-II is valid.

### C. Direct Effect Proposition

The evidence for H-III is similar to that for H-II: when the attained resources variables are not controlled, it has a statistical support which virtually disappears after control. As in case of H-II, we will show that under certain conditions the failure of H-III does not necessarily imply the failure of S-III.

*Model 3.* Suppose that the attained level does not depend on the tie strength but the probability of mediation for a weak tie contact is higher than for a strong tie contact. This assumption is justified by the observation that there is “structural tendency for those to whom one is only weakly tied to have better access to job information one does not already have” [3]. In this situation, the ego obviously gains more from weak ties rather than from strong ties (S-III holds). A similar picture is observed if the contact cost matters and is higher for strong tie contacts.

Now let us examine H-III. If prior prestige level is controlled, the strength of ties does not matter and H-III fails. But in the absence of such a control, H-III holds since in this case actors with more weak tie contacts advance faster in the hierarchical structure and thus, the relationship between tie strength and attained level is spurious and caused by an independent variable – the proportion of weak tie contacts.

## IV. WORK RELATION OF TIES

### A. Work Relation Proposition

Our support for H-IV is primarily based on the analysis of income differences by type of personal job finding in [1] which revealed a strong net effect of work-related ties for managerial-professional-technical workers, whereas the net effect of weak ties for the same respondents was statistically insignificant.

Another argument concerns the organizational research literature devoted to the ways individuals' social networks affect their careers in organizations. All the contacts considered there are past or current members of ego's organization, i.e. all the ties are *a priori* work-related. As it was shown above, H-III has no sufficient statistical support and weak ties do not exert a net effect on higher level job obtained. On the other hand, the importance of networking for the achievement of career goals has become common place in the organization research literature (e.g., [11], [12], [13]). These two observations together give another evidence to support H-IV.

Unlike social resources theory hypotheses, H-IV implies S-IV. Indeed, we know that work-related contacts provide job at higher level. In this situation, the only reason for rational actor not to use these contacts is high probability of mediation or low contact cost for communal tie contacts. Both these assumptions are not plausible.

### B. Strength of Ties Proposition Puzzle

While social resources theory provides theoretical background for H-II, the statistical evidence for this proposition is vague. Work relation aspect of social resources can be used to explain this phenomenon.

Analysis conducted in organizational research study [10] shows that after control for attained resources variables weak ties exert strong positive effect on contacts at high level. This result gives us a hint to strength of tie proposition puzzle which is demonstrated by the following model.

*Model 4.* We make several assumptions:

- 1) Weaker ties reach contacts at higher level (H-II holds).
- 2) There are two types of ties: work-related and communal.
- 3) Probability of mediation for work-related weak tie contacts is *higher* than for communal weak tie contacts and the probability of mediation for work-related strong tie contacts is *lower* than for communal strong tie contacts.

In this situation, if both work-related and communal ties are considered we may not observe any effect of the tie strength on the level of contacts reached since both weak tie work-related contacts and strong tie communal contacts are frequently mobilized (due to the use of ex-post data for hypothesis verification, support for H-II is not provided). However, if we restrict our analysis only to work-related contacts the required evidence can be provided.

## V. UNANSWERED QUESTIONS

### A. How does the Effectiveness of Using Weak/Strong Ties Vary Along Prestige Level?

Both theoretical and empirical evidences for this question are extremely contradictory. Original Lin's study [5] provides theoretical and statistical arguments to claim that “when ... initial position in the structure is relatively low, only weak ties can provide access to social resources significantly higher up”. On the other hand, in [8] it is proven that “job shifters with initial low prestige job advance by using strong intimate ties”. Finally, [7] reports that no relation has been found between the prior prestige level and the advantage of use any special kind of ties.

### B. Can Different Outcomes of an Instrumental Action (Wage/Income, Prestige) be Considered as Proxies in Attainment Process?

This assumption is implicitly present in many occupational status attainment researches, in particular in all the related mathematical models. Nevertheless there are at least two arguments against it. First, the correlation between income and prestige does not exceed 0.5 for Dutch and German data [4]. Second, [7] and [4] showed that for the same data sets prestige and wage/income outcomes demonstrate different patterns for H-II. The former depends on contact's status and the latter does not depend. While the results from [4] can be explained by the fact that the regression for income has prestige as one of the controlled variables, the regression from [7] is free of this possible specification error.

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