

**The Management of Trust in PPPs: the Case of a Post-Earthquake  
Psychological Rehabilitation Program in China**

**Tongyan Wang**

Thesis submitted as partial requirement for the conferral of  
PhD in Management  
Specialization in Global Management, Strategy and Entrepreneurship

Supervisor:  
Prof. Nelson Santos António, Professor Catedrático, ISCTE-IUL, Departamento de Marketing,  
Operações e Gestão Geral

Co-Supervisor:  
Prof. Virginia Trigo, Professora Associada, ISCTE-IUL, Departamento de Recursos Humanos  
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REHABILITATION PROGRAM IN CHINA

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## **Abstract**

China's public health sector is undergoing significant changes. Introducing private sector into the medical and health system is an important factor to the success and development of medical and health undertaking. As domestic demands intermingle with the international situation, increasing attention is paid to public-private partnerships (PPPs) in the public health sector. The success of PPPs and the accomplishment of the expected targets depend not only on technological and resource complementarity between the public and the private sectors but also on mutual confidence and the degree of trust. Thus the governance of such partnerships has become a subject valued by the academic and practitioner circles.

As to the discussion on inter-organizational cooperation, major research orientations fall into two types: transaction cost theory and the study of trust. Transaction cost theory assumes that people tend to be opportunistic, which increases transaction costs. Through arrangements of governance structure and contract mechanisms, all partners can get guarantee and reduce transaction costs. The study of trust believes that trust can suppress opportunism and enhance the efficiency of the cooperation, and points out a number of factors leading to trust. However, both of the two research orientations have their own limitations and a merging trend has emerged in recent years.

This thesis proposes the view of trust management and suggests that PPPs shall stress whether a partner is reliable and whether trust can arise from proper management rather than emphasize transaction costs. Compared with the study of trust, trust management values positive actions of partners rather than the goodwill of partners' intrinsic motivation so that it can avoid insufficiency of manageability and attribution errors in the study of trust. On the basis of theoretical study, the thesis analyses the influence of such antecedents as relationship specific assets, corporate reputation and communication on trust and the influence of trust on consequential variables like performance, commitment and long-term relationship, and then proposes a theoretical model of mutual trust in PPPs, the hypothetical relationship between antecedents and trust, and the hypothetical relationship between consequential variables and trust.

With post-earthquake psychological rehabilitation as the empirical object, the thesis verifies the structural relationship between antecedents and trust and the structural relationship between trust and cooperation effects through a case study and statistical analysis. It

formulates hypotheses on the relationship between each antecedent and trust and hypotheses on the relationship between trust and cooperation effects, and discourses on the theoretical and practical significance and implications of the research findings. The statistical results indicate that the architecture of trust management is logically reasonable, empirically supported, and considerably applicable. Theoretically, the thesis not only proposes a systematic management architecture but also confirms the intermediary influences of psychological factors on management; practically, the thesis provides reference for diagnosis of relationship risks, determination of management intensity and establishment of cooperation confidence. It is suggested that future studies be carried out on connotations of relationship risks, optimal management intensity, management mechanism portfolio, gap of psychological state, partnership perspective and dynamic development of partnerships.

Keywords: China, public health, public-private partnership (PPPs), trust

Classification: M14; Q01

## Resumo

O sistema de saúde pública na República Popular da China tem vindo a ser sujeito a mudanças significativas. Entre elas, a introdução do sector privado é um fator importante para o sucesso e desenvolvimento do sistema. A conjugação das exigências internas com a situação internacional aumenta a atenção sobre as Parcerias Público Privadas (PPP) cujo sucesso e prossecução de objetivos depende não somente da complementaridade dos recursos existentes quer no sector público quer no privado, mas também da confiança mútua e do grau dessa confiança, pelo que, nos últimos anos, o estudo da governação das PPPs tornou num assunto de interesse para a academia e para a prática.

Quando se discute a cooperação inter-organizacional, as principais linhas de investigação existentes são a teoria dos custos de transação e o estudo da confiança. A primeira assume que as pessoas tendem a ser oportunistas, o que aumenta os custos de transação. Contudo, através de arranjos na estrutura de governação e de mecanismos contratuais, todos os parceiros podem obter garantias e deste modo reduzir esses custos. Entretanto, os autores que estudam a confiança, acreditam que ela pode eliminar o oportunismo e aumentar a eficiência da cooperação e indicam um conjunto de fatores que conduzem à confiança. Estas linhas de investigação têm porém alguns constrangimentos e, para os obviar, emergiu recentemente uma linha de investigação integradora.

Esta tese defende a gestão da confiança e sugere que as PPPs deverão realçar a fiabilidade dos parceiros e também o facto de a confiança provir de uma boa gestão, deixando de enfatizar os custos de transação. Em comparação com o estudo da confiança em sentido estrito, a gestão da confiança valoriza as ações positivas dos parceiros em detrimento da boa vontade da sua motivação intrínseca, evitando deste modo eventuais insuficiências. No enquadramento teórico a tese analisa a influência de antecedentes tais como os ativos específicos de relacionamento, a reputação da empresa ou a comunicação sobre confiança. Analisa também a influência da confiança nas variáveis consequentes incluindo o desempenho, envolvimento e relações de longo prazo e propondo um modelo teórico para o desenvolvimento da confiança mútua nas PPPs.

Tendo como objeto de estudo uma situação de reabilitação psicológica pós terramoto na China, a tese verifica a relação estrutural entre antecedentes e a confiança assim como a relação estrutural entre a confiança e os efeitos da cooperação através de estudo e

análise estatística. Propõe hipóteses sobre a relação entre cada antecedente e a confiança e sobre a relação entre a confiança e efeitos cooperativos. A tese discorre ainda sobre o significado dos resultados para a academia e para a prática. Os resultados estatísticos indicam que a arquitetura de gestão da confiança é lógica, apoiada empiricamente e explicada de uma forma adequada. Teoricamente a tese não propõe somente uma arquitetura sistemática de gestão mas também confirma influências intermediárias de fatores psicológicos na gestão. Para a prática a tese fornece referências para relações de risco, determinação da intensidade da gestão e o estabelecimento de formas de cooperação baseadas na confiança, sugerindo futuros estudos sobre riscos inerentes ao estabelecimento de relações e sobre a condução de parcerias dinâmicas.

**Palavras-Chave:** China, Saúde Pública, Parcerias Publico Privadas (PPPs), Confiança

**Classification:**M14; Q01



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## **Chapter I – Introduction**

### **1.1 Research Background**

#### **1.1.1- Significance of PPPs in Public Health Sector**

In recent years, faced with rapid growth of public demands for public products, worldwide financial shortage and low efficiency of public sectors in areas such as urban public utilities, culture, education, health and environment, all governments have started to seek cooperation with private sectors to solve problems. As a result, a new public-private cooperation mode is emerging and develops quickly. Public-private partnership involves all political and economic fields. It has found wide application especially in the public health sector. In the 1980s, a market-oriented medical reform was launched in China. The government successively released a series of policies aiming to expand the supply of medical services. Medical and health undertakings were gradually marketized. Its original intention was to solve problems of a "shortage economy", such as difficulties in seeing a doctor, getting hospitalized, receiving surgical operation, and easing the supply-demand contradiction. However, the marketized medical and health sector also faces severe market failure. In the 21<sup>st</sup> century, along with rapid economic growth for consecutive years, marked progress of science and technology, and remarkable increase of per capital medical expenses, the public health undertaking is confronted with increasingly severe difficulties and challenges. Take tuberculosis as an example. In the first 30 years after the founding of the People's Republic of China, the incidence of tuberculosis was cut down by 60-70% despite the scarcity of resources; in the following 20 years, more funds were available and treatment means were more mature, but the incidence of tuberculosis has been rising rather than falling. In addition, there are other alerting public health issues that arouse public concern, such as occupational diseases, rising incidence of mental diseases, suicide rate high above world average, worsening food hygiene and environmental health, and SARS.

Practice has proved that due to the externality of medical and health market and information asymmetry, we cannot effectively distribute social resources and solve public health issues by relying on state-centered government control or market-centered competitive mechanism alone. As a hybrid mode of "intrinsic combination of government and market", the recently

developed public-private partnership, a long-term partnership established between public and private sectors for providing public services, provides a path worth exploring for innovation in public health management. Study of public-private partnerships in public health is essential and has great significance for China's medical reform. This mainly includes the following four aspects:

- (1) Complementarity of resources. Public private relationship involves public institutions, enterprises, voluntary organizations and communities. It provides the channel for mutual resource transport and utilization of resources and improves the efficiency of resource utilization.
- (2) Functional integration. Public-private relationship is conducive to solving the worsening differentiation in public sectors. Functional division in traditional public administration only stresses professional division but neglects vertical and horizontal integration, leading to the defects of departmental protectionism, dispersion of rights and responsibilities, ambiguous division of rights and responsibilities, emphasis on division of work, and ignorance of integration. Therefore, the establishment of a partnership by strengthening functional integration puts all actors in a mutually dependent governance network and provides a means for all organizations to realize respective and common goals.
- (3) Settlement of cross-boundary issues. The existence of some complicated, tricky and troublesome cross-boundary issues, such as AIDS, mental and psychological problems, and SARS, requires an integrated mechanism of communication and coordination. As Rhodes said, "A troublesome problem has to be solved by a troublesome method." This highlights the importance of establishing inter-organizational and inter-departmental partnerships. The innovative cooperation mode of public-private partnership characterized by resource sharing can be a strategy for developing mutual trust and cooperation and be employed to solve cross-boundary issues requiring cooperation of different institutions.
- (4) Public disclosure of decision-making process. The establishment of partnership among institutions also serves as one strategy of making the decision-making process more public. Many institutions and social organizations hope partnership relations can air more viewpoints to exert influence on decision-making process. Therefore, after public institutions have transformed the role as the sole service provider, many governments gradually accept the social governance concept of engaging in coordination with local stakeholders (Lowndes & Skelcher, 1998).

### **1.1.2- Research Background of PPPs Trust Management**

Public-private relationship may cover cooperation between governments, enterprises, non-profit organizations or inter-departmental cooperation within a government system. The establishment of a cooperative relationship between these organizations is based on the concept of cooperation and for the purpose of achieving 1+1>2 results through inter-organizational coordination. Abuyual (1999) says that public-private partnership shall be responsible for improving the efficiency of social resource utilization and giving play to policy framework and operation strategy.

Despite the advantage of integrating resources and competencies of partners, the establishment of a partnership may not necessarily leads to expected effects. Usually, the goals and interests of partners are not completely the same. Inevitably, the partnership itself has many problems and risks. There is often a gap between reality and expectation, and discontent with partnership is often heard. Generally speaking, there are two kinds of risk in the cooperation: relationship risk and performance risk. The former is related to the cooperative relationship that is the possibility of partners not being cooperative. For example, speculation is a typical source of relationship risk. As to the latter, even if the partnership is satisfactory, it is possible that the expected targets cannot be achieved. Sources of the two kinds of risk are different. Relationship risk originates from interaction between organizations while performance risk stems from interaction between organization and environment. Both the practical and academic circles are very concerned about the subject of relationship risk because there would not be good results without a solid cooperation as the basis. Parkhe (1993) said, "The inter-organizational alliance is uncertain in nature. Such uncertainty comes from the uncertainty of the future behaviors of partners." If one cannot deal with the relations with its partners effectively, it will not be able to achieve its strategic goals and may even get itself into a disadvantaged situation.

In the management of cooperative relationship, it is essential that neither party will be harmed or deceived and both will be guaranteed and secured in cooperation. The transaction cost theory has a lot of studies on this point. The theory has a basic assumption about human nature of economic actors-opportunism, i.e self-interest seeking with guile (Williamson, 1985). In all transactions, the parties involved must take measures to avoid opportunistic behaviors. However, from a more positive perspective, in order to achieve enhanced efficiency and innovation in cooperation, both parties must better interact with each other rather than distrust each other. It is in this direction that scholars trusted by research

institutions are exerting efforts in recent years. Only with full trust of each other can the parties devote their resources and competences to the cooperation more openly and generate higher value.

Trust may be something that both parties can pursue jointly. In practice, what is trust? In Chinese societies, connection is an important resource. Therefore, a lot of investment is put in formal and informal inter-organizational relations, including time relations, spiritual relations and material relations. Establishing so-called inter-personal trust has become an important approach in business. Paradoxically, although people consider trust to be very important, they hesitate when being asked about trust between them and others. Such hesitation may be explained from two aspects. Firstly, there are different levels of trust. It can be trust in a particular person or trust in an organization, thus the confusion in identification. Secondly, interests in business relations may lead to attribution of behaviors difficult. Chiles & McMackin (1996) find it necessary to differentiate "real trust" from "behaviors similar to trust". Williamson (1994) expresses a similar opinion. He holds that, "real trust" stems from social situations based on a particular (interpersonal) relation and is regulated by social norms. However, "behaviors similar to trust" can be initiated by economic calculation or incentives. People see interests, so they exhibit some behavior to promote the relations. Madhok & Tallman (1998) point out that a sound cooperative relationship may not be necessarily explained from the perspective of "trust". When the prospect of cooperation is good, the prospect itself constitutes the best guarantee. Besides, trust may not be the cause of a sound cooperative relationship but it is the result of satisfaction with the cooperation.

At theoretical level, "opportunism" and "trust" are like the two ends of a cooperative relationship. Transaction cost theory focuses on the former while the view of network and trust focuses on the latter. Are "opportunism" and "trust" two sides of one body or two different issues? A lot of mechanisms for increasing trust and mechanisms for reducing opportunism are not clearly differentiated in theory. The common nature of them is to provide an essential guarantee. However, we can find a tendency in literature that scholars generally hold that increasing "trust" can reduce "opportunism" but reducing "opportunism" does not mean the increase of "trust" and at best is reducing "distrust". Therefore, "opportunism" and "trust" have different meanings. The former is like hygiene factor and the latter is like motivating factor.

The thesis holds that if we describe public-private partnerships simply using "opportunism" or "trust", it is likely to cause conceptual misunderstanding and we cannot properly grasp the essence of the phenomenon. The two are both behaviors in handling relationships and are

closely related. In essence, they have the same purpose. It is the same when it comes to public-private relationship. When the focus of study is put on either opportunism or trust, researchers would be inclined to stress some management mechanisms and underestimate the influence of other management mechanisms. In addition, negative or positive behaviors of a partner cannot be explained only using "opportunism" or "trust". If a partner has no more intention to continue with the cooperation, the low performance manifested may not necessarily be "self-interest seeking with guile". This could be a false ethical judgment. On the other hand, when both parties are positively devoted to their joint undertaking, the reason may not necessarily be that there is more "trust" between them, and this can be a superfluous explanation. The excessive emphasis on transaction cost theory of opportunism is likely to cause the danger of "throw the baby out with the bath water" (Nooteboom, 1996); excessive emphasis on trust can be wrong as well because people may not be able to master "trust". As Dasgupta (1988) said, "Appropriate incentives can make one trustworthy (untrustworthy) person become untrustworthy (trustworthy)."

A good cooperation management mechanism shall agree with the tendency of human nature, which is to go after profits and avoid disadvantages, encourage positive behaviors, and suppress negative behaviors, and shall not be over optimistic or pessimistic. The thesis tries to look at the concepts of "opportunism" and "trust" from a new angle "trust management" to solve the same issue. In public-private partnership, the low and middle-level requirement is that the public-private partnership shall be able to solve problems of safety and security; at higher level, it is expected that both parties could achieve mutual benefits and win-win results while pursuing self interests. However, the two levels can be coordinated. We also hope that discussion on this issue can help answering questions like how to enhance trust in public-private partnerships, which factors influence the degree of mutual trust, and what influences mutual trust has on the effects of cooperation. The discussion will offer suggestions and contributions for practice.

## **1.2 Research Objectives and Content**

As previously mentioned, China's public health sector is undergoing major reform. The sustainable development of medical and health undertaking requires settlement of fund shortage and ineffective management. Introduction of private sector into the medical and health system and efforts of all parties in the medical and health market are important factors for the success and development of medical and health undertaking. Considering domestic demands and international situation, it is essential to carry out theoretical and empirical study

of public-private partnership in China's medical and health field. Cooperation may not necessarily lead to win-win results. In this situation, how can we achieve satisfactory goals? This is very much dependent on how the parties in a public-private partnership effectively build mutual trust. Mutual trust in public-private partnerships can be reflected in the following questions.

1. In what context of cooperation does a public-private partnership have high relationship risk?
2. What factors affect partners' perception of relationship risk and willingness to bear relationship risk?
3. How does trust level requirement influence the use of management mechanism?
4. What management mechanisms can be used to produce trust between partners?
5. How to choose different trust management mechanisms? What is the relation between different trust management mechanisms?

The questions are consistent. Firstly, the issue of requirement on trust level in cooperation is rarely mentioned in past literature. In other words, in what situation would partners consider the partnership secured or to what extent are positive behaviors to be expected? Transaction cost theory thinks that opportunism can be reduced through vertical integration and legal contracts but instead of stating to what extent should opportunist behaviors be reduced, the theory only proposes to solve the issue of opportunism according to the principle of "transaction cost and governance cost minimalization". How can the issue of opportunism be deemed as solved? In fact, settlement of the issue by internal means would also cause the so-called "agency problem" and incur "agency cost". Opportunist situations would appear within organization as well. The issue cannot be completely solved. It might only be solved to an extent that people are willing to accept. Obviously, minimalization of transaction cost and governance cost cannot be taken as the answer to the issue.

Introduction of the concept "trust level" will be conducive to the transition of research focus and understanding of the above questions more directly. Trust level is a partner's expectation of the cooperative relationship. In different cooperation projects, sometimes, the partners expect more confidence; sometimes, they do not. The psychological states will influence the partners' efforts in trust management in the future. What factors would affect partners' requirement on trust level? This is a major question the thesis tries to answer. Study on this issue is mainly for the following purposes.

Firstly, build conceptual model of trust management in public-private partnership on the basis of research findings abroad on public-private cooperation and mutual trust.



Secondly, verify application of the conceptual model in reality, investigate the degree of influence of all antecedents on trust level, and the degree of influence of trust level on cooperation results.

Thirdly, provide suggestions as reference on how to establish mutual trust and achieve satisfactory cooperation results in public-private partnership based on the above research findings.

To achieve the above purposes, the thesis plans to further study on specific subjects according to theory construction on trust management in public-private partnership and empirical analysis of post-earthquake psychological rehabilitation.

#### (1) Theory construction

Define major concepts in the study and elaborate on public-private partnership. Make comprehensive and in-depth discussion on the concept of trust from different fields of research and different dimensions. Discuss theoretical models related to trust and explain the inspiring and reference roles of these models in the study.

#### (2) Empirical analysis

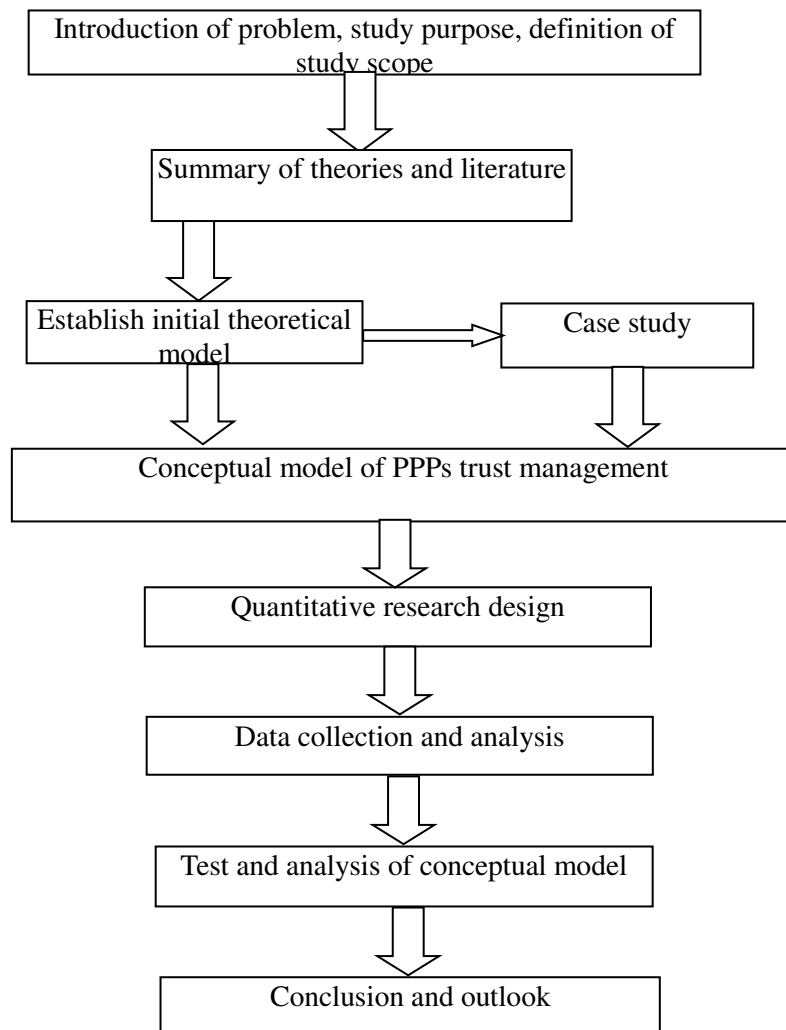
1. With the case of post-earthquake psychological rehabilitation, study influences of antecedents like relationship specific assets, organizational reputation and communication on trust, and the influence of trust on consequential variables like performance, commitment and long-term relationship in partnership concerning governments, enterprises and non-profit organizations.
2. Use questionnaire to collect validity and reliability data, and verify study models and hypotheses using structural equation model.
3. According to key factors that may influence trust building in a partnership, seek effective governance method for the post-earthquake psychological rehabilitation program.

### **1.3 Technical Route and Research Framework**

The technical route of the study is shown in Fig. 1-1. Firstly, introduce motivation and problems and review literature to understand existing research findings in the academic circle. Secondly, deduce and build initial theoretical model according to existing theories and literature. Thirdly, carry out case interview with the practical circle to understand applicability of the theoretical model. Fourthly, amend the theoretical model of trust management according to case interview, propose research hypothesis, and choose the scope and object of study. Fifthly, carry out quantitative research design according to the theoretical model, including operation and measurement of variables and compilation of questionnaire. Sixthly,

collect and analyze sample data, including descriptive statistics and inferential statistics. Seventhly, test research hypothesis based on the results of empirical analysis and provide explanation. Eighthly, make conclusion and point out theoretical contribution and practical value of the study and direction of future study.

**Figure 1-1 Technical Route**



The thesis is divided into six chapters. The 2nd-5th chapters constitute the main body of the thesis. Below is a brief introduction of each chapter:

Chapter I – Introduction: This chapter introduces the problems under study, the purpose and significance of the study, and defines the scope of research. It provides an overview and guideline for the thesis.

Chapter II – Literature Review: This chapter defines major concepts in the study and explains public-private partnership. It makes a comprehensive and in-depth discussion of the concept of trust from different fields of study and different dimensions, discusses theoretical models

related to trust, and explains the inspiring and reference roles of these models in this study.

Chapter III – Conceptual Model of PPPs and Trust Management: This chapter analyses the influences of antecedents like relationship specific assets, reputation and communication on trust and the influences of trust on consequential variables like performance, commitment and long-term relationship, and on this basis, proposes conceptual model of trust management in public-private partnership, and the hypothetical relationship between antecedents and trust, and the hypothetical relationship between consequential variables and trust.

Chapter IV – Research Design: In terms of research method, the study mainly uses questionnaire survey with case interview as assistance. Quantitative data obtained are subject to statistical analysis for verification of hypotheses. This chapter starts with the case interview so as to confirm and amend the initial theoretical model and to understand its applicability, and then explains the research method, data and sample collecting method, research variables, questionnaire design, and data analysis method.

Chapter V – Research Findings: The chapter tests validity and reliability of questionnaire using item analysis, exploratory factor analysis and confirmatory factor analysis, and verifies research model and hypotheses using structural equation model.

Chapter VI – Conclusion, Implications and Prospects: The chapter summarizes innovation points and major conclusions of the study, makes a brief analysis of the limitations in the study, and introduces outlook of subsequent studies.



## **Chapter II - Literature Review**

### **2.1 Public-private partnership**

#### **2.1.1- Cooperation**

Mattessich & Monsey (1992) deems that cooperation is a kind of partnership out of mutual benefit, mutual trust and respect, joint responsibility and career development and the accomplishment of new ideas and goals. Cooperation is a process to achieve some goals that cannot fully be made true just by the individual. Rath (1978) holds that cooperation is something to do with individual, partner or organization, and its goal is to seek a cooperator to provide services or resources necessary.

Cooperation is a process to find the agreed solutions to problems based on respective ideas of two or more partners (Gray, 1989; Mattessich et al, 2001). Some scholars may also hold that cooperation is a process for two or more partners to provide different resources (knowledge, fund) to achieve the agreed goals (medical products or services).

To sum up, cooperation is a relationship with mutual benefit and identified definition, and a process to achieve the common goals with two or more organizations involved. From the points of view of Mattessich & Monsey (1992), the cooperation also contains the undertaking, i.e.: definition of mutual relationship and goals, jointly determined structure and joint responsibility, authority and obligation to the final success, and the share of resources and benefits.

#### **2.1.2- Connotation of public-private partnership**

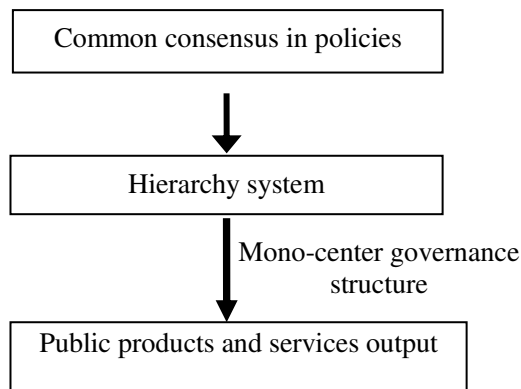
In the face of the zero-sum situation under the mode of “Government or market”, public-private partnership mode emerged. Considering the challenges of unspecific authority and obligation, management negligence and cross-sector business resulted from overlapping of work or functions of different sectors, public sectors, enterprises and the third party work together in the form of cooperation or contract to fix public issues (Li Changyan, 2004). In U.S., informal governmental co-work, inter-governmental organs contract, partnership mode, formal and informal inter-organization cooperation, local governmental alliance, urban federal system, city-county cooperation, regional special area and public management, outsourcing

and exterior authority can be found (Zhao Yongmao, 2003).

On the whole, the government is to serve for the social development and resources allocation. When public policies are agreed, if the government is to transfer the public service, the execution tool for the public products and services is the hierarchy system. Governmental systems always are mechanical and lack of efficiency, and the public products can not serve the full demands of the public, thus, over supply and under supply are quite frequent (Liao Kunrong, 2004).

Governments thus are in the face of crisis of institution as indicated in Fig. 2-1.

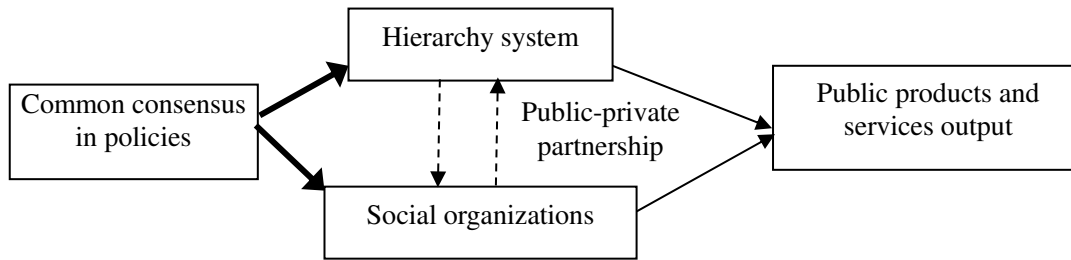
**Figure 2-1 Traditional public products and services output mode**



Source: Turner & Hulme, 2004, Governance, Administration & Development.

“Public-private partnership” proposed a new solution to the crisis of institution faced by the traditional hierarchy system, i.e.: through the share network of resources and information, public sectors and other organizations or authorities develop a public-private partnership mode for integration of functions to provide public services and realize cooperative production (Kooiman, 1993; Rhode, 1997; Peters & Pierre, 1998). Fig. 2-2 illustrates the process for output of public products and services by hierarchy system and social sectors or the combination of the both. Many non-governmental organizations, not-for profit organizations, volunteer organizations play a key role (Salamon, 1987).

**Figure 2-2 Public products and services output mode by public-private partnership**



Source: Peters & Pierre, 1998, *Governing without Government: Rethinking Public Administration*.

Public-private cooperation and public-private partnership are always interchangeable, indicating that apart from the government, citizens, the third party can also serve to provide or transfer the public products and services. “Public” mean public sector, i.e.: the government or public servants; “private” refers to private sectors, i.e.: citizens or the third party, such as the mass, the served, community organizations, legal corporate, and not-for-profit organizations. Public-private partnership means that the public and the private can develop a kind of special interactive relationship under co-work, resources share and mutual trust to provide services due to public sectors (Langton, 1983; Stephenson, 1991). In terms of cooperative production, in early times, Whitaker (1980) indicated that all interactive relationship with citizen involved in governmental authorities’ policies and actions can be taken as cooperative production, regardless of direct production, request or raising ideas. Sharp (1980) deems that citizens’ responsibilities lie in participation which makes citizens not only consumers, but also producers of public services. Furthermore, cooperative production extends the responsibilities of the government and public servants, from pure providing service and assuming responsibility to developing and utilizing the potentials of citizens.

Above all, public-private partnership can be deemed as the cooperation between citizens and public sectors to make full use of governmental and social resources, provide public services to relieve the increasing financial pressure, and to make citizens more involved in the decision-making and execution of public affairs. The cooperative production of public-private partnership is a process to provide and transfer public products and services with more involvement of citizens and the third sectors overcoming the administration challenge between the first sectors (public sectors) and the second sectors (market) (Ostrom, 1996).

### **2.1.3- Motive of public-private partnership**

Close mutual dependence is not necessary enough for public and private sectors to establish the partnership for mutual benefits, which requires an effective governance mechanism.

“Network governance” is a new development trend after the new public management (Abbot & Lewis, 2002), which claims to bring back the “Governmental responsibility” withdrawn and stresses that the government is only a member of network governance that should establish a cooperative relation of sharing resources and jointly undertaking responsibilities with other sectors based on equality, reciprocity and long-term cooperation (Craig et al, 2002).

However, the cooperative relation is not a new concept. It repeatedly emerges in the literature related to the social welfare service, which is a concept or a term only, but not deeply explored and even is misused by the government as a “Complementary role” instead of “Formal cooperative relation” (Alcock & Scott, 2002). But in terms of the core concept, it stresses “A civil sector involves in governance of the government while the government is a member of it only”. Linder (2000) believes that connotation of the cooperative relation includes the following six-level meanings:

1. Public and private partnership is a reform in management;
2. Public and private cooperative relation is a conversion of solutions;
3. Public and private cooperative relation is a wakeup on moral returning to the market competition;
4. Public and private cooperative relation is a risk transfer of the governmental fiscal burden;
5. Public and private cooperative relation is a reestablishment of public services;
6. Public and private cooperative relation is a sharing of the governmental governing right.

In other words, the public and private partnership aims at addressing inefficiency of public services with the “Market” power, but emphasizes that the non-governmental sector involves in the governmental governing work instead of improvement of the management technology only, namely it is a “Fair and reciprocal” interactive relation between the sectors. So-called “Fair” refers to that both parties must jointly participate in making decisions and undertaking responsibilities; “Reciprocal” refers to complement by interest and incentive. The partnership is established based on trust and jointly acquires the shared prospect through systematic communication, coordination mechanism or channel (Craig et al, 2002).

In terms of interaction between the sectors, the public-private partnership can be conceptualized to be a continuous governance spectrum (Fig. 2-3), the network formed by informal special relations on one end, formal and structural interaction on the other end, which will possibly integrate the cooperative units into a single organization finally. This spectrum relies on the interaction rules and the integration degree to divide governance into



two types as “Self-management” and “External management”. It is called network in case of governance “By informal relation” while the cooperative relation is an incomplete cooperation form. Although such spectrum means that a more complex cooperation subject is more inclined to acquiring effective cooperation in the informal network form, but the best cooperation form is not pointed out and all depend on the current situation. What is more important is that the interested party should know that the organization will benefit from cooperation and commit itself to investing resources in cooperation, otherwise no cooperative relation will occur between the organizations. Inter-organization cooperation is a dynamic equilibrium relation instead of a static balance relation. An individual organization will adjust the form of cooperation with time and development of the subject, which however finally aims at maintaining its own independency and autonomy (Sullivan & Skelcher, 2002).

**Figure 2-3 Cooperation mode and governing rules**

Cooperation mode	Slack informal network (established by special relationship)	Limited agreement for information sharing	Contract for joint work	Contract for formal governance system	Participation in Alliance structure for improvement of independency	Single organization after merging
Governing rule	Self-management by mutual assistance, undertaking, value and trust	←————→			External management by laws or systems	Hierarchy system
Terminology in organization and policies	Network	Partnership			Alliance	Integration

Source: Sullivan & Skelcher, 2002, Working across boundaries: Collaboration in public services

Clarke & Glendinning (2002) further point out: innovation of the inter-organization cooperation originates from professionals or service providers instead of users or sponsors and the legal voluntary service will severely deviate from the “Fair and reciprocal” concept of network governance or cooperative relation. Mackintosh (2000) also holds that the public service industry should use the flexible contract to form the cooperative relation between the sectors instead of the inflexible quantitative contract or the definite contract for restricting

establishment of the partner contract, especially more diversified service should be coped with the flexible contract while the flexible contract is established based on “Mutual trust relation” between the interactive sectors (Walsh et al., 1997).

Above all, partnership is not a new concept. Since the ancient times, the public and private sectors have jointly provided services, but the government has been dominant in the social operation right. However, with development of the network society and influence of the network governance, the government is no longer a controller independent of the society, a joint promoter of social evolution instead; relatively, a private sector does not passively wait, instead it is an innovator actively involves in the public service. The main view of accelerating reemergence of cooperative relations includes “Public-private co-production”, “Citizen society”, “Network governance”.

### 1. Public-private co-production

Public-private co-production refers to that citizens are willing to cooperate with the government, combine the resources of each other to jointly produce public services and solve both issues that the government fails to meet the demand of the mass and financial shortage and enable citizens to participate in decision-making and execution of public affairs (Sheard, 1995). In addition, Sheard points out: co-production is to stress the “Joint responsibility”, in which the citizens and the governmental administration personnel play an extensive and flexible cooperation role, jointly solve the public issues and jointly undertake the responsibilities. In such relation, the government not only responds to the demands of citizens, but undertakes the responsibility of exciting the civic competence and promoting public-private cooperation. Relatively, the civil sector is more a participant improving governance quality and administration efficiency than a pure policy consumer and evaluator.

### 2. Citizen society

Although the citizen society is a complex and vague ancient concept, the generality of the modern citizen society is to criticize excessive expansion of the governmental role since the 20<sup>th</sup> century and stress that the mass should actively participate in the public affairs related to public interest. Gamble (2000) further points out that “Citizen participation” is the basic value of social work and individuals and groups should be voluntarily involved in the policies and the plans related to changing the circumstance and influencing their living quality. Putnam (1993) contends that the citizen society does not focus on the supply of goods and services; instead it creates “Social capital” to accelerate economic growth and sound development of

the democratic society.

In addition, Walzer (1995) points out that the government, the market, the voluntary or informal sectors have their importance or influential force in the different living levels of citizens without a power-controlling sector with absolute strengths, which compete with and influence each other. Although the sectors are mutually influenced, the “Government” still plays a role of assisting other sectors to develop as well as a special role of rectifying or normalizing behaviors of other sectors when necessary. Although scholars have different understandings on the concept of the citizen society, they all stress that the citizens should actively participate in the public affairs and believe that the voluntary sector can be used as a bridge between the government, the market and the informal sector to make joint efforts to pursue public benefits. Sullivan & Skelcher (2002) summarize: the foundation of the citizen society is establishment of “Trust, criteria and network” between the organizations.

### 3. Network governance

Network refers to a dynamic “Inter-organization relation” aggregate formed on the condition that different organizations are mutually dependent in resources and power. The government is only a member of it and no longer a big government stressing regulations or a small government stressing market orientation; instead, it accelerates operation of “Cooperative relation” with the concept of network governance. However, although network governance and new public management have a similar foundation of management philosophy, they are different in practical operation as shown in Table 2-1.

**Table 2-1 Comparison between new public management and network governance**

Item	New public management	Network governance
Government-society relation	Shrinkage of governmental action	Mutual dependency network between power and resources
Government role	Minor government	Network/process administrator
Flow of power	Increased importance of civil sectors	Share of decision-making and power
Service target	Customers' demands	Government and public interests
Value pursuit	Market efficiency	Efficiency, humanism, democratic value
governance structure	Market mechanism	Network mechanism
Organization form	Horizontal organization	Network organization
Political & cultural impact	High	Low
Theory basis	Organization theory New institutional economics Public choice theory	Political theory Resource dependence theory Network analysis Organization network
Operation level	Management technique	Interaction between administration and society

Source: Mei-Chiang Shih, Wu-Hsuan Tsai, 2000, *Network Society and Governance*

According to the above comparison, it is not difficult to find that network governance is a self-management process between inter-organization networks, which stresses that the government and the civil sector cooperate in providing public services based on trust, equality and reciprocity and surpass the traditional management mode of “Market” and “Bureaucracy”, namely, in the network-based organization environment line, in order to maintain implementation of social interest, it emphasizes self management, public-private cooperation, mutual cooperation and the network management process by application of the strategy of joint negotiation. Newman (2001) also points out: network governance is to make a new definition of the functions of a civil sector and believes that a civil sector is a partner executing the governmental policies instead of a subordinate unit, which is expected to realize democracy and policy execution. But what is more important is to absolutely avoid change of “New cooperative relation” after awakened into the political euphuism, instead it must put into practice. Typically, after New Labor Party came into power, it intended to fulfill the new cooperative relation after transformed. Under the influence by social service privatization, the cooperative relation was highly valued once again in 1980’s (Cutler & Waine, 2000). However, “Voluntary sector” at this time was an executor of governmental policies instead of

a decision-making participant. A voluntary sector and the government were peripherized during cooperation (Craig & Taylor, 2002). In 1997 after New Labor Party came into power, the voluntary sector was endowed with a new era meaning that the “Contract” highly valuing “Market competition” was replaced by the “Covenant” focusing on “Participative cooperative relation” and claimed that a new “Replacing the discontinued annual contract with the long-term fair and reciprocal cooperative relation” (Alcock & Scott, 2002). During the welfare reform of New Labor Party, the ideal of “Road III” was used as the supreme guiding principle of its policies and intended to create the social capital required for establishing the citizen society, (McDonald & Marston, 2002).

Basically, “Covenant” is not a formal legal document; instead it is a memorandum and a guiding principle of normalizing the relation between the government and voluntary sectors. Labor Party, in order to fulfill the commitment to “Covenant”, has cooperated with the voluntary sector in completing Consultation and Policy Appraisal: a Code of Good Practice and published a series of books related to cooperation with sectors, which aim at enabling citizens to be familiar with how to participate in the policy formation and decision-making process through the voluntary sector to practice the ideal of the citizen society (NCVO, 2000). For example, National Council for Voluntary Organizations, (NCVO) often serves as a consulting unit for the government and other voluntary organizations. With the influence of Road III and the concept of citizen society, British voluntary sectors have developed from a frontier role of welfare supply into one of the important suppliers, which are the partners for executing governmental policies instead of a subordinate unit accepting a command or commissioning a contract and aims at establishing “Network governance” surpassing the market and the bureaucracy management (Powell & Exworthy, 2002).

The core concept of “Covenant” is to stress “Performance, quality and optimal value” and expect to establish a long-term “Fair and reciprocal” cooperative relation under guidance of “Optimal value” and realize the target equivalent or even above the price in value, not the pure contractual relationship only (Ruane, 2002). In the covenant, the principle of “Cooperative relation” between the government and the voluntary sector is as follows (NCVO, 2000):

1. Voluntary action is the basic element of a democratic society;
2. Independent and diversified voluntary sector is the foundation for perfecting social welfare;
3. During establishment and supply of public policies and services, although the government and the voluntary sector have their respective uniqueness, their roles and

functions are complementary;

4. Cooperative relation can create additional value and the meaningful consultation can establish relations, improve formation of policies and strengthen design and supply of services and plans;
5. The government and the voluntary sector have different accountability modes and different interest relation groups, but both need to be incorrupt, objective, accountable, open, loyal and leading;
6. The voluntary sector has the right to be engaged in advocate;
7. The government should be the major sponsor for the voluntary sector and sponsorship is an important relation between the government and the voluntary sectors;
8. The government and the voluntary sector need to understand importance of accelerating fair opportunities for all.

It is easy to find out that the cooperative relation in the covenant is established on “Trust” and jointly acquire the shared vision through systematic communication, coordination mechanism or channels (Audit Commission, 1998). Compared with the command of the superior and the subordinate or the contractual relationship of the market mode, individual organizations in the cooperative relation are relatively independent and decide on the opportunity of entering and exiting from the cooperative relation at any time, different from the contractual arrangement, which is a relation instead of a command (Powell & Glendinning, 2002). However, during the execution of the covenant, the following issues occur (Hudson&Hardy, 2002):

1. Insufficient governmental commitments;
2. Insufficient coordination between public sectors;
3. Voluntary sectors lack resources;
4. Questioned representativeness of the alliance organization.

In addition, ”Right parity relation” between the partners is the focus. And some demonstrative researches point out: if the government fails to change its mindset in bureaucracy management, it will form mandatory partnership working or legal volunteerism. Such cooperative relation without full trust and equivalent rights will disorganize the covenant ideal or form an unwilling cooperative relation (Clarke & Glendinning, 2002; Daly & Davis, 2002; Ruane, 2002). The effect of trust shall be taken as key issue in review of public-private cooperation to reconsider and straighten out the relation between the sectors and the nature of social welfare based on the shared vision, and to realize a more fair and reciprocal contractual relation by the common consensus of partners

For the discussion of inter-organization cooperation, it can be divided into two orientations:

structure orientation and action orientation (Aulakh, Kotabe & Sahay, 1997). Structure orientation research focuses on the structure prior to cooperation, aimed at the selection of partner, strategic connection between organizations and economic motive and the control over ownership. Action orientation research focuses on the maintenance of inter-relationship in cooperation in which trust is deemed as the most important part. Generally, trust can help to suppress the opportunism, improve hierarchy system, accomplish the goal and improve the efficiency. Transaction cost theory prefers the first one; while network theory based on the sociology prefers the second one. The two orientations may vary in management mechanism, but share the same target of how to obtain satisfactory and guaranteed cooperation. Concept used in trust management originates from the research in transaction cost theory and trust, therefore, the two topics are detailed and reviewed for comparison.

## **2.2 The theory of transaction costs**

### **2.2.1- The basic assumptions of the theory of transaction costs**

The basic concepts of the transaction cost theory stems from Coase's (1937) research on the nature of corporate. Coase believes that apart from the market price mechanism, which could be used as a coordination tool, corporate also has the function of coordination. In the economic system, which is characterized of specialized division of labor and exchange, the price mechanism would generate a number of costs, such as the cost of searching for relative information, the cost of negotiation and making contracts and the cost of monitoring the execution of contract. All these costs could be commonly referred to as transaction costs. The establishment of corporate is to deal with these transaction costs. Therefore, corporate could be regarded as another type of governance structure.

Based on the theories of Coase, Williamson (1975, 1985) combined the opinions of organization theory and strategic theory, and further developed the transaction cost theory into one of the most important theory in the realm of management and economics. In his logic of analysis, he considers market and corporate as tools to accomplish a set of related transactions. However, in order to determine which type of governance modes is more appropriate, the efficiency of each mode should be taken into consideration. If the cost of adaptability, performance evaluation and protection is zero or quite low, the economic player would prefer the mode of market governance; however, if the cost is so high that it exceeds the production cost advantage brought by market, the corporate would prefer the mode of internal organization. This attitude internally takes market as the prior governance mode; however, as

the existence of market failure, the corporate would skip market transaction and seek the organizational hierarchical system to solve the problem, which means the corporate would take internal administrative procedures to replace the market mechanism.

Market failure is brought about by both environmental factors and human factors. The major environmental factors include uncertainty, small numbers transaction/ asset specificity, and transaction frequency, while the human factors are based on the assumptions of three types of actions: bounded rationality, opportunism and risk neutrality. Among these factors, the functions of the former two transaction and action assumptions are more important. If there are only environmental or human factors, these factors alone could not obstacle market transactions. Bounded rationality implies that the economic player is constrained by his information management and communication capability. Although he tries to be rational, his ability is limited. The limitation of rationality could only manifest rather obviously as the player is about to reach the boundary of rationality, which refers to the existence of uncertainty or complex situation. As human only have limited cognitive abilities, when they have to make transactions under uncertain complex situations, it is almost impossible for them to draw a complete decision tree. Under this circumstance, it is quite difficult for the players to make long-term contracts which could cover all the possible scenarios. As the consequence, the market might fail.

Opportunism refers that the player may cunningly pursue selfish interests, and it is difficult to find out which one is trustworthy beforehand. The so-called opportunism includes: lying, theft, deceit and all kinds of other tricky traps. Whether opportunism would elicit problem is also related to small numbers transaction or to asset specialty. Asset specialty means that certain asset has particular purposes, and these purposes could not be easily transferred into other transactions while retaining the same value. Under the circumstances of asset specialty, the other party of the transaction might take advantage of the investors. For instance, if one company wants to customize its production facilities and has decided to choose a certain supplier to provide a specific level of material. Consequently, when the supplier wants to raise the price of that material, the corporate as the buyer would find itself in a very unfavorable negotiation position. If the corporate changes the supplier, it must re-organize its production facilities in order to adapt to a new type of material, which might lead to high expenditure. Therefore, investment in specialized asset would generate the problem of small numbers transaction, because the buyer corporate could not negotiate with other potential suppliers freely and fairly. The magnification of the supplier's negotiation power would encourage it to take bold opportunist behavior, which would result in market failure (Collis & Montgomery,



1988). Besides, the high frequency of transaction could also increase the possibility of market failure, because duplicate transactions would make the corporate more vulnerable, and make it easily be bounded up by the process of bargaining and negotiation. In order to diminish these costs, the corporate would consider making vertical integration.

As high transaction cost causes market failure, the economic players would choose the hierarchical mode. The question is why the internal organization can reduce transaction cost? The reason is based on several priori assumptions. First, the organization has more effective control and monitor mechanism than the market. As the corporate has the capability of evaluating and rewarding action and production, the corporate capability of detecting opportunism and improving adaption could be increased. Second, organization could provide long-term reward, such as promotion opportunity. The effect of this kind of reward would reduce the action of opportunism. Third, organizational climate has potential influence. The organizational culture and socializing process could drive both parties to form common goals and reduce the opportunism beforehand (Rindfleisch & Heide, 1997).

The transaction cost theory has been continuously introduced into many different research topics in the last two decades, such as intermediate product market, labor market, capital market, corporate governance, laws, technology transfer and multinational organizations (Williamson, 1996). These topics have exceeded the boundary of the simple choice between self-manufacturing and outsourcing, but have included some mixed models that lie in between. Many expansions or modifications of the transaction cost theory are targeted at the mixed models. In the theory of transaction cost, the most direct resolution to solve the opportunism problem is to adopt vertical integration, which could reinforce monitor and control by the means of organizational internal hierarchical model. In fact, the economic player does not have to choose the vertical integration mode; he could also adopt the mixed model (which refers to inter organizational cooperation). Scholars have made certain modifications and amendments to the theory of transaction cost to explain inter organizational cooperation.

### **2.2.2- Transaction cost and public-private partnership**

Among the theoretical literature of transaction cost, Williamson (1999) believes that public-private partnership design consists the regulation strategy with the minimum transaction cost, cost related formats and sustainable relationship, contract, coordination, execution, product manufacturing and service. This system could reduce transaction cost, and help public and private sectors determine governance cost. The basic logics of transaction cost

are transaction, contract and the incompleteness of contract. The transaction cost could be divided into direct cost and opportunity cost. The direct cost refers to the cost of completing the transaction. The opportunity cost refers to the loss of time and resources caused by choice or lack of urgency. By taking transaction cost analysis, it is possible to minimize the agency cost and maximize the effectiveness of society and organizations. Government departments shoulder supervision cost and policy implementation cost.

Rangnas (2003) believes that the transaction cost is determined by the frequency of interaction between public and private sectors, the uncertainty of transactions, the rational action of departments and the asset specialty. To some extent, the establishment of partnership could reduce transaction cost, improve potential economic opportunities, and establish more effective industry organization and system structures, rather than merely rely on market-oriented operation. The internal organization operation and vertically integrated production form the structure of venture firm. The public-private partnership is based on technical transfer and service management. As there are differences in the degree of trust, usage right positions, operation pace and organization culture between public and private sectors, there might be difficult for them to execute the contract. Hence it is necessary to establish systematic structure and arrangement for the organizations.

Klmeperer (2002) points out that the new welfare economics is the research on the economic efficiency of exchange and production activities, in order to realize efficient allocation of resources. As there are restraints of uncertainty, it is impossible to realize Pareto optimality, the organization chooses the second best, i.e. realizes the second best Pareto optimality. As there is the necessity of coordinating and shifting focus between social fairness and efficiency, the problem of redistribution exists. Under the public-private partnership, the goal of the government is to maximize social welfare, while the goal of the private sector is to maximize the profitability of the sector. The ultimate goal is to realize the most effective allocation of resources. Klmeperer believes that the public-private partnership would have important influence on the government governance structure. It implies that the government is not the only supplier of public products. Under the circumstances of general market failure, such as the economy of scale of public products, free riding, asymmetric information, and other external effects, the government could still play a positive role. Within the public-private partnership, there lies a problem of failure between departments' complementariness and coordination. It is advised to establish a buyer's market to provide public products and services. Under the public-private partnership, the government procurement is the purchasing of infrastructure construction and service delivering, which has the characteristics of economy

of scale. The high inter dependence between service delivering and infrastructure construction investment decisions means the government will choose the optimal procurement and franchising bidding method that reduces cost and realizes efficiency best. The government should establish necessary subsidiary and tax system for the incentive and regulatory policies of the public-private partnership.

Hartwich (2003) points out that the innovation system of public-private partnership is an economic and social system based on scientific innovation opportunities, within specific society and regions. As the corporate is a requester of surplus value, the Schumpeter's entrepreneur innovation theory and entrepreneur spirit could be further applied to social institutions and the inter relationship between public and private sectors. The core of research on public-private partnership is the mutual benefit space of both parties. By sharing the cooperation, the public and private departments could establish common benefit space.

Under the circumstance of incomplete and asymmetric information, Williamson (1993) gives description to the transaction cost and establishes the theories of bounded rationality, opportunism and asset specialty. Bounded rationality means only under the situation of having incomplete information, would the parties of transaction make rational decisions. Opportunism refers that under the circumstances of incomplete and inaccurate information, the parties of transaction seek dishonest actions by disguising preference, distorting data or concealing facts intentionally. It is a behavior of seeking self-interest by means of fake or vain facts, unreal threat or promises. Asset specialty determines the dimension of transaction, and generates sunk costs and quasi rent. In the realm of asset specialty there are absolute cost advantages and product differentiation entrance barrier. The existence of bounded rationality, opportunism and asset specialty makes the process of transaction full of risks, and consequently drives the transaction participants to seek information advantages. Williamson discusses the action of seeking benefit by means of tricks, whereas the 'lemon effect' leads to the disappointment of buyers.

Parker, et al. (2001) point out, that the public-private partnership is a contract relationship between public and private sectors under the circumstances of incomplete information. The contract theory takes into consideration the advantages and disadvantages of public-private relationship. The transaction cost is the result of sale and purchase transaction and incomplete contract. When the contract could not reach the optimal result even with complete information, there would be incomplete information of transaction. In the incomplete information of long-term contract, there are certain uncertain factors, such as technical factors and the uncertainty of cost, product quality and service quality, or the uncertainty of national

economic development under changing economic circumstances. As the information is asymmetric, the participants of transactions may pursue opportunism, and put threat to asset specialty. Regarding the asset specialty of the newly established or expanded infrastructure investment, the certainty lies in the building and facilities, the uncertainty lies in labor training. Stiglitz (2000) explains the corporate contract theory from the point of organization internal control. He regards the public-private partnership as a team production form of organization. He considers the principal-agent relationship as a rewarding system designed by the principal to motivate the agent to act for the benefit of the principal, which could be regarded as a contract. There are moral risks and adverse selection problems for the contracts. It is necessary to make beforehand design and incentive, as well as follow-up governance and negotiation.

Hart (1998) points out that the private sector could achieve higher benefit and operation efficiency, while reducing cost and seeking profit. Corporate property theory believes that the incentive is generated by corporate property. In the public-private partnership, there is the transfer of property and control. By considering the usage and distribution of surplus control power and surplus ownership, we understand that the surplus control power influences the re-negotiation power of bargaining afterward, which would also affect the beforehand incentive. Reputation and trust is one type of “social capital”, which could make the partnership sufficient and effective and punish the “betrayal” behavior. In the operation of public-private partnership, in order to reduce the risk of opportunism, it is possible to vertically integrate actions in terms of corporate ownership and control power. Williamson refers to this structure as hierarchical structure, which includes the direct management cost of resources. It is possible to change the status of un-economical high expenditure, lack of competition and effective mechanism. The transaction cost theory provides beneficial basis for scale-of-economy government policies. As the motivation of cooperation, it could increase reaction capability and adaptability.

Brodabent et al. (2003) point out that the public-private partnership has recently been regarded as a new type of public administration as it is changing the way of delivering public service. These authors think that the organization should provide public service collectively by means of partnership and that privatized management is a new type of public management. The public sector should design a legal framework with which to restrain the major market players, giving them policy guidance through formal or informal agreement. The private sector should have a reasonable reward for their investment and funding in the natural monopoly industries, which is an effective way of establish public-private partnership. The

public sector must develop and manage contract relationship and public-private partnership. As the state-owned companies reduce their state-owned stocks or divest their shares to private sectors, the public sector must establish an effective monitor system, and reduce the negative effect of institutional reform on the public.

### **2.2.3- Opportunism and control mechanism**

Opportunism is one of the most important while most controversy human assumption in the transaction cost theory. The transaction cost theory believes that the economy players have the inclination of cunningly pursuing self-interests. However, it also believes that not all of the players would take opportunism actions. As far as the corporate is concerned, it is very difficult and expensive to tell the difference between moral transaction partners and opportunist transaction partners (Williamson, 1975). When the corporate has to invest in special asset, the problem of opportunism becomes quite severe and would generate high transaction cost. In order to solve this problem, the corporate has to take different safe guards measures or governance structures.

The safe guard measures emphasized by early transaction cost theory are relatively formal, structural control mechanism, which could be divided into two types: legal contract and equity investment. By means of legal contract, it is possible to write down the rights and obligations of both transaction parties. When one of the parties has opportunist actions, the other party could ask a third party (court/state) to take action. In simple transactions, the ordinary classic contract could fulfill that function. However, when the specialty of asset increases, the transactor has to make more complex contract (such as new classical contract) with the object transaction party, and list out some expedient terms to deal with changes in market environment. Making complex contract increases the transaction cost. Therefore, when the cost of making contracts becomes too expensive, the transactor would prefer taking hierarchical governance rather than making contracts (Williamson, 1985; Dyer, 1997).

The equity investment could be divided into two types: the wholly owned equity, as the equity in entirely owned by one party; and the joint venture, in which each party shares the equity. The wholly owned equity tries to solve the opportunism problem by means of internal hierarchical orders and governance. The joint venture mainly takes the role of providing incentives and financial hostage. Depending on the share of equity and the degree of involvement into management, the joint venturers would have considerable directing and monitoring ability. As the object transaction party invests capital and becomes a formal

cooperate partner, its commitment to the alliance would increase. Under this circumstance, taking opportunist actions would conflict with its own interest. Therefore, equity investment could constrain the occurrence of opportunist actions (Klein, 1980).

In recent years, under the influence of trust and internet theories, many scholars have added less formal, soft safe guard measures into their research. Although they also aim to decrease the risk of opportunism, the original characteristics of transaction cost theory have faded a lot. Coleman (1990) points out that the opportunism mechanism could have both proactive and reactive effect. The proactive mechanism includes the energy spent on choosing partners, and the design of incentive structure. The partner selection process could be dealt with by certificate procedure. The corporate could evaluate the product quality, delivery term, service and other characteristics of the potential partner. The design of incentive structure includes investing in proprietary tools and equipments. This is similar to the hostage generated by equity investment. The reactive mechanism mainly refers to the governance provided by hierarchical system, which could decrease the degree of asymmetric information and increase corporate capability of detecting opportunist actions (Stump & Heide, 1996).

Research on the automobile industry of U.S. and Japan indicates that, in contrast, Japanese players prefer taking self-enforcing safe guard measures (such as building trust, financial hostage) rather than making legal contract (Dyer, 1997). Different safe guard measures would generate different set-up cost and transaction cost at different points of the transaction cycle. In the short term, the cost of building trust and making exclusive financial investment would be higher than that of making legal contract. However, in the long term, it could reduce the transaction cost of making replicate contract, monitoring and execution.

Deeds and Hill (1999) combined the transaction cost theory with the relational contract, and carried out research into 109 research alliances in biotechnical industry in U.S. The relational contract puts emphasis on the historical and social backgrounds of the economic transactions. It also points out that if the transactional parties have cultural similarity, frequent communication or have a lot of cooperation opportunities, it would be easier for these parties to establish steady, long-term relationship, which could restrain the opportunist actions. Their empirical research indicates that, by contrast to make hostage of equity investment or sign contingent claims contracts, the good relationship between transactional parties could constrain the opportunist action more effectively, which means that they believe the relational contract is more powerful than the transaction cost theory.

This research is based on the empirical research on transaction cost by Rindfleisch & Heide (1997). It finds out the variables that could facilitate the opportunist actions include: coercive

power, asset specialty, reliance, and action uncertainty. However, there are certain doubts about the relationship of certain variables in the empirical results. For example, the relationship between reliance and opportunism could be influenced by the relationship norms of the two parties, and the results generated by one-way and two-way reliance could be different. Therefore, the relationship between reliance and opportunism is not simple linear relationship. Besides, action uncertainty could be defined as opportunism in Williamson's (1985) definition. Hence it is inappropriate to regard the relationship between action uncertainty and opportunism as causal relationship. In the empirical research, the variables, which could be used to decrease or control opportunist actions, include: reference power, internalization, goal congruence, reliance, relationship norms, backgrounds, contact frequency, interactive experience and long term inclination. This implies that among all the elements that could influence the degree of opportunism the governance structure and contract just take a small portion. Noorderhaven (1994) points out that in the empirical research on transaction cost, the researcher should also take into consideration of action norm system, social environment, and other elements, and should take opportunism as a variable rather than a constant. The objective of the research into safe guard measures is to reduce the risk of opportunism. However, from recent literature we could find out that in the human dimension the effective safe guard measures should not only focus on opportunism. A more realistic and feasible philosophy should take into consideration of the other party's need for achievement, two parties' mutual recognition and trust, social norms and obligations, and other soft elements. The traditional transaction cost theory believes that it is advisable to use the means of hierarchical governance to reduce opportunism, and only when that measure is not feasible (such as the cost of merger is too high and the property could not be divided), should the corporate choose mixed structure and try for second best results. However, much cooperation between organizations could have been developed through long-term relationship and have been embedded into social backgrounds. Hence in terms of building trust and restraining opportunism, the mixed governance structure could be superior to hierarchical governance structure (Chiles & McMackin, 1996). Besides, when the transactional parties put emphasis on preventing opportunist actions, they might neglect the positive aspects of cooperation, which would make both parties take rather conservative strategies.

#### **2.2.4- Criticism of the transaction cost theory**

The transaction cost theory does not assume that all of the social players have opportunist inclination, whereas, only some of the players have opportunist intentions. However, it is quite difficult to identify which one is the opportunist player beforehand (Barner, 1990). According to the views of Williamson (1996), the objective of the players to take opportunist actions is to: 1) avoid being too naïve in making contract; 2) identify, manifest and reduce risks, and these risks are rooted in opportunism. He also points out that it is not advisable for everyone to take economic players as mean or not restrained by moral standards. Williamson also believes that a more honest economic organizational theory, which could better predict intentions, could identify opportunist inclinations of different players and cultures. Unfortunately, the transaction cost theory has not made more detailed discussion on this topic. The most powerful question called on opportunism is raised by Ghoshal & Moran (1996). They point out that Williamson does not explain the cause of opportunism but simply attributes it to human nature. They think this is too much established on behavior assumptions, and expanding such an assumption-based logic into a normative theory is dangerous for corporate cooperation, as it would increase the potential confliction, reduce potential mutual interests and constrain the measures of establishing order. All of the human inclinations, including opportunism, could not determine the action or influence the governance mode independently. Human have many important attributes, however, the transaction cost theory only puts emphasis on opportunism, which results in the incompleteness of the theory.

Apart from that, the transaction cost theory relies on mandatory rational control, and neglects the influence of social control. The very difference between organization and market is that the organization could create special scenarios, develop common goals, and make its members accept the goals, establish trust and make commitment. Therefore, the organization is not merely a tool to constrain action or respond to market failure. Moschandreas (1997) also has similar opinion. He points out that the transaction cost theory has not taken into consideration the complexity and diversity of human motivation. As it puts too much emphasis on opportunism, it might have adverse influence on work environment and fail to encourage cooperation action.

Although the transaction cost theory has taken opportunism as an important human assumption, it deals with it with the attitude of preventing deceit, and intends to respond with a formalized governance mechanism, rather than making detailed division of cooperation



objectives and scenarios. As a result, opportunism is more like an exogenous variable, which means the design of governance mechanisms is to respond to the characteristics of opportunism, rather than to influence it (Noorderhaven, 1994). We could take the instance of harnessing the Yellow River as an example. The governor Gun adopted the method of blocking, while Yu adopted the method of dredging and guiding. Obviously, the latter governor had deeper understanding of water. As a matter of fact, in recent researches on transaction cost, there appears opinions from other theories and certain combinations (Chiles & McMackin, 1996; Deeds & Hill, 1999; Dyer, 1997). Besides, the recent literature intends to regard opportunism as an endogenous variable rather than a constant or a fixed condition (Rindfleisch & Heide, 1997).

## **2.3 Trust and Related Studies**

### **2.3.1- Meaning and nature of trust**

Trust is a concept that has been used by many different disciplines in social sciences. In studying trust, economists tend to explore how to design incentives and systems to reduce uncertainty and increase trust. Psychologists emphasize the personality traits and cognition of the trustor and the trustee. Sociologists regard trust as a characteristic of relational embeddedness or structural embeddedness. At research level, trust can be at individual, group, organization or system level. Since 1990s, trust has been a very popular and valued concept in research on organization, strategy, marketing, multinational corporations and other management areas. However, with the extensive application of this concept, controversy also emerged, because the concept of trust has been cited from and invoked by each other among different disciplines at different levels, resulting in many interpretation and applicability issues. This study focuses on the partnership between public and private partners, so the literature review looks at trust at the organizational level.

So far, there is no universally accepted definition of trust (Rousseau, 1998) yet, but Rousseau et al. (1998) sum up a basic definition of trust accepted by the majority of scholars. They point out that the “positive expectations” and “intention to accept vulnerability” is the most critical components of most definitions of trust. Consistent with this view, we define trust as one party believing that other parties will not take any action to take advantage of its vulnerability (Barney & Hansen, 1994; Mayer et al., 1995; McAllister, 1995). Rousseau et al. (1998) divided trust into deterrence-based trust, calculus-based trust and relational trust. Sako (1991) divide trust into three basic types: contract-based trust, competency-based trust and

goodwill-based trust. Some scholars have proposed the concept of conditional trust and unconditional trust (Jones & Borgatti, 1997) as well as weak, strong or semi-strong trust (Barney & Hansen, 1994). Other scholars believe that trust has cognitive and affective characteristics (e.g., McAllister, 1995). Trust in general refers to a party's general belief that other person, group or organization will not take any action to take advantage of its vulnerability (Morrow Jr., Hansen & Pearson, 2004).

Rousseau et al. (1998) believe that trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another. This definition implies that trust has two conditions: risk and reliance. Sabel (1993) defines trust as: trust is the mutual confidence of parties in a transaction that neither party will take advantage of the vulnerability of the other. Sabel's definition indicates, when the parties of an transaction trust each other, they are mutually confident that the other party will not take advantage of any adverse choices, moral hazard, unreasonable asking price or other vulnerability that may exist in the specific transaction.

Hosmer (1995) defines trust as people's positive expectation of another party when they have to make a decision under conditions of vulnerability and reliance. Mayer et al. (1995) describe trust as the intention of one person (trustor) to be vulnerable to another person (trustee) based on the expectation that the trustee will perform a particularly important action to the trustor without the trustor's supervision or control. Lewicki et al. (1995) define trust as "confident and positive expectations of the behavior of others." Bhattacharya et al. believe that trust is the expectation of positive results, which are based on the other party's behaviors in interactions characterized by uncertainty (Bhattacharya, Devinney & Pillutla, 1998). McAllister (1995) holds that trust is the willingness of a person to act in accordance with the speech of another person.

Whitener et al, believe that trust should include the following three facets: (1) trust reflects the trustor's expectation or belief that the other party will act benevolently; (2) trust includes the willingness to accept vulnerability and take risks; (3) trust involves some level of dependency on the other party and the outcomes of one individual are influenced by the actions of another (Whitener, Brodt, Korsgaard & Werner, 1998). Mishra (1996) thinks that trust arises when the trustee is believed to be reliable, concerned, frank and capable. Fukuyama (1995) defines that "trust is the expectation that arises within a community of regular, honest, and cooperative behavior, and it is based on commonly shared norms of other members of that community."

In short, these definitions and descriptions believe that trust is determined by the trustor's understanding of uncertainty, dependency and influence and by the expectations of the

trustee's behavior. The existence of trust is usually based on the incompleteness of contract, which is a characteristic of cooperation between public and private sectors (Arrow, K. J, 1974). In other words, trust is to encourage cooperation among organizations by reducing transaction costs and eliminating forms of opportunism (Bromiley & Cummings, 1995).

In addition, a lot of empirical literature suggests that trust is a form of “social capital” and has studied the impact of trust among organizations on departmental and regional development. Based on the comparative study of national development models, the success of Japanese industry in the 1980s should be attributed to the high degree of relationship-characterized trust between Japanese managers and organizations (Casson, 1991). Trust is a social norm, which reduces the need to use the system to control opportunism (Marie-Laure et al., 2004).

When there is high degree of trust between the parties of a transaction from the beginning, they may be more willing to rely on social and non-contractual preventive measures. For example, in the case of high degree of trust, cooperation agreements may be less detailed, because the possibility of opportunism is lower. In contrast, in the case of low degree of trust, the governance costs will be higher and operating procedures will be more formal, such as more detailed contract documents, more frequent board meetings and more thorough law supervision (Inkpen & Currall, 2004). These procedures will bring additional transaction costs to all cooperating parties (Dyer, 1998). If the reputation of transaction parties is not clear and in question, further control will be required to offset the additional risk (Hill, 1995). Parkhe (1993) found that the level of thoroughness of preventive measures is strongly related to the understanding of opportunism.

Two different definitions of trust are frequently used in the literature: a person's confidence in expectations or predictability (Zucker, 1986) and a person's confidence in goodwill (Friedman, 1991). A lot of evidence supports the inclusion of trust as a key factor in the transaction structural model.

Given previous experience with potential partners, trust may already exist between the organizations, and it will be strengthened with the companies' interactions. As a result, the two organizations will adjust the expectations of previous cooperation (Doz, 1996). In the initial stage of organizational cooperation, which refers to the partner searching and negotiation phase here, trust is initially established by evaluating the trustworthiness of potential partners.

What we are interested in is the trust formed between organizations. This usually includes the trust among individuals because the relationship between companies is managed by individual boundary scanners and it is rarely a non-personal and mono-nature relationship (Zaheer,

1998). Zaheer proves that the trust between individuals and that between organizations are different but positively correlated.

Sako (1992) distinguishes three types of trust: contract-based trust (will the other party perform its contractual agreement?), competency-based trust (will the other party do what he says to do?) and goodwill-based trust (will the other party make limitless commitments to take actions of mutual benefit and avoid the use of unfair advantages?). In accordance with the views of Barney & Hansen, there are at least three types of trust that can be determined: weak form trust, semi-strong form trust and strong form trust (Barney & Hansen, 1994). If there is no vulnerability, namely there is no adverse selection, moral hazard, unreasonable asking price or other resources, then the exchange parties are highly trustworthy, and trust will be the standard for exchange. This type of trust is called the weak form trust (Barney & Hansen, 1994). Even if significant vulnerabilities exist, trust can still emerge if exchange parties are protected by various governance mechanisms. In this case, the exchange parties are mutual confident that their vulnerability will not be exploited, because doing so is unreasonable. This type of trust is called the semi-strong form trust (Barney & Hansen, 1994). In strong form trust, in the presence of significant exchange vulnerabilities, trust will still appear irrespective of the existence or nonexistence of detailed social or economic governance mechanisms, because opportunistic behaviors would be against the internalized values, principles and standards of behaviors of each party (Barney & Hansen, 1994).

Trust may be established between business partners after repeated exchanges. Trust is defined as the desire to rely on trading partners, where one partner has confidence in the other partner (Morgan and Hunt, 1994). Trust has also been described as the expectation of honest and good deeds from the other party (Ganesan, 1994; Kumar, Scheer, Steenkamp, 1995). Therefore, trust is such a belief that the partner is reliable to perform its promises and fulfill its promised obligations and is honest. All entrepreneurs emphasize that trust is the key antecedent of commitment. Trust is already established before social interactions. Therefore, personal friendship is already built before any commercial commitment is made. This result shows that when decision on with whom to do business is made, trust is an important initial factor. Before making more commitments, personal preferences and honesty have laid the foundation for trust and are considered to be important (Friman, Garling, Millett, Mattsson, Johnston, 2002).

Many behavioral science scholars believe that treating trust in rational, calculable, and economical ways is empirically wrong (because in fact most of the parties in transactions are trustworthy) and economically inefficient (because it leads to excessive investment in

unnecessary governance), and can lead to moral hazards. They suggest adopting a more reasonable approach to assume that most of the trading parties are trustworthy since the transaction parties are the steward of the resources they control (Donaldson & Davis, 1991). Therefore, trust is common in exchange relationships, even in the absence of legal and contractual regulations for governance protection. Both behavioral and economic approaches assert that trust is very common in economic exchanges (Friman, Garling, Millett, Mattsson, Johnston, 2002).

The values and beliefs of strong form trust are enhanced by internal pay system and decision-making mechanism. Internal pay system and decision-making mechanism reflect the standard of strong form trust. Companies with such appropriate cultural and institutional mechanisms often adopt the form of strong trust in exchange relationships (Barney & Hansen, 1994). Maybe a company engaged in exchanges does not have the culture of strong form trust, but the specific persons directly engaged in such exchanges may be worthy of strong trust. The exchange between persons worthy of strong trust among different companies can lead to strong form trust, even if the company itself may not be worthy of strong form trust (Barney & Hansen, 1994).

Heterogeneity of governance skills and ability is an important explanation for the changes in various economic exchanges, as revealed by, for instance, the comparison of the exchange between Toyota and its suppliers and the exchange between GM and its suppliers (Dyer & Ouchi, 1993). Toyota's supply relations are deeply rooted in the long-term network of social and economic relations. These social governance mechanisms make Toyota and its suppliers to engage in very vulnerable exchanges (because the high transaction nature of special investments results in high risk of unreasonable asking price), and Toyota thus adopts less contract than GM or other types of governance (Barney & Hansen, 1994). For example, let us consider several competing companies seeking to develop and apply a new complex technology with one or several other companies. Assume that only a few companies are worthy of strong trust and the technology to be developed is of significant economic potential, but there are a lot of exchange vulnerabilities in the development process of the technology. In this case, companies worthy of semi-strong trust will have to invest heavily in governance to form semi-strong trust. This may occur where there is no appropriate governance mechanism to form semi-strong trust (Grossman & Hart, 1986) to gain the potential economic return from this transaction, because the equivalent present value obtained from governing the transaction will certainly be reduced. Moreover, the present value of this transaction will be offset by the remaining threat of opportunism. Due to decrease in the value of such transactions, companies

worthy of semi-strong trust may decide not to have such exchanges despite the possibly enormous economic value (Barney & Hansen, 1994). On the contrary, this exchange between companies worthy of strong trust does not need to bear the high cost of governance, subject to no remaining threat of opportunism. Companies worthy of strong trust can pursue these valuable but high-vulnerability exchanges, while companies worthy of semi-strong trust cannot. This may indicate the source of enormous opportunity costs of companies worthy of semi-strong trust and competitive advantages of exchanges partners worthy of strong trust (Barney & Hansen, 1994).

Hierarchical governance does not automatically form strong-trust transactions (Williamson, 1950). Hierarchical governance is not always a solution to the threat of opportunism, and the exchanges between parties worthy of strong form trust usually will establish trust irrespective of whether the exchange happens within a single company. There is no doubt that the trustworthy type of exchange parties is formed through long-term development, and the characteristics of strong trust, namely historical, path-dependent, social complexity and fuzzy causality features make companies worthy of semi-strong trust unable to become worthy of strong trust in a short to medium term (Barney & Hansen, 1994).

It thus can be seen that different areas of research have different definitions of trust, and the reason for this phenomenon can be attributed to two aspects. One is that different disciplines look at trust from their own point of view. Just like the blind touching the elephant, researchers in all fields study trust with “colored glasses” from respective perspective of their disciplines. Psychologists usually regard trust as a personality; sociologists usually regard trust as a social structure; economists usually take trust as an economic selection mechanism. Scholars in certain fields may not be interested in or do not even understand the studies done by scholars in other areas, resulting in the significantly different and sometimes even contradictory definitions of trust in different research areas. The other reason is more related to trust itself. “Trust” itself is a very vague and ambiguous term, including meanings in many aspects. The inconsistent definitions of trust reflect the differences in the understanding of trust, which lead to different orientations of researches on trust. Broadly speaking, there are five kinds of orientation in the researches on trust in social science community:

Firstly, trust is understood as a response to situations, which is individual psychology and behavior determined by situational stimuli. In the Prisoner's Dilemma experiment by social psychologist Deutsch (1958), the presence or absence of interpersonal trust was reflected by cooperation or not between two parties, and the degree of trust between two people would change with the change of experimental conditions. In this case, trust is treated as a dependent

variable determined by external stimuli.

Secondly, trust is understood as the performance of individual personalities, and is a relatively stable personality characteristic formed through social learning. Representative figures include psychologist Wrightsman. They believe that a person's life experiences and views of human nature will enable him (her) to form the usual expectations or beliefs of the trustworthiness of others. Some people tend to trust others; some people tend to suspect others. Scholars holding this orientation have prepared a lot of scales to measure people's individual differences in the characteristics of interpersonal trust.

Thirdly, trust is understood as a product of interpersonal relationships, and an interpersonal attitude decided by rational calculations in interpersonal relationships and emotion-associated decisions. Representative figures include sociologist Lewis and Weigert. They have carried out systematic analysis on the characteristics, dimensions, basic types and other aspects of trust, and believe that reason and emotion are two important dimensions of interpersonal trust. Different combinations of the two will form different types of trust, in which cognitive trust (trust based on rational investigation of the credibility of others) and affective trust (trust based on strong affective connection) are the two most important types, as the vast majority of interpersonal trust in everyday life is the combination of these two types. They also believe that with the change of social structure and increased social mobility, more and more social relations will be based on cognitive trust, rather than affective trust.

Fourthly, trust is understood as a product of the social system, and a social phenomenon established on the basis of rational laws and regulations. Chinese economist Zhang Weiyong pointed out that the property rights system is the basis of reputation.

Fifthly, trust is understood as a product of cultural norms, and a social phenomenon established on the basis of morals and customs. Representative figure is Japanese-American scholar Fukuyama who believes that trust is determined by culture, and arises from religion, ethics, customs and other cultural resources.

Trust is a complex multidimensional concept (Mayer, 1995; Rousseau, 1998). Theoretical and empirical researches all believe that trust is cognition, affection and behavior-based (Clark & Payne, 1997; McAllister, 1995). Cognitive trust refers to the belief that other person or organization is trustworthy, while affective trust indicates the important role of affections in the process of trust. Williamson (1993) defined three types of trust in transactions—calculus-based, person based-trust and institution-based trust. Calculus-based trust and institutional trust correspond to cognitive trust, while personal trust corresponds to affective trust. Zucker (1986) identified three sources of trust in social transactions: process

based-trust tied to a record of past operations, person based-trust tied to individuals and institution-based trust tied to the formal social structure.

In summary, the above definitions of trust broadly include the following five facets: confidence, expectation, predictability, vulnerability and risk. These represent the key affective and cognitive elements of human behavior. All of the above definitions of trust can be divided into affective-based trust, cognitive-based trust and the combination of affective-based and cognitive-based trust. The phrases “confidence” and “vulnerability” express feelings, so the definition of these terms adopted in study is classified under affective-based trust. The phrases “expectation”, “predictability” and “risk” express views, so the definition of these terms adopted in study is classified under cognitive-based trust.

### **2.3.2- Trust and public-private partnerships**

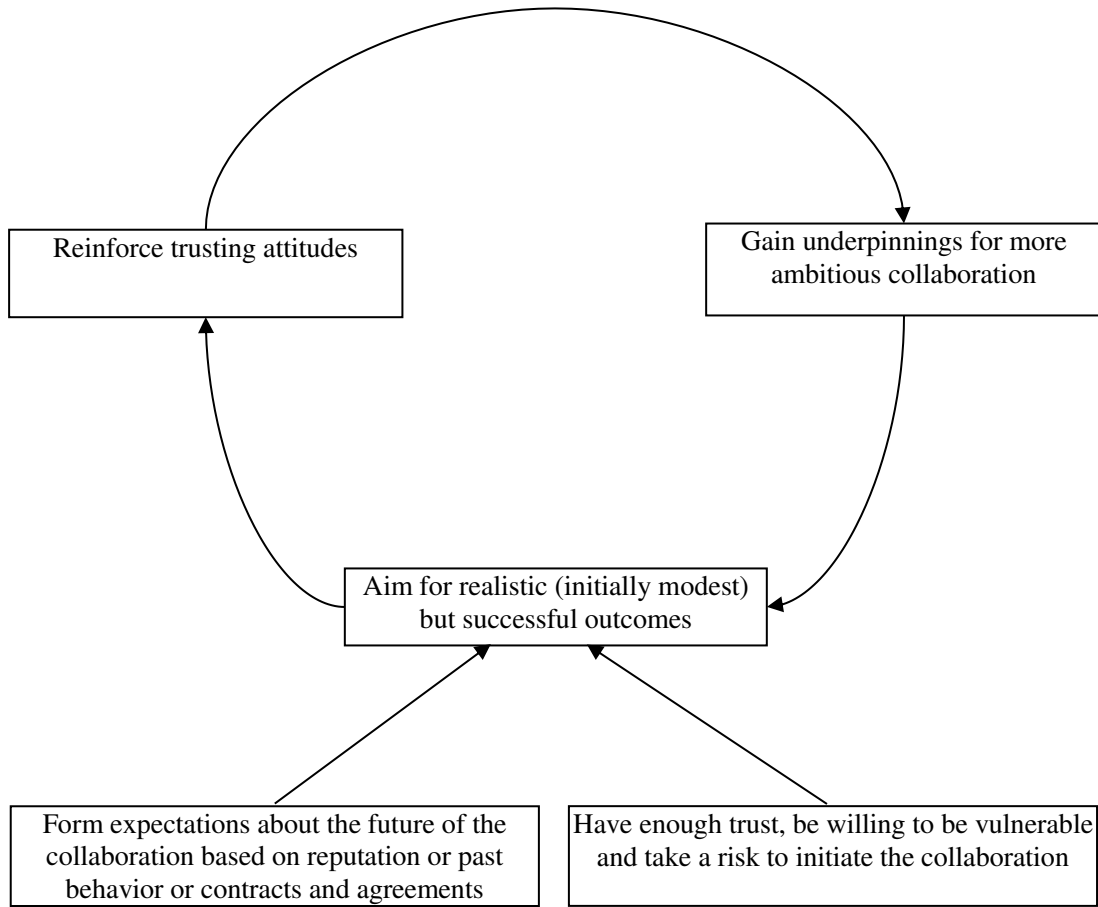
Cooperation is a process of integration of resources, which requires the collaboration and trust of all cooperation parties, and trust can enable the resources of various parties to be more fully exchanged and integrated. In most cooperative relationships, the researchers regard trust as an alternative governance mechanism (alternative price and authority) (Powell, 1996; Tyler & Kramer, 1996; Kumar et al., 1998; Zaheer et al., 1998). If we understand cooperation as a process where two or more participants form a common view on a problem or solution based on their based unique understanding of the problem (Gray, 1991; Mattessich et al., 2001), trust will become an important element, which can involve different participants into a dialogue, and help to disclose their unique perspectives in order to effectively transfer these unique perspectives (Szulanski, 2000; Levin et al., 2002).

Although trust is considered to be an important element in the process of collaboration (Zand, 1972; Gray, 1991; Mattessieh et al., 2002), in the process of strengthening, collaboration creates an opportunity for further development of initial trust, and such process poses a potential trap or a form of positive relationship (Larson, 1992; Rousseau, et al, 1998). In a recent review of trust and collaboration-related literature, Vangen & Huxham (2003) stressed the importance of trust in the sustained development of cooperative relationships during this strengthening process. In the reflection of such process, they believe that two key elements initiate the trust-building cycle (see Figure 2-4), namely, “the ability to form expectations for future outcomes of collaboration and willingness to take risks”. Moreover, according to the experience of their commitment to the process of cooperation, it is recommended that practitioners should be concerned about the establishment and maintenance of high level of



trust to place emphasis on trust-building activities.

**Figure 2-4 Trust-building cycle**



Source: Vangen, S. & C. Huxham (2003). *Journal of Applied Behavioral Science*

In the operation and practice of public goods and services supply, the application of public-private partnerships can make organizations more innovative and capable of responding to environmental changes. The governance model of public-private partnerships is currently the focus of many discussions, and emphasis is placed on “trust” relationship in public-private partnerships, because “trust” is one of the elements to constitute social capital, which can accumulate more and more social capital through the contacts and interactions among organizational members, conducive to both organizations and the civil society by increasing efficiency and quality assurance in flexible ways. Trust has also become an indispensable factor in the maintenance of stable social relations. When social relations are at a high-trust status, people will be more willing to trade with others or have any cooperative interactions. In contrast, when the inter-organizational distrust is increased, control will be required (such as: system, rules), and thus, the cases of over-management may arise. The

presence of distrust will lead to non-smooth information circulation and increase the costs of mutual coordination, trading and supervision. Thus, trust existing in organizations can serve as a lubricant for mutual cooperation and reduce the generation of circumstances where review, delay or alertness is required in the process of many transactions.

Therefore, the partner pattern where organizations establish collaboration or exchanging relations with other organizations in order to seek their own interests or use of other resources has currently become an avoidable trend. Therefore, in the environmentally driven partnerships, the establishment of “trust” plays an important role for the organization itself or organizational relationships. Thus, undoubtedly, trust is a key factor in many social relations, a main source of competitive advantages, and also a necessary element for organizational survival.

For inter-organizational trust, Zaheer, McEvily & Perrone (1998) believe that it is a concept with “expectation” as the core. Thus they believe that mutually trusted organizations will have the following three kinds of expectations for the other party: (1) can be relied on to fulfill obligations; (2) will behave in a predictable manner, and (3) will act and negotiate fairly when the possibility for opportunism is present. “Expectation” is the spindle of inter-organizational trust, which means to be filled with uncertain expectations for others’ unknown behavior.

Xu Daoran (2001) also proposed that the establishment of inter-organizational trust will help with organizations’ partnerships, and form many positive effects on organizations.

1. Reduce institutional control:

If organizations have mutually trusted partnership, it is unnecessary to spend excessively on mutual supervision and handling of tedious details, which can reduce some of the control, thereby promoting organizational efficiency and performance.

2. Reduce conflicts: During collaboration, organizations can easily differences or conflicts. In this regard, high degree of inter-organizational trust can stimulate innovation and adaptation of communication of each other.

3. Promote inter-organizational cooperation:

Inter-organizational trust is a governance mechanism, and also an integration mechanism that can maintain and enhance the unity and cohesion of organizations. Relying on contract or monitoring alone is very difficult for organizations to cut off the risk of uncertainty and speculation behaviors. Therefore, only by establishing a mutual trust mechanism with mutually beneficial attitude can long-term cooperation and commitment relationships be maintained.

#### 4. Reduce transaction costs, and improve organizations' competitive advantage:

For organizations, choosing a governance structure that can minimize transaction costs and thereby enhance efficiency is a very important goal. With a high-trust relationship, organizations in cooperation can share each other's information and reach consensus, and thus effectively alleviate information asymmetries. Both parties can calmly negotiate with each other in order to reduce coordination costs. Therefore, trust can become a source of the organizations' competitive advantage.

#### 5. Promote inter-organizational learning:

Organizations strive to correctly and quickly obtain useful information to ensure long-term survival, so they must establish partnerships with other organizations to seek complementary resources. At the same time, organizations can learn from each other in the process of cooperation, and understand other organizations' management philosophy or knowledge, thereby generating the effects of mutual learning.

Therefore, in partnerships, regardless of formal or informal organizational partnerships, "trust" plays a very important role in such relationships. "Trust" is also a prerequisite for and outcome of the accumulation of social capital. More specifically, trust is a key element for the generation of social capital, and also an indispensable factor for maintaining the stability of social relations (Chen Hengjun, 2002). Accumulation of social capital can not only reduce production costs and transaction costs and increase productivity and efficiency, but also contribute to the achievement of organizational goals. As a result, trust plays a very significant role in organizations' accumulation of social capital. Of course, "trust" is also an important element for maintaining the steady state of organizations, because in the presence of high degree of trust among organizations, inter-organizational members will be more willing to cooperate and interact with each other. In contrast, if the trust relationship between organizations is weak, regardless of formal organizations or informal organizations, mutual suspicion between such organizations will relatively increase the costs of mutual communication, conveyance and information confirmation, thereby reducing the efficiency and productivity of the organizations. It thus can be seen that "trust" can stabilize organizational relationships, provide interaction and willingness for cooperation, and promote the efficiency and productivity of organizations so as to effectively accomplish the organizations' goals.

Therefore, in the governance of partnership operation, the establishment of mutual trust relationship is essential. Establishing mutual trust and interdependence relationship with each other is also conducive to the inter-organizational accumulation of social capital of each other.

From this perspective, “trust” can be said as an essential element in partnerships, and a good helper for sound organizational cooperation, organizational interaction and accomplishment of goals.

### **2.3.3- Study on trust-related factors**

Scholars studying trust not only pay attention to the connotations of trust, but also attach great importance to the influencing factors of trust and related conducts and results caused by trust. Axelrod (1984) mentioned the importance of significant interdependence formed due to continued cooperation. Securing oneself in a certain relationship is a deliberate strategy to improve the conversion costs, which can promote the generation and maintenance of trust. Investment in assets dedicated to the other party makes the mutual commitment to the relationship more credible, thereby enhancing trust, especially if both parties have a good convertible replacement. More dedicated resources have lower value for other uses (Sako & Helper, 1998). Compared with universal resource, the owner of the possible value of dedicated resources faces greater risk (Klein et al., 1978). Economic collateral may be symmetric investment in dedicated or joint dedicated assets (e.g. stocks), forming a visible indirect contract, which is consistent with the economic stimulus of both parties in the transaction. Moreover, if two parties of an alliance cooperate, the investment may be proliferated, so the two parties of an alliance have the motives to be engaged in value creation activities (Dyer, 1998). If one party is an opportunist, the value of the economic collateral will be reduced, and such a fact provides an incentive for both parties to an exchange to act more reliably (Dyer & Ouchi, 1993; Pisano, 1989). Thus, the investment in dedicated assets is closely related to trust.

Compared with enterprises with weaker bargaining power, enterprises with relatively stronger bargaining power can cast more effects on the design and use of control systems (Makhija & Ganesh, 1997). However, the use of that power can hinder the pursuit of the value of cooperation, because it prevents all parties from developing mutual commitments to the relationship (Madhoc & Tallman, 1998). More importantly, one party’s imbalanced control will lead to the other party’s opportunistic behavior, not to mention the failure to reduce the risk of opportunistic behaviors (Inkpen & Currall, 2004). Asymmetric control of a party will inhibit the other party’s decision-making authority and its ability to accomplish the goals of the alliance (Makhija & Ganesh, 1997). Thus, a company may seek compensation for the absence of its control and influence by engaging in opportunistic behaviors in fields that are

not controlled by the other party. For example, one party may sell parts to a joint venture. If this party thinks that the other party has excessive control over the joint venture, the company may seek to increase the transfer price of parts (Inkpen & Currall, 2004).

In a controlled study of joint ventures, Yan & Gray found that when a partner requires the maximum bargaining rights, the balance will be particularly skewed, and such imbalanced management control will lead to low performance for the weaker party. Reardon & Spekman (1994) also believed that during the negotiation phase, rights shall be carefully used, and the promotion of communication and authorization of all parties is advocated. Larger companies would invest a joint venture with small companies to access the business of such joint venture. Such investment brings a lot of benefits for small companies (for example, legitimacy and capital market growth). The risk, however, is that the partner may unilaterally decide the fate of these small companies. Monitoring and control is difficult for small companies, so we believe that the best strategy for small companies may be to create an independency situation. The more transactions prove successful between all parties, the higher level of trust is likely to be brought about for future transactions (P. S. Ring & A. H. Van de Ven, 1992). Trust is affected by the communication between the parties to an exchange, and high-quality communication (for instance, relevant, timely and reliable) communication will lead to higher trust. Communication, especially timely communication can promote trust by helping to resolve disputes and adjust feelings and expectations.

Information sharing promotes the coordination between organizations. However, by disclosing one party's proprietary and confidential information to another party due to trust, this party reveals its vulnerability. In this case, two-way information exchange is crucial for the generation and maintenance of trust which shall be supported by a loose form of long-term mutual benefits. In one-way information exchange, for example, if a supplier is required to provide information about the detailed process steps, while consumers are not more open about their own future business plan, the supplier is likely to suspect and believe that it is a sign of enhanced control. One-way information exchange caused by asymmetric information can also cause opportunistic behaviors in a wider range (Williamson, 1975).

After parties have repeated transactions and observe the criteria of fairness and reciprocity, when gaining proprietary information, they will trust that the parties will not take opportunistic actions, and the parties may trust the information provided by each other even more (Normann, 1971). All entrepreneurs emphasize that the communication and two-way flow among organizations at all levels seems to be a prerequisite for increased commitment and trust (Friman, Garling, Millett, Mattsson,, Johnston, 2002).

A company's reputation of being trustworthy can be used as an alternative to the shared history of cooperation (Parkhe, 1993). Lind & Tyler (1988) believed that an organization will establish the standard of processing and decision-making to standardize the organization's structure and process, so that when the procedures are consistent with the organization's basic values, a feeling of procedural fairness will be aroused. If such a process occurs in an organization or network of organizations, the previous history of compliance and belief in procedural fairness of a potential partner can be spread in the inquiry process through the network (Hill, 1990). Therefore, in a network, an organization's fair (or unfair) procedural reputation will provide a key indicator for its trustworthiness.

Informal self-reinforcing agreement relies on personal trust relationship (direct experience) or reputation (indirect experience) as a governance mechanism. Many scholars believe that informal preventive measures (such as goodwill trust, reputation) are the most cost-effective ways for the protection of specific investments and the promotion of complex transactions (Hill, 1995; Sako, 1991; Uzzi, 1997). If the other party's reputation is unknown or unreliable, further control will be necessary to compensate for the additional risks (Hill, 1990), which will lead to a decline in trust. Therefore, reputation is directly related to trust.

Several scholars have pointed out the important role of shared values for the establishment of a high level of trust. Dwyer, Schurr & Oh (1987) theoretically explained that shared values contribute to the development of trust. Values are the basis for the definition of organizational culture (Enz, 1988).

Lewicki et al. (1998) believed that the high-trust characteristic of relationships depend on the extent of similarity of both parties' values. Jones & George (1998) pointed out that shared values are the main means for people to experience the highest level of trust (unconditional trust). Barber (1983) further pointed out the interactive process of shared values and trust. On the one hand, shared values can help to establish a trust relationship; on the other hand, trust is conducive to the maintenance and expression of those shared values.

Traditional transaction cost theory holds, when encountering valuable and highly vulnerable transactions, trading partners will choose the form of hierarchical governance and adopt management commands to deal with trust issues (Williamson, 1985). The selection of management control mechanisms is closely related to one party's evaluation of the other party's trustworthiness. Literature studying trust with social methodology (Sitkin & Roth, 1993) believes that the use of formal management control mechanisms reduces the trust of the partner, because these mechanisms provide alternative explanations for trustworthiness (Das & Teng, 1998; Inkpen & Currall, 2004). According to this logic, we emphasize the role of

formalization in limiting the discretion of all parties. For example, in the early phase of a relationship, due to the lack of information and direct experience on the other party, low trust is representative. In general, trust is gradually enhanced, and then established after results are observed. If two parties can act in a trustworthy manner, they would have more trust.

However, the existence of formal management control mechanisms will limit the discretion of parties in an alliance. Formal control may hinder the development of trust, which does not necessarily stop or damage the development of trust, but definitely will slow it down, because trust actions will be suspected (Inkpen & Currall, 2004). Excessive use of formal means of control will delay the development of trust (Inkpen & Currall, 2004). Control is a prerequisite of trust, and trust is always subject to a certain hierarchy and system. Good control helps to promote trust. On the other hand, trust itself requires control. Otherwise, mistrust or excessive trust may arise. Different levels of control combined with different levels of trust will jointly affect the confidence of both parties to an exchange.

In many ways, opportunism is opposite to mutual trust. When individuals attempt to maximize their own output by harming the interests of others (such as opportunistic behaviors), trust will be reduced (Friman, Garling, Millett, Mattsson, Jolinston, 2002). When an enterprise (one party to an exchange) exploits the vulnerability of the other party, the behavior of such enterprise is opportunistic behavior (Barney & Hansen, 1994; Sako, 1991). Williamson (1979) stressed that a company's exploiting the vulnerability that all parties to an exchange face the risk of being asked for high prices is caused by asymmetric specific exchange of investments. However, the exploitation of other vulnerabilities of exchange, including the vulnerability of adverse selection and moral hazards is also a characteristic of opportunistic behavior (Barney & Hansen, 1994; Sako, 1991). In business researches (e.g. Morgan & Hunt, 1994), the influence of opportunistic behaviors is embodied in the fact that one maximizes its own interest by lowering trust.

In the study of outcome variables of trust, relevant literature is introduced as follows:

From the point of view of transaction costs, trust is expected to reduce management costs, as it can reduce the threat of opportunistic behaviors. Reduction of governance costs will lead to increased efficiency, which in turn improves organizational performance. Empirical research has been found and supported this view—trust can affect the governance structure, negotiation costs, perception of risks within the strategic alliance, and the performance of business units (Zaheer et al, 1998).

Trust between enterprises can improve organizational performance through a variety of ways. For example, trust can enable enterprise networks to adapt to unpredictable environment,

which is common in a world full of risks and uncertainties, thereby reducing transaction costs (Jarillo, 1988). Trust also promotes the willingness of one party in a cooperation and innovation to invest in the other party's unique and general assets. Some scholars believe that goodwill trust reduces transaction costs in relevant bargaining and monitoring, and thus improves performance (Barney & Hansen, 1994; Sako, 1991).

Cooperative relationship is built on the basis of mutual commitments. Commitment is defined as the feeling of the importance of the relationship (Dwyer F. R., Schurr P. H., Oh S., 1987). Commitment also includes the continuation of relationships and the desire to take actions to maintain such continuation (Moorman, Deshpande, Zaltman, 1993). Commitment refers to the willingness of parties to an exchange to make efforts to maintain their relationship (Porteretal., 1974). Commitment suggests importance and the desire to maintain a sustained relationship, and assumes that this relationship will bring about the expected values and interests. Fairness and responsibility are obvious in the joint venture environment. Without trust, the commitment made by any party will lack credibility (Gundlach & Murphy, 1993).

According to the KMV (key mediating variable) model, the higher is level of mutual trust between parties, the stronger is the mutual commitment (M. Frimanetal., 2002). Empirical research has found that trust is the antecedent of commitment (Morgan & Hunt, 1994; Anderson & Weitz, 1989).

Korsgaard et al. pointed out that trust is very important for the long-term cooperation between organizations (Korsgaard, 1995). Mutual trust between all parties in a cooperation affect the orientation of their long-term relationships from three aspects: (1) it reduces the perception of risks associated with the other parties' opportunistic behavior, (2) it increases the confidence of parties in an alliance—long-term relationships can solve short-term unfairness, (3) it reduces the transaction costs in exchange relations.

According to the studies by Williamson (1975, 1981), understanding of transaction costs is central to the study of organizations. Transaction costs include the costs of reaching an agreement (contract) that is satisfactory to both sides, adapting the agreement to unanticipated contingencies, and enforcing its terms. Because of bounded rationality and the costs of writing, negotiating, and implementing a contract, a comprehensive contract involving a long-term relationship At best, only incomplete contracting can be achieved. Under such incomplete contracting, opportunistic behavior will be more dangerous, because the termination of the relationship is not easy to achieve (Ganesan S, 1994). Incomplete contracting in a trusting relationship means that the two parties agree to adapt to unanticipated contingencies in a mutually profitable manner, responding to inequities through solutions over



the long run instead of short-term opportunistic behavior, the hazards of which can be mitigated or removed if there is trust between the two parties in long-term relationships. This means that trust reduces the risks of opportunistic behavior in long-term exchange relationships. Therefore, when trust exists, all partners can have unique long-term investment without significant risks, because all parties will refrain themselves from using their capability to breach the agreement or take advantage of changes in the environment to gain the benefits they want. Moreover, a trusting relationship may involve even lower transaction costs, because incomplete agreement is sufficient enough for exchange relations.

### **2.3.4- Method of trust research**

#### **1. Cognitive-based methods**

Early in 1958, Western social psychologists began to define trust and explain how it affects behavior. Deutsch (1955) first proposed a definition of trust—trust is based on expectations leading to concrete acts. He believed that if a person expects one thing to occur, he would believe that this will happen; if he thinks that expectations leading to a behavior are not confirmed, the negative consequences thus caused are greater than the positive results that would arise when such expectations are confirmed (Deutsch, 1958). In other words, the risks outweigh the gains.

This cognitive approach is subject to the influence of the principle of self-interest. Trust is a person's confidence in predictability of expectations (Zucker, 1986). Lewicki et al defined trust as “self-confident and positive expectations of the behavior of others” (Lewicki, McAllister & Bies, 1998). Bhattacharya et al believe that trust refers to expectations of positive outcomes, and such positive outcomes are based on the other party's behaviors in interactions characterized by uncertainty (Bhattacharya, Nevinney & Pillutla, 1998). The emergence of trust as an act is based on the consideration of the profit or loss of every opportunity (Marie-laure, 2004).

The trust studied by these research scholars mainly focuses on the views of a person or organization on another person or organization. In the definition of trust, “expectation”, “predictability”, “risk” and other terms are mainly adopted. Therefore, theoretical methods adopting these terms in the researches on trust are classified as cognitive-based methods.

#### **2. Affective-based methods**

Some researchers study trust as an affective concept. Gibb (1964), Fox (1974), Rempel, Holmes & Zanna (1985), Friedman (1991) and Sabel (1993) defined trust as “confidence in

another person". Related affective elements of trust include goodwill and acceptance (Gibb, 1964), good faith (Fox, 1974) and security (Rempel et al). Rempel et al defined trust as "feelings of confidence and security in the relationship and the responsiveness and caring expected from the partner", in particular. Such a definition undoubtedly focuses on the affective elements of trust. Therefore, a person would say that he (she) feels confident or secure, instead of thinking that he (she) is confident or secure.

Sabel (1993) defined trust as: trust is the mutual confidence that no party to an exchange will exploit the other's vulnerability. According to Sabel's definition, when parties to an exchange trust each other, they will have mutual confidence that the other party will not take advantage of any adverse selection, moral hazard, unreasonable asking price or other vulnerability that may exist in the specific transaction.

The trust studied by these research scholars mainly focuses on the feelings of a person or organization to another person or organization. In the definition of trust, "confidence", "vulnerability" and other terms are mainly adopted. Therefore, theoretical methods adopting these terms in the researches on trust are classified as affective-based methods.

### 3. Combination of cognitive-based and affective-based methods

Clearly, both affective-based and cognitive-based elements influence the development of trust. McAllister (1995) considered affective-based and cognitive-based trust as the basis for researches on interpersonal cooperation in organizations. He found that affective-based and cognitive-based trust represents distinct forms of interpersonal trust. The results of his study have shown that certain cognitive-based trust is a necessary precondition for affective-based trust. For example, in order to develop one person's sense of trust for another person, he believes that there must be a certain level of trust as security. In McAllister's study, the level of cognitive-based trust is higher than affective-based trust.

Hosmer (1995) defined trust as optimistic expectation by people of another group when making decisions under conditions of vulnerability and dependence on the part of the trusting party. Mayer et al. (1995) described trust as the intention of one person (trustor) to be vulnerable to another person (trustee) based on the expectation that the trustee will perform a particularly important action to the trustor without the trustor's supervision and control. Rousseau et al. (1998) believed that trust is a psychological state of the intention to accept vulnerabilities, which is based on the positive expectations of the behavior of another person or organization.

Combining the views and feelings of a person or organization on another person or organization, this type of trust research is classified as a combination of cognitive and

affective-based methods.

## **2.4 Theory comparison and integration**

### **2.4.1- Comparison between transaction cost theory and the trust perspective**

Both of researches of the theory of transaction cost and the viewpoint of trust take over important positions in the research of the management, the theory of transaction cost can be applied in various issues, such as oversea investments, technology transmission and strategy alliance. The research of trust covers researches of all levels or all kinds of functional strategies, such as interpersonal relationships, group driving forces, parent and constituent companies, and strategy alliance, by numbers, researches on networks mention trust most frequently. These two types of researches are mixed on the issue of public-private partnership, and some scholars have noticed the similarity, the complementation and differences of the two types of researches on the research topics. Johanson&Mattson (1987) and Nooteboom (1993) have been compared the viewpoints of the theory of transaction cost and the network orientation from the following points.

1. Theory foundation: the transaction cost comes from the framework of the neoclassical economics, wherein the focus thereof is on the balance of stabilization; the network orientation pays attention to the relatively connected relationships and interactions, some organization boundaries are not clear, and it regards enterprises as the units of social exchange.
2. Issues orientation: the transaction cost is aimed at explaining institutional governing structures, the value activities shall be cooperated within or among enterprises. The network orientation is preferred to describe and analyze trends and strategies of enterprises in the business system; especially the process involves exchanges and adaption.
3. Essential concepts: the theory of transaction cost regards opportunism as the basic feature of an actor, but trust is the significant concept for the network orientation and social exchange. The theory of transaction cost considers that high asset specificity will result to vertical integration while the network orientation considers that the asset specificity is a result of relationship interactions among organizations.
4. Theory boundary: the governing structure in the theory of transaction cost is the collection of specific trade relationship types while a network in the network orientation is a system consists of dependence and dyadic relationships.

5. Relational properties: the network orientation stresses that the long-term relationship among enterprises can reduce costs of exchange and production and can promote the development of knowledge; hereby the process of exchange and adaption can be regarded as investments. The bilateral rule in the theory of transaction cost doesn't take influences of the long-term relationship on opportunism and effectiveness into consideration.

#### **2.4.2- Limitations of the transaction cost theory and the trust perspective**

The theory of transaction cost and the viewpoint of trust both provide valuable opinions, the former explains features and risks of trade as well as presents different guarantee methods while the latter states the effect of trust to cooperation and capacity complementation among organizations. However, the two orientations have their own problems and limitations. Further descriptions are as follows.

##### **1. Limitations of the transaction cost theory**

The limitation of the theory of transaction cost can be divided into aspects as follows: firstly, deviation to humanity, the opportunism is over emphasized without deeply analysis and recommendation. Secondly, incompleteness of guarantee mechanisms, the guarantee mechanism after events is over-valued while the importance of screening before events is ignored. Thirdly, the assumption of risk neutrality runs counter to facts which results to false explanation to enterprise behaviors. Fourthly, the efficiency viewpoint of cost minimizing not fits actual requirements.

Firstly, the opportunism can be considered as the most important humanity assumption of the theory of transaction cost, such assumption can not go wrong because such features are actually existed in the humanity. Williamson (1985) thinks that it is difficult to know who has the opportunism trends or who is relatively reliable before events. However, the view of Williamson has problems since it considers the opportunism as a common condition, a changeless humanity core (Noorderhaven, 1996). Although Williamson has mentioned that, in comparison with America, the trade risk of Japanese is not so serious because cultures and systems can examine and verify the opportunism. Noorderhaven (1996) points out that the theory of transaction cost only sets eyes on the situational trust but does not catch sight of any character trust. That is, in addition to affects of cultures and systems, features of traders will also result to different trends of opportunism, and which is not totally unknowable. Besides, the transaction cost ignores opportunism behaviors within the organization levels. The vertical integration changes imposturous opportunism behavior into lazy opportunism behavior and

both of cheat and lazy seeking for own benefits craftily, whereas the theory of transaction cost is inclined to not consider lazy as the opportunism and regards cheat and lazy as a trade-off relationship, which leads to raise of many argues because these two not always happened easily inside or outside the organization and they are not always the relationship of mutual substitution or mutual exclusion.

Secondly, the excessive emphasis on the opportunism makes the guarantee mechanism trending to prevent cheat but ignore that the guarantee mechanism will influence the willing of two parties to share and learn from each other and influence the achievement of the overall comprehensive efficiency. To the view of guarantee, transaction cost has proposed many specific suggestions with great contribution from actual practices but it is not complete since it ignores the important roles of social situations and trust. Although the cost for choosing trade partners before events belongs to one term of the transaction cost, the theory of transaction cost did not state clearly what is relied on to choose trade partners. The aim of an enterprise to spend such transaction cost is obviously for seeking a trustworthy trade partner and such transaction cost shall have distinct help to reduce the transaction cost for contracting, supervising and executing, but the theory of transaction cost neglects the significant meaning of screening before events.

Thirdly, there is no need to take the problem of risk predilection of enterprises into consideration when analyzed as a whole but when analyzing individuals the risk predilection shall not be ignored if it can really affect the decision of an enterprise. The internal coherence of the theory of transaction cost will not be damaged if the risk predilection is added for discussing. Neither a descriptive nor a normative theory needs an additional risk neutral assumption contrary to real situations. Chiles & McMackin (1996) puts different risk predilections into analysis of governing decisions, which explains the differences of enterprises more clearly, so that such amendment is quite requisite to the theory of transaction cost.

At last, the principle of minimizing transaction cost and governance cost may not suitable for many situations of business cooperation, especially the cooperation of public-private partnership. That can be illustrated from three aspects: (1) According to trade value, not only the transaction cost of one part but also the transaction cost of the opposite side shall be considered during cooperation, what is more, the value produced by the cooperation shall be considered. Sometimes, it is necessary for adding transaction cost for promoting cooperation. (2) The sense and items of cost are too narrow and limited that the cost for lowering transaction cost is not taken into consideration. Although some incentive designs and trust can

lower transaction cost according to documents, but it ignores that these mechanisms have potential costs or costs of these mechanisms are happened long time ago (for example, some interpersonal relations established with expenses ten years ago might be used for helping trade till now). (3) Cost minimizing shall not be considered as the standard and target for decision of public departments. When an enterprise costs for seeking, contracting, executing and supervising, its main aim is to seek for guarantees and, according to the statement of traditional transaction costs, it is mainly to overcome the problem of opportunism. Thus the key point shall be how many problems of opportunism are solved but not how much transaction cost is consumed. In the situation of the public-private partnership, the reason for a partner to provide more transaction cost is seeking more guarantees but not lacking aware of economic efficiency. Our research is not a simple thinking that the problems of opportunism shall be totally resolved or not be resolved at all, that is, no matter how many governance mechanisms are, they only control the chance of opportunism behaviors under a probability value which is mentally acceptable or sustainable.

## 2. Limitations of the trust perspective

The problem and limitation of the concept of trust can be divided into three aspects: firstly, the lack of common views of the definition and scopes of trust cause difficult for theory integration. Secondly, trust may cause to increase of vulnerability. Thirdly, the manageability of trust is low.

Firstly, there are many researches about trust but no theory for unifying and integrating in comparison with the theory of transaction cost; the most important reason for that might be that trust has different meanings for different scholars. Although one can hold the viewpoints of trait theory or circumstantialism, the two viewpoints may cause problems. From the theory of social exchange or social interaction, trust is absolutely not only based on features of one person (such as openness, faithfulness, and reliability) but also on basis of fairness or kindness, according to trade experiences of the two parties in the past, and that may cover factors of social standards and social inlay. If one takes the viewpoint of circumstantialism to trust, the credibility of the other person might be a result of situations, which negates the core values of people. Another practical method is to keep on layering and classifying trust to build a unified identification method for the academic field. However, classifying methods are abundant at present while no integration is available. The most frequent phenomenon happening during classification is to over apply and amplify (for example, the trust based on threat) concepts that contain portions not belonging to trust but are expanded although the theoretical efficiency is reduced.

Secondly, the appearance of the statement that trust can lower the transaction cost but more trust may lead to deeper hurt will result in a severe puzzle: how to trust? People are inclined to trust others, for example, when we get lost, we might turn to strangers to ask the way and we are inclined to think that the information they give us is correct, of course we might be deceived so that we might watch the clothing and behaviors of some passersby before asking. Therefore, trust may reduce chances for one being hurt if it comes from rational judgments. Trust or not will become a problem; for example, it is possible to give suggestions to an enterprise about how to gain the trust of the opposite side but it is difficult to give suggestions to the enterprise about how to trust the opposite side because too much trust makes itself easy to be hurt. Therefore, at the aspect of giving actual suggestions to the guarantee mechanism, the contribution of trust is not as concrete as the theory of transaction cost.

Thirdly, trust is an extremely delicate mental status should not be mixed with too many attributions of purposes and motivations. Whether trust is cultivatable or not is a big philosophic problem: we are easy to trust others when we think behaviors of others are originated from pure and honest hearts, however, trust is discounted when behaviors of others are in purpose or have motivations. Such contradiction is expressly obvious in business relationship, for example: after attribute kindness of others to the purpose of later benefits, the purity of trust is decreased. That is, the generation of trust shall not with the existence of too many shades of strategies and skills, however, the governance field must emphasize the aspect of governance, if no achievement can be gained, the contribution of such concept for the practical field is weak. Trust is not trust if it can only be got after many designs on governance. The research considers that trust is cultivatable but is really cannot be compelled, wherein active release of kindness is the first step for cultivating trust. We are hard to force others to generate real trust feelings on us since we cannot control the internal reasoning methods of others and it is hard to force others to be very creditable partner because we cannot control internal motivations of others. The commendable of trust shall not be judged by only one standard, trust is existed in many kinds of cooperation so that the two parties are willing to run a risk together. What should be noticed is that trust is not something that can be controlled by someone. A concept with manageability refers that such concept can provide principles to managers and can assist them to take initiative and positive management actions. Governing oneself to get trust of others is far more reasonable than governing others for trusting them.

### **2.4.3- Integration of the transaction cost theory and the trust perspective**

Researches of transaction cost and trust have their own contributions and limitations, so that some scholars attempt for fusion, for example: both of Noorderhaven (1996) and Chiles&McMackin (1996) consider trust as the regulation variable between property and the governance structure, and Nooteboom (1993) considers trust as a predisposing factor for reducing the opportunism. However, such integration is limited and the main difficulty may lie in how to list contrary viewpoints of humanity into a same theory. To use organization theory simile, the viewpoint of trust is similar to theory Y while the viewpoint of transaction cost is similar to theory X. Therefore, criticisms to the viewpoint of trust and the theory of transaction cost are operated in reverse directions: the viewpoint of trust is criticized as too naive while the viewpoint of transaction cost is criticized as paying too much attention to prevent disadvantages but lacking of comprehension to overall behaviors of human.

Noorderhaven (1996) considers that the internal core of human is divided into a part of creditable and a part of opportunism (see figure 2-5). The surrounding trade circumstances may strongly or lightly trigger the two features. Many people may consider themselves as creditable, but creditable people may not keep promises under any condition. The core of human cannot be totally changed but situations may change, for example: the process of interaction may change the degree of subjective trust. When the two parties can think of fair and unity and restrain behaviors of maximizing own benefits, the degree of trust may be increased, or they can judge whether to trust or not when the information of the opposite side is accumulated to a certain degree.

There is no need to deny the existence of opportunism or trust since humanity is complex and changeable and management is a kind of knowledge must take humanity into consideration. This research considers that some situations can trigger the opportunism while managers can initiatively make effort to create situations to trigger behaviors of trust. How to avoid limitations of past researches but fuse advantages thereof during management of cooperation among organizations is a direction worth efforts. Therefore, the study put forwards a new theoretical concept, trust management, and hopes to lead to a development of the topic of risks of public-private partnership. In comparison with the theory of transaction cost, trust management has opinions as follows: (1) partners may take behaviors of opportunism but some partners are still creditable or agreeable; (2) the guarantee mechanism is polybasic which goes far beyond the transaction cost, but common factors and basic rules can be traced; (3) the relationship risk might be changed corresponding to the variation of features of



partnership risks or self conditions; (4) some governance mechanisms might be operated for the safety of cooperation, although the governance mechanisms may lead to cost, it has effectiveness---the trust to the partner, therefore, the logic is trust optimizing but not cost minimizing.

In comparison with the viewpoint of trust, the opinions of trust management comprise: (1) taking the opinion with a combination of acknowledge and emotion as the definition of trust, that is, taking the positive behaviors of the partner as the management target but not being insisted on disputes of trust; (2) taking the opinion of heuristic rationality for the acknowledge and establishment of trust, that is, the trust for partners is justified but not leaded by sensibility, although the reason of human is not complete, it is also reasonable acknowledge and behaviors within cognitive abilities of human; (3) trust management stresses the manageability, that is, partners can take different methods to settle the problem of relationship risk, it is nice to have trust, however, cooperation is possible even if there is not enough trust.



## **Chapter III - Conceptual Model of PPPs Trust Management**

### **3.1 Building of research structure**

The main conceptual structure for analyzing mutual trust in public-private partnership and the relevant important influencing factors are formulated on the basis of the orientation of this study and the result of literature review. The following sections will explain the connotations of the conceptual structure and its influencing factors from the perspective of theoretical framework and concept definition.

#### **3.1.1- Theoretical framework**

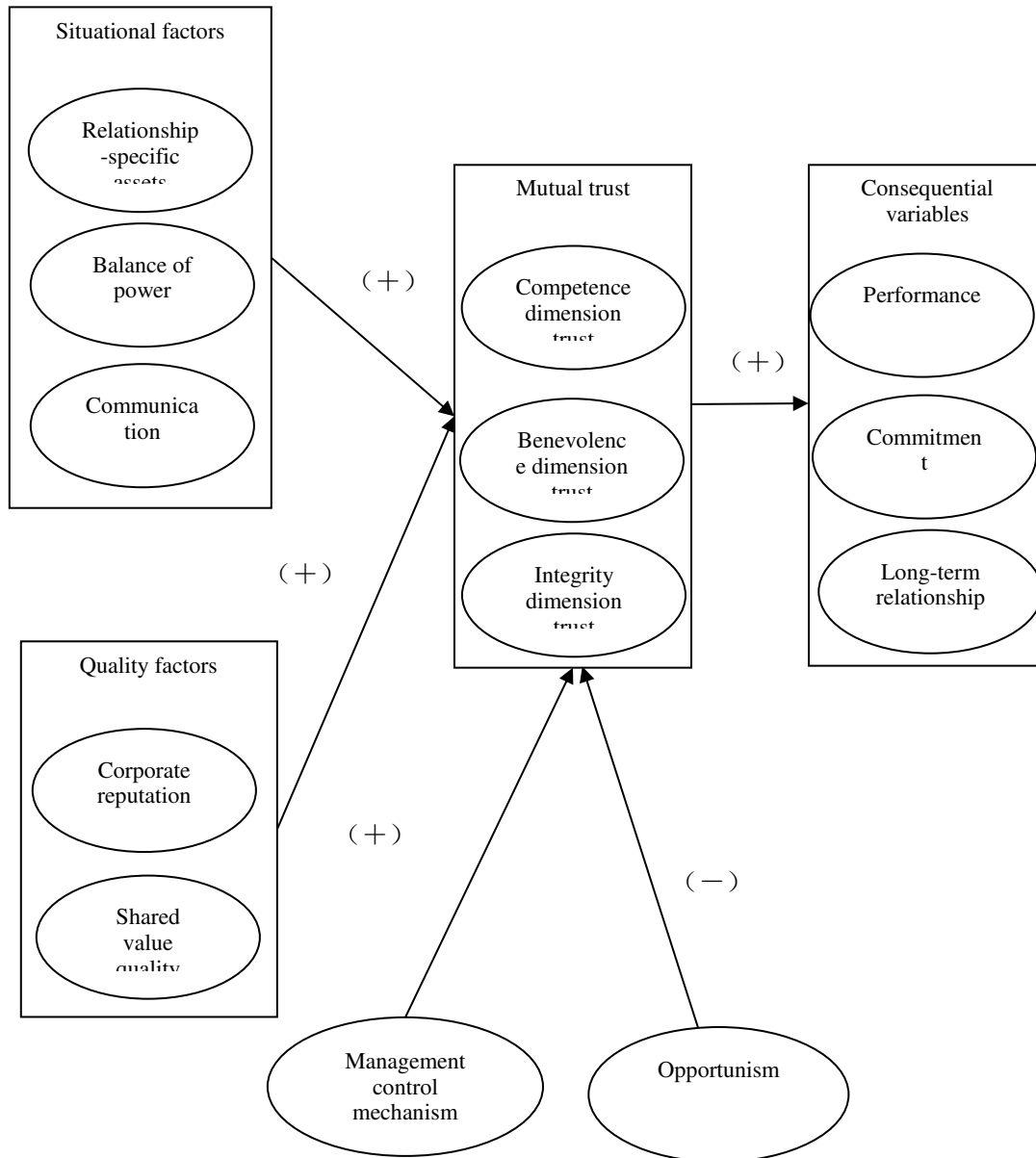
Review of previous literature concerning trust research shows that relevant trust research mostly focuses on mutual trust between individuals, enterprises, and trust between individuals and enterprises, while a small amount of research addresses public sector /private sector, public sector/public sector and private sector-private sector trust in public-private partnerships. However, research findings on trust between individuals and trust between individuals and enterprises serve as the very important reference for our research on mutual trust in public-private partnership since actually trust between different sectors is mainly that between managers (or management teams). This thesis builds the conceptual structure for analyzing trust in public-private partnerships on the basis of understanding the Theory of Reasoned Action (TRA) and the Commitment-Trust Theory.

The most basic thinking of the Theory of Reasoned Action (TRA) can be illustrated as follows: individual's convictions and beliefs may affect individual's Attitude Toward Behavior (ATB) and thus individual's Behavioral Intention, while individual's Behavioral Intention is the most important and immediate factor which results in such individual's ultimate implementation of the corresponding behavior. Lewis & Weiger et al. (1985) understand trust as an attitude jointly determined by reasoned calculation and emotional associations. Thus we can take mutual trust in public-private partnership as one attitude jointly determined by reasoned calculation and emotional associations between sectors. We could consider - that mutual trust in public-private partnership is affected by one partner's evaluation and perception of another partner, while trust may also exert impact on the desire for taking action and finally cause the corresponding action.

According to the Theory of Trust Spiral Model, information, impact and control are the basic elements in trust; information disclosure and communication enhance trust, control mode may affect the level of trust, while beliefs and views indirectly affect the level of trust through information communication and control mode. The Theory of Three Hierarchies of Trust indicates that only cooperation established by strong-form trust is most effective since one set of principles and criteria has been internalized into behavioral values, principles and criteria governing all parties in cooperation. As shown in the Trust-Commitment Theory, trust is affected by three antecedent variables including shared value, communication and opportunistic behavior. Trust directly affects such consequential variables as cooperation, functional conflict and uncertainty. Therefore, we get the enlightenment: mutual trust in public-private partnership is affected by some antecedent variables, while trust may impact some consequential variables.

Conceptual structure for mutual trust in public-private partnership proposed on the basis of the above discussions in this thesis (as shown in Diagram 3-1) consists of three parts, in which trust in public-private partnership is deemed as the core, specific assets, specific assets, balance of power, mutual communication, reputation, shared value, management control mechanism and opportunism are antecedent variables affecting mutual trust in public-private partnership, while trust in public-private partnership may result in improving performance in public-private partnership, establishing effective commitment and long-term relationship in public-private partnership.

**Figure 3-1 Conceptual structure for mutual trust in public-private partnership**



### 3.1.2- Definition of concept connotation

Based on the result of literature review, this research defines relevant important concepts affecting trust in public-private partnership as follows:

#### I. Trust in public-private partnership

Public-private partnership is the organizational mixture between public sector and private sector, which breaks away from previous dichotomy in governmental-nongovernmental

system. It introduces enterprise spirit to promote public affairs in a more professional, efficient way on the one hand, breaks the tether of current system and bureaucratic organization of government regulations involving personnel and accounting so as to operate organization in a more autonomous and flexible manner and ensure that public objectives are realized. Public-private partnership requires partners to share necessary resources at various stages of cooperation in the light of respective advantages and jointly participate in provision of public products and services as well as bear risks. This necessitates mutual trust between partners so that partners give full play to respective advantages, share resources and make respective advantages complementary to each other in order to mitigate cooperation risks and achieve win-win outcome. Trust meant that trading parties were confident that the other party would not take advantage of its weaknesses and was based on positive expectation of one party about the other party (Sabel, 1993; Rousseau, 1998). In this research, mutual trust in public-private partnership suggests that partners believe that the other party will not utilize its weaknesses, including adverse selection, moral degeneration, unreasonable charge or other weaknesses and is positive expectation about effective cooperation between partners. Partner's weaknesses and expectations of the trusted partner are multifarious and complicated, so does trust of partner in the trusted partner. Trust was one complicated and multidimensional concept (Mayer, 1995; Rousseau, 1998), there are different trust views about different aspects of the trusted partner.

We evaluate organizational mutual trust in public-private partnership in terms of three dimensions including competence, benevolence and integrity by making reference to measurement model proposed by Mcknight et al. in 2002. These three trust dimensions separately correspond to evaluations of the organization about competence, benevolence and integrity of the trusted organization. These three trust dimensions are discussed as follows.

#### 1. Competence dimension trust

It means positive expectation of the trusting party about specific competence of the trusted party in securing trust. In public-private partnership, Competence trust dimension of the organization mainly involves positive expectations of the trusting party about services or resources of the trusted party which meet needs of the trusting party, resource sharing, complementation of advantages and technical improvement. Actually, only the trusted party possesses the competence or features necessary for the trusting party can the trusted party be trusted by the trusting party. If the trusted party want to win the trust of the trusting party, the trusted party needs to be competent in technology, marketing and management and other

aspects as necessary for the trusting party, in other words, the trusted party should provide the trusting party with the necessary resources and competences which can not be found in the trusting so as to reduce cooperation risks, increase technical level and reach common goal.

Therefore, competence dimension trust defined in this research refers to certainty perception and cognition of the trusting party about resources and competences of the trusted party necessary for meeting special requirements of the trusting party.

## 2. Benevolence dimension trust

It reveals positive expectations of the trusting party about actions of the trusted party for caring about and taking into consideration interests of the trusting party. In public-private partnership, benevolence trust dimension of partner mainly means positive expectations of the trusting partner about care of the trusted party for interests of the trusting party.

In public-private partnership, benevolence of partners mainly includes positive care for and safeguard of legitimate interests of partners in addition to own interests, timely and effective help and solutions provided for parties in overcoming problems and difficulties occurring during cooperation. Generally, one party cannot monitor activities of the other party at any time during cooperation, in which once partner has opportunistic behaviors, interests of the other party will be greatly affected, thus positive evaluation of partner about the level of own benevolence is of great importance for any party.

Benevolence dimension trust defined in this research means certainty perception and cognition of the trusting partner about willingness of the trusted partner to safeguard interests of the trusting partner in addition to pursuit of own legitimate interests.

## 3. Integrity dimension trust

It involves positive expectations of the trusting party about efforts of the trusted party in timely and effectively exchanging information, honoring commitment and observing contractual rules. In public-private partnership, integrity dimension trust mainly means cognition and expectation of the trusting party about efforts of the trusted party in uprightly releasing information, honoring commitment and observing contractual rules.

For partners in public-private partnership, their responsibilities for integrity mainly include: accurately and timely exchanging relevant information with partner, honoring various kinds of commitments for partner, and earnestly performing contracts concluded with partner. Generally, one party can not monitor activities of the other party at any time during cooperation, while effective control and supervision is very costly, thus the level of integrity between partners is extremely important for partners, while integrity is also the important aspect of evaluation and selection of partners.

Integrity dimension trust defined in this research means certainty perception and cognition of partner about characteristics of the other party about accurately and timely exchanging relevant information with partner, honoring various commitments made for partners, and conscientiously performing contracts concluded with partner.

## II. Antecedent factors affecting mutual trust in public-private partnership

Undeniably, some researches on antecedent factors concerning trust were conducted in China and foreign countries (Coughlan, Anderson, Stern, & El-Ansary, 2001; Wang GuilinZhuanguijun, 2004; He Yanchun, Zhou Lei, 2004). Their work is of great significance; however, few researches touch upon antecedent factors affecting mutual trust in public-private partnership. Based on review and analysis of research findings of domestic and foreign theory communities, the author analyzes antecedent factors affecting mutual trust in public-private partnership and classifies such antecedent factors into the following several categories.

### 1. Situational factors

Situational factors include specific assets, balance of power and mutual communication, which make opportunistic behaviors of partners unnecessarily in maximizing own interests. These factors rely on characteristics of cooperation environment rather than properties of partners.

Asset specificity is related to the transferability characteristic of asset available for transferring from one application to another application. The higher transferability is, the lower asset specificity is, vice versa. Relationship-specific assets are those assets whose value will greatly decrease if transferred to another transaction and can not be fully recovered if relationship is discontinued. In public-private partnership, relationship-specific assets are those assets which are dedicated for public-private partnership projects and whose value will decrease in the case of converting application. When investing in relationship-specific assets, partners will lock themselves in certain cooperative relationship, which increases conversion costs and results in weaknesses towards partners, and thus shows trust in partners. Therefore, overall, investing in relationship-specific assets helps increase the degree of mutual trust between parties and thus prevent opportunistic actions.

As compared to the party with less strength and professional, technical competence, those with more strength and professional, technical competence are more capable of affect design and use of cooperative control system. However, utilization of that power may hamper the force driving partners to realize the cooperation objectives since it prevents mutual



commitment of partner development for partnership and not only it can not mitigate the risk of opportunistic behaviors of partner, but also unbalanced control may stimulate opportunistic behaviors of partner. Partner may pursue opportunistic behaviors in the fields beyond control of the other party so as to seek compensation for absence of its control and impact, for example, exaggerating working difficulties for demanding more interests and rights. Unbalanced control will inhibit decision-making authority of other partners and their capability for reaching cooperation goals. Therefore, we believe that, in public-private partnership, power of partners shall be balanced or at least mutually independent and there is no control of one party over the other party, communication and authorization between parties are advocated and promoted so that partners can develop positive expectations, it is favorable for promoting mutual trust and reducing risks from opportunism.

Communication meant formal and informal sharing of valuable and timely information between partners (Anderson & Narus, 1990). In public-private partnership, communication between partners suggests formal and informal exchange of information relating to public-private partnership projects between partners. The information exchanged between partners must be valuable and timely; otherwise, communication will be ineffective. Communication especially timely and effective communication helps partners settle disputes, resolve differences, coordinate disaccords in feeling and expectation, form optimistic expectations between partners, thus boost mutual trust between partners. When partners engage in communication for many times and observe the rules of equality and reciprocity, they will trust in partners rather than adopt opportunistic behaviors, on the contrary, more trust in mutually provided information may be built. Therefore, effective communication affects mutual trust in an increasingly intensive way. Effective communication shall be a two-way exchange of information, which essentially makes the weaknesses of one partner exposed to the other partner and indicates trust in the other party. Thus effective communication enhances mutual trust between partners; communication is the prerequisite for improving trust between partners and is of vital importance for producing and maintaining trust as well as is beneficial for preventing opportunistic behaviors.

## 2. Quality factors

Quality factors include reputation and shared value, which are based on perception about partners and serve as the bases for evaluating credibility of partners.

Reputation is one concept relating to but differing from image. Reputation is the overall cognition and impression of other organizations or individuals about organizational image, character and various kinds of marketing communication. Reputation may also be deemed as

subjective judgment of other organizations or individuals about organizational quality which is made in the light of previous performance of organization. Thus reputation may directly affect expectations of partners and further the level of trust of partners. Reputation is the important basis for selecting partners. Reputation makes partners develop expectations about not only key quality but also future actions. Thus, in public-private partnership, good reputation may provide one key indicator for trustworthiness of partners. If reputation of the other party is unknown or unreliable, it is necessary for intensifying control to prevent additional risks, which will certainly increase transaction costs; thus good reputation helps protect specific investments, facilitate complex transactions, reduce transaction costs, and results in enhancing trust. Trust building entails a long process, while good reputation is even harder earned. From the perspective of economics, reputation may be deemed as economic “collateral” for the trusting partner. If the trusted party has opportunistic behaviors injurious to interests of the trusting party, it will certainly bear the risks from damaging reputation. The higher reputation of the trusted party is, the more losses incurred to reputation by opportunistic behaviors and the higher opportunity cost is; thus it is more likely that partner with good reputation adopts trustworthy behaviors rather than opportunistic behaviors. Good reputation can promote mutual trust in public-private partnership on the one hand and protect relationship-specific investments, push forward complex transactions on the other hand, thus greatly enhancing mutual trust between partners.

Shared value suggests the degree of sharing the conviction as to which actions, objectives and policies of partners being important or unimportant, proper or improper, correct or incorrect. “Norms” specified by Heide&John (1992) were shared values since they meant “proper behaviors”. In public-private partnership, shared value between partners can enhance mutual trust between partners since Fukuyama (1995) believed that trust was based on norms shared by part of members in group. Social culture, politics, rules, professionalism, network and organizational culture are always embodied in partnership. Social culture values (social norms) determine social norms (rules). Degree of trust varies with organizations in different societies mainly due to differences in social culture values (social norms). Social norms can be self-enhanced. The organizations that observe social norms are easy to be trusted by other organizations. Actually, some social norms can be deemed as “historical sedimentation” and constitute the foundation for mutual trust between organizations. The more social norms are internalized into organizational values, the easier it is that a high degree of trust is formed between organizations. The more shared values between organizations are, the more the tendencies towards generating positive expectations about other organizations are. Thus

shared values are the important means for building mutual trust in public-private partnership.

### 3. Management control mechanism

It is the factor for ensuring that trust occurs between partners. Selection of management control mechanism is closely related to evaluation of one party about trustworthiness of the other party.

Management control mechanism is divided into formal and informal ones. Formal management control mechanism is foreseeable, regular, includes explicit information transfer and is regulated into rules, procedures and regulations. Informal management control mechanism is uncertain, obscure and is internalized into organization and utilizes values, norms and cultures to promote favorable behaviors.

Selection of management control mechanism has close connection with evaluation about trustworthiness. If both parties have no sufficient information about the other party and experience in direct cooperation at the initial stage of partnership, it is essential to adopt formal management control mechanism since control is the precondition for trust, absence of control will cause mistrust or excessive trust and trust is built in certain regime and system. Furthermore, formal management control mechanism is also one way for understanding partners. Trust in partnership is usually strong-form or semi-strong form trust at the initial stage of partnership, in which case, cooperation between organizations needs formal contract namely management control mechanism to provide guarantee. With deepening cooperation, both parties have gathered sufficient information about the other party and experience in direct cooperation. If both parties act in a trustworthy way and have no opportunistic behaviors, trust between both parties will be enhanced, in which case, excessive use of formal management control mechanism decreases the degree of mutual trust between partners since contract is incomplete, formal management control mechanism may restrict discretion of partners and excessive control may render the other party to develop the expectation about mistrust, which hinders trust development.

It is unrealistic to design complete contracts, and if it were possible, it would be very costly. Informal management control mechanisms cover the shortage of formal ones. It makes use of social culture norms to control partnership and will not make the trusted behaviors of partners under suspicion. It boosts trust development and is likely to bring higher degree of trust namely strong-form trust to future cooperation. Partner with appropriate social culture norms always acts in the way of strong-form trust in partnership so that partner engages in very weak cooperation namely high-risk high-return cooperation. Public-private partnership exactly represents such high-risk high-return cooperation. Therefore, in public-private partnership,

with increasingly enhanced trust between partners, the roles of formal management control should be gradually reduced, while that of informal management control should be gradually intensified, which is beneficial for development of mutual trust.

#### 4. Opportunism

Opportunistic behaviors are frequently mentioned in the literatures concerning transaction cost analysis and are the important factors affecting mutual trust between partners.

Opportunistic behaviors are those behaviors that seek self-interests by deceit. If one organization (or individual) takes the advantage of weaknesses of the other organization (or individual) including unreasonable charge, adverse selection and moral degeneration, such organization (or individual) pursues opportunistic behaviors. Essentially, opportunistic behaviors violate the roles proper or necessary for direct or indirect promises of organization (or individual) for the purpose of deceiving. In many cases, opportunistic behaviors run counter to mutual trust. If one party believes that partner has opportunistic behaviors, this will reduce trust in such partner. Opportunistic behaviors affect trust by maximizing self-interests and decreasing the degree of trust in partner.

In public-private partnership, opportunistic behaviors are mainly attributable to information asymmetry and difficulties in monitoring partner. It is uneasy to evaluate work quality and degree of partner's dedication, it is relatively difficult in deciding on further cooperation; thus opportunistic behaviors abate trust between partners. This shows that opportunistic behaviors cause decreasing trust between partners in public-private partnerships, therefore the development of mutual trust can be promoted only after opportunistic behaviors are restricted and even eliminated.

### III. Consequential variables for mutual trust in public-private partnership

According to the Transaction Cost Theory, mutual trust was required since failure of group to assume their responsibilities put all partners under the condition of inequality and at risk (Williamson, 1985). Trust in partnership was conducive to future cooperation, thus growth in mutual performance, relationship equality, satisfaction and better relationship between both parties were achieved to deliver organizational performance serving interests of both parties. Cooperation in public-private partnership is not only limited to single cycle process with organization, instead, it is one interactive cycle process in which the organization must establish long-term, multiple relationship in its internal departments and other outside organizations (such as enterprises and public sectors) so as to complement resources and advantages of partners for achieving win-win outcome. However, the success in cooperation

and reaching the desired goals hinges on not only complementarity of technologies and resources of partners but also trust between partners and the degree of trust. This means that partners must build mutual trust so that commitment is valid, long-term good cooperative relationship can be fostered and the desired goals can be achieved. Thus consequential variables (cooperation effects) from mutual trust in public-private partnership are performance, commitment and long-term relationship.

When the degree of trust between partners is relatively low, governance costs will be higher, and management control mechanisms will become more formal (for example, contractual documents and lawyer's supervision are more detailed, meeting of board of directors is more frequent) so as to prevent opportunistic behaviors and other additional risks. Formal management control mechanism will incur additional transaction costs to partners. Mutual trust between partners dispels opportunistic behaviors of enterprises and helps adapt to the environment which is difficult to predict as well as makes it unnecessary to conclude detailed contract, thus reducing such transaction costs as governance costs and negotiation costs. Decrease in governance costs results in improving efficiency and cooperation performance. In public-private partnership, mutual trust between partners is one soft governance mechanism and covers the shortage of formal management control mechanism; moreover, it reduces perception about cooperation risks and increases willingness of partners to invest in specific and general assets. It also promotes cooperation between organizations by reducing transaction costs and eliminating opportunism. Thus mutual trust between partners lowers risks from opportunistic behaviors and transaction costs, thus improving performance in public-private partnership.

Partnership is built on mutual commitment. Commitment is one lasting desire for maintaining valuable relationship. In public-private partnership, commitment is partner's desire for making efforts in maintaining cooperative relationship. Commitment means recognition of the importance of cooperative relationship and the desire to sustain relationship as well as belief in expected values and interests brought about by such cooperative relationship. Lack of trust between partners will breed opportunistic behaviors and results in lack of credibility in commitments made by parties. Therefore, the higher is degree of mutual trust between parties, the stronger their mutual commitments are and the trustworthier they are. Empirical research showed that trust was an antecedent for commitment (Morsan, Hunt, 1994; Anderson, Weitz, 1989). This indicates that mutual trust in public-private partnership can directly result in effective commitment between parties.

Mutual trust between partners in public-private partnership affects tendency of long-term

relationship between parties from three aspects: (1) it reduces perception about risks relating to opportunistic behaviors; (2) it enhances confidence in public-private partnership and long-term relationship can address short-term inequality; (3) it lowers transaction costs in exchange relationship. According to research conducted by Williamson(1975, 1981), transaction costs can be understood as central transaction costs of the organization including the costs for concluding one agreement and making it satisfactory for both parties, that for adapting agreement to the expected circumstances and that for executing its terms. Comprehensive agreement covering long-term relationship is impossible due to bounded rationality, writing, negotiation and agreement execution costs. Only incomplete agreement is concluded at the most. More hazards from opportunistic behaviors occurred under such incomplete agreement since it was uneasy to realize suspension of relationship (Ganesan 1994). Mutual trust between both parties can mitigate hazards from opportunistic behaviors or get rid of opportunistic behaviors in the long-term relationship. Incomplete agreement in mutual trust relationship means that parties agree to adapt to the unexpected circumstances in a mutually beneficial way. For such trust relationship, it is likely that parties in public-private partnership deal with inequality by long-term solutions rather than short-term opportunistic behaviors. This suggests that trust reduces risks from opportunistic behaviors in long-term exchange relationship since partners can make long-term specific investments with fewer risks in the presence of trust. Furthermore, trust relationship may bring about lower transaction costs since incomplete agreement may be sufficient for exchange relationship. Therefore, mutual trust in public-private partnership mitigates risks from opportunistic behaviors, decreases transaction costs in exchange relationship and increases the possibility for building long-term relationship between partners.

### **3.2 Selection of research methods**

In terms of building abstract theory, researchers must develop one rigorous theory to seek confirmation from empirical observation so as to establish a testable theory, further test or revise the theory on the basis of various empirical researches (Lalman, Oppenheimer&Swistak, 1993). Finding a rigorous logic that can threads together both abstract theory and empirical experience so as to achieve empirical and theoretical complementation could be helpful in disclosing the problem solving direction and accumulate scientific knowledge and advancement. Based on this, this thesis is designed to build a conceptual model for mutual trust between organizations in public-private partnership by

further conducting test based on empirical data concerning the psychological rehabilitation program and developing complete scientific research process under the condition of complementary combination of abstract theory and empirical analysis in addition to seeking rigorous consistency of logical deduction with inference. Research methods adopted in this thesis include literature review, qualitative research and statistical analysis.

### **3.2.1- Literature review**

Literature review was conducted by historical narrative of relevant events and causal inference of process tracing in time sequence on the basis of previous data (Mahoney & Rueschemeyer, 2003); more rigorous research result and more research findings can be obtained through literature review. In this thesis, previous relevant research achievements in public-private relationship and trust are analyzed to define relevant research concepts and clarify correlation among concepts, summarize relevant arguments and grounds of argument based on current researches, structure and position research questions in this thesis, identify questions which were not fully addressed in previous researches, and put forward such research subject in consideration of theories in relevant fields.

### **3.2.2- Survey method**

Qualitative research focuses on small-scale, theoretically prominent, unique and targeted samples as typical research objects and usually collects data through natural observation, participant observation, open in-depth interview and focus group for overall exploration of social phenomena. It is “an interpretive understanding” activity of construct behavior and its meaning through interaction with research subjects. The conditions for qualitative research generally include an unfamiliar social environment, a situation without control and formal authority, low level of conceptualization and theory building background, description of complex social phenomena and setting a new concept and formation of new hypothesis.

This research is designed to explore the topics relating to mutual trust in public-private partnership and involves many dynamic and complex concepts; moreover, relevant operation principles of public-private partnership in practice are concepts under development, and all answers to many pending questions are obtained through gradual empirical induction. Therefore, this research breaks down and puts together variables which are crucial for mutual trust in public-private partnership and relations among variables on the basis of data analysis principles such as “scientific logic, interactive thinking, development code, naming, memo

writing, memo parallelism” proposed in the grounded theory. In this research, we have conducted case study of psychological rehabilitation program and have made semi-structure in-depth interviews with government and enterprise managers, project directors, administrative personnel, lecturers relating to psychological rehabilitation program so as to understand internal points of view on propositions covered in this thesis.

### **3.2.3- Statistical analysis**

The objective of statistical analysis is to centralize, extract and abstract the information hidden in mass chaotic data to find the inherent law of research objects. In practice, statistical analysis helps people make judgment to facilitate appropriate actions. Thus statistical analysis is applied at an extremely wide range. Data analysis can not do without external knowledge and judgment; formal statistical analysis technique is only one auxiliary means for helping people making judgment or inference. This research develops and modifies the conceptual model based on literature analysis and qualitative research, and then utilizes statistical analysis to validate the model. Statistical analysis in this research covers the following several steps:

- (1) Project Analysis: in questionnaire testing, it is necessary to conduct project analysis to examine feasibility and fitness of testing, its difficulty, discrimination and distraction.
- (2) Factor Analysis: this technique was initially developed by a psychologist in order to explain human behaviors and abilities by virtue of factor analysis model. In 1904, Charles Spearman published a thesis concerning factor analysis in the American Journal of Psychology. In the following 30-40 years, factor analysis theory and its mathematical foundations were gradually developed and improved. It was gradually recognized and accepted as one general statistical analysis tool by researchers. Since the 1950s, with the application of computers and the emergency of various kinds of statistical software, factor analysis has been increasingly applied to sociology, economics, medicine, geology, meteorology and marketing.

Factor analysis is aimed at describing interactive relations among multiple variables by concise and accurate method so as to assist researchers in the conceptualization of these variables (Gorsuch, 1983). Factor analysis can express the original data structure by fewer variables and retain most of the information available from the original data. Factor analysis has at least the following several functions:

Firstly, descriptive function: factor analysis turns numerous observed variables into several



simpler variables, i.e. the so-called general factors.

Secondly, hypothesis provisions function: factor analysis enables orderly arrangement of messy variables; such exploratory function helps develop new hypothesis and new theory. Generally speaking, if a researcher knows little about the number of underlying variables behind the observed data, and factor analysis is used as dimensionalities for exploring underlying variables, this kind of factor analysis is exploratory factor analysis.

Thirdly, hypothesis testing function: if the researcher's theoretical structure has been well-improved or others' theories are quoted, factor analysis can be adopted to test these theories and hypotheses. Such factor analysis is called confirmatory factor analysis.

This research incorporates two factor analysis methods and adopts exploratory and confirmatory factor analysis method.

(3) Structural Equation Modeling (SEM): it is one statistical method for addressing causal relationship. It effectively integrates two mainstream techniques -- "factor analysis" and "path analysis" -- in statistics and is widely applied to research on such fields as psychology, economics, sociology and behavioral sciences. It synthesizes statistical analysis techniques in econometrics, sociometrics and psychometrics. It also covers path analysis, factor analysis, multiple regression and analysis of variance.

Structural equation modeling is a new field in statistical analysis techniques. Its application started in researches published in the 1960s; however, its core concepts were proposed by relevant scholars and experts at the beginning of 1970s and rapidly developed in the later period of 1980s. However, they were not widely applied until the beginning of 1990s. We use three concepts including hypothesis testing, structural confirmatory, modeling analysis to explain the fundamentals of structural equation modeling.

#### ① Hypothesis testing

It is the first main connotation in structural equation modeling and also the core concept in behavioral science research. Methodologically, research hypothesis means that the researcher gives descriptive or temporary answers to relations among research objects and it is subject to test based on empirical data gathered by the researcher. For example, in linear relationship, the researcher's assertion that two concepts (or variables) are relevant is called alternative hypothesis expressed in  $H_1$ , while the hypothesis that two concepts (or variables) are irrelevant is called null hypothesis in  $H_0$ . Two hypotheses  $H_0$  and  $H_1$  constitute two opposite conditions for hypothesis testing and there is completely mutual exclusion and opposition relationship. The researcher can make final statistical decision only by proposing one critical value based

on a specific confidence level to determine the sample statistic value computed from samples to the extent that it is deemed relevant, in which case, the whole process is called hypothesis testing.

② SEM as a confirmatory technique

Structural equation modeling involves discussion about relations among one group of variables that may have latent causality or hierarchy in addition to mathematical, apparent relations. Both verification of causal relationship and confirmation of the internal structure of the scale rely on pre-research on the nature of variables and clarification of contents, which requires a clear description of hypothetical relations among variables and specific, structural hypothetical propositions proposed by the researcher for statistical testing. Structural equation modeling may be used to obtain rigorous statistical data for proving the existence of constructs (or abstract proposition).

③ Modeling analysis and comparison

With the above hypotheses testing and structural confirmatory function, structural equation modeling can structure a series of research hypotheses into a meaningful hypothetical model that is tested by statistical procedures. Adoption of modeling analysis is the third main feature of structural equation modeling. This thesis mainly covers two levels of modeling analysis. The first one is purely confirmatory process in which appropriateness of a single prior hypothetical model is evaluated, which is called confirmatory research; the second one is model generation in which one initial model is preset and a comparison with actual observation data is drawn. Necessary corrections and repeated estimations are made to arrive at an optimal model, which is called generation research. In sum, structural equation modeling still utilizes simultaneous equations to find solutions but it is not subject to strict hypotheses restrictions and allows measurement deviations in both independent and dependent variables. Structural equation modeling enables the researcher not only to address measurement errors in analysis but also analyze structural relations among latent variables. In this research, all latent variables cannot be directly measured and measurement deviations exist, but we still need to analyze structural relations among these latent variables, thus SEM is the relatively suitable analysis method.

Structural equation modeling is applied in the following six main steps:

Step One: hypothetical model. Theory or conceptual model proposed by the researcher is used to obtain research hypotheses suitable for SEM principles and construct a structural equation modeling to be tested.

Step Two: model definition. Hypothetical model tested by researcher is converted into LISREL-compliant model so that LISREL software can conduct analysis. It is necessary to compute discrimination of model in a highly prudential way so as to avoid failure in SEM execution.

Step Three: SEM execution analysis means parameter estimation and model testing. The most important work in this phase focuses on arranging research data into a data base suitable for SEM analysis.

Step Four: result analysis is designed to research and judge LISREL analysis result (test data accuracy).

Step Five: model modification is aimed at obtaining better data. If a model can not accommodate the data appropriately, it is necessary to modify and reset the model. One preferably fitted model always requires repeated testing; however, sometimes model modification is not necessarily because SEM analysis is based on theory, namely, theoretical considerations precede technical ones.

Step Six: in order to complete SEM analysis, the researcher must derive important parameter data from complicated LISREL statement, select correct technical indicators as the evidences of final analysis conclusions and prepare rational technical report.

The above six steps constitute the basic work of applying structural equation modeling to the research on a theoretical model. We combine LISREL software with SPSS in data processing.

### **3.3 Objects of study and sampling method**

This study seeks to deeply probe into mutual trust of public-private partnership and influencing factors. Sampling of extreme and abnormal cases and deep sampling methods are employed to select cases with rich information as objects of study, for collection of materials related to research issues. Sampling of extreme and abnormal cases can be defined as selection of special cases with high relevance to the research question and rich materials as objects of the research; deep sampling refers to the method of selecting those who show full interest (but not extreme) in the research phenomenon as subjects. In fact, the above two methods have the same sampling principle, however, deep sampling will select typical cases or those fully representative of research phenomenon, rather than selecting extreme cases, so as to avoid distortion of truth due to high abnormality (Patton, 1990). Since public-private partnership involves government, voluntary organizations and enterprises simultaneously, we should select typical cases with rich information as objects of this study respectively from the above three sectors.

Hence, as for government (with interview content code G), Disease Control Department of the Ministry of Health, Health Department of Shaanxi and Sichuan Province are chosen from policy-making departments as objects in this study; as for voluntary organizations (with interview content code V), West China Hospital and Mental Disease Control and Prevention Center of Shaanxi and Sichuan Province are selected as interviewees for this study. In corporate sector (with interview content code B), Xi'an Janssen, which has initiated psychological rehabilitation program in current stage, is chosen as object of this study. Finally, a total of 20 respondents are successfully interviewed. In general, the respondents are mostly senior decision-makers in public sector or enterprises related to the project, taking charge of supervision, strategic planning and operation of such project. Therefore, inherent concept of the research proposition can be interpreted from related comments and views provided by them.

This study, not only applies qualitative research to analyze and explore the research results, but also employs quantitative method to make up for limitations of qualitative approach, so as to present a most comprehensive analyzing process. Based on stratified sampling of random sampling, this study was conducted across post-earthquake psychological rehabilitation programs in Wenchuan Earthquake stricken areas of Sichuan and Shaanxi Province, and selected project administrators and executives as interviewees. The main reasons are: firstly, the government used to spend five to ten years or even longer on research, preparation and establishment of new public-welfare programs with allocation of immense national resources, while it did not necessarily produce good benefits.

Public-private partnership has pointed a new direction for China's public-welfare programs, and it will serve as an effective governance model for joint efforts of government and public to boost new public-welfare affairs. Wenchuan Earthquake in 2008 not only brought considerable impact on China in medical, social, economic and political terms, but also aroused huge enthusiasm of common public for social welfare. Public-private cooperative projects abound in quake-stricken regions in Sichuan and Shaanxi, so it is possible to investigate and study them intensively. Secondly, the author is familiar with senior management of some projects. With their assistance in investigation, most of project participants were willing to cooperate in conducting the research. Thirdly, the author used to study and work in Shaanxi for many years, enjoying a network of classmates, colleagues and students who are working for government, institutions and enterprises in Shaanxi. With their help, the majority of project staff were willing to cooperate in conducting the research and complete the questionnaire. Therefore, after investigating the group of administrators and

executives for post-earthquake psychological rehabilitation programs, a total of 234 valid and complete questionnaires were received.

### **3.4 Design of research tools**

As mentioned earlier, prior factors, such as relationship-specific assets, reputation, communication, and shared values, will influence mutual trust of public-private partnership. After mutual trust has been established, they may still impact on cooperation performance, mutual commitment and willingness to establish long-term cooperation between organizations. In order to verify this specific process, data of this study will be collected through survey method. Thus, the appropriateness of questionnaire design - the research tool, will directly affect the findings. The most critical part of questionnaire design is to define measurement variables. Construction of measurement system consists of three steps: construction of measured items, correction of measured items and verification of measurement variable system.

#### **3.4.1- Design of the trust measurement scale**

Based on our previous elaboration and review of trust, it can be seen that a relatively complete system of trust measurement variables has already been established in existing research literature. Therefore, measurement variables for trust in this study will be chosen from existing relevant literature. We follow the three dimensions of benevolence, integrity and ability, put forward by Mcknight et al., for trust measurement. Liedtka, J. M et al., 1998; Henry Adobor, 1999; Korthuis-Smith, W. A.,2002; Avinandan Mukherjee & Prithviraj Nath, 2003 et al, have established measurement system for trust. Therefore, measurement variables are selected from it to constitute the set of preliminary measurement variables for trust in this study, as shown in Table 3-1.

**Table 3-1 The set of measurement variables for trust and the source**

No.	Measured item	Source
Trs1	We can rely on our collaborators to help us solve problems.	Liedtka, J. M et al., 1998
Trs2	Our collaborators are mainly interested in their own interest.	Korthuis-Smith, W. A., et al., 2002
Trs3	Our collaborators are honest and sincere to us.	Henry, et al., 1999
Trs4	Our collaborators make us feel that we can fully trust them.	Avinandan, et al., 2002
Trs5	Our collaborators are sincere to fulfill what they have agreed.	Henry, et al., 1999
Trs6	Our collaborators have not given us sufficient consideration.	Avinandan, et al., 2002
Trs7	Our collaborators tend to treat us in a fair and just manner.	Korthuis-Smith, W. A., et al., 2002
Trs8	Although we do not blindly agree with the decisions by our collaborators, we still believe they have good intentions.	Liedtka, J. M et al., 1998
Trs9	We feel that our collaborators have capitalized on our vulnerability.	Henry, et al., 1999
Trs10	We reckon that our collaborators can fairly meet common expectations.	Henry, et al., 1999

### 3.4.2- Design of prior variable measurement scale

As mentioned above, prior variables include contextual factors, quality factors, supervisory control mechanism and opportunism. Among them, contextual factors contain relationship-specific assets, ability contrast and communication among collaborators; quality factors include reputation and shared values. For the measurement system of prior variables, we have referred to the measurement system put forward by Morgan, R. M. & S. D. Hunt, 1994; Liedtka, J. M et al, 1998; Dyer, Jeffrey H. & Singh, Harbir, 1998; Henry Adobor, 1999; Bennett, Roger & Helen Gabriel, 2001; Wakefield, R. L., 2001. Measurement variables are selected from the above to construct the set of preliminary measurement variables for prior variables, as illustrated in Table 3-2, 3-3, 3-4, 3-5, 3-6, 3-7 and 3-8.

**Table 3.2 - The set of measurement variables for relationship-specific assets and the source**

No.	Measured item	Source
Rel1	For the cooperative project, our collaborators have invested necessary specific physical assets (for example, location adjacent to us, tailored equipment and tools.).	Jeffrey et al., 1998
Rel2	For the cooperative project, our collaborators have invested necessary specific human capital (for example, competent managers, committed engineers, specialists.).	Jeffrey, et al., 1998
Rel3	Our collaborators and us have made considerable investment in our working relationship.	Henry, et al., 1999
Rel4	Our collaborators have spent necessary time on face to face communication with us.	Morgan, et al., 1998
Rel5	Change of our collaborators is extremely detrimental to our operation.	Roger, et al., 2001
Rel6	Our collaborators have implemented necessary training for staff involved in cooperative projects.	Roger, et al., 2001

**Table 3-3 The set of measurement variables for ability comparison and the source**

No.	Measured item	Source
Pow1	Capabilities and resources of our collaborators and us are complementary in some respects.	Liedtka, J. M et al., 1998
Pow2	Our partners can give us enough care and support.	Roger, et al., 2001
Pow3	The degree of interdependence between our two parties is symmetrical.	Henry, et al., 1999
Pow4	The termination of relationship with our collaborators will not jeopardize our operation.	Henry, et al., 1999
Pow5	To find a new partner requires only limited input.	Henry, et al., 1999
Pow6	The partners have not made any excessive demand.	Morgan, et al., 1994

**Table 3-4 The set of measurement variables for communication and the source**

No.	Measured item	Source
Cmu1	Our collaborators have exchanged a lot of detailed information on related business with us.	Morgan, et al., 1994
Cmu2	The collaborators are ready to provide us with secret intelligence.	Liedtka, J. M, et al., 1998
Cmu3	We often conduct personnel exchange with our collaborators.	Roger, et al., 2001
Cmu4	We often carry out activities related to public-private cooperation with our collaborators.	Roger, et al., 2001
Cmu5	We often organize informal or social activities with same-level staff from our partners.	Roger, et al., 2001
Cmu6	We often carry out formal exchange with our partners.	Henry, et al., 1999
Cmu7	Information exchange between partners and us is open.	Henry, et al., 1999
Cmu8	Information exchange between our collaborators and us is rapid	Henry, et al., 1999
Cmu9	Information exchange between collaborators and us is of high quality.	Henry, et al., 1999

**Table 3-5 The set of measurement variables for reputation and the source**

No.	Measured item	Source
Rep1	Our collaborators boast high-level quality management.	Roger, et al., 2001
Rep2	Our collaborators are financially safe.	Roger, et al., 2001
Rep3	Our partners can attract and retain talented employees.	Roger, et al., 2001
Rep4	Our collaborators have a good long-term future.	Roger, et al., 2001
Rep5	Our collaborators are responsible for the environment.	Henry, et al., 1999
Rep6	Our collaborators are innovative.	Henry, et al., 1999
Rep7	Our collaborators can make use of their assets wisely.	Henry, et al., 1999
Rep8	Our collaborators are often covered by the press and other media.	Roger, et al., 2001



**Table 3-6 The set of measurement variables for share values and the source**

No.	Measured item	Source
Sha1	Our collaborators share similar code of ethics and organizational culture with us, based on which rules and regulations are established and enforced.	Liedtka, J. M et al., 1998
Sha2	Our collaborators and we can mutually respect and understand each other's corporate culture.	Wakefield, R. L, 2001
Sha3	Our collaborators will not provide incomplete product information or disclose our information to a third party.	Morgan, et al., 1994
Sha4	Our collaborators and us have a clear mind of common goals.	Liedtka, J. M et al., 1998
Sha5	Our collaborators and us understand the result that the other party intends to achieve.	Liedtka, J. M et al., 1998
Sha6	Misunderstanding often arises during our cooperation with collaborators.	Henry, et al., 1999

**Table 3-7 The set of measurement variables for supervisory control mechanism and the source**

	Measured item	Source
Mag1	In the initial stage of cooperation, our collaborators and us employ formal control means to ensure smooth implementation of cooperative projects.	Wakefield, R. L, 2001
Mag2	With the implementation of cooperative projects and increasing understanding of each other, our collaborators and us tend to use more informal control methods.	Wakefield, R. L, 2001
Mag3	Our cooperation is in strict accordance with the terms of the contract.	Roger, et al., 2001
Mag4	Our partners and us can freely share ideas, feelings and visions.	Henry, et al., 1999
Mag5	Through mutual consultation of selecting control methods, the rights of control of both parties are symmetrical.	Henry, et al., 1999
Mag6	With the deepening of cooperation, our collaborators and us feel that formal control methods are increasingly lacking flexibility for management of cooperative projects.	Henry, et al., 1999

**Table 3-8 The set of measurement variables for opportunism and the source**

No.	Measured item	Source
Opp1	In order to get our support, our collaborators may slightly alter facts.	Roger, et al., 2001
Opp2	Our collaborators may promise something, yet later they fail to honor it.	Henry, et al., 1999
Opp3	Our collaborators pay attention to reading restrictive affiliate provisions of contract.	Henry, et al., 1999
Opp4	Under exceptional circumstances, our collaborators only consider their own interest.	Henry, et al., 1999
Opp5	Our collaborators may use our information without permission.	Henry, et al., 1999
Opp6	Our collaborators may benefit by capitalizing on our problem.	Wakefield, R. L., 2001

### 3.4.3- Design of measurement scale for consequence variables

Based on the previous discussion, it can be seen that consequence variables of mutual trust between enterprises in cooperation and innovation strategic alliance contain: cooperation performance, commitment and long-term relationship. For the measurement system of consequence variables, we have referred to the measurement system put forward by Henry Adobor, 1999; Bennett, Roger & Helen Gabriel, 2001; Korthuis-Smith, W. A., 2002; Avinandan Mukherjee & Prithwiraj Nath, 2003. Measurement variables are selected from the above to construct the set of preliminary measurement variables for consequence variables, as illustrated in Table 3-9, 3-10 and 3-11.

**Table 3-9 The set of measurement variables for performance and the source**

No.	Measured item	Source
Prf1	Managers of both parties honor their promises.	Henry, et al., 1999
Prf2	Our collaborators know much about our needs.	Henry, et al., 1999
Prf3	Our business contact with collaborators is not subject to strict supervision.	Korthuis-Smith, W. A. et al., 2002
Prf4	Overall, we are very satisfied with the performance of our collaborators. Overall we are very satisfied with the performance of our collaborators.	Korthuis-Smith, W. A. et al., 2002
Prf5	Transaction cost of the exchange is lowered.	Avinandan, et al., 2003

**Table 3-10 The set of measurement variables for commitment and the source**

No.	Measured item	Source
Cmi1	Our collaborators are willing to maintain valuable relationship with us.	Henry, et al., 1999
Cmi2	We consider the cooperative enterprise as an important partner.	Korthuis-Smith, W. A. et al., 2002
Cmi3	Our key staff have established personal friendship with key staff of our collaborators.	Korthuis-Smith, W. A. et al., 2002
Cmi4	We are willing to do business with our collaborators on oral commitment, which would be put in written form later.	Avinandan, et al., 2003
Cmi5	The confidence of cooperative parties is enhanced.	Avinandan, et al., 2003

**Table 3-11 The set of measurement variables for long-term relationship and the source**

No.	Measured item	Source
Lon1	Both parties are willing to use long-term solutions to address short-term unfairness.	Korthuis-Smith, W. A. et al., 2002
Lon2	Our collaborators and us are willing to build relationship with more input.	Korthuis-Smith, W. A. et al., 2002
Lon3	The cooperation between us two parties is more and more effective.	Avinandan, et al., 2003
Lon4	We can count on our partners to provide reliable information, advice and assistance.	Avinandan, et al., 2003
Lon5	We expect to maintain long-term cooperative relationship with our collaborators.	Roger, et al., 2001

### 3.5 Data analysis methods

After the questionnaires were collected, data entry and check were conducted. First of all, data from collected questionnaires were input into Excel. Due to the large number of entries and complex data, we adopted the method that one person is responsible for data entry while another, in this case the researcher, checks aside, to ensure correctness of input data and reliability of data entry process. Among the 267 collected questionnaires, we further deleted 33 with incomplete data or obvious inclination, so the final number of valid questionnaires was 234.

We used SPSS17.0 and LISRELS8.51 to conduct statistical analysis of such data, which was carried out by the following three steps. The first step was to use item analysis of SPSS to differentiate responsiveness of subjects for each latent variable, so as to determine whether the item should be retained or not; then Principal Components Analysis of Exploratory Factor

Analysis was conducted to examine Construct Validity of the scale, Reliability Analysis was conducted to examine reliability and stability of the scale; in addition, confirmatory factor analysis of LISREL was also carried out for confirmatory analysis. The second step was to use confirmatory factor analysis of LISREL to implement relationship analysis of latent variables on partial models, and to test our hypotheses. The third step was to use confirmatory factor analysis of LISREL to implement relationship analysis of all latent variables on the whole model, and to judge the matching degree of the whole model.

The basic idea of factor analysis is to find common factors in order to achieve dimensionality reduction. In the process of looking for common factors, whether to use priori information differentiates exploratory factor analysis and confirmatory factor analysis. Exploratory factor analysis refers to the process of using statistical software to conduct factor analysis on certain principles, totally based on data, without prior idea of influencing factors, and finally producing factors. While confirmatory factor analysis makes full use of priori information; on the basis of knowing factors, it tests whether collected data can produce effect in a predetermined mechanism. Therefore, exploratory factor analysis mainly seeks to find out the number of factors influencing observed variables, and relevance between factors and observed variables; while confirmatory factor analysis mainly aims to determine the fit ability of predetermined model of factors into real data. Before doing exploratory factor analysis, we do not need to know how many factors will be used, and what the relationship between factors and observed variables is; while confirmatory factor analysis requires prior hypothesis of factor structure, what we will do next is to examine whether it is consistent with observed data.

Exploratory factor analysis attempts to reveal the internal structure of a set of relatively large variables. Researchers assume that each indicator variable can match a certain factor. This is the most common form of factor analysis, without any priori theoretical form. As a result, factor structure of data can only be deduced by perception through factor load. Confirmatory factor analysis tries to examine whether factor number and factor load are consistent with pre-established theoretical anticipation. Indicator variables are selected based on a priori theory, and factor analysis is done to check if they are as expected. The priori assumption of researchers is that each factor can correspond to a specific subset of indicator variables. Confirmatory factor analysis requires at least an assumption of factor number in a model; sometimes it may also anticipate which variables are dependent on which factors. For example, the researchers seek to test whether observed variables, which represent latent variables, belong to one category.