

# Network Centrality and Public Service Motivation: The Medium of Organizational Commitment

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## Abstract

Based on social network theory, this paper studies the mechanism of betweenness centrality on public service motivation and how this influence is mediated by organizational commitment. The theory of public service motivation, as a product of the crisis of Western social government, has attracted a lot of academic interest because of its completely different ideas. In the subsequent development, it has become a parallel with Weber's bureaucratic theory, representative bureaucracy, and public choice theory. One of the four theoretical schools that describe bureaucratic behavior. As an emerging topic in the field of public management research, in-depth study of public service motivation not only helps to select a qualified civil service, but also helps to better improve public service motivation in the public sector and accelerate service-oriented government construction pace. Through a questionnaire survey of 206 public sector members, the empirical analysis shows that the higher the betweenness are, the more motivated individuals are. In addition, the organization promises to play an intermediary role between the betweenness centrality and public service motivation. The article's research conclusions, from the point of view of social network theory, enrich the angle and strength of interpretation of public service motivation, and also provide new ideas for the future public sector to further enhance the public service motivation of the organization members.

**Keywords:** public service motivation, betweenness centrality, organizational commitment

## 1. Introduction

Public service motivation is an important issue in public management research. Under the guiding ideology of the citizen and society standard, the public service motive emphasizes that the social service itself is the value and basis of the government existence, and the service spirit runs through the various functions and activities of the government. In this context, public services have become an inevitable choice for building modern government functions. The staff of the government's public sector, as the implementers of the service spirit and activities, directly affect the quality of public service provision. Therefore, cultivating and constructing a civil service force with strong public service motivation and spirit is of great significance for implementing service-oriented government reform.

At present, the research on the former dependent variables of public service motivation can be divided into four aspects: individual statistical characteristics, individual behaviors, motivational organizational environment, and social and historical factors. First, individual statistical characteristics include age, gender, and educational level. Taking the socio-demographic characteristic variable as an antecedent factor is an important feature of the study of early public service motivation. Among them, most scholars have shown through empirical research that women generally have a higher level of public service motivation than men (Bright, 2005; Naff & Crum, 1999); there is a gap between individual education level and public service motivation. Because education plays an important role in shaping personal values, and individuals with higher levels of education have relatively higher levels of public service motivation (Moynihan & Pandey, 2007). Some scholars also questioned this, arguing that the socialization process is urging individuals to contribute to society with increasing age and education. Second, individual behaviors mainly include rational restraints, rules, and responsibility constraints. Third, the motivational organizational environment variables include organizational culture, reward systems, work characteristics, and relationships with colleagues or superiors. The organizational environment plays an important role in shaping public service motivation. The role of individual work management within the organization significantly affects the level of public service motivation, and the managerial level of the manager also has a certain impact. In addition, adding tedious rules and regulations will reduce the individual's public service motivation, and the number of organizational levels has a positive effect on public service motivation (Vandenabeele, 2011; Moynihan & Pandey, 2007). Fourth, social and historical factors include religious activities, political awareness, and professionalism. Vandenabeele (2011) shows through empirical research that

individuals have parents or relatives working in the public sector, and their level of public service motivation is relatively high.

In view of the current need to increase the public service motivation in the public sector, this article examines the relationship between “network centrality—public servants’ public service motivation” from the perspective of social networks. As one of the important branches of western sociology, social network theory emphasizes the interpretation of social phenomena such as interpersonal relationships, the connotation of relations, and the structure of social networks. It has established a bridge between micro-behavior and macroscopic phenomena. Moreover, because it can specify specific causal models in the study of many social phenomena, it has demonstrated its unique empirical analysis capabilities in the field of social sciences. From the perspective of social network theory to study the issue of public service motivation, it is helpful to enrich the research perspective and content of public service motivation, and deepen the research on the factors that influence public service motivation. Therefore, from the perspective of social networks, this study uses a combination of qualitative research and quantitative research to deeply analyze the relationship between network centrality and public service motivation.

## 2. Theory and Hypotheses

Perry & Wise (1990), based on Knoke & Wright-Isak (1982) Three-Dimensional Motivation Theory, divides public service motivation into three types: rationality, norms, and emotions. Among them, “Rational motivation” refers to the individual’s motivation to pursue personal utility maximization, for example, by participating in the formulation of public policies to satisfy individual self-fulfillment needs and supporting individual public projects with personal values. Rational motivation is an important part of public service motivation. Norm-based motivation refers to compliance with social values and norms, such as the desire to pursue and serve the public interest, the pursuit of social values that are fair and equitable to the society, and the sense of mission to fulfill civic responsibilities. Affective motivation refers to the individual's emotional reactions in a particular social context, such as the love of the motherland and sympathy for others. Although some scholars have questioned and criticized whether rational motivation for maximizing self-interest should be included in public service motivation, Perry & Wise's classification of public service motivation is still the most recognized in the academic community. Afterwards, based on the three types of public service motivation, Perry (1996) developed six major components of public service motivation and proposed a four-dimensional structure of public service motivation, namely the desire to participate in the formulation of public policies, and the public interest. Commitment, compassion and self-sacrifice. Among them, the first three dimensions correspond to rational motivation, normative motivation and emotional motivation. This article considers public service motivation as the individual's desire to participate in the formulation of public policies, the commitment to the public interest, the compassion, and the willingness to self-sacrifice.

### 2.1 *The Relationship Between Betweenness Centrality And The Public Service Motivation Of Civil Servants*

Social network theory regards social structure as a human network, and betweenness centrality analyzes the structural characteristics of social networks by measuring the ability of actors as mediators in this network. The higher the actor's intermediaries are, the more they occupy the important position of resource exchange and become the key to gaining competitive advantage. According to the characteristics of the betweenness's centrality, this article believes that the betweenness center is positively acting on public service motivation. First of all, from a rational perspective. The higher the agency's centrality, the more obvious its resource advantages and location advantages are (Burt, 1992). From the aspect of resource advantages, the higher the agency's centrality is, the more likely it is that it has the opportunity to exchange information with more individuals. As a result, it can obtain more information, acquire more resources, and become an information distribution center. The enthusiasm of actors to participate in the formulation of public policies is also stronger. From the perspective of location advantages, the more actors with more betweenness centers occupy more structural holes, which is the key path for other people to communicate, and therefore the flow of resources. And the dominance of income is higher, so the formulation of public policies has a stronger attraction for them, and the motivation for public services is stronger. Second, from an emotional point of view. The actors with higher intermediaries are more likely to have more opportunities to communicate with others, and therefore have more opportunities to generate emotional communication and form more emotional dependence and connections. If one can establish an emotional support relationship with more people in a social network, it will bring more resources for this person (Krackhardt & Brass, 1994), inspiring public policy making to appeal to them and to others. Sympathy.

Therefore, there will be stronger motivation for public services. Finally, from the normative point of view. Activists who have more betweenness-centrality often play an important role in the formal or informal networks of the organization. Compared with others, it has a stronger motivation for public service. Because, from the perspective of Maslow's hierarchy of needs, its material security is relatively abundant, so it has a higher spiritual level. In the public sector, it also pays more attention to the commitment and value of the public interest (Bright, 2005). Therefore, based on the above theoretical and logical arguments, we assume:

H1: Betweenness centrality has a positive effect on the public service motivation of civil servants. The higher the betweenness centrality is, and the stronger public service motivation of civil servants is.

### *2.2 The Relationship Between Betweenness Centrality And Organizational Commitment*

Organizational commitment is the strength of individual identification and participation in the organization. A large number of existing studies have shown that the interpersonal relationship network within an organization has a significant impact on the working status of the organization members, and the rational and effective use of social networks can stimulate the initiative and initiative of the organization members. This article believes that the betweenness centrality has a significant positive impact on organizational commitment. First of all, from a rational perspective. The higher the intermediaries of actors in social networks are, the stronger their ability to acquire resources and information within the organization means that they have more opportunities to obtain betweenness benefits and maximize their own interests. In other words, the success of the actor is due to its position as a resource exchange center within the organization. Once he leaves the organization and breaks away from the existing social network, he will sacrifice most of his resources, including prestige, status and information. Therefore, the higher the agency's centrality is, the stronger the rational motivation is, and the more dependent it is on the organization, that is, the stronger the level of organizational commitment. Second, from an emotional point of view. The higher the agency's intermediaries are, the closer to the center it is in the organization. This means that higher-level actors have higher opportunities to establish good interpersonal relationships with more people. Compared to marginal actors, the members of the organization have more opportunities to contact members willing to exchange social support (Wellman, 1992). Therefore, he is more likely to feel his own importance, dependence on others, and a strong sense of belonging to the organization. On the other hand, actors at the edge of social networks have few connections with their colleagues. This also means that he has less chance to find colleagues who can support each other and provide emotional support when they need help and care. (Morrison, 2002). In this sense, actors with lower intermediaries are less able to experience the intimacy of the members of the organization and the sense of association and recognition with the organization. Therefore, based on the above theoretical and logical arguments, we assume that:

H2: Betweenness centrality has a positive impact on organizational commitments. The higher the intermediaries are, and the stronger public service motivation of civil servants is.

### *2.3 Organizational Commitment To Mediate The Role Of Betweenness centrality And Public Service Motivation of civil servants*

Moynihan and Pandey (2007) believe that organization is an important place to shape the motivation of public services. This article believes that organizational commitment has a significant positive effect on public service motivation. First of all, from an emotional point of view. The higher the level of organizational commitment of the members of the organization, the stronger their dependence on the organization, their sense of belonging and identity (Buchanan, 1974). The purpose of the public sector is to provide high quality public services to the public. It is service-oriented and often requires members of their organizations to pay attention to public services. Highly committed organizational members have a stronger sense of identity with the organization and, relatively speaking, they also recognize the organization's values and goals (Mowday, Steers and Porter, 1979), and therefore have higher commitment to the public interest. That is, the higher the organizational commitment level of the organization members, the stronger the motives for public services they have. Second, from the normative point of view. Organizational commitment also manifests itself in the result of the organization's constant instilling of the organization's ideas toward its members. The members then internalize organizational values into personal values and believe that they should do so (Wiener, 1982). The public sector emphasizes that the members of the organization should be guided by the value of serving the public and take measures to continuously enhance their commitment to the public interest. Therefore, civil servants with higher organizational commitments will be more likely to believe that they have the responsibility to provide quality public services and that their public service motivations are stronger. Finally, from a rational perspective. Once

an organization member leaves the organization, it is accompanied by the loss of its interpersonal relationships, status and welfare benefits. In the face of opportunity costs, employees will have higher commitments. The higher the organizational commitment of the organization members based on the economic foundation, the more motivated they are to enhance their existing benefits, so they have higher motivation requirements in terms of participation in the formulation of public policies. That is, the more motivated the public service. Therefore, based on the above theoretical and logical arguments, we believe that organizational commitment has a positive effect on the public service motivation of civil servants. That is, the higher the organizational commitment of civil servants, the stronger their public service motivation.

Camilleri (2007) believes that the way the actor interacts with others and the friendship relationship it has has a positive impact on public service opportunities. In the public sector, agents with strong intermediaries often occupy the key position of resources and information exchange within the organization, and they are more willing to participate in the formulation of public policies. Through the analysis of H1, we can see that in the public sector, whether from a rational perspective or from an emotional and normative perspective, the stronger the intermediaries are, the stronger the public service motivation is. The higher the actor's intermediaries are centered, the higher the organizational commitment is based on the degree of material interests and the sense of obtaining organizational support. H2's theoretical analysis shows that there is a positive correlation between betweenness centrality and organizational commitment. The higher the level of organizational commitment, the higher the degree of recognition of the organizational values of the representative members. In the public sector, this means that the public service motivation is stronger. H3 analyzes the relationship between the two aspects in many ways. Combining the logical derivation of H1, H2, and H3, we can see that in the public sector, actors with higher intermediaries are more likely to have a higher organizational commitment due to the advantages represented by the resource exchange, and then to identify organizations. On the basis of values, the level of their public service motivation is enhanced. In other words, the organization promises to mediate between the betweenness's centrality and public service motivation. Therefore, based on the above theoretical and logical arguments, we assume that:

H3: The organization promises to play an intermediary role between the betweenness's centrality and the civil servant's public service motivation.

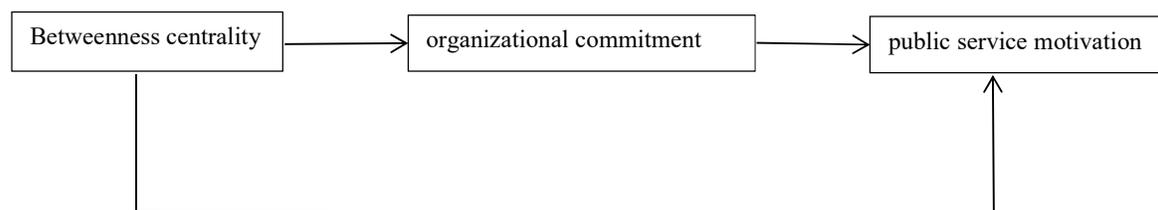


Figure 1. Overview of Research Model

### 3. Research Method

#### 3.1 Sample And Data Collection

The sample selected in this study is mainly from the government public departments at or below the county level in China, and questionnaires are used to collect data. The questionnaire used the Likert 5-point scale, where 1 is “completely disagree” and 5 is “fully agree”. As the questionnaire is developed with a mature scale, this study uses expert back-translation to ensure the accuracy of the questionnaire. Before the formal distribution of the questionnaire, we selected three public departments to carry out pre-investigation and revised the items according to the problems reflected by the members of the department and formed the final questionnaire. The survey lasted 2 months. By making full use of alumni and other channels, a total of 476 questionnaires were distributed. 263 questionnaires were finally returned, 57 invalid questionnaires were eliminated, and 206 valid questionnaires were finally recovered. The effective recovery rate was 43%.

### 3.2 Measurement

Betweenness centrality. This study mainly refers to the concept and scale of social networks of Freeman (1978) and Krackhardt (1992), and collects data through the overall social network. There are three main items of betweenness-centric measurement items, including “In the current organization, I often actively contact many colleagues to discuss issues related to work, such as work tasks, work problems, and organizational development strategies” and so on.

Organizational commitment. The three-dimensional organizational commitment structure scale proposed by Allen & Meyer in 1990 is the classic of current measurement organizational commitments, including the Affective Commitment Scale, Continuance Commitment Scale, and Normative Commitment Scale. The measurement of organizational commitment in this study mainly refers to the design of the Organizational Commitment Scale by Allen & Meyer (1990). Because the measurement of organizational commitments has to be adapted to the socio-cultural environment in China, some adjustments have been made. The measurement of organizational commitment in this study mainly includes the three dimensions of emotional commitment, continuing commitment and normative commitment, a total of 18 items. Among them, there are 8 measurement items for the emotional commitment, 5 items for continuing to be promised, and 5 items for the measurement commitment.

Public service motivation. The four-dimensional 24-item Public Service Motivation Scale developed by Perry (1996) is a relatively complete measurement questionnaire. Based on the scale developed by Perry, adjustment was made based on the motivation of public services under the Chinese context. The questionnaire on the measurement of public service motivation consists of four dimensions, totaling 18 terms. Among them, the gravitational dimension of policy formulation has three measurement items, the commitment dimension of public interest has four measurement items, the compassion dimension has four measurement items, and the self-sacrifice dimension has seven measurement items.

Control variables. In this study, variables that can have a significant impact on public service motivation and organizational commitment other than network centrality are set as control variables, including gender, age, education level, and years of work within the organization. First, gender is set as a categorical variable, with 1 being male and 2 being female. Second, age is divided into five stages: 24 years old and below, 25-34 years old, 35-44 years old, 45-54 years old, 55 years old and above. Third, the level of education is divided into four levels of education: undergraduate, master, doctoral and above. Fourth, the number of years of work within the Organization is mainly divided into five levels, namely 5 years and below, 6-10 years, 11-15 years, 16-20 years and over 20 years.

### 4. Analysis and Result

Table 1 is a descriptive statistical chart showing the mean, standard deviation, and correlation coefficients of the variables. From Table 1, it can be seen that there is a significant positive correlation between the centrality of independent variables and the organizational commitment of mediator variables and the motivation of dependent public service motivation ( $r=0.454$ ,  $p<0.01$ ;  $r=0.459$ ,  $p<0.01$ ). The working life of control variables was significant at the level of 0.01 ( $r=0.236$ ,  $p<0.01$ ). The variance inflation factor is between 1.025 and 1.229, well below 10, indicating that there is no significant multicollinearity between variables.

Table 1. Correlations

	Mean	S.D.	1	2	3	4	5	6
1.Gender	1.41	0.49	1					
2.Age	2.57	1.19	0.069	1				
3.Education	2.90	0.98	-	-0.159*	1			
4.Working years	2.70	1.08	0.011**	-0.153*	0.006	1		
5.Betweenness centrality	3.78	0.51	-	-0.097	0.152*	0.051	1	
6.Organizational commitment	3.94	0.52	-0.165*	0.015	0.083	0.049	0.346**	1
7.Public service motivation	3.98	0.95	-0.135	-0.115	0.091	0.236**	0.454**	0.459**

Note: N=206; \*p < 0.05; \*\*p < 0.01

This article uses the method of hierarchical regression analysis to test hypotheses. Taking the public service motivation as the dependent variable, the control variable is introduced into Model 3, and the results show that gender has a negative correlation with public service motivation ( $\beta=-0.123$ ,  $p<0.1$ ), that is, men's public service motivation is slightly higher than that of women. On the basis of model 3, the introduction of betweenness centrality as an independent variable, and model 4 can be seen that the betweenness centrality has a significant negative effect on public service motivation ( $\beta=0.435$ ,  $p<0.01$ ). Therefore, Hypothesis 1 is supported. Using the organizational commitment as a dependent variable, a control variable, model 1, was introduced. In Model 1, the results show that gender has a moderate negative effect on organizational commitment ( $\beta = -0.158$ ,  $p < 0.05$ ), that is, men's organizational commitment is slightly higher than women's. On the basis of model 1, the introduction of the independent centrality of the independent variables can be found that the medium-centered significant works are used for organizational commitment ( $\beta=-0.071$ ,  $p<0.05$ ). Hypothesis 2 is supported. Then, based on Model 4, we introduce the mediation organization commitment, model 5. Comparing model 5 with model 4, it can be seen that organizational commitment plays a role as a partial intermediary between betweenness centrality and public service motivation. Hypothesis 3 has been verified. Through regression analysis, we find that in the social network of the public sector, the higher the agency's centrality is, the stronger the motivation for public service is. In addition, the organization promises to play an intermediary role between the betweenness centrality and public service motivation.

Table 2. Results for Hierarchical Regression Analysis

Variables	Organizational commitment		Public service motivation		
	Model 1	Model 2	Model 3	Model 4	Model 5
Gender	-0.158*	-0.072	-0.123 <sup>†</sup>	-0.008	0.017
Age	0.045	0.063	-0.063	-0.038	-0.060
Education	0.060	0.030	0.058	0.017	0.006
Working years	0.057	0.036	0.227**	0.208**	0.193**
Betweenness centrality		0.032		0.435**	0.324**
Organizational commitment		0.071**			0.340**
R <sup>2</sup>	0.035	0.130	0.083	0.253	0.354
Adjusted R <sup>2</sup>	0.015	0.108	0.064	0.234	0.334
F	1.796	5.953**	4.521**	13.550**	18.159**

Note: <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$

## 5. Discussion and Conclusion

### 5.1 Contribution

First, we study the influencing factors of public service motivation and enrich the research results on the former dependent variables of public service motivation. As one of the three most important issues to be studied in the field of public management, the motivation issue has attracted the interest of organizational behavior scholars, but it has been neglected in the public management field (Behn, 2009). The theory of public service motivation, to a certain extent, makes up for the relatively lack of motivation in the public sector research. At present, the research on the antecedent factors of public service motivation mainly focuses on four factors: personal characteristics, individual behavior, organizational motivation environment, and social and historical background. This paper explores the relationship between network centrality and public service motivation, enriches the research on the antecedent variables and mechanism of public service motivation, and helps to deepen the research on the factors that affect public service motivation from the individual level.

Second, the use of social networks to study public service motivation has increased the interpretation of public service motivation. Social network is a relatively stable system composed of individual social relationships. It can regard the network as a series of social connections or social relationships that link actors. At present, this

theory has been widely used in organizational research field, and become the dominant school of management research. This article further analyzes the relationship between civil servants' social networks and public service motivation through the perspective of social networks. Combining organizational commitments, the paper builds and examines network centrality from an individual perspective. The influence mechanism model of public servants' public service motivation. This paper applies the social network theory to the study of public service motivation, increases the analysis of the impact of network centrality on public service motivation, and enhances the interpretation of public service motivation.

Third, the combination of qualitative research and quantitative research has enriched the empirical research of public service motivation. On the one hand, questionnaires are used to collect data. Based on the data and data obtained from the survey, quantitative analysis and research are performed using statistical analysis software such as SPSS to confirm or disprove the theoretical hypotheses of the study; on the other hand, we using interviews to conduct in-depth research on some of the research objects, to explore the mechanism of personal social motivation in the social network structure. Through the combination of qualitative research and quantitative research, the logical and empirical support for “network centrality - public service motivation” will help enrich empirical research results on public service motivation and make up for deficiencies in existing quantitative studies.

### 5.2 Limitation And Directions For Future Studies

This article also has some research limitations, and it needs further improvement in future research. First, the data collected in this paper is mainly from China. Although China's environment provides a good context for hypothesis testing, it also limits the application of research findings in other countries and regions. In the future, cross-cultural studies can be conducted to analyze the influence of betweenness centrality on public service motivation in different cultural contexts. Second, the number of samples in this article is limited. Future research can further expand the sample size. Third, the public service motivation studied in this paper are just public departments, private sector are not within the scope of this article. In the future, the relationship between the two scenarios can be analyzed.

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