Academic Staff Integration
in Post-Merger Chinese
Higher Education Institutions
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ABSTRACT

The aim of this research was to discover the factors that affect academic staff integration in post-merger Chinese higher education institutions, especially the cultural dimension of that integration.

The case study institution is a provincial university in China which was formed ten years ago through the amalgamation of three institutions. These institutions were located in the same city and offered similar programmes in teacher education and training. Two of them were similar in terms of academic strength and organisational age and had programmes leading to both undergraduate and postgraduate qualifications. The third was a much newer institution offering three year undergraduate non-degree programmes.

The case study consists of two parts: a pilot study based on the analyses of in-depth interviews, and the other is based on the statistical analysis of survey questionnaires. The empirical understandings generated by the pilot qualitative investigation, as well as an interpretation of the phenomena of staff integration in a framework of institutional organisation theory led to the development of hypotheses concerning the central research problem. The quantitative study of survey data was used to test these hypotheses.

The study has proved useful both within an institutional theory framework for understanding the cultural aspects of academic staff integration and through the combination of qualitative and quantitative research methods in the case study.

The results indicated that among a number of possible factors affecting academic staff integration, three have been empirically identified as vital. These are cultural compatibility between the pre-merger institutions, transparency of management and school level upgrading. It was also shown that the type of merger could exert an impact on the success of academic staff integration.

Currently, hundreds of universities and colleges in China and other countries have undergone their own merger processes. How to integrate the staff of pre-merger institutions successfully in order to achieve synergy has become a common challenge not only for the management of individual institutions, but also for entire higher education systems. The research findings may provide some useful guidelines for overcoming the challenges.

Keywords: higher education, merger, institutional theory, organisation, culture, academic staff, integration
Tämän tutkimuksen tavoitteena oli, tarkastella mitkä kulttuuriset tekijät vaikuttavat akateemisen henkilöstön integraatioprosessiin yhdistymisprosessin läpikäyneissä kiinalaisissa yliopistoissa.


Tämä tutkimus on osoittanut että institutionaalisen teorian viitekehys sekä laadullisen ja määrällisen tutkimusmenetelmän yhdistäminen tapaustutkimuksessa toimivat hyvin akateemisen henkilöstön integrointumisen kulttuurisista piirteistä tutkittaessa.

Useiden akateemisen henkilöstön integrointumiseen vaikuttavien tekijöiden joukosta kolme teki jää voitiin empiriisesti osoittaa erityisen tärkeiksi. Näitä ovat kulttuuristen erojen vähäisyys, johtamisen läpinäkyvyys ja korkeakoulun arvoaseman (statuksen) parantaminen. Tutkimus myös osoittaa, että yhdistämistyypit vaikuttavat akateemisen henkilöstön integraatioprosessiin.

Sadat yliopistot Kiinassa ja muualla maailmassa ovat läpikäyneet yhdistymisprosessiin. Siksi siitä, miten yhdistettävien korkeakoulujen henkilöstö voidaan onnistuneesti integroida synergiaan saavuttamiseksi, on tullut eräs keskeisistä korkeakoulujen johtamisen haasteista sekä yliopistojen että korkeakoulujärjestelmän tasolla. Tämän tutkimuksen tulokset ja niistä tehdyt johtopäätökset voivat toimia hyödyllisinä suuntaviivoina onnistuneille yhdistämisperusseille.

Avainsanat: korkeakoulutus, yhdistyminen, institutionaalinen teoria, organisaatio, kulttuuri, akateeminen henkilöstö, integraatio
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1 Introduction

1.1 Problem background

1.1.1 Higher education mergers

In the context of combining organisations, the term “merger” has two meanings (Vaara, 2000, p.82). In a broad sense, it refers to any form of organisational combination, while a more specific understanding separates mergers from acquisitions. The higher education literature does not seriously make such a distinction. Merger, in a higher education context, is normally defined as a distinctive form of inter-institutional cooperation (G. Harman, 1989; Lang, 2002a, 2002b), characterised by irreversible totality (Mulvey, 1993). It describes a transfer of ownership in which one or both entities legally disappear and re-emerge as a new entity which has common ownership of the assets of the former organisations. In this respect, Goedegebuure (1992, p.16) writes:

A merger in higher education is the combination of two or more separate institutions into a single new organisational entity, in which control rests with a single governing body and a single chief executive body, and whereby all assets, liabilities, and responsibilities of the former institutions are transferred to the single new institution.

I am aware that using the term institution to be a synonym of organisation could confuse readers who hold the institution as a core concept of institutional theory. In the context of this dissertation, the former refers to any post-secondary education organisation, such as a college or a university. Normally higher education institution or its abbreviation HEI is used to explicitly express the meaning.

Although mergers of higher education institutions (HEIs) date back to the late 19th century in North America, they had not become an important governmental tool to reform public higher education system worldwide until the 1960s. During the period between the 1960s and the early 1980s, Australian and British governments used mergers to create non-university sectors, polytechnics in the UK and colleges of advanced education (CAEs) in Australia, and then to solve the problems of fragmentation and duplication within the sectors (Donaldson, 1975; G. Harman, 2004; L. Meek, 1988, 1991; Pratt &
However, the late 1980s and the 1990s saw a demise of the binary higher education systems of both countries, and mergers were used again to transform their higher education into unified systems (G. Harman, 1986; L. Meek, 1991; Temple & Whitchurch, 1994). In Europe, in one way or another, most mergers have been related to non-university sector reforms, such as the Dutch HBO reforms in the 1980s and 1990s (Goedegebuure, 1992), restructuring of Norwegian colleges in 1994 (Kyvik, 2002) and establishment of polytechnics in Finland from 1991 to 1995 (Ministry of Education of Finland, 2002). As an exception, the mergers in Germany were not related to the non-university sector, but were employed in an experiment with the Gesamthochschulen (comprehensive) universities during the 1970s (Cerych et al., 1981). Since the 1990s, institutional mergers were also used in developing countries, such as South Africa (Habib & Parekh, 2000) and China (Chen, 2001).

1.1.2 Studies on higher education mergers

Along with the increasing number of mergers, it has not been surprising to see a growing literature on mergers in higher education. Most researchers search to find implications of, or prescriptions for a successful merger. What makes some mergers more successful than others? There is no general answer to this question, partly because of the ambiguity of measuring success. First, mergers in public higher education are often a governmental policy approach, and successful implementation generally refers to the achievement of desired goals. In a higher education context however, neither policy nor organisational objectives are clear (Daumard, 2001; Å Gornitzka et al., 2002). Hence, the performance can not be as clearly measured and judged as that in private firms. Second, the judgment of success or failure is up to individual's subjective perceptions or perspectives (H. M. Ingram & Mann, 1980, p.12). In policy implementation studies, two contrasting approaches lead to different ways of evaluating implementation. From a top-down perspective, the judgment of policy implementation attaches great importance to initial policy objectives. The assessment is concerned with the extent to which the actions conform to what should be done. By contrast, the bottom-up approach is “action centred” (Hill, 1997, p.139), in which the attention of evaluation is given to the “behaviour or actions of groups and individuals and the determinants of that behaviour, and seeks to examine the degree to which action relates to policy, rather than assuming it to follow from policy” (Barrett & Fudge, 1981, p.12-13). Given the
particular context of a merger, it may be impossible to have a unified standard to assess them, because “[t]he answer depends on to whom you are talking, the stance and perspective that you take” (Skodvin, 1999, p.75).

In the higher education literature on mergers, there exists an important fragmentation of research interests. A general distinction can be drawn between studies at a system level and at an institutional level. The studies concentrating on the system level include three perspectives. The first perspective focuses on an explanation of why mergers take place and how they are initiated. Studies of this type normally embrace a broad observation of mergers at national level or across nations (K. Harman & Meek, 2002b; Patterson, 2000; Skodvin, 1999). Although the motivations for mergers vary, the common interests for governments to initiate mergers include the pressure to achieve economies scale, administrative efficiency and academic benefits. Following these motivations, the second perspective concerns the structural changes resulted by mergers at national system level (Crane, 1976; Gamage, 1993; Goedegebuure, 1992; G. Harman, 1986, 1989, 1991; Kyvik, 2002; L. Meek, 1991). The central research question is: How mergers have been used as a governmental policy tool to tackle system-wide problems. The studies in the above two tracks pay special attention to the diversity of mergers. Therefore, the studies under the third perspective attempt to understand different inter-institutional arrangements by creating classifications of mergers, and some discuss the relations between merger forms and merger outcomes (Beerkens, 2002; Goedegebuure, 1992; G. Harman & Harman, 2003; Lang, 2002a, 2002b; Patterson, 1997, 2001; Samels, 1994).

Studies at the institutional level mainly consider two stages of the merger process. The first stage is the decision making process. The major concern of the studies dealing with this process relates to a synergistic potential or mutual growth. These points are exemplified by most articles in the book “Merging Colleges for Mutual Growth” (J. Martin & Samels, 1994b). The second stage is called post-merger process. The studies dealing with this process are usually concerned with the evaluation of academic performance as a result of mergers (C. D. Martin, 1996), and the investigation of problems and difficulties in the processes of merger implementation (Curri, 2002; Eastman & Lang, 2001; G. Harman & Harman, 2003; K. Harman, 2002; Hatton, 2002; Mildred, 2002; Norgååd & Skodvin, 2002; Pick, 2003; Skodvin, 1999). In contrast with the studies focusing on the first stage, the research on the second stage often concerns synergy realisation. Efforts are made to discover the factors that may lead to success or failure of a merger.
1.1.3 Human sides of merger in higher education

The present study focuses on the post-merger integration process within a higher education institution, because the actions of this process are essential to the final outcomes of a merger. The existing studies on post-merger integration have revealed a number of factors influencing the outcomes of merger, such as time, the nature of merger, the characteristics of participating institutions, organisational structure, management and leadership, cultural differences, academic goals, disciplinary identity, and financial investment (Curri, 2002; Currie & Newson, 1998; Eastman & Lang, 2001; G. Harman & Harman, 2003; Kyvik, 2002; Lang, 2002b; Norgård & Skodvin, 2002; Skodvin, 1999). In one way or another, the authors share a common understanding that a successful merger ultimately depends on the achievement of administrative and academic efficiency, and that the achievement of efficiency requires the effective participation and integration of staff members.

The importance of the human side of mergers has been largely discussed in the studies of industrial mergers (Buono & Bowditch, 1989; Cartwright & Cooper, 1996; Daniel & Metcalf, 2001; Davy et al., 1988; Marks, 1982; Schweiger et al., 1987). On the one hand, merger often results in the lack of certainty and fuels fears, anxieties and disruptions among employees. These can prompt immediate and chronic problems in employees’ attitudes and behaviour, and ultimately undermine organisational performance (Marks, 1982, p.41). On the other hand, merger is always associated with mixing and changing of people’s values and cultures. This seriously threatens the stability of accustomed norms, work behaviours and relationships by which an organisation is underlined. In a higher education setting, the human factors have been believed to be more important (Eastman & Lang, 2001, p.176). Because academics (who constitute the core of higher education institutions) have higher level of autonomy and freedom than employees in industrial sectors, the support of academic staff is especially important in higher education mergers. Otherwise, they can generate great tensions and resistance for change. As Mildred (2002, p.50) quotes from one of his interviewees, “A good amalgamation is one that most of the staff want”.

On this understanding, a growing higher education literature has focused on the synergy of human resource, with particularly respect to academic staff. “Academic staff” is a synonym for “faculty”, which is the term most commonly used in an American context. Academic staff shall be limited to regular,
full-time personnel at HEIs whose regular assignments include instruction, research as principal activities. The members normally hold professional qualifications. "Academic staff" does not include the staff whose major responsibilities are administratively or logistically related. Those leaders of academic departments whose administrative tasks are no more than their academic assignments, are considered here to be “academic staff” members.

As has been shown by a number of studies, the academic staff integration has proved crucial in the post-merger process in one way or another. As an investigation of ten cases of merger in American higher education has indicated, the most troublesome part of a merger in higher education is to integrate academics (Millett, 1976). Other cases evidence that opposition from academics is one of the standard reasons why college mergers fail (O’Neil, 1987). A similar point is also mentioned by Skodvin (1999, p.77) in observing experiences in the US, Australia and in several Western European countries. In the mergers in South Africa, the importance of the perceptions and emotions of the staff involved in mergers has also been highlighted (L.R. Becker et al., 2004; D. Hay & Fourie, 2002; H. R. Hay et al., 2001; Millett, 1976). If facing the lack of integration of academics, HEIs are unlikely to be transformed through merger into the desired shape.

1.1.4 The cultural dimension of academic staff integration

Integration as a consequence of merger “refers to a combination of elements that results in wholeness” (Lajoux, 1998, p.4). The academic staff integration refers broadly to the process of combining academic staff members of pre-merger institutions. It should be understood within an overall framework of post-merger integration. Shrivastava (1986) distinguishes between post-merger integration at three levels: procedural, physical, and sociocultural, meaning that procedures and policies are to be standardised, office accommodation is to be shared, and there is to be one set of values or culture. Among those, the most critical type of integration is cultural integration and it takes the longest time.

Similarly, the rector of Wuhan University of Science and Technology in China, Wang Weifu (1998) has identified three layers of integration in a Chinese context: superficial integration, deep integration, and kernel integration. Superficial integration refers to administrative combination. Such integration normally takes place at the initial stage of merger, for example, seeking unity of leadership, institutions, regulations, finance, and planning, which forms a
departure point for the integration of deeper layers. Deep integration is associated with restructuring of disciplines and specialisations, for example, the amalgamation of academic departments and institutes. Kernel integration refers to the integration and redefinition of institutional concepts and institutional cultures. He maintains that the kernel integration is the mark of the ultimate, substantial merger. For the integration of academic staff, the integration on the kernel or cultural layer is essential (K. Harman, 2002; Norgåd & Skodvin, 2002). It is not only a process of mixing people together, but also a process of redefinition of academic values and beliefs. The combination of the two cultures is crucial not only for staff integration, but also for the ultimate outcome of the merger. As Norgåd (2002, p.26) puts it, “[T]he success of merger will to a large extent be dependent on the degree of integration between established traditions and cultural identities of the staff”. This study therefore will examine the integration of academic staff with a particular emphasis on the cultural dimension. Although the importance of cultural integration has been reported by studies both in the business sector (Buono et al., 1985; Cartwright & Cooper, 1993b, 1996; Sayan Chatterjee et al., 1992; Datta, 1991; Olie, 1994) and in the higher education field (K. Harman, 2002; Norgåd & Skodvin, 2002), few conclusively document the causal effects or provide theoretical explanations. There appears to be a need to explore the mechanisms of cultural integration with respect to academic staff members.

The scale and scope of staff integration differ in different forms of mergers. Many merger studies in the business realm make a clear distinction between related and unrelated mergers (Carroll & Harrison, 2002; Cartwright & Cooper, 1996). A merger between partners in similar areas requires the integration of human resources to a larger extent, because there is considerable organisational overlap. In contrast, in mergers between partners in unrelated areas, there is little necessity for staff members from separate organisations to work together. In the higher education context, Skodvin (1999) implies that the degree of complexity is higher in related mergers, in that the conflicts between staff members of pre-merger institutions are salient. The present study is to investigate the integration of staff members of pre-existing institutions within the same units, and, therefore, related mergers will be the central focus. Nevertheless, even in the mergers of institutions in different academic areas, some sort of overlap in terms of human resources is unavoidable, but the life of the majority of staff will usually be less affected by the organisational combination.
1.2 China as an interesting case

Most merger studies in the higher education literature place their empirical emphasis on western countries. Chinese practices have been left out of the international research attention, despite of the fact that the largest number of higher education mergers in the world took place in China. This corroborates Hoffman’s (2004) point that some of the biggest developments in higher education that also concern most people go largely unnoticed in most places because we spend a lot of time talking in empirical terms about what catches our attention, not what’s significant.

Since 1990 there have been more than 400 cases of merger in China, involving nearly 1000 public colleges or universities (The numbers of merger took place in each year are described in Figure 1). Almost 1/5 public universities and colleges are post-merger institutions (Q. Zhou, 2003a). Given this situation, how to deal with the emerging issues in the merger processes has become an urgent challenge for Chinese higher education. In the meantime, the large scale and diversity of mergers in Chinese higher education may offer ample information and data for empirical studies. Studies on Chinese mergers may hopefully enrich universal knowledge and experience, relevant to merger practices and studies elsewhere.

Figure 1. The numbers of mergers from 1990 to 2005

Source: Chinese Ministry of Education (www.moe.edu.cn)
The higher education system of the People’s Republic of China was established in the 1950s. The construction of the socialist higher education system in that period was fully based upon the Soviet pattern towards a highly centralised and planned model. Among many other things, merger was used as an important policy tool to restructure the higher education system. The emphasis of that round of merger was to regroup and realign HEIs and faculties in order to reduce needless duplication. It included the geographical reallocation of higher education institutions and regrouping of faculties (departments). For instance, the departments of architecture of all the universities in Shanghai were integrated into Jiaotong University, while the automobile specialisations of all the universities in the country were annexed by Tsinghua University. As a result, the early HEIs developed mainly along specialisation lines, while only a few multi-disciplinary universities were retained. In addition to the Ministry of Education and provincial governments, central industrial administrative departments were running HEIs to cultivate professionals for their own respective fields in keeping with centrally planned economic system.

However, since the market economy was adopted at the end of 1970s, the system characterised by narrowly specialised professional institutions proved incapable of adapting to the new challenges.

Among the major flaws were: Bureaucratic barriers erected by excessive central, local and departmental administrative controls; conflicting departmental interests; extremely narrow range of curricula; small school size; needless duplication among universities and faculties; non-communication between production, study and research; and heavy-handed government control that proved excessively manipulative. (L. li, 2004, p.69)

In line with the new requirements arising from the social transformation towards a market oriented economy, the government launched a new round of reforms to restructure higher education. The restructuring followed the guidelines of joint construction, transfer of jurisdiction, cooperation, and merger. In 1998, the former vice premier Li Lanqing reformulated the principles of restructuring of higher education in eight Chinese characters, namely “gongjian” (joint jurisdiction), “tiaozheng” (adjustment), “hezuo” (cooperation) and “hebing” (merger) (Y. Zhou, 2002, Dec. 15). This was merely a rhetoric change.

“Joint construction” means that central government department and local authorities should run HEIs in cooperation, though one party normally takes more responsibilities than the other depending on a bilateral agreement. The
first example of this change dated back to 1992 when the Ministry of Education and Guangdong provincial government agreed to co-administrate Zhongshan University and Huanan University of Science and Technology.

“Transfer of jurisdiction” can be understood as a by-product of the governmental institutions reform. In this reform, most ministries are not allowed to run HEIs, and consequently, the colleges and universities originally affiliated to these ministries have either been decentralised to local authorities or been handed to the Ministry of Education.

Both of the above strategies have largely reinforced the role of HEIs in regional development by mobilising the enthusiasm of local authorities. Though these jurisdictional changes are not directly liked to inter-institutional cooperation, many of the HEIs concerned have been involved in organisational alliances and mergers later on. For instance, in 1995, Tongji University was co-administrated by both the State Education Commission (renamed as Ministry of Education in 1998) and the Shanghai Municipal government. Subsequently, the university merged with the Shanghai Institute of City Construction and Shanghai Institute of Construction Material Industry in 1996 and continued to merge with the Shanghai Railway University in 2000. This is the so-called “Tongji” model.

“Cooperation” has two meanings. First, it refers to inter-institutional cooperation among HEIs geographically close to each other. The cooperation usually takes shape on a voluntary basis, although it has to be approved by the competent authorities of all partners. What is different from merger is that all participating institutions in the form of cooperation are independent entities. Second, it means the collaboration between HEIs and non-education organisations. With enterprises and research institutes taking part in higher education provision, the relationship between HEIs and society is strengthened.

Among those strategies, “merger” as a means of improving economies of scale and creating strong comprehensive universities brings the most substantial change in higher education. Even though some pilot merger projects started in the mid 1980s, the essential steps were not taken until the early 1990s.

The primary reasons for the reform were to achieve economies of scale, lower cost, greater efficiency, and improve academic quality in higher education. It was based on the belief that mergers could achieve cost-effectiveness and increase efficient use of educational resources by increasing student-teacher ratios, reducing redundancy of work positions, and sharing facilities (Zhao, 1998). To a large extent, it was related to Professor Min Weifan’s scholarly proposal on the preferred model for Chinese higher education development.
Min received his Ph.D. in Economics of Education from Stanford University in 1987 and joined the faculty of Peking University in 1988. Min Weifang is currently the Executive Vice President and the Chairman of University Council of Peking University.

The period between 1977 and 1985 saw a rapid expansion of higher education in China. The number of institutions increased from 404 to 1,016, and the number of enrolled students increased from 625,319 to 1,703,115 (Hao & Long, 2000, p.614). Despite the rapid growth, the average number of enrolment per institution remained at less than 2000, and more than one third of institutions had a student enrolment of less than 1000 (Min, 1994, p.7). This sparked a theoretical debate about what was the best way to improve the higher education system. Min identified two development models, namely external expansion (waiyan) model and internal enhancement (neihan) model (Min, 1990). In the first model, expansion of higher education was achieved mainly by establishing new institutions. This model reflected the development of higher education in the 1980s. According to the second model, higher education would be developed by exploiting internal potentialities of existing institutions and increasing internal efficiency. The second model attaches importance to economies of scale and cost-effectiveness. As quoted by Min from a survey that “higher education institutions with enrolments of 2,000 or less had average unit costs considerably higher than those with enrolments of 4,000 students or more” (Min, 1991, p.158). Min considered the model of internal development much suitable for China’s reality.

Min’s proposition drew special attention from the Ministries of Education and Finance, because the idea of internal development seemed to have a potential to solve the dilemmas confronting the ongoing reforms, particularly the tension between higher education expansion and financial constraints. Consequently, the governmental reforms on higher education in the 1990s followed the internal development model (H. Wang, 2000). As the Outline for Education Reform and Development in China put it: “the development of higher education must be carried out in the way of internal development in order to improve internal efficiency”. In 1994, the Implementation Opinions of “The Outline for Education Reform and Development in China” further stressed this model as the primary strategy to optimise higher education structure and distribution. Merger has also been considered as a important means to implement some relevant governmental policies, such as “211 Project” concerning building key point or first class universities, “Enrolment expansion” and “Government administrative reforms” (Wan, 2003).
1.3 Research focus

This study focuses on the mergers from the middle 1990s as a background. Compared to the mergers of public HEIs in Europe and Australia, the Chinese experiences bear some distinctive characteristics. One of the most important characteristics is concerned with the role played by the government. Although most mergers in Australia as well as in Europe have been initiated by governments, the Chinese reforms have been even more dominated by the governmental intervention, with individual HEIs playing a minimal role. Whereas the bottom-up approach helps merger partners create consensus and common identities, the top-down approach tends to create more tensions and conflicts between staff members (Norgåd & Skodvin, 2002; Skodvin, 1999, p.69-70). Similar observations have been made in a study of joint ventures, that cultural transformation is more problematic for employees who have not self-selected themselves for change (Cartwright & Cooper, 1989). This may explain why many staff members in post-merger Chinese HEIs have been reluctant for the mergers and have reacted only with dampened enthusiasm. One Chinese university president has argued that the tension among staff members is the principal problem in the further development of merged HEIs and noted that “the merged institutions have to pay a cost for that” (Sui, 1998, p.73).

A number of Chinese research articles have dealt with staff conflict with a particular focus on cultural integration (X. Li, 2001; F. Liu, 2002; Song, 2002; Zhang & Li, 2003), but their glimpses into the subject could hardly be considered to have been rigorous studies. The treatment of cultural factors in the Chinese merger literature has been under criticism for lacking a broader theoretical focus and empirical evidences (Q. Li, 2003). The gap in theory development is also a challenge for the research into mergers in higher education worldwide, as it has been argued that most studies are prescriptive and anecdotal in character and bear theoretical flaws (Eastman & Lang, 2001; Goedegebuure, 1992; Mulvey, 1993). Cultural differences between pre-merger groups have been of interest to merger researchers. With notable exception, however, very little is known about theories underlying the processes of interaction of different cultures with respect to academic staff members. The lack of theoretical and empirical research on the subject became a direct motivation in the direction to conduct the present study.

In terms of empirical location, this study only investigates a provincial post-merger university. Currently, most merger studies in China give much attention
to national institutions, run by the Ministry of Education or other central ministries. However, one should be aware of the fact that the national institutions only account for less than one fifth of the total mergers. The study of the provincial university will hopefully generate pertinent implications that guide a large number of regional institutions to deal with merger problems.

1.4 Research problem and questions

Based on the above considerations, the central research problem has been formulated as follows: What affects academic staff integration in post-merger Chinese higher education institutions, especially in the cultural dimension?

To be able to address the main research problem, the following research questions have been formulated:

1. How can the cultural dimension of academic staff integration in post-merger HEIs be interpreted theoretically?
2. What factors may possibly affect academic staff integration according to this theoretical framework?
3. What types of merger can be identified in Chinese higher education in comparison with mergers in other higher education systems.
4. How can the theoretical assumptions concerning the factors affecting academic staff integration be verified by empirical data?

1.5 Focus of observation

The basic observation unit of this study is the academic department. Academic department generally refers to a division of a higher education institution that is responsible for a given subject. Department here refers to department-like units, which might also be called divisions, colleges, schools and faculties depending on the contexts and traditions of educational administration. In the Chinese context, HEIs traditionally consisted of only two levels of administrative structure, institutional (central administration) and departmental (academic departments). Since 1997, most universities have gradually adopted a three-level system, adding colleges (faculties or schools) in between. The structural change has been seen as a result of learning from international experiences. The change has also been attributed to the result of mergers, which
expanded the scale of individual institutions and demanded for a new administrative structure.

In the case study university I investigated, for example, all the pre-merger institutions had two layer administrative structures, namely the central administration and the academic department. The establishment of college level in between was used as one of the strategies to implement merger. The post-merger colleges were formed through the amalgamation of pre-merger departments that were in similar academic areas. Within each college, there were several departments. In practice, however, the post-merger colleges functioned more like the previous departments. The administrative role of the college deans was almost the same with that of the departmental directors before merger. In the post-merger college, the power of departments was quite limited. The departmental directors’ administrative roles were constrained, with a principle focus on every day academic activities. In this study, “department” generally refers to the unit where administrative activities directly related to the academic staff members take place, such as formal performance evaluation and promotion. In the case investigated, the department has different meanings in the pre-merger institutions and in the post-merger university. In the pre-merger institutions the department refers to academic departments, while in the post-merger university the department refers to colleges.

The reasons to focus on the department level are twofold. The first reason is quite general. In a large organisation, such as a university, people tend to communicate with others within the same department, in that they have not only closer work relations but also share common problems and experiences. These common problems and experiences reinforce people’s identity with their specialized department, at the expense of integrating with other departments in pursuit of an overriding objective. A paradox in grouping activities at different levels of aggregation in organisations is that the more homogeneity and sense of common identity grouping creates within departments, the more difficult it may consequently be to achieve integration between departments. (Child, 1984, p.112)

Second, in the specific context of merger it is too broad to talk about integration at the institutional level, not only because the substantial staff integration must take place at the departmental level, but also because the forms of merger may vary across departments within one post-merger institution.
Within departments, my main interest is not the interpersonal issues but inter-group relationships, though the empirical observation has been made through individuals. Specifically, the academic staff members from each pre-merger institutions are treated as a group.

1.6 Limitations and delimitations

To understand the emergent phenomenon of academic staff integration in a post-merger context is an extreme challenge. There has been little research to deal with this subject either theoretically or empirically. Even the concept of academic staff integration has not been clearly defined. Therefore, some delimitations and limitations should first be clarified.

First, the study has been delimited to a narrow focus. The integration can be seen from a variety of perspectives. The emphasis of this dissertation specifically relates to the importance of the cultural dimension of the process of post-merger integration with respect to academic staff, because some existing studies have evidenced that the cultural integration is the crucial phase in mergers. In the mean time, the other aspects of merger, such as the financial and economic aspects, have been excluded from the research focus.

Second, even though an institutional framework for understanding the research problem has been established in this study, it is still a challenge to have a scientific understanding of the concepts of institutions (especially informal institutions), which are key conceptual elements in the institutional framework.

The original intention of this study was to develop an effective instrument to measure the concept of institution, especially the informal/internal institution. A general challenge to the application of institutional theory might be a lack of support by empirical measurements of the concept of institution. Some studies attempt to measure institutional concepts, but focus mainly on the formal aspects of the institution. In these studies, the measurements of “institutions” are often replaced in equations by some sort of counting of the numbers of documents and organisations, such as the studies on formal organisation rules (X. Zhou, 1993), changes in the formal organisational structure (Tolbert & Zucker, 1983) and organisation populations (P. Ingram & Inman, 1996).

This focus on formal institutions perhaps reflects the fact that formal institutions may be easier to measure than informal institutions. Coming up with an empirical proxy which measures all these dimensions of informal institutions in a post-merger context is clearly not possible. It would be extremely difficult,
for example, to quantify the different types of norms or conventions. This may, in fact, explain why measures of informal institutions have not previously been included in the quantitative-oriented research literature.

As there are no ready-made instruments for measuring informal institutions, this study has tried to simplify the concepts of institutions by emphasising most relevant elements. For instance, the informal/internal institutions have been treated as organisational cultures. When understanding the institutional environment, only the change of academic level of a school has been considered.

The simplification of complex concepts of institutions is particularly relevant to the quantitative part of the research for the purpose of developing measurement instruments. However, it may also reduce the particular strength of institutional theory to some extent.

Third, this study only investigated one post-merger university. The choice is mainly due to the limited time. To study more mergers would require much more time for making arrangements and gathering data than the time permitted for completion of a PhD study. Although the conclusions and implications of this study may hopefully be relevant to other mergers in Chinese higher education, veracity and precision still need to be confirmed by further studies. As the mechanism underlying the phenomenon may be different from one context to another, readers should be cautious in the generalisations they make from the conclusions of this study.

Fourth, even in the context of the case study university, the soundness of the conclusions could be challenged due to the small sample data. The study here is rather experimental.

Finally, since all data used in this analysis were self-reported, there are potential limitations in terms of inconsistent operationalisation of concepts, intentional and unintentional misrepresentation, and tendencies towards reporting socially desirable answers.
1.7 Structure of the doctoral dissertation

1. Chapter 1
   Introduction

2. Chapter 2
   Methodology

3. Chapter 3
   Qualitative case study (Pilot study)

4. Literature review

5. Chapter 4
   A theoretical approach

6. Chapter 5
   Hypotheses

7. Chapter 6
   Forms of merger

8. Chapter 7
   Measures of Culture

9. Chapter 8
   Operationalisation of variables

10. Chapter 9 and 10
    Statistical analysis

11. Chapter 11
    Conclusions
2 Methodology

This chapter explains the research strategies, designs and methods used to accomplish this study. It provides the reader with an overview of the research and how it has been methodologically conducted as well as the underlying rationales behind it.

2.1 Research strategies and choice of case study design

Yin (1994) has summarised five different ways of undertaking social science research, namely experiment, survey, archival analysis, history, and case study. The choice of each research strategy depends on the forms of research question; the control that investigator can exercise over actual behavioural events, and the extent of focus on contemporary events (Table 1).

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question</th>
<th>Requires control over behavioural events</th>
<th>Focus on contemporary events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>how, why</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Survey</td>
<td>who, what, where, how many, how much</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>who, what, where, how many, how much</td>
<td>no</td>
<td>yes/no</td>
</tr>
<tr>
<td>History</td>
<td>how, why</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Case study</td>
<td>how, why</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

Source: Yin (1994, p.6)

The main research question of this study is: “What factors affect the integration of academic staff in post-merger Chinese HEIs?” As these factors have neither been clarified by existing knowledge nor by practical experience, the “what” question here, in the first instance includes an exploratory investigation. Such an integration is normally conducted when the existing knowledge base is poor and the goal is to develop pertinent propositions and hypotheses for further inquiry. According to Yin (1994), any of the five research strategies can be used to conduct research, depending on specific situations. My study
focuses mainly on contemporary events—mergers and the merger processes cannot be affected by researchers. Therefore, experiment and history strategies may be excluded. Given the fact that few existing documents or studies concerning the problems in question are available, a case study approach seems to be a suitable choice. As Rossman and Rallis (1988) note that a case study can be used when the researcher seeks to understand the deep meaning of an individual’s experiences and how he or she articulates these experiences. Nevertheless, the theoretical bases and previous experiences in mergers elsewhere will shed light on the understanding of phenomena in a particular case.

On the other hand, the research question also implies an effort to seek causal links between the “factors” and consequences in staff integration, which leads to an explanatory study. According to Yin (2003), case study research can be applied to broad areas of inquiry, including ones with a quantitative orientation. A particular advantage of the application of the case study methodology to the current research lies in its capacity to explain context-bound causal relations, such as the research questions to be tackled in this study.

In summary, the merit of case study here is that this research strategy makes use of multiple sources of evidence, such as interviews, surveys, documents and archival records.

Case studies can be single or multiple case designs, and, within these two types, there also can be unitary or multiple units of analysis. Therefore, there are four main types of case study design, namely (1) single-holistic case, (2) single-embedded case, (3) multiple-holistic case, and (4) multiple-embedded case, as presented by Yin (1994) in a 2 X 2 matrix (Table 2).

Table 2. Basic types of designs for case studies and underlying rationales

<table>
<thead>
<tr>
<th></th>
<th>Single-case designs</th>
<th>Multiple-case designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holistic (Single unite of analysis)</td>
<td>TYPE 1</td>
<td>TYPE 3</td>
</tr>
<tr>
<td>Embedded (multiple unites of analysis)</td>
<td>TYPE 2</td>
<td>TYPE 4</td>
</tr>
</tbody>
</table>

Source: Yin (1994, p.39)

I decided to employ an embedded single case study design in my study in order to gain a deep and comprehensive understanding of focused issues in a single post-merger university and the variations among the subunits within
this university. The case study university, which was formed through merger of three institutions in 1996, is administrated by a provincial government in north China. The choice of this case was mainly determined by three principles of case selection suggested by Yin (1994, p.77), namely convenience, access, and geographic proximity. The location of this university is close to my place of residence place in China. Of most importance, my previous experience as a public servant in the Education Department of this province and especially the experiences as a staff member in the university make the case accessible to me. With the university, the observation concentrates on the mergers of academic departments.

2.2 Use of mixed research methods

Unlike some researchers who treat qualitative data as priority in the case study (Gomm et al., 2000), Yin (1994, p.14-15) stresses that the case study does not necessary exclusively follow qualitative methods. Rather mixed methods may sometimes be a preferable solution.

Research methodology literature tends to indicate a correspondence between research questions and methodological designs. The choice of a quantitative or a qualitative method is dependent on whether a study is looking for causal links or for deep understandings (Newman & Benz, 1998, p.2). The research question of the present study involves both.

First of all, the question appears to infer a quantitative approach, since it informs causal relationship, in which the staff integration can be read as a dependent variable, while the factors are independent ones. The quantitative nature is likely to lead the research to be conducted in a deductive way—from theory to hypotheses, then followed by an empirical test. One of important preconditions for using the quantitative method is the availability of relevant theories. Theories refer to “a set of organically connected propositions that are located at a higher level of abstraction and generalization than empirical reality, and which are derived from empirical patterns and from which empirical forecasts can be derived” (Corbetta, 2003, p.60). However, there is an absence of well-formulated theories concerning the research problems in this study. Therefore, a qualitative study was applied to help develop theoretical hypotheses. In order to verify these hypotheses and specifically to identify key factors at work, a quantitative strategy is needed.
The attempt to incorporate both qualitative and quantitative methods into a single research is always a challenge. An extensive body of literature on research methodology sharply divides the two methods according to their philosophical beliefs between interpretivism and post-positivism. Quantitative studies emphasise the measurement and analysis of causal relationships between variables, often associated with population generalization. Qualitative methods allow for the articulation of many truths in meaningful social actions, stressing how social experiences are created and given meanings (Denzin & Lincoln, 2003, p.13). Despite of the dichotomy between qualitative and quantitative research strategies, I agree with Newman and Benz (1998, p.xi) that “the two philosophies are neither mutually exclusive (i.e., one need not totally commit to either one or the other) nor interchangeable (i.e., one cannot merge methodologies with no concern for underlying assumptions)”. It follows that studies at operational level are located at different points of a continuum between qualitative and quantitative. This is consistent with Creswell’s (2003, p.4) vision that while traditional paradigms of social science research exist on two opposing stances requiring either quantitative or qualitative approaches, “the situation today is less quantitative versus qualitative and more how research practices lie somewhere between on a continuum between the two”.

Creswell (2003) develops a framework for research design (Figure 2), which is very useful for researchers to locate their studies in methodological settings. Although it partly reflects a deterministic philosophy, my study is not intent to make broader generalisations. Rather I believe that the meaning of the causality can only be interpreted within its specific context. As such, the study finds its root in pragmatism in the middle of the continuum. For pragmatists, un-

**Figure 2. Framework of research design**

<table>
<thead>
<tr>
<th>Epistemologies</th>
<th>Objective</th>
<th>Subjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social science paradigms</td>
<td>Post-positivism</td>
<td>Pragmatism</td>
</tr>
<tr>
<td>Inquiries</td>
<td>Quantitative</td>
<td>Mixed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from Creswell (2003)
derstanding problem is more important than being committed to any one sys-
tem of methodological philosophy (Creswell, 2003, p.12). The question here, therefore, is not whether the two sorts of methods can be linked during study design, but that it should be done.

The advantages of using mixed methods for social science research have been argued and evidenced by a number of researchers (Creswell, 2003; Miles & Huberman, 1994, Chapter 3; Newman & Benz, 1998; Tashakkori & Teddlie, 2003). Among those, the convergent view is that the two methods are complementary and compatible with each other. For instance, Newman and Benz illustrate that mixed methods have strength by their self-correcting feedback loops (Figure 3).

**Figure 3. The structure of social science research**

![Diagram of social science research structure](source: Adapt from Newman and Benz (1998, p.21))

For a range of purposes, there are three main ways to conduct studies with mixed methods. These are sequential procedures, concurrent procedures and transformative procedures (Creswell, 2003). In sequential procedures, the research seeks to elaborate or expand the findings of one method with another. Concurrent procedures are often used by those researchers who are attempting to obtain a comprehensive analysis of the research problem. In transformative procedures, researchers use a theoretical lens as an overarching perspective embracing both qualitative and quantitative data.
2.3 Study design

For this study, sequential procedures are more suitable. The sequential strategy includes three models: sequential explanatory, sequential exploratory and sequential transformative. This study takes a sequential exploratory approach, which is characterised by “an initial phase of qualitative data collection and analysis, which is followed by a phase of quantitative data collection and analysis” (Creswell, 2003, p.215). The qualitative approach is used to explore the issues concerning staff integration in mergers and inform tentative hypotheses. The quantitative methods are used for testing these hypotheses. Basically, my study was conducted in two stages, as described in Figure 4.

Figure 4. The procedures and methods of the case study

First, a single-case pilot study was conducted. According to Yin (1994, p.74), pilot study is neither a rehearsal nor a pre-test of the final study, but, rather, it helps “an investigator to develop relevant lines of questions—possibly even providing some conceptual clarification for the research design as well”. The pilot study here serves three purposes: (1) to test the feasibility of research questions and the relevance of research focus; (2) to develop preliminary hypotheses or propositions; (3) to provide a basis for research design in the next stages. The primary data are acquired from in-depth interviews, documents and archives.

Based on the intuitive and empirical understandings from the pilot qualitative investigation, I have tried to interpret the phenomena of staff integration
in a framework of institutional organisation theory, relying heavily on existing research literature. Yin (1994, p.32) has stressed the importance of using theoretical framework in case study, irrespective explanatory, descriptive, or exploratory; “The use of theory, in doing case studies, not only is an immense aid in defining the appropriate research design and data collection but also becomes the main vehicle for generalising the results of the case study”. In this study, the consistency between the empirical findings of the pilot study and the theoretical propositions informed by institutional organisation theory hopefully enhance the validity of the research. Some theoretical hypotheses were developed in this stage.

The next stage of empirical study is quantitative oriented. Based on the knowledge obtained from the previous research stages, survey questionnaires were designed and sent to all the academic staff members involved in mergers in the case study institutions. The analyses of quantitative data could then be used to testify the hypotheses. The conclusion part then analysed and compared both qualitative and quantitative empirical results, and developed comprehensive understandings of the research problem. A detailed description of research design about the pilot study will be presented later in Chapter 3 and about the survey study in Chapter 8.
This chapter is an exploratory attempt through a pilot case study to discover the factors, which influence academic staff integration in post-merger processes. It was conducted in the summer of 2004. The case study institution is a provincial university in northern China, which was formed in 1996 through the amalgamation of three higher education institutions: Institution A, Institution B and Institution C.

It should be noted that the development of both research questions and methodological strategy described in the previous two chapters are based heavily on the result provided by the pilot study, although this study is presented afterwards. Here I will not repeat the issues related to the formulation of research questions and methodology design. Rather, the exploratory nature of this pilot study has been emphasised. As such, the main objective of this chapter is to explore the richness and complexity of issues concerning academic staff integration in merger processes. The central research problem is: What factors influenced the academic staff integration in post-merger processes?

Although the central action of this pilot study was to generate concepts and ideas about a subject, such as staff integration, I already had some initial concepts about the subject beforehand. As Miles and Huberman (1994, p.17) put it, “Any researcher, no matter how unstructured or inductive, comes to fieldwork with some orienting ideas”. Some initial ideas derived from my previous experience. I used to work at a provincial education department, where I partly participated in the policy-making process with respect to the province’s higher education mergers. Because of this, I had the opportunity to contact, both formally and informally, a number of administrative and academic staff members who had been involved in the institutional mergers. Besides the experiences that provided my intuitive perceptions about my research problems, the existing literature also provided some conceptual knowledge about post-merger problems in higher education, though it is not enough to build a theory. It has been argued that there are a variety of factors that determine the outcome of merger, such as time frame, nature of merger, characters of participating institutions, organisational structure, management and leadership, cultural differences, academic goals, disciplinary identity, and financial investment (Curri, 2002; Currie & Newson, 1998; Eastman & Lang, 2001; G. Harman & Harman, 2003; Kyvik, 2002; Lang, 2002b; Norgååd & Skodvin, 2002; Skodvin, 1999).
These also have implications for understanding the phenomenon of academic staff integration. The preliminary ideas from both my experiences and the research literature constitute a rudimentary conceptual framework or a guideline to help look for most important data, avoiding diffuse information and data overloaded.

### 3.1 Research design

The pre-merger institutions of the case study university were located in the same city and offered similar programs in teacher education and training. The first two were similar in terms of academic strength and organisational age. The programs offered led to both undergraduate and postgraduate qualifications, but the majority led to bachelor degrees. By comparison with the Universities A and B, College C was a much younger institution and offered only three year, undergraduate non-degree programs. Departments in similar academic fields from the pre-merger institutions were merged into a single new department in the merged institution.

The pilot study was conducted primarily on the basis of in-depth interviews, but documents sourced from both governmental agencies and institutions’ archives concerning planning and implementation of the merger were also collected and used. In-depth interview is discursive and allows the researchers and respondents to explore an issue. This special nature determines the interview as important information source for this pilot exploration, and the interviews aimed to capture some of the richness and complexity of issues concerning academic staff integration in a post-merger university and derive propositions that are grounded in the detailed evidence and examples arising from the interviews. To reach this goal, the interviews needed to be properly designed. As the purpose of the pilot study was to explore something which had been fairly unfamiliar, it was hard to formulate concrete questions before going into the field. Thus, the interview questions were unstructured. Nevertheless, a preliminary interview protocol including some interview topics had to be prepared beforehand.

Generally speaking, there were three rationales for me to design interview topics: (1) the topics were expected to evoke “deep”, “detailed” and “vivid” responses; (2) the topics should provide the interviewees with the opportunity to give information that was not anticipated by the interviewer; (3) the information from interviewees should cover major subjects focused on by my study.
However, the questions used in the real interview processes did not always follow the initial design and was quite open ended. They were continuously modified along with the process of interviews. In addition, the questions varied across individual interviewees’ backgrounds and experiences. Despite the change of interview questions, the major interview questions have been summarised in Annex 1.

In all, 28 persons were interviewed, including government officials, university administrators and academic staff members from five academic colleges. The analysis was undertaken by using a qualitative data analysis software program—Nvivo 2.0.

### 3.2 Merger processes and outcomes

#### 3.2.1 Planning process

The merger of the three institutions was carried out as part of nation-wide reform to restructure the higher education system. These institutions were located in the same city, offered similar programs in teacher education and training. The provincial government saw such a distribution as irrational, in that many programs were replicated, and, therefore, educational resources could not be used efficiently. For this reason, the government intended to achieve educational efficiency and effectiveness by combining these three institutions.

In 1994, the government submitted a proposal to the State Education Commission (the predecessor of the Ministry of Education). According to the proposal, the number of higher education institutions in the province was expected to be reduced from 55 to 18 through mergers. The merger of the three teacher education institutions was an important part of the overall higher education restructuring in the province. Besides teacher education, the new merged institution would develop also some non-teacher-related programs. The primary objective of the merger was to optimise human and material resources, improve academic strength, enlarge the enrolment scale, and ultimately promote effectiveness and the quality of education.

The plan concerning the merger of the case study university was rejected by the State Education Commission in February 1995, but the provincial government did not give up. In the later 1995, the government submitted a renewed plan to the Commission. With follow-up efforts by the government, the new application was finally endorsed in 1996.
I was a bit curious about why the government was so active in its pursuit of this merger, even though it had been against the initial judgment by the State Education Commission. With this question I asked a university administrator from the Institution A who had participated in the planning process of the merger. His answer was simple: On the one hand, the government assumed this merger would bring some benefits, and it was also for the purpose of political achievements on the other. This implies that there was a lack of either rational or theoretical bases for the merger. The authorities’ motivation mainly derived from their subjective will.

3.2.2 Implementation process

In the initial stage of implementation, the administration of the new institution attempted to have a substantial combination through unifications of administrative structure, operation of academic activities and student management. In the mean time, they realised that the substantial merger could not be achieved over night, in that people could hardly accept such a rapid change in the beginning. They understood that it would take some time for people to adjust to a new circumstance. Thus, a transition period was planned. At the beginning of the transition, a single unified team of university leaders was established, the members of which had been in charge of the affairs concerning the pre-merger institutions. The role of the middle level administrators and academic department directors still remained intact with them continuing to take responsibility for their own business. The transition period lasted around two years.

During the transition, merger had been implemented gradually in two stages. The first stage was a trial that took place in 1997. That year, some selected academic departments joined together and became colleges. The second step followed one year later at which time the rest of the academic department combinations were completed. Generally, mergers at the college levels started with the combination of the equivalent departments from Institutions B and C, because the two institutions are geographically close to each other. One year later, the merger with the departments of Institution A took place. The colleges of natural sciences were located in the “east campus”, which is where the Institution A was located. The colleges of humanities and social sciences were distributed in the “west campus” where Institutions B and C were located.
In a quantitative sense, academic development could be improved the most through the sharing of educational resources. There was an immediate and significant increase in terms of the number of degree programs offered, the disciplinary areas covered, and in staff and student numbers. Despite the increase in human and material resources, the new university has suffered from a number of problems and challenges, such as an outflow of staff talent, conflict and friction between staff members and low levels of administrative efficiency. All of these are in one way or another linked to staff integration.

### 3.3 Integration of academic staff

Most interviewees described two interrelated phenomena concerning academic staff in the post-merger integration process.

First, academic staff integration required contact, preferably cooperation, between members of the pre-merger institutions. This cooperation mostly took place at the departmental level. Some interviewees regarded integration as being synonymous with cooperation or good interpersonal relationships. As one academic staff member said:

> Academic staff integration is a process that starts from developing working relationships and then moving towards interpersonal relationships. Given the experiences of past years, it is academic cooperation that leads to real academic staff integration. For example, I came from Institution B. Through conducting research projects and writing articles together, I have established very good relationships with those from the Institution A. Our relationship has gradually changed from one of academic partnership to one of friendship.

Second, academic staff integration was not only a process of mixing people together in their academic activities, but also a process of redefinition of academic values and beliefs.

When different cultures collide, it is inevitable to have “us and them” feelings. An agreement shared by most interviewees was that in order to achieve a consistency of academic values and beliefs, it is important to break down the “us and them” feelings. Without the “us and them” feelings, academic staff integration can take place spontaneously. However, eliminating cultural differences was not easy. As one university leader observed:
Conflicts are inevitable in the process of integration, due to the cultural differences between pre-merger partners, especially between Institution A and Institution B, both of which had around 100 years of history.

The interviewees’ perceptions of academic staff integration presented above appear to corroborate both Shrivastava’s (1986) description of post-merger integration, which consists of three levels, namely procedural, physical and sociocultural, and Wang Weifu’s (1998) categorisation in a Chinese higher education context, in which three level integration are described as superficial integration, deep integration, and kernel integration. For academic staff integration, the kernel or cultural aspect is the most critical (K. Harman, 2002; Norgåd & Skodvin, 2002). As a college dean claimed:

*Academic staff integration can only be achieved when there are consistent ways of thinking and behaving.*

In a post-merger process, there will usually be different and perhaps even contradictory cultural elements. Cultural integration of academic staff can be generally understood as a process of adjustment and growing mutual respect and acceptance between different groups of pre-merger institutions, in which different cultures and behaviours oriented to certain common solutions in a major area of academic life. According to Calhoun et al. (1994, p.62) cultural integration can be seen as a matter of degree—a measure of the similarities between the cultures shared by different pre-merger groups. The varying degrees of integration can result in different patterns of cultural integration or acculturation, such as integration, assimilation, separation and deculturation (Nahavandi & Malekzadeh, 1988). Integration is a process in which each pre-merger organisation loses its culture identity despite interaction and adaptation between the two cultures. In the mean time, both sides maintain many of their own basic elements of assumptions, beliefs and organisational practices. Assimilation is a unilateral process in which one dominating merger partner adopts the identity and culture of the other, while the latter accepts the culture and organisational practices of the former. Separation is likely to happen when the members of one partner have a strong desire to preserve their own culture and organisational practice by remaining separate from the dominant group. Deculturation involves a significant loss of cultural and psychological contact with both partners. This process is accompanied by feelings of alienation, loss,
and collective and individual confusion. This study will not examine the different patterns of acculturation, but it will generally consider cultural integration as the similarities between values and cultures held by different pre-merger groups.

Cultural integration can also be observed in terms of how the feelings of “us and them” have prevailed. Most interviewees more or less had such feelings and saw a considerable challenge to recover from the “us and them” syndrome. These feelings were much stronger for those from small communities. This “us and them” perspective often complicated some regular interaction. As one administrative support person complained:

In the past, in our “east campus”, people were quite familiar with each other, but after the merger, many strangers came in. Now it has become very important to deal with interpersonal relations. For example, one part of my work is to make arrangements for lecture schedules. As the new college is located in the “west campus”, the teachers originally from the “east campus” have to travel around 10 km in order to lecture to students. If the schedule forced them to travel frequently, they would be unhappy. For this reason, I try to schedule their lectures so that they spend as little time as possible in transit. However, when I pay much attention to this, the teachers originally from the “west campus” may feel that I am not treating them equally. They have such thoughts simply because I am originally from the “east”.

Without the merger, such consideration and arrangements would be quite normal, but now it is very difficult to establish a balance between the two sides. Conflicts cannot be avoided. Of course, we must adapt to the situation gradually, but the problem is still there after seven years.

### 3.4 Factors affecting academic staff integration

The findings from the interviews indicate that there are several factors which affect academic staff integration, namely leadership, objectives for development, regulative rules and regulations, geographic division, cultural differences, and forms of merger.
3.4.1 Leadership

The interviewees have frequently linked the subject of academic staff integration to leadership. As the core of an institution, leaders play a critical role in staff relations. Specifically the cohesion between top leaders is positively related to the cohesion between the members of staff they lead. In the context of a merger, how well the leaders of pre-merger institutions can be integrated is the key to successful staff integration for the whole institution.

Leadership is also important because to a large extent leaders decide on the objectives of academic development and determine the models of academic management. Integration of the leadership team is crucial for developing clear mission statements and effective management.

If the leaders had strong conceptions of “where I am from” and “who I am for”, that could have negative effects on the level of cooperation between academic staff members. Unfortunately, the experiences suggested that administrators felt it was more difficult to adapt to the new situation arising from the merger than academics. On one hand, there was strong competition between administrators, due to the limited number of administrative positions. On the other hand, many administrators prefer to form themselves into cliques, as a shortcut to ensuring their progress up the hierarchy.

3.4.2 Objectives for development

There was little doubt about the importance of academic development in the process of academic staff integration. Academic development refers to the increase in the status of academic prestige and the level of academic achievement. A clear mission statement on the subject of academic development is essential, because it can provide unified goals and guidelines for academic staff members. Collective efforts for academic advancement are important bases for creating a common vision. One university leader said:

*Academic staff integration takes place in the process of institutional development. Institutional development is an important factor in the process of integration. To meet the requirements arising from institutional development, academics must develop common visions, which fuse people together.*
This point was pushed further by another university leader, who thought that institutional development was based on a common vision shared by all staff members. In so doing, an institution must have its own objectives for development. Through implementing these objectives, the cohesion of staff members would be achieved. He stressed the importance of each academic unit (such as a college) having its own objectives, because colleges are more concrete and realistic communities for academic staff members than the university overall.

### 3.4.3 Formal regulations and management

Academic staff integration also needs strong administrative support as well as proper regulations. This point was clear in most interviewees’ responses. Only one interviewee seemingly held the opposite view. He believed that the integration was a spontaneous process:

> Academic staff members have their own ways to solve conflicts. Even though we have different beliefs, the differences do not affect our cooperation in, for example, writing papers and doing research. Neither do they affect our friendships. The divergence will be gradually eliminated as time elapses. The way to solve problems of cultural conflict should be more humanised.

It is true that integration is a function of time. In reality, however, most organisations lack patience. They try to shorten the process through regulative or administrative approaches. Although this interviewee thought that official commands or administrative arrangements did not work much towards staff integration, he accepted that poor management would have negative effects on the integration processes. In this respect, the role of administrative arrangements could not be neglected.

Most interviewees did not see a spontaneous integration process as being realistic, and believed that an effective integration required administrative intervention. For instance, an academic staff member commented:

> Academic cooperation is a voluntary activity. When we feel that we can get along with each other, we do research together. However, we are only together when writing papers; no one organises us. The cooperation in academic activities is loose. People join together when they have common interests. When their goals are achieved, they part. Although currently there are some incentives,
such as material rewards, to encourage academic performance and academic cooperation, there is little regulative guarantee. The college leaders intend to promote integration and develop academic synergy, but few relevant regulations have been provided in this respect. This is a problem which causes the loose cooperation and integration.

Administrative organisation and regulations are important because they determine the patterns of interactions (such as either cooperation or competition) between academic staff members of different pre-merging groups. In most cases, academic staff members expected effective administrative arrangement promoting cooperation in academic activities.

### 3.4.4 Geographic division

Almost all the interviewees in a college emphasised a causal link between geographic division and staff integration. This college was formed in 1997 through the merger of three similar departments in the Institution A, B and C, but still operated at two separate locations, “east campus” and “west campus” at the time this study was undertaken in June, 2004. The academic staff members working at the “east campus” were mainly those from the Institution A, while those at the “west campus” were predominantly from Institution B and Institution C. The interviewees in this college indicated that it was important to have all the staff members working in the same location. As one said:

> The integration is going too slowly and people are still unfamiliar with each other. Academic staff integration is heavily affected by geographical division: teaching and research operate separately, and there are only a couple of meetings where all academics can meet one another each semester. The integration should not be so difficult, because all the academic staff members have studied and worked in similar disciplinary areas. Although they are from different institutional cultures and traditions, these pre-merger institutions share some similarities. They were all teacher training institutions, and accordingly, their management styles and academic activities are not so different. Why does the integration proceed so slowly? The most important factor is that people are geographically separated and have few opportunities to meet face to face. We must work together physically, which is the precondition for integration. Otherwise, it is hard to talk about integration.
Working together physically is important because it can increase the extent to which academic staff members of pre-merger institutions interact with one another. Without intensified personal interaction, the integration of staff members of pre-merger groups especially at the cultural level is unlikely to be achieved (Eastman & Lang, 2001, p.186; Nahavandi & Malekzadeh, 1988). Nevertheless, intensified day-to-day interaction is only a necessary condition, not a sufficient one. In other colleges which have already had a substantial merger operating in same locations, the integration was also not a smooth process for many other reasons.

3.4.5 Cultural differences

The cultural differences (or cultural incompatibility) have been considered to be a major problem for post-merger integration in the merger literature (Bueno et al., 1985; Cartwright & Cooper, 1993b; Datta, 1991, p.283; Greenwood et al., 1994, p.239). The responses of interviewees in this case study have clearly reflected this point. The investigation also suggested that individuals’ habits and values derived from their previous institutions are often different. When academic staff members had to work and communicate with those from other institutions, they often realised that they had different ways of thinking and working. They saw cultural differences as essential obstacles to the process of integration.

Another cultural factor regarded as important for academic staff integration is concerned with study relations (xueyuan), meaning that people have studied at the same higher education institutions. It has been commonly agreed that those who graduated from the same institutions are more likely to integrate with each other, even though they originally worked for different institutions. The factor of xueyuan was significant in the case study university, because the majority of academic staff had graduated from the Institution A, or B, and in some disciplines, another comprehensive university in the same province. Many teachers now working together used to have a teacher-student relationship. For those having a teacher-student relationship, they could be tolerant to each other, even if they had heated arguments or quarrels. Without this former relationship, however, the results would be different.

In some cases, the collaboration in academic activities was based primarily on past teacher-student relationships. In the aforementioned college which was
operating on two campuses, for example, there was little cooperation between academic staff in the two campuses. However, there were some exceptions. One academic I interviewed was originally from the “west campus”, but had been mainly working in the “east campus” since the merger. The reason was, as he explained, that he received his Masters degree from Institution A and had a closer relationship and contact with his supervisor there. Some similar stories were repeated by some other interviewees.

When it comes to staff integration, the study relationship plays a double-edged role. On the one hand, to some extent it enhances cooperation across campuses and, hence, promotes integration. On the other hand, it cannot smooth the cooperation and integration process at large. Rather, such cooperation or integration on a basis of study relationships tends to form small groups or factions.

### 3.4.6 Forms of merger

For the creation of colleges in this merged university, most involved a merger of three partners, namely the Institution A, B and C. In a very few cases, only two partners were concerned. The five merged colleges studied were of two types. One type involved the merger between corresponding departments of Institution A and Institution C. It was more like a takeover. The other type was a hybrid one, which involved a consolidation between two almost equally strong partners, and as well as a takeover.

Some interviewees indicated that there was a relationship between merger forms and staff integration. They drew a distinction between a strong-weak merger and a strong-strong merger. They thought integration would be easier in the former than in the latter. In a strong-weak merger, the academic staff members in the dwarfed partner tended to have their cultures assimilated into those of the dominant partner.

### 3.5 Summary

This study has attempted to investigate the process of integration of academic staff members in a post-merger Chinese university. The findings show that cultural integration is the most crucial dimension in the process of academic
staff integration. The analyses of qualitative interview data imply the following tentative propositions:

1. The more the differences between the cultures of the pre-merger partners, the more will be the challenge for academic staff integration.
2. The longer two departments are substantially merged, the more likely it is that integration will be achieved.
3. The missions or objectives of academic developments affect academic staff integration.
4. Management may facilitate or impede academic staff integration depending on its styles and contents.
5. The intensive interaction between members of pre-merger groups is a necessary condition for academic staff integration.
6. The consequences of academic staff integration depend on the forms of merger.
4 Neo-institutional organisation theory — a theoretical approach used to interpret academic staff integration in post-merger higher education institutions

While there is little argument about the importance of human sides of post-merger integration, relatively few researchers have actually examined how the staff integration takes place and the research on this topic has suffered from some significant flaws. The difficulty in dealing with the subject is compounded by two major theoretical challenges in merger-related research. One is a general challenge in studies of mergers. Merger as a specific form of organisational change has been approached by varying organisation theories with analytical foci on either the macro or micro level. While the issues at both levels have been proved significant in merger processes, few approaches can incorporate them into a single frame. The second challenge confronts the particular studies of staff integration in post-merger organisations. The subject of staff integration has usually been approached by inter-group or organisational culture theory. Although both approaches have provided insights about how different groups of organisational members interact, there are few attempts to link the inter-group dynamics with the broad dynamics facing the members in organisational and environmental settings. In addition, these approaches have concentrated much on intangible features, while the role of formal structures and regulations is less considered. Although this study considers cultural aspect as fundamental to the staff integration, it does not suggest that culture should be analysed independently of formal rules.

Against these problems, this chapter tries to develop a conceptual framework, which can hopefully fill the gap and overcome the shortcomings of contemporary approaches to the human side of post-merger integration. Although there are a numerous organisation theories, most of these intellectual wisdoms have their strength in particular aspects but offer only loose insights in others. It is the recent development on a synergy of old and new institutionalism that merits my attention. The two schools of institutionalism respectively deal with micro and macro features of institutions. Combining the insights from both, there is a potential to bridge the two levels in organisational analysis. The combined institutional approach regards merger as both a response to the external
environment and intra-organisation dynamics, and therefore, it is useful for analysing the multifaceted characteristics of the process of staff integration.

Normally institutional organisation theory considers an organisation as a single, constant community, and the central subjects are about institutions in use. However, organisations in a merger context are quite unique. Merger discloses two dimensions of its meanings, one dimension that relates to combining separate organisations, and another that relates to giving birth to a new entity. In the former sense, staff in a newly merged organisation or unit can hardly be treated as a homogeneous community, due to the different values and cultures shared by groups of pre-existing organisations. To achieve solidarity, merged organisations always try to create common norms and values. In the latter sense, the merged organisation is always involved in actions to establish a new structure and identity with efforts towards conforming to legitimacy. In both respects, the central issues in a post-merger process appear to be changing or creating institutions. This particular situation challenges the conventional perspectives and opens up a new focus among institutional organisation studies. This chapter introduces neo-institutional organisation theory as an approach to explain academic staff integration in post-merger HEIs.

The chapter starts with a discussion of the theoretical challenges for merger research with respect to staff integration. It follows a presentation of both new and old institutional theories in organisational study. Some importance concepts related to institutional theory will then be clarified.

4.1 Theoretical challenges

4.1.1 A gap between macro and micro levels of analysis

In the corporate world, merger was traditionally perceived as a rational, strategic phenomenon (Brown, 1988; S. Chatterjee, 1986; Salter & Weinhold, 1979) to maximise profit, revenue and utility. As such, studies tended to draw insights from economic theories, such as new classic economics (Bradley & Jarrell, 1988) or game theory (Mossin, 1968). However, economic approaches have been regarded more later as being limited to analyses of the profit sector (Pfeffer, 1972) or as being ineffective as tools to explain the rationale of mergers in higher education (Curri, 2002; Goedegebuure, 1992). Since the 1980s, along with an enriched theoretical understanding of organisations, new approaches have been applied to merger-related research, mainly resource dependency the-
ory (See for example: Finkelsten, 1997; See for example: Pfeffer, 1972) and the organisational culture approach (See for example: Buono et al., 1985; Nahavandi & Malekzadeh, 1988; Reimer, 1985; Sales & Mirvis, 1984). Even though higher education mergers dated back to the end of 19th century in North America, the subject did not attract research attention until the 1970s, when merger was largely used as an important means to restructure higher education, with an intention, among other things, to stimulate the “mutual growth” (J. Martin & Samels, 1994a) of HEIs. As there have been relatively fewer studies of public sector, the approaches used in studies of industry mergers have been borrowed to the studies of mergers in higher education. For instance, economic theory has been used by Chambers (1983) and Patterson (2000), resource dependency theory has been used by Goedegebuure (1992), and network theory and the cultural approach have been used by Norgåd and Skodvin (2002). In higher education as in the corporate world, a common theoretical challenge is the gap exists between macro and micro levels of analysis.

Traditionally, studies on industry mergers have been conducted with reference to the issues at the macro and meso levels, such as strategic planning and inter-organisation relationship, while little attention has been given to the internal characteristics of organisations. Although the last two decades have seen an proliferation of studies focusing on internal organisation features, in particular cultural and human factors (Blake & Mouton, 1983; Buono & Bowditch, 1989; Buono et al., 1985; Cartwright & Cooper, 1990, 1996; Greenwood et al., 1994; Jemison & Sitkin, 1986; Nahavandi & Malekzadeh, 1988), the insights from a macro perspective have not been incorporated. This is also true in a higher education context. The higher education literature on mergers encompasses two separate but naturally interrelated standpoints. One views merger as organisational response to the external context (Goedegebuure, 1992, p.74), such as the pressure of competitive market forces, financial stringency, and national political and economic reforms. Researchers following such a perspective tend to emphasise the influence of the external environment and inter-organisational relationships on merger outcomes. Despite their acknowledgement of the influences from the “faculty floor”, such as staff members’ opinions, preference and emotional factors, they consider the role of these factors insignificant in the overall process of merger (Goedegebuure, 1992, p.75). In contrast, the second standpoint considers the staff integration the most troublesome part of the merger process (Millett, 1976; Norgåd & Skodvin, 2002; Skodvin, 1999), implying that the broad perspective is not enough to explain the internal complexities of merger. This perspective leads to a shifting attention on micro
features, such as organisational structure, management and leadership (Curri, 2002), cultural differences (Kyvik, 2002; Norgååd & Skodvin, 2002), and staff experiences (L.R. Becker & Associates, 2004). The Chinese literature on merger has mainly focused on the role of the government in initiating changes by means of changing policies and regulations. There is a notable lack of research on merger at the institutional level, for example, on institutional and individual behaviours in the merger process.

While studies along each line have advanced the knowledge of mergers in higher education, they have been conducted independently without learning much from each other. There appears to be a gap between the research about large-scale social units such as the state, competing organisations as well as external environments, and research about intra-organisational dynamics. What missing is a valid theoretical framework—in particular one that elucidates the interaction between macro and micro features of mergers. The existence of the gap however, is not accidental. It is strikingly similar to a common challenge in organisation studies—the lack of stronger links between research areas (Haveman, 2000) and between levels of analysis (Astley & Van de Ven, 1983).

In further making the point, a brief presentation of organisation theories is needed. However, I will not go into excessive details, as the review of organisation theories, from varying perspectives has already been portrayed in some classic literature (Haveman, 2000; Pfeffer, 1982; Robbins, 1990; W. R. Scott, 1992). Here, I only briefly review the development of organisational theories in terms of their analytical foci.

Organisational studies emerged at the turn of the 20th century marked by a American mechanical engineer’s work about principles of scientific management (Taylor, 1911). In the early period, the main stream of organisation studies was dealing with “mechanical efficiency” (Robbins, 1990, p.31). The theories of organisation were reinforced by the translation of Weber’s work on bureaucracy into English in the late 1940s (M. Weber & Parsons, 1947). Weber’s contribution to structural “bureaucracy” dominated organisation studies in the 1950s and 1960s. The rationale behind “bureaucracy” was that people were guided by rational ways of thinking, and that the purpose for building “bureaucracy” structures was to pursue maximised efficiency. However, it was argued that humans were not always optimal and only in some cases locally optimal. On this understanding, some new theories were developed, such as “bounded rationality” (March & Simon, 1958), old institutional theory (Selznick, 1949) and contingency theory (Calbraith, 1973). Nevertheless, most organisation studies in the pre-1970s period stressed internal organisational
life. Since the end of 1970s, others have come up with several new branches of organisation theory, such as new institutionalism (Meyer & Rowan, 1977), population ecology (Hannan & Freeman, 1977), and resource dependency (Pfeffer & Salancik, 1978). These schools have shifted attention to the relationship between organisations and environments.

In brief, organisational studies have successively fallen in two categories. The former primarily deals with organisational and individual behaviour, while the later treats the organisation as a unit with a particular emphasis on the relationship between organisations and environments. The gap between the two categories was observed by Pfeffer (1982) more than two decades ago. It is still the case at present, as indicated by Zhou’s (2003b) recent observation on the development of the sociology of organisations.

Pfeffer (1982) classifies major theories in organisation studies by two dimensions: the perspective on action taken and the level of analysis. The first dimension discriminates between theories based on assumptions of human behaviour: action can be seen as purposive, rational and goal oriented, as determined by external constraints, or as the emergent result of an almost random decision-making process. In the second dimension, a distinction is made between macro and micro focus, in specific words, between “theories that treat the organisation as a unity, as an undifferentiated collectivity, and those that deal with smaller social units within organisations” (p.12). By interpolating the two dimensions, Pfeffer obtains a matrix in which each organisation theory finds its niche, indicating that each theory has its strength in one aspect but loses insights in another. His classification of organisation theories also implies that there is a potential to improve our understandings of the real world of organisations, if we could go beyond the artificial boundary between macro and micro levels of analysis. As Rollinson, Broadfield and Edwards (1998, p.2) put it, “[u]nderstanding behaviour at either level requires taking account of factors at work at the other level”. On the one hand, it is difficult to explain the individuals’ behaviour without comprehending organisational structure as well as the context in which an organisation is situated. On the other hand, it is a challenge to analyse organisations as entities without attention to individual behaviours.

According to Pfeffer (1982), the institutionalisation theory is associated with the macro level of analysis. In this respect, it can be read as new institutionalism that has emerged since the late 1970s. New institutionalism tends to analyse populations of organisations on a more macro level, having the advantage of explaining the stability or isomorphism of organisations by paying
special attention to the relationships between organisations and environments. However, how organisations respond to and react with institutions remained a “black box” (Zuker, 1991, p.104). To open the box, some sociologists have called attention to a micro perspective, from which “individual and organisational actors return to the centre of institutional life” (Trommel & Van Der Veen, 1997, p.61). It represents a renewed interest in old institutionalism, which deals primarily with the internal dynamics of organisations, such as the institutionalisation processes within a given organisation, where the central subjects are power, coalition and competing values. The old institutional approach to organisation analysis, however, is missing from Pfeffer’s observation. If we incorporate both new and old institutionalism together, the insights from the combination may hopefully fill the gap between the two levels of analysis in the study of mergers, through explaining “how the characteristics of the organisational field interact with the internal characteristics of an organisation” (Greenwood & Hinings, 1996, p.1032).

4.1.2 Theories in understanding staff integration and their limits

The integration of academic staff can be understood as combining groups of academic staff members from pre-existing institutions, in a hope that they can work effectively in a new unit with higher synergy. In a broad sense, the academic staff integration is also a subject of inter-group relations. Generally, there are two major theories of inter-group relations (Brickson, 2000). The first is contact hypothesis theory rooted in psychology (Allport, 1954; Williams, 1947), which assumes that inter-group attitudes can be improved via contact between individuals from different groups. Although some positive results have been demonstrated by some empirical studies, the approach faces the difficulties in implementation, due to an absence of consideration of contextual factors, such as acquaintance potential, social and institutional sanction, and equal status between groups. Even in some cases, this line of analysis is totally inapplicable (Guttman & Foa, 1951).

The recent inter-group researchers tend to apply the second theory—social identity theory (Tajfèl, 1981, 1978), deriving from the perspective of social psychology. As such, conflicts have been traced theoretically to many forces, including intra-individual, psychodynamic, cognitive, interpersonal, institutional and cultural (Gaertner et al., 1993, p.2). Among those, a central concept is social identity; “groups are a source of social identity for people” (Brown, 1988,
The theory stresses the importance of categorisation and social identity in inter-group relations. Accordingly, individuals tend to categorise themselves into groups, which often result in favour towards the in-group and discrimination against the out-group. Categorisation of self and others into in-group and out-group defines people’s social identity and provides cognitive simplification. The social category can be, for example, nationality, political affiliation, and organisation. Within an organisation, it has been agreed, groups can be divided into two broad classes, namely identity groups and organisational groups based respectively on social-emotion and work task orientations (Alderfer & Smith, 1982). As the central task of this study is to investigate the pre-merger groups in same academic departments, focal group here should be identified as the identity group by their common historical experiences in the pre-existing institutions.

The theory further implies that inter-group conflicts derive from divergent social identities. Following this proposition, there are basically two approaches to reduce the conflicts (Gaertner et al., 1993). One is de-categorisation approach, which emphasises the importance of breaking down the salience of the two group identities. The other is re-categorisation, which proposes to reduce conflicts by constructing common identities. Schein (1988, p.181) claims that locating superordinate goals is an effective means of reducing inter-group conflict by creating common identities. Merger is both a process of de-categorisation and a process of re-categorisation. On the one hand, the social categorisation of groups based on previous work experiences becomes indistinct, due to a loss of, at least, legal organisational identities. On the other hand, the common tasks and goals in the new merged organisation create common categories or identities for members from separate groups. On this understanding, merger could naturally lead to staff integration, just a matter of time. In reality, however, most organisations can not be too so patient as to wait for a spontaneous integration over a long time.

Thus, there is a growing research interest in the inter-group integration in specific merger settings. Applying inter-group theory, Mottola et. al. (1997) examine the influence of merger integration patterns on staff expectations about the merger process. Although other studies usually have not directly employed inter-group theory, they rely heavily on the theoretical foundation provided by the social identity theory, in which the process of social identification is especially useful for examining the cultural differentiation in merger process.

These studies are usually underlined by organisational culture theory. While a cultural approach has been increasingly applied in organisation studies since
the 1980s, it also sheds particular light on an understanding of mergers. In the business field, most studies dealing with the subject of integration emphasise “how cultural differences may create problems in organisational change processes by highlighting such issues as the incompatibility of beliefs and values” (Vaara, 2000, p.83). However, no matter how the issues of “cultural fit” have been considered in the strategic planning stage, cultural conflicts are seemingly inevitable in a post-merger process (Buono & Lewis, 1988). The reason can be generally explained by the complexity of organisational culture. As culture is intangible, it is hard for it to be perceived by a planner in a rational way, especially during the courtship stage (Greenwood et al., 1994).

The increased interest in the application of organisational culture to mergers in higher education (K. Harman, 2002; Norgård & Skodvin, 2002) derives from almost the same situation that business companies are facing. Higher education institutions vary in many aspects as complex organisations, such as in their objectives, structures, the ways of conducting academic activities, cultural traditions, values and beliefs. Diversity determines that mergers are complicated processes of restructuring social systems, accompanied by frictions, conflicts or repulsions. These problems largely hamper a development of human synergy; the outcomes may sometimes go against the initial intentions of merger. To solve the problems, the central theme is concerned with developing a common organisational culture as a social glue to bind different groups and individuals together.

Both the inter-group theory and the cultural approach have enjoyed some success in understanding staff integration by focusing on the process in which similar identity or culture is developed. However, the traditional social identity theory or cultural approach cannot provide a comprehensive framework to capture the complex re-categorisation in a post-merger process. The concept of identity or culture has been usually understood on more at the micro level and with a narrower focus, rather than as multifaceted and context-dependent. Another disadvantage of the social psychology of cultural perspective is that it gives too much attention to cognitive meanings, but neglects the role of the formal structures of organisation.

These shortcomings may be solved by using an institutional approach combining the wisdoms of both old and new institutionalism in organisation studies. The combined theory brings about fruitful advantages through mutually beneficial exchanges between different levels of analysis. It not only embraces the perspectives of either social psychology or organisational culture theory, but expands the perspective by taking account of formal organisation struc-
tures and management processes. As a new approach beyond traditional ways of thinking about group integration, institutional organisation theory can deal with cultural and sociocognitive aspects with respect to staff integration in a broader contexts.

4.2 Institutional theories in organisation study

4.2.1 Old and new institutionalism in organisation studies

The institutional approaches, as a way of social thinking dates back to Aristotle’s study of Greek city-states. Since then, institutions had been central to political analysis, in one way or another. In the 20th century, renewed interests appeared in institutions in sociology (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Selznick, 1949), political science (March & Olsen, 1989; Peters, 1999) and economics (North, 1990), as an intellectual response to the new structure of our society. Although most subscribers to institutional organisation theory lean towards a sociological perspective (DiMaggio & Powell, 1991), other contributions from, for example, a political perspective (March & Olsen, 1989) and an economic perspective (Roland, 2004) have also been helpful for the present study.

Some early works in the middle of the 20th century (Berger & Luckmann, 1967; Selznick, 1949, 1952, 1957) have often been cited as origins of old institutionalism in organisation study. The old institutionalism emphasises the details about individual organisations and organisations’ behaviour. The central subjects are influence, coalitions and competing values within power and informal structure. Selznick (1957) suggests that the understanding of organisation should go beyond efficiency and organisation itself, because an organisation is not simply a machine of efficiency meeting technical requirements. Rather, organisation, as an institutionalised “social organism” (p.139), is heavily affected by its context— institutions. He initially makes a distinction between organisation and institution by defining the former as “an expandable tool, and rational instrument engineered to do a job” and the latter “more nearly a nature product of social needs and pressures—a responsive, adaptive organism” (p.5). He considers an organisation as institutionalised, in contrast to Weber’s model where organisation is regarded as a sort of technical system. In a broad social perspective, Berger and Luckmann (1967) understand institutions as social orders, and in the context of social orders human existence takes place. Social
order as a product of human activity is closely related to habit. How social orders merge, maintain and change makes up the theory of institutionalisation. According to the authors, all human activities are habitualised actions. The processes of habitualisation exist before institutionalisation. “Institutionalisation occurs whenever there is a reciprocal typification of habitualised actions by types of actors” (Berger & Luckmann, 1967, p.72). In an organisational context, Selznick claims that institutionalisation is a process of infusion with “values beyond the technical requirements of the task at hand” (Selznick, 1957, p.17). Institutionalisation can be best observed when an organisation is more affected by values and beliefs, such as the organisation’s history, vested interests by individual groups and external context, than by technical goals. Selznick also stresses the correspondence between power and institutionalisation process by the involvement of leaders.

Since Meyer and Rowan’s two seminal papers (Meyer, 1977; Meyer & Rowan, 1977), institutionalism in organisation studies has generated fresh insights as well as shifts of focus. Their work has been regarded as the origins of new institutionalism. Despite being labelled as “new”, it does not denote a completely novel paradigm sharply breaking with the past (Selznick, 1996, p.272; Trommel & Van Der Veen, 1997, p.46), since both are to varying extents sceptical about rational models of organisation. Nevertheless, the new institutionalism is not simply the old wine in a new vessel. There are several distinctions between the two (See Table 3).

### Table 3. Old and new institutionalism

<table>
<thead>
<tr>
<th></th>
<th>Old</th>
<th>New</th>
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<tbody>
<tr>
<td>Conflicts of interest</td>
<td>Central</td>
<td>Peripheral</td>
</tr>
<tr>
<td>Source of inertia</td>
<td>Vested interest</td>
<td>Legitimacy imperative</td>
</tr>
<tr>
<td>Structure emphasis</td>
<td>Informal structure</td>
<td>Symbolic role of informal structure</td>
</tr>
<tr>
<td>Organisation embedded in</td>
<td>Local community</td>
<td>Field, sector, or society</td>
</tr>
<tr>
<td>Nature of embeddedness</td>
<td>Co-optation</td>
<td>Constitutive</td>
</tr>
<tr>
<td>Locus of institutionalisation</td>
<td>Organisation</td>
<td>Field or Society</td>
</tr>
<tr>
<td>Organisational dynamics</td>
<td>Change</td>
<td>Persistence</td>
</tr>
<tr>
<td>Basis of critique of utilitarianism</td>
<td>Theory of interest aggregation</td>
<td>Theory of action</td>
</tr>
<tr>
<td>Evidence for critique of utilitarianism</td>
<td>Unanticipated consequences</td>
<td>Unreflective activities</td>
</tr>
<tr>
<td>Key forms of cognition</td>
<td>Values, norms, attitudes</td>
<td>Classification, routines, scripts, schema</td>
</tr>
<tr>
<td>Social psychology</td>
<td>Socialisation theory</td>
<td>Attribution theory</td>
</tr>
<tr>
<td>Cognitive basis of order</td>
<td>Commitment</td>
<td>Habit, practical action</td>
</tr>
<tr>
<td>Goals</td>
<td>Displaced</td>
<td>Ambiguous</td>
</tr>
<tr>
<td>Agenda</td>
<td>Policy relevance</td>
<td>Disciplinary</td>
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Source: DiMaggio and Powell (1991, p.13)
Among those, for example, the most significant change is a shift of attention from details of organisation’s behaviour to the relationship between environments and organisations.

Although the old and new approaches agree that institutionalisation constrains organisational rationality, they identify different sources of constraint, with the older emphasising the vesting of interests within organisations as a result of political tradeoffs and alliance, and the new stressing the relationship between stability and legitimacy and the power of common understandings that are seldom explicitly articulated. (DiMaggio & Powell, 1991, p.12)

The new institutionalism has strength in the way in which it explains organisational isomorphism, or why different organisations operating in different environments are often so similar in structure. It attaches great importance of legitimacy, assuming that culture, value and social expectation, as commonly taken-for-granted facts, strongly constrain an organisation’s structures and behaviours. On this understanding, the visible structures and routines of an organisation always reflect patterns or templates institutionalised in wider environments. “The rise of such pattern drives the birth of organisations and also greatly affects their detailed structure contents” (W. R. Scott et al., 1994, p.2). The implication on mergers is that once a merger is implemented, the merged organisation, as a one newly formed, starts with creating structures and missions. The development of structures and missions reflects the organisation’s conformity to certain institutional templates.

The adaptation of institutionalised template in an environment often has the effect of directing attention away from task performance. Therefore, organisation structures are often loosely coupled (W. R. Scott et al., 1994, p.2). This point challenges traditional explanation of organisation structure, by which formal structure is considered as means for coordinating and controlling activities and therefore, a tight connection between structures and actual behaviours of organisational members is important. “Today, however, structural change in organisations seems less and less driven by competition or by the need for efficiency” (DiMaggio & Powell, 1983, p.147). Instead, in institutionalised environments, organisations conform ceremonially to its appropriate norms based on rules which are taken for granted. This can happen in order for the organisation to become socially accepted (or to gain resources need for survival), no matter the organisational changes have influence on efficiency or not (Meyer & Rowan, 1977, p.352). In order to avoid conflicts between
daily activities and societal myths, and among myths, organisations often separate their formal structure from their activities, minimize control and evaluation, and handle coordination informally. This process is called “de-coupling” (Meyer & Rowan, 1977). Therefore, the official design of an organisational structure may not be very consistent with informal and spontaneous practices, attitudes, relationships and commitments (Selznick, 1992, p.235). As the individuals’ real behaviours and interactions are driven by values and beliefs, the subject of environments, values and beliefs are likely to attract the attention of more and more researchers.

4.2.2 Towards a synergy

Since the early 1990s, the literature on the application of the new institutionalism in organisational studies has been increasing in size (Powell & DiMaggio, 1991; W. R. Scott et al., 1994), and, in particular, with respect to higher education (Å Gornitzka, 1999). While the new institutionalism can prove helpful in understanding changes in higher education organisations, the validity of the propositions posed by the new institutionalism have not always been empirically evidenced. Some higher education studies (Covalski & Dirsmith, 1988; Larsen & Gornitzka, 1995) demonstrate the importance of powerful organisational actors, group interests and instrumental elements in organisational change, rather than that of environment. Others reveal that diversity, instead of convergence, appears to be more common, for example, in the development of American private college curricula (Kraatz & Zajac, 1996) and public higher education study programs (Morphew, 1996). These results remind us of the fact that the new institutionalism itself was not originally developed as a theory for organisational change. It mainly provided a good account of similarity or stability of organisational arrangements in a given organisational population or field. The theory is weak in analysing the internal dynamics for organisational change, because by making dichotomies between the new and old institutionalism, it neglects what the old theory focused on factors, such as the role of power, self-interest and efficiency (DiMaggio & Powell, 1991, p.27; Greenwood & Hinings, 1996). The new institutionalism fails to “integrate the old and the new by taking full account of theoretical and empirical continuities” (Selznick, 1996, p.275).

First, the new institutional theory overemphasises an institution’s exteriority and isomorphism, treating the institution as an independent variable. How-
ever, “[i]t has been less effective in generating ideas about why particular kinds of forms are chosen over possible alternatives, and why organisational forms change over time in particular directions” (Brint & Karabel, 1991, p.343). The argument indicates that the new institutionalism overlooks how the adaptation of organisations to institutional environment takes place. Facing a new environment, merged organisations or units must conform to certain institutional templates in order to gain legitimacy. However, the perception of legitimacy or appropriateness in a merger process is always ambiguous, because members of the organisation have different values and beliefs. The question is how the appropriateness for a merged organisation or unit is determined.

Second, according to the new institutionalism (Meyer & Rowan, 1977), over socialised individuals are assumed to accept and follow social norms unquestioningly, and, therefore, the relationship between actual, everyday activities as well as behaviours of organisational members and formal structures seem to be negligible. Stinchcombe (1997, p.6) criticises the fact that the new institutionalism ignores “the work of people who put the detail into institutions and who constrain people and organisations to conform to institution’s exteriority”. This notion is also reached by Abbott’s (1991, p.754), who says, “the new institutionalists have to remember the power and interest that utilitarians never forget”. The argument directs attention to the question: what are the roles the staff members’ interests and the power of leadership in the adaptation of merged organisation to change?

Third, while the new institutionalism is clearly characterised by a rejection of rational model of behaviour, Tolbert and Zucker (1996, p.176) suggest that both the institutional model and rational model “should be treated not as opposition but rather as representing two ends of a continuum of decision-making process and behaviour” and, therefore, “what is needed are theories of when rationality is likely to be more or less bounded”?

The answers to the above questions require both an understanding of an organisation’s interaction with its environments and a detailed explanation of an organisation’s behaviour. In so doing, we need to incorporate both the old and new wisdoms (Abbott, 1991; Greenwood & Hinings, 1996; Selznick, 1996; Stinchcombe, 1997). Greenwood and Hinings (1996) label the coming together of the old and the new intellectual contribution neo-institutionalism. Although neo-institutionalism is in most cases treated as being similar to new institutionalism, in this study, the term has been used to describe the combined old and new institutionalism. The interest in neo institutionalism has been exhibited in some recent works (P. Ingram & Silverman, 2002; Roland, 2004; W. R. Scott,
Although they do not explicitly state that they favour a synergy between the two streams of institutionalism. The authors have contributed, in one way or another, to the development of neo-institutional approach to organisation study. However, their widely varying definitions and understandings of the institution and of institutional change create confusion as often they provide insight. It should be noted that neo-institutionalism, though called theory, is not well elaborated yet, but mainly represents a theoretical tendency in social science. It faces both a general challenge to the reconciliation of the debates among varying schools of institutionalists, and a further development of its application to specific areas. Notwithstanding important contributions by Gornitzka (1999), Stensaker (2004) and other authors, institutionalism still remains peripheral in the field of organisational analysis in a higher education context. Given that the particular topic of the integration of this thesis is academic staff in post-merger universities, it provides a new focus among studies of mergers, particularly from an institutional perspective. To make good use of the theoretical contributions by neo-institutionalists for the present study, I will first clarify some important issues about institution.

**4.3 Identifying key concepts**

**4.3.1 Conceptualisation of institution**

While the institution has become a central concept in institutionalism, there is a “lack of clear conceptualisation of what institutions are, or how they can be defined” (Keman, 1997, p.1). “Institutionalists’ vary in their relative emphasis on micro and macro features, in their weightings of cognitive and normative aspects of institutions, and in the importance they attribute to interests and relational networks in the creation and diffusion of institutions” (DiMaggio & Powell, 1991, p.1). The diversity of conceptualisations can be partly explained by the fact that institutionalists are exclusively attached to varying disciplines in social science. A progress towards developing a comprehensive understanding has been made by those who “are not solely confined to their mother disciplines” but “have scientific cooperation across disciplinary boundaries” (Bogason, 2000, p.84). With respect to organisational study, for example, Scott (1995, 2001), drawing insights from institutional analysis in sociology, political science, and economics, provides an extensive description of institutions:
Institutions are social structures that have attained a higher degree of resilience. Institutions are composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life. Institutions are transmitted by various types of carries, including symbolic systems, relational systems, routines, and artifacts. Institutions operate at multiple levels of jurisdiction, from the world system to localized interpersonal relationships. Institutions by definition connote stability but are subject to change processes, both incremental and discontinuous. (p.48)

A most innovative contribution of this omnibus definition is the introduction of “three pillars”, namely regulative, normative and cultural-cognitive elements. The regulative processes involve the capacity to establish rules and the power to exercise control over others’ conformity to the rules. The central ingredients of regulative institutions are force, fear and expedience tempered by the existence of rules. Overemphasis on this pillar will lead to a rational way of understanding of organisations. Some theorists, like Karl Marx, stress the coercive nature of institutions, which distribute and legitimate power. They think that the moral function of institutions serves the interests of the powerful rather than maintaining social structure. In this regard, Trommel and Van Der Veen (1997) from a sociological perspective treat coercive aspect as an independent element. For them, the regulative institutions, such as rules and laws, are central to individualistic sociology, while the coercive dimension is attached to conflict sociology with power as the fundamental basis. However, the power, especially legitimate power, never exists solely, but rather overlaps with and is associated with organisational structures and rules. As it has been argued, “the more formal and elaborate the structure of an organisation the more likely it is that boundaries will be placed on a person’s legitimate power” (Rollinson et al., 1998, p.380). In fact, Scott does not overlook the coercive nature of institutions, but considers it an inclusive part of regulative institutions.

In the normative pillar, social obligation is central to social life, and the building blocks are values and norms which form the basis of social obligation. Values can be simply interpreted as what people think important or right. Norms derived from values directly influence people’s actions by specifying how people are supposed to behave.

The cultural-cognitive pillar emphasises basic assumptions, which determine how realities are perceived and how things should be done. These assumptions are so taken for granted that, within the cultural unit, other types of behaviour are inconceivable. Thus, the basic building blocks in cultural-cognitive systems
are meanings and common frameworks of references. Although the common cultural frameworks are difficult to articulate, they can be reflected through symbols, such as stories, words, signs, gestures, ceremonies (Masland, 1985; Trice & Beyer, 1984).

While norms are the basic component of institutions in the light of old institutionalism, the attention to the cultural-cognitive dimension represent a distinguishing feature of new institutionalism within sociology, which considers symbolic system as objective and external to individual actors. Nevertheless, the two elements (normal and cognitive) are usually intertwined and the boundaries between the two are not clear-cut. In higher education, for example, the idea of academic freedom can be seen as a basic norm in higher education, meaning that academics feel they should have freedom to pursue their research interest. On the other hand, academic freedom entails cognitive meanings, in that it has been taken for granted that academic freedom is essential to university life.

In this respect, another categorisation based on how rule to which institutions are subjected and enforced (P. Ingram & Clay, 2000; P. Ingram & Silverman, 2002) may be more applicable. It distinguishes between centralised and decentralised institutions.

Centralised institutions rely on such functionaries, for example, laws may be made by legislatures and enforced by police. The legislature and police are ‘third parties’ in that they make and enforce the laws, even if they are not directly affected by their violation. Centralised institutions rely on functionaries. Decentralised institutions, on the other hand, emerge from unorganised social interaction, and rely on diffuse individuals (often those directly affected) to publish institutional violations. (Ibid., p.10)

According to these definitions, the centralised institutions are mainly regulatory in character, such as policies, regulations, guideline, or routines established by third parties through formal procedures. Decentralised institutions share the common features of both normative and cognitive pillars, such as social norms, routines, meanings, and what is taken-for-granted. The centralised and decentralised institutions correspond respectively to formal and informal institutions.

The dichotomy of formal or informal institutions is often applied by institutional economists (North, 1990). They normally define formal institutions as rules that are readily observable through written documents or rules that are
determined and executed through formal positions, such as authority or ownership. Formal institutions, thus, include explicit incentives, contractual terms, and organisational boundaries as defined by equity positions. The informal institutions, in turn, are defined as rules based on implicit understandings, being in most part socially derived and, therefore, not accessible through written documents nor necessarily sanctioned through formal position. Thus, informal institutions include social norms, routines, and political processes. However, the economists’ definition of informal institutions concentrates merely on the normative meanings. For the present study, the informal institutions consist of both normative and culture-cognitive pillars. Either normative institutions or culture-cognitive institutions are created in a decentralised way.

Besides the formal/informal features, institutions vary also in a vertical dimension. Scott (2001) identifies six levels at which institutional approaches are applied and empirical investigations are focused. The six categories, from macro to micro level, are the world system, society, organisational field, organisational population, organisation, and organisational subsystem. As the attention of this study is mainly focused on individual organisations, institutions in the vertical levels simply fall into an external/internal dichotomy. Internal institutions are the rules driven by a group itself and are embodied within an organisation. External institutions are imposed by external environment, surrounding the organisation (Kasper & Streit, 1998). The formal and informal institutions exist in both external and internal levels. Therefore, four types of institutions will be the focus of this study (Table 4). However, the study treats both informal and formal aspects of external institutions as a whole, called the institutional environment, in seeking to understand changes in post-merger processes.

### Table 4. Typology of institutions

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<tr>
<th></th>
<th>Formal</th>
<th>Informal</th>
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<tr>
<td>External</td>
<td>Institutional environment</td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>Structures and management processes</td>
<td>Organisational culture</td>
</tr>
</tbody>
</table>
4.3.2 Institutional environment

Components of the institutional environment are parts of the whole organisational environment. The other parts of the organisational environment are technical environments, “in which organisations produce a product or service that is exchanged in a market such that they are rewarded for effective and efficient performance” (W. R. Scott, 1992, p.132). Technical environments are originally considered by economists when analysing organisations in competitive markets. Some organisational approaches, such as contingency theory, resource dependency theory and transaction cost theory emphasise the technical elements of the environment, such as financial resources, materials and markets. For a manufacturing factory, technical environments are crucial for its survival and success, in that raw material resources and consumer market are closely related to its goal attainment. In contrast, the social culture, values and beliefs have little impact on profits. In such organisations, efficiency and market competition are the primary driving forces behind organisational change.

In contrast, education organisations are mainly subject to institutional environment (W. R. Scott, 1992, p.133). As Meyer, Scott and Deal (1983, p.409) put it, “schools are weak and ineffective organisations with little capacity to produce useful technical efforts or to defend themselves from the environment”. Therefore, the new institutionalism with the strength it can provide in understanding the role of values and beliefs in organisational stability and resistance to reform, has gained a place in studies of higher education organisation (Å Gornitzka, 1999).

Institutional environment, as showed in Table 4, comprises both formal and informal external institutions. For the purpose of this study, no clear distinction has been made between the two elements, because the environment a higher education institution confronts is always a combination of the two. To further understand the relations between environment and individual institutions, two concepts should be introduced namely organisational field and organisational population. An organisational field is defined as “those organisation that, in the aggregate, constitute a recognised area of institutional life” (DiMaggio & Powell, 1983, p.148). It involves a process of structuration, which occurs through interaction and information exchange, generating structures of prestige and dominated by certain organisations and shared norm and practice. These processes may lead to organisation isomorphism; organisations in a given field employ similar technical bases. In a broad sense, a national higher
education system can be seen as an organisation field (Sköldberg, 1991, p.551). For a delicate demarcation, HEIs in a nation may fall within several populations. The invention of the term “organisational population” is underlined by an ecological approach to organisations or its combination with institutional theory. Scott (2001, p.84) defines organisational population as a collection of organisations that share similarities in some aspect. In a higher education context, the populations can be identified by different categories, such as, in a Chinese context, research institutions, research & teaching institutions, teaching only institutions, and application institutions. Application institutions are colleges that offer three years non-degree, practical oriented programs. From the new institutional perspective, change in HEIs derives from efforts to create or conform to categories and practices existing within the fields or populations of higher education (Brint & Karabel, 1991, p.342). This adaptation of HEIs to their environment is closely associated with changes of organisational identity, which will be discussed later.

4.3.3 Internal institutions

Formal institutions

An organisation is always bounded with certain formal structures, which refers to “the formal system of task and authority relationships that control how people coordinate their actions and use resources to achieve organisational goals” (Jones, 2001, p.8). No matter how an organisation is structured, it consists of certain mission statements, formal positions and organisational rules. In the formal system, rules define the responsibilities and roles of organisational membership. The legal power of managers is sustained by their roles described by organisational rules. Merger by nature will result in a process of reorganisation in terms of structures, regulations and management processes. The internal formal institutions exist mainly on both organisational and sub-unit levels.

Informal institutions

The informal institutions are inherently difficult to explicate. Although the concept of institution has been introduced in the higher education field (Å Gornitzka, 1999; Kirby-Harris, 2003; Sköldberg, 1991; Stensaker, 2004), the current research suffers from the an absence of description of the charac-
teristics of institutions. The term culture appears, however, more frequently than institution among higher education studies. The meanings of the two are always overlapped, if not exchangeable. It has been argued that culture is the micro image of institution, while institution is the concretisation and externalisation of culture (Wei, 2003).

Culture was originally defined in an academic sense in the 19th century by British anthropologist, Edward Tylor. He made a list of what might be included in culture, such as ”knowledge, belief, art, law, morals, and other capacities and habits acquired by man as a member of society” (Tylor, 1871, p.1). Since then, authors of increasing numbers of studies have involved themselves in theoretical debates on culture, defining culture in many ways (Jelinek et al., 1983). In the early period, each of the various definitions emphasises a particular focus or level.

Since Schein (1985) published the book Organisational Culture and Leadership, more researchers have recognized culture as a multidimensional and multilevel concept. Schein describes three levels of culture. The first level consists of visible organisational structures and actions, such as dress code, facilities and procedures. This level of culture can be easily observed. The second level consists of espoused values manifested in the public images of organisations, such as strategies, goals, and philosophies. While not as visible as the artefacts present in the first level, these values can be ascertained by norms, the way things are done in the organisation. The third level consists of basic assumptions, or unconscious beliefs, perceptions, thoughts, and feelings. These determine both behaviour norms (the way people should behave) and organisational values (the things that are highly valued).

According to Buono and Bowditch (1989, p.137-139), the visible elements created by an organisation on the first level are treated as objective organisational culture, while the elements on the second and the third levels are concerned with subjective organisational culture. Most researchers agree that subjective culture is more important as a significant determinant of beliefs, attitudes, and behaviours, and it thus provides a more distinctive basis for characterising and interpreting similarities and differences among people in different organisations.

With respect to higher education, Chaffee and Tierney (1988), in a broad sense, point out three general dimensions of organisational culture (structure, environment and values), as well as three themes (time, space and communication). Their further explanation of these dimensions and themes correspond to the comprehensive meanings of institutions, including both formal and in-
formal features. In most higher education studies on culture, however, the regulative meanings of institution is excluded. As Maassen (1996, p.34) observes, “scholars interested in the use of the concept of culture in higher education have in common a desire to study specific aspects of the non-traditional, or symbolic side of higher education”. Their understandings about culture can be best reflected in what Barnett (1990, p.97) writes, “[t]he ideal of culture suggests a shared set of meanings, beliefs, understandings and ideas; in short, a taken-for-granted way of life, in which there is a reasonably clear difference between those on the inside and those on the outside of the community”. In the present study, the understanding of culture might more aptly be related to informal (normative and cognitive) aspect of institutions, such as values, norms, attitudes, routines and symbols. As such, the understanding of normative and cognitive institutions in higher education can rely on the higher education literature dealing with the subject of culture, especially organisational culture.

Organisational Culture

Although cultural approach has gained a place in organisational study since the late 1970s (Ouchi & Wilkins, 1985, p.458), the concept of organisational culture is by no means brand new (W. R. Scott, 1992, p.57). The anthropologists always stressed culture and values in social life. Even Max Weber realised the importance of symbolic and meanings in organisational life. The most significant contribution of cultural approach to organisation is its emphasis on the implicit dynamics within organisations.

Culture has been defined in different ways and from different perspectives (Kroeber & Kluckhohn, 1952). The variations of understanding of culture exist also in organisational studies (Smircich, 1983). While agreement on a precise definition of the organisational culture has proved difficult, there are a few important components shared by most definitions, such as assumptions, beliefs, values or perspectives. On this understanding, Smircich (1983) compares organisational culture as the social or normative glue that holds organisation together. The glue consists of shared norms, values, ideologies, and beliefs that determine the behaviours of members within an organisation. It serves four purposes (Kuh & Whitt, 2000, p.161): it conveys a sense of identity; it facilitates commitment to an entity, such as the college or peer group, other than self; it enhances the stability of a group’s social system; and it is a sense-making device that guides and shapes behaviour.
University culture is a particular form of organisational culture, which is defined “as the collective, mutually shaping patterns of norms, values, practices, beliefs, and assumptions that guide the behaviour of individuals and groups in an institute of higher education and provide a frame of reference within which to interpret the meaning of events and actions on and off campus” (Kuh & Whitt, 2000, p.162).

Subcultures

While the term organisational culture is used as if an organisation has monolithic culture, most organisations have more than one set of beliefs influencing the behaviour of their members (Morgan, 1986; Sathe, 1985). Kuh and Whitt argue that the cultural diversity appears to be more obvious in HEIs.

The ‘small homogenous society’ analogues used in anthropological studies of culture is sorely strained when applied to many contemporary institutions of higher education. Large public, multipurpose universities are comprised of many different groups whose members may or may not share or abide by all of the institution’s norms, values, practices, beliefs, and meanings. Instead of viewing colleges and universities as monolithic entities, it is more realistic to analyse them as multicultural contexts that are host to numerous subgroups with different priorities, traditions, and values. (Kuh & Whitt, 2000 p.161)

For merger studies, it has been suggested, “it is not the more salient aspects of organisational culture that may be important, but the more concealed, unquestioned subculture” (Greenwood et al., 1994, p.253). Then, how is the subject of subculture considered in the present study? Subcultures may be divided along occupational, functional, product or geographical lines, and they can be enhancing or counter to one another (Sathe, 1985). In terms of culture shared by staff members in a university, culture can be broadly distinguished between academic culture and administrative culture (Sporn, 1996, p.51). This study centres particular attention on academic staff. As it has been mentioned at the outset, this study chooses the department as the basic unit for observation and analysis, the emphasis is laid on departmental cultures—values and beliefs shared by academic staff members of either pre-existing departments or post-merger departments.

Disciplinary identity is a core dimension to differentiate between academic cultures across academic departments (Becher, 1981; Becher & Trowler, 2001),
which are normally divided according to disciplines. Although, it has been argued, “the studies of disciplinary cultures skip the institutional level and focus on an individual academic to reconstruct the international disciplinary culture” (Välimaa, 1998, p.120), within a higher education institution disciplinary cultures often exhibit themselves as varying departmental cultures. Nevertheless, disciplinary culture is not the sole source of the culture shared by academic staff members within an academic sub-unit. Rather subculture with respect to academic staff in a departmental setting is subject to a variety of circumstance, such as national context, professional culture, organisational character and disciplinary identity (Austin, 1992; B. R. Clark, 1983, p.75; Välimaa, 1998). Particularly the departmental cultures are illustrated in a merger process as shown in Figure 5.

Figure 5. Cultures in academic departments in merger process

![Diagram showing cultures in academic departments in merger process]

The higher education institutions involved in mergers in the present study are located within not only a same national system but are also geographically proximate. Therefore, the academic staff members of both pre-merger institutions are likely to derive similar cultures from the culture at system level with respect to the profession as academics. For this reason, this study pays little attention to the influence of national culture with respect to higher education on academic cultures within institutions. What really matters most departmental cultures are institutional cultures and disciplinary cultures, because...
“the academic department is often referred to as the intersection between the larger discipline and the local institution” (Lee, 2004, p.604). The figure shows that the homologous academic departments in both pre-merger institutions may share similar disciplinary cultures at large. What contributes more to the differences between the cultures of corresponding departments of pre-existing institutions are the characters of organisational cultures. As Austin (1992, p.1617) puts it, “the employing institution plays a significant role in defining the work and life of a professor or professional”. Moreover, the academic department per se as an organisation also develops its own distinct elements of values and norms.

The above presentation does not necessarily imply that there is no cultural divergence among the academics of single pre-existing departments. However, the difference may be less salient in the process of merger, partly because merger can increase organisational cohesiveness (Cartwright & Cooper, 1996, p.43) as responses to temporarily sharing senses of lose (Schweiger et al., 1987) or feelings of anger and resentment (Mirvis, 1985).

4.3.4 Organisational image and organisational identity

In order to understand the relationship between the institutional environment and the internal/informal institutions (or organisational culture), two of the concepts from organisational studies are the most relevant, namely organisational image and organisation identity. Although the two concepts have been subject to many different conceptualisations and different definitional debates, they lend insights into the linkages between external dimensions of organisation and internal organisational issues from different perspectives. For instance, an organisation’s image and identity may guide and activate individuals’ interpretations of an issue and motivations for action on it, and those interpretations and motivations affect patterns of organisational action over time. The meanings of the two concepts will be clarified for the purpose of this study, particularly with their relevance to the institutional framework.

There has been a range of definitions of organisational image (Gioia et al., 2000), such as “construed external image”, “projected image”, “desired future image”, “corporate identify”, “transient impression” and “reputation”. In organisational studies, the main distinctions are drawn between the perceptions that organisational image is seen as something projected or believed by internal organisation members (Bernstein, 1984; Dutton & Dukerich, 1991)
and the perceptions that organisational image is something received from or impressed on outsiders (Berg, 1985; Fombrun, 1996). In higher education studies, the expression “organisational image” has been mentioned less often. Nevertheless, the central ideas about organisational image, e.g. as construed external perceptions, have often been discussed, but in other contexts, such as reputation, prestige, HEIs’ classifications. The image of a higher education institution here can be understood to be how the institution is perceived as a research institution, a research & teaching institution, a teaching only institution, or application institution. This meaning is consistent with the concept of institutional environment. As mentioned earlier, in this study institutional environment refers particularly to categories of higher education institutions or different types of institutions.

In contrast to organisational image, the higher education literature often discusses organisational identity. While some merger study literature treats organisational culture and identity as almost interchangeable terms (Daniel & Metcalf, 2001, p.27), Stensaker (2004) considers them to be different concepts in the higher education context. Organisational identity focuses on the symbolic, mythological and cognitive aspects of organisation, about how organisational members make sense out of their acts through the use of cognition, language and emotions. In more simple words, “[o]rganisational identity should be understood as a socially constructed concept of what the organisation is rather than how it acts” (Stensaker, 2004, p.22).

In the literature on organisational identity, three different perspectives are offered (Tierney, 1991). One perspective is about how to construct an organisational identity. The other two are concerned with the two dimensions of organisational identity. The first is mainly concerned with organisational “saga” which determines how one organisation is different from others as essential for an effective organisation. This perspective normally emphasises the past as well as the future of an organisation. The second perspective, in contrast, concentrates on what an organisation does in the present. Authors who subscribe to this viewpoint call for missions which are sensitive to organisational environments and capable of adapting to the requirements of the market place.

Stensaker (2004, p.41) also implies that organisational identity can be understood in two dimensions, internal and external. In the internal dimension, identity is connected to “internally focused culture” (Sporn, 1996), which is associated with internal dynamics and internal context, such as “organisational saga”— a “collective understanding of unique accomplishment in a formally established group” (B. R. Clark, 1972, p.179). In this sense, organisational iden-
tity can be to a large extent considered as interchangeable with intra organisational culture.

The identity in the external dimension can be understood by the relationship between the organisation and its environment, for example, “the assets it owns and the markets it approaches, the niches it occupies, the relationships it has to its customers and to the organisations that fund it, supply it, and confer legitimacy on it” (Kanter et al., 1992, p.15). From an institutional perspective (DiMaggio & Powell, 1983; Meyer & Rowan, 1977), the process of developing the external dimension of identity is associated with organisational conformity to appropriateness in external environment. In a higher education context, the appropriateness is related to the university’s functions and products orientation. By pursuing legitimacy, HEIs develop both self-perceptions and external impressions of what type of universities or colleges they are. Such identity shapes an organisation’s “externally oriented culture” (Sporn, 1996). This is concerned with values about the external development of the organisation, such as what the role of a university should be and what the university should produce.

In this study, organisational identity refers primarily to the organisation’s adaptation to its external environment. As put by Stensaker (2004, p.24), “organisational identity is a social institution the organisation adapts to.” The identity reflects the organisation’s conformity to appropriateness in its environment. The appropriateness is mainly determined by environmental factors. On the one hand, governmental policies, through the offering of incentives, motivations and resources for institutions to merge provide broad guidelines for universities’ operation. One the other hand, the appropriateness derives either from the imitation of HEIs of similar size and strength, or from those merged institutions with the same strategy. However, leadership also plays an important role in the determination of university identity through the mission statements it establishes.

4.4 Institutions and individual actors

By now some understandings of institution have been provided. This abstract concept may be accessible via observation and interpretation of actors’ behaviour and their interaction. The actors could be states, organisations and individuals, who share common characteristics in the institutional framework:
pursuing interests, being constrained by institutions, and producing institutions that affect other actors (P. Ingram & Silverman, 2002). Among those actors, the individual ones are important subjects, because “[o]utcomes at the system level are thought to be determined by the interactions of individuals acting consistently in terms of the axioms of individual behaviour” (March & Olsen, 1989, p.5). What are the axioms? This opens a question about how individuals behave. In general, there are two competing views on human behaviour located at the two extreme ends of the social science spectrum, namely the rational-choice approach and cultural anthropology. Anthropologists believe that human behaviour is governed by culturally transmitted norms, and that such norms contain accumulated wisdom, which allows people to behave sensibly even though they do not understand why they do and what they do. Rational choice theorists have been sceptical about this functionalist claim, because anthropologists have not provided any plausible mechanism that could explain why norms have this property. They consider humans as reasonably similar, and believe that people make behavioural choices on their rational calculations, in which the central element involves a cost benefit analysis. For the rational approach, personal interests and preferences are the driving forces of individuals’ behaviour. Institutionalists normally take such a standpoint that human behaviour is heavily constrained by complexity and uncertainty of institutional or cultural contexts. However, this is not dissimilar to the anthropologists’ arguments. Thus, the view that the new institutional approaches give insufficient attention of the reality of purposive, interest-driven behaviour has been criticised (DiMaggio, 1988). Accordingly, people are only treated as the carrier of institutions, while the dynamic role of human beings is neglected. There has been further criticism that the new institutionalism suffers from a lack of detailed theory about how particular institutions work, “due to ignoring the work of people who put details into institutions” (Stinchcombe, 1997, p.6).

The emerging neo-institutional perspective, however, has a strength to square the rational choice approach with the anthropological perspective, instead of treating them as being in opposition (Tolbert & Zucker, 1996). It explains individuals’ interests in an institutional framework: individuals’ behaviour is directly driven by their interests and preferences, but how they pursue their interests is bounded by institutional rules. Alternatively, “[i]nstitutions produce behavioural predisposition rather than predetermined behaviour” (Trommel & Van Der Veen, 1997, p.58). Scharf (1997, p.21) suggests that institutions are the most important influential sources of individuals’ behaviours and interactions. While interests could not exist beyond institutional settings, institutions

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may persist even when they serve no one’s interests. Therefore, the preferences and interests of human actors are not exogenous to the institutions, but develop within the institutions. In Ingram and Clay’s (2000, p.525-526) words, “actors pursue their interests by making choices within (institutional) constraints”. The internal institutions constraining “organisational participants” (W. R. Scott, 1992,p.18) are composed of two sides: the formal institutions created by the organisation, and informal ones derive from individuals themselves. The overlapped part between the two sides underlines the “standard operating procedures” (March & Olsen, 1989, p.21), which specify most of individuals’ behaviour within an organisation. Following this, the more overlapped area the two types of institutions have, the more is the likelihood the community will remain stable, and vice versa. In the case of merger, there are not only interactions between the formal and informal institutions, but also considerable conflicts within informal institutional traditions, such as norms, values and beliefs that are sensed by individuals. The conflicts have a potential for chaotic organisational life.

4.5 Summary

The traditional probe into the integration of human resources focuses on organisational culture and social identity. Social psychology or organisational cultural theory is often used as a conceptual framework to understand the relevance of culture and identity to the human side of post-merger integration. As such, the intangible and cognitive aspect of the integration process is overplayed. It has been commonly accepted among merger researchers that the cultural dimension is critical to the human side of integration, and they focus special attention to organisational culture. Nevertheless, the staff integration in a post-merger period is a rather complex and complicated process, in which the environmental factors, regulative structures and management process may play indispensable roles. Although the cultural aspect of integration is the focus of my investigation, a better understanding of this phenomenon requires a conceptual framework beyond a pure cultural perspective.

This framework is underlined by institutional organisational theory, which expands the traditional perspective of cultural theory by including other elements in the analysis. Instead of culture, institution is the key concept. It can be basically categorised by two dimensions, external vs. internal and for-
mal vs. informal. For instance, the internal informal institution embraces the content of organisational culture. The internal formal institution refers to the organisational structures, regulations, and the tangible aspect of management procedures. As the particular analytical purpose of this study, there is no clear distinction between the formal and informal aspects in external institutions. Both aspects together are called institutional environment. In order to be more successful or better to survive, the organisation must pursue its legitimacy or appropriateness in its environment. Through such interaction with its environment, the organisation appears some distinct characteristics that provide outsiders with an impression of what the organisation is. This external image is quite related to organisational identity.

According to this framework, the integration of academic staff in the cultural dimension can be understood as a process of interaction between these institutional elements. This will be discussed in the next chapter.
5 Implication of neo-institutional organisation theory for cultural integration with respect to academic staff

The previous chapter indicated the relevance of institutional organisation theory to this study. This chapter will consider particular implications of post-merger integration with respect to the human side in light of neo-institutional theory. In the meantime, two issues will be highlighted: 1) post-merger integration as a process of institutionalisation, 2) the institution as a critical component in understanding post-merger integration. The discussion of the former will form a basic framework to conceptualise the human side of post-merger integration. Throughout the discussion of the latter, a number of hypotheses will be developed.

5.1 Post-merger integration as a process of institutionalisation

5.1.1 Post-merger integration as the institutionalisation stage of organisational innovation

Merger not only offers unparalleled opportunities for innovation (Searby, 1969, p.5), but itself is one type of organisational innovation or transformation. Innovation combines the ideas of reform and change, and connotes something new and different. Levine (1980, p.4) defines innovation as “any departure from the traditional practices of an organisation” (1980). According to Eckel, Hill and Gree’s (1998, p.3) definition of organisational transformation, change or reform must be “both deep and pervasive”. In a merger process, fundamental changes can be clearly observed. Merger as organisational combination refers to legally disappearing of pre-existing organisations, and a transformation towards a new entity. It constitutes a special and important area of organisational innovation (Vaara, 2002, p.212), involving a large structural transformation (Kanter et al., 1992, p.7).

Levine (1980) distinguishes four stages in the innovation process: 1) recognition of need, 2) planning and formulating a solution, 3) initiation and imple-
mentation of a plan, and 4) institutionalisation or termination. Greenwood, Hinings and Brown (1994) divide a merger into three phases, namely courtship, consummation and post-merger. The courtship phase is associated with the recognition of the need for organisational combination. The consummation includes both the planning of merger and the action of putting it into effect. The post-merger integration belongs to the fourth stage of innovation that is institutionalisation. As Gorman (1989) argues that the organisational change will end with “adoption”, “institutionalisation”, and finally “internalisation”. Merger is one particular form of organisational change. “Adaptation” refers to the implementation of a merger plan. “Institutionalisation” and “internalisation” can both be understood as “the process whereby specific cultural elements or cultural objects are adopted by actors in a social system” (T. N. Clark, 1968). The differences between “institutionalisation” and “internalisation” lie in how actors are defined. The term “institutionalisation” treats actors as organisations. It refers to the process by which certain external meanings, such as symbols, routines, and ceremonies, become incorporated into roles or other socially prescribed activities within an organisation. When some ideas, values, sentiments, or goals have been institutionalised in the organisation, however, it does not mean that the members of the organisation really believe the idea, or hold the values, or feel the sentiments, or want the goals. Therefore, “internalisation” emphasises the actors as individuals, referring to the process by which, through socialisation, the individuals comes to believe, or hold the values, or feel the sentiments, or want the goals. In post-merger integration processes, institutionalisation affects mainly the individual level. A successful integration depends on the individuals’ participation, perceptions and feelings, as it has been argued that mergers “fail operationally unless they are accompanied by much more involving and fundamentally different grassroots efforts” (Kanter et al., 1992, p.7).

The institutionalisation of post-merger integration is also a process of changes of institutions. Institutions are not only sources of order and stability, but are also processes of change. The subject concerning institutional change has been regarded as a considerable challenge for the students of new institutionalism (P. Ingram & Clay, 2000, p.539; Trommel & Van Der Veen, 1997, p.58), because the theory overemphasises persistence and is less effective in generating ideas about why and how institutions change (DiMaggio & Powell, 1991, p.29). Nevertheless, a convergent view among new institutionalists stresses two important factors in the process of institutional change, namely environment and actor (Hall & Taylor, 1996). This message is clearly reflected
in Brint and Karabel’s (1991) analysis of institutional origins and transformations in the case of American community colleges, for example, in which they stress actors and environment as vital elements in institutional change. The environment can be both internal and external. When the environment changes, institutions either preserve themselves by being resistant to change, or change themselves through developing their own criteria of appropriateness. March and Olsen (1989) assume that institutions remain stable when there is equilibrium among actors, institutions and environment, thought a perfect equilibrium never exist. On the one hand, “[u]nless an environment is perfectly stable, or an institution instantaneously adaptive, of course, there will always be some delay in an adaptive process” (March & Olsen, 1989, p.85). On the other hand, the status quo may be broken by social actors’ intentional action. Nevertheless, in older age organisations, some sort of equilibrium may exist.

Some similar viewpoints on organisations’ institutional equilibrium has been elaborated by Levine (1980) by using the concept of boundary. He thinks that each organisation has its own unique characteristics, such as norms, values and goals. To protect their characteristics against influences from internal or external organisational environments, an organisation tends to delineate certain boundaries, which circumscribe a limited range of activities and patterns appropriate to the organisation. This understanding sheds special light on higher education mergers.

When two HEIs combine and transform into a new one, the boundaries of the new institution become vague, consisting of a different set of goals, norms, and values. The presence of the divergent boundary systems result in multiple or blurred definitions of organisation character. However, the new entity cannot endure such a situation for long, because each boundary system may pull it in a different direction. The problem can only be solved by making these boundaries congruent, as Shrivastava (1986, p.67) alleges, “These groups (of pre-existing institutions) must be integrated with each other for the organisation to respond as a single unite to multiple environmental demands”. This normally takes place in the process of post-merger integration, which, according to Levine, can be the final and essential stage of organisational innovation or transformation. While the research literature on mergers has documented that success or failure of a merger is dependent on the effect of post-merger integration (Shrivastava, 1986, p.66), Levine (1980, p.9) states, “during the institutionalisation-termination stage, innovations are usually transformed or die”. As the aim of mergers is normally to pursue organisational synergy, the post-merger process is always associated with a commitment towards establish-
ing new institutional equilibrium—or making divergent boundaries congruent. Rather than studying the overall process of post-merger integration, this study focuses only on the cultural dimension with respect to academic staff.

5.1.2 The integration of academic staff on the cultural level

The introduction chapter defined the integration of academic staff, indicating that the core of staff integration lies on the cultural level—cultural integration. However, the current literature does not provide a clear-cut definition of cultural integration in general and particularly in the settings of mergers. In mergers, cultural integration can be generally understood as a process of adjustment and growing mutual respect and acceptance between different groups of pre-merger institutions. As informed above, the cultural integration as an essential part of post-merger can be understood as a process of institutionalisation. In other words, a successful cultural integration should be institutionalised. However, the institutionalisation process is rather long.

In a post-merger process, there are always different, sometimes contradictory, cultural elements. The institutionalisation with respect of post-merger cultural integration refers to the process in which different cultures and behaviours oriented to certain common solutions in a major area of academic life. An institutionalised system does not necessarily mean the values and norms in the system are all of one piece. Rather, some groups may still have negative orientations, but the institutionalisation of a system provides possibilities for “anti-groups” develop within it (Eisenstadt, 1964, p.247). This point is pertinent in understanding cultural integration. Even in an integrated culture system, each pre-merger group may maintain many of their own basic cultural elements (Nahavandi & Malekzadeh, 1988), implying that the institutionalisation of cultural integration can take place in varying degrees (Zucker, 1977).

Calhoun et al. (1994, p.62) give a general definition of cultural integration, which “refers to the degree to which a culture is a functionally integrated system, so that all parts fit together well”. It has a particular implication for the merger settings, where integration can be seen as a matter of degree to which different pre-merger groups fit together in terms of the ways of behaviour and thinking with respect to academic works. The varying degrees of integration can result in different patterns of cultural integration or acculturation.

Nahavandi and Malekzadeh (1988), based on Berry’s (1983) study on acculturation, suggest four modes of acculturation in merger processes: integration,
assimilation, separation and deculturation. Integration is a process in which each pre-merger organisation loses its cultural identity in spite of the interaction and adaptation of both cultures. In the mean time, both sides maintain many of their own basic elements of assumptions, beliefs as well as cultures, and organisation practices. Assimilation is a unilateral process in which one dominating merger partner adopts the identity and culture of the other, while the latter accepts the culture and organisational practices of the former. Separation is likely to happen when the members of one partner (often as required organisation) have a strong desire to preserve their own culture and organisational practice by remaining separate from the dominant group. Deculturation involves a significant loss of cultural and psychological contact with both partners. This process is accompanied by feelings of alienation, loss and collective and individual confusion. Among those models, the last two models cannot be seen as institutionalised post-merger integration, since no possibility has been provided for “anti-groups” to develop within it.

Despite the variations in the institutionalisation of post-merger integration, the convergent objective is to establish equilibrium among different institutions. The changes of institutions in post-merger processes concern the organisations’ relation to both the external environment and their internal dynamics. First, post-merger universities try to obtain new legitimacy from environment by conforming to proper institutional templates in their surroundings. Second, merger, as a radical restructuring of an organisation, involves both a process of redesigning organisational structures, and a process of blending different norms, values and beliefs. The changes of institutions are particularly reflected in the process of staff integration. As was addressed in the previous chapter, institutions fall into the categories of formal/informal, external/internal (Table 6.2). Next, the changes of institutions with respect to staff integration in the cultural dimension within the categories will be discussed.

5.2 Changes of institutions in the post-merger integration process

5.2.1 Changes of informal institutions within merged organisations

Informal institutions within organisations not only strongly influence the functionality of organisational forms, but also define the actual behaviour of in-
dividuals. Thus the collaboration and integration between different groups of staff members in a post merger process are heavily dependent on the configuration of their internal values and cultures.

A post-merger process is often associated with a desire to create something of value to both, as Cartwright and Cooper’s (1993b, p.57) put it, “the stated objective of all mergers and acquisitions is to achieve synergy or the commonly described ‘two plus two equals five’ effect”. For this end, the staff members confront pressures or motivations to achieve organisational cohesion by generating common action. At a deep level, they need common values or organisational culture. A strong organisational culture serves as a social glue to bind individuals together, creating organisational cohesiveness (Smircich, 1983). For a merged university, the glue is an important means to achieve staff integration.

However, the problem is that in the post-merger circumstance the organisational culture is unlikely to be strong due to the cultural discrepancy. Since the “culture shared by members of every institute is different” (Kuh & Whitt, 2000, p.162), the academic staff members of different pre-existing groups may have different ways of thinking and behaving. Thus, the cultural differences or cultural incompatibility has been commonly considered as a major cause of post-merger problems (Buono et al., 1985; Cartwright & Cooper, 1993b; Datta, 1991, p.283; Greenwood et al., 1994, p.239). As Buono and Bowditch (1989, p.134) claim:

One of the underlying reasons why mergers and acquisitions often fail to achieve the level of operational and financial performance predicted by precombination feasibility studies is the conflicts and tensions that merge when companies try to combine disparate and frequently dramatically different cultures.

It has been found in the corporate realm: (1) “the greater the differences between merging firms the more likely that implementation will be problematic” (Greenwood et al., 1994, p.239); (2) “the greater the hostility of employees within either of merging firms towards the merger, the more difficult it is to secure integration within the new firm” (Greenwood et al., 1994, p.240). These propositions can be easily understood with the concept of organisational boundaries introduced by Levine (1980). When a post-merger university tries to make different boundaries congruent, the endeavour will be relatively easy if the two pre-existing boundaries were similar or compatible.
These lead to the following hypothesis.

**Hypothesis 1:** The achievement of cultural integration is inversely related to cultural differences of pre-merger HEIs.

### 5.2.2 Role of formal institutions

Despite the important role of informal institutions in staff members’ behaviour, informal institutions in general are difficult to manipulate and this engenders major managerial challenges. In this respect, Greenwood and Hinings (1994, p.253) remark that informal institutions, such as culture, “may be not amenable to managerial action in merger especially during the courtship stage”. Without disagreement with the authors, I believe “[a]lthough culture change is difficult, time consuming, and expensive in terms of breadth and depth of resources required, it can be accomplished” (Buono & Bowditch, 1989, p.171).

The accomplishment relies heavily on formal institutional rules. Formal institutions refer to “normative system designed by management” or the “blueprint for behaviour” (W. R. Scott, 1981, p.82). In contrast to informal institutions that are “slow-moving” (Roland, 2004) and “unintentional” (Knight, 1992, p.171) in character, formal institutions can change dramatically and be intentionally manipulated. In an organisation, formal institutions are created on the foundation of informal conventions and norms shared by organisational members. However, once formal organisational rules are designed, they also affect the informal institutions in the organisation. The vehicles of the interaction between the two forms of institutions are organisational members. While informal institutions, like culture, provide meanings and directions for people’s behaviour, the formal rules along with informal ones affect an individual’s action by establishing social expectation through provision of information and sanctions (Knight, 1992). The point is consistent with Douglas’s vision that social institutions may influence the direction of internal value by making “public memory” (Douglas, 1986). The public memory is the storage system for the social order. The implication of public memory is that institutions, like a person, do remember and forget. Although the emergence of internal cultures and values cannot be controlled, the organisational regulations and management may manipulate the potential cultures of the new organisation by directing individual memory and perceptions into the forms that are compatible with what the formal institutions authorize. As such, formal insti-
tutions constitute a tool available to managers, through which informal institutions can be shaped.

In a merged organisation, integration of cultures is not simply an intentional and spontaneous process in the informal dimension. The structures and regulations formulated by the positions of individuals in the formal hierarchy will provide a formal guideline, informing staff members what they are supposed to do. These considerations provide a general proposition that organisational structures and regulative rules may affect the cultural integration.

The design and implementation of formal organisational rules are intertwined with management procedures. Organisational structure and management processes embrace a range of issues. The factors that facilitate or hamper cultural integration remain largely undiscovered in the context of Chinese higher education mergers. Nevertheless, some concrete aspects could be identified that might have effects on cultural integration, based on the exploratory case study and the review of the literature.

**Balance of power and interests**

One managerial approach, which has been commonly employed in most Chinese merged universities, pays special attention to the balance between the interests of pre-merger groups, with an initial intention of avoiding hostile competition or friction between them (Wan, 2004). For leaders of post-merger institutions, one of the most challenging tasks they faced was how to balance the power and interests between pre-merger institution in a way that was regarded by both sides as fair and impartial. Trying to avoid being accused of favouring either side, a balance strategy was used in the process. In the appointment of academic unit leaders or professional title evaluation, for example, the strategy put more emphasis on balancing two sides rather than on selecting the best candidate. This rigid arrangement appeared to be fair to both sides but it comes at great cost. Under such an arrangement, the subordinate staff members also automatically divided along the old institutional lines. Thus rather than promoting integration of the two institutions, this arrangement enhanced the “us vs. them” antagonism that is common in organisational mergers (Astrachan, 1990; Blake & Mouton, 1985). It made cooperation and coordination within the same unite more difficult. This has been recorded in a Chinese journal article, “At the commencement of a merger, the new leadership team must always pay attention to the balance (between pre-merger institutions), but the more the balance is pursued the more difficult it is for a healthy development. A balance strategy often results in imbalance in practice.” (B. Liu, 2001, p.26)
This strategy can be used in any forms of merger, but it is normally highlighted in the consolidations of equally strong partners. This partly explains why the so called “strong + weak” merger are relatively more successful that the so called “strong + strong” mergers in Chinese higher education as observed by some Chinese scholars (Duan, 2001; Xue, 2000).

**Hypothesis 2:** The more balance strategy has become central in management processes, the more difficult it may be for the integration of academic staff, particularly for the long run cultural dimension.

**Transparency of management process**

The transparency of management process has been considered by Shrivastava (1986) as a factor facilitating the human side of post-merger integration. When a merger occurs, employees often feel uncertain about their job and future prospects and feel difficult to solve problems because the available information may be vague, ambiguous or incongruent. This situation is likely to lead individuals to react by creating conditions of closed communication and self-fulfilling prophesies (Bastine, 1967). As such, an ambiguous merger environment is likely to result in inter-group differentiation and mistrust. Shrivastava (1986, p.72) suggests, “Many of these negative consequences can be minimised by encouraging open communications”, such as allowing key employees to participate in decision-making providing ample information regarding the criteria for evaluation, promotion and termination. Bastien (1967) notes that despite management efforts at making management procedure transparent, some members especially those from a weaker merger partner may feel somewhat suspicious. Therefore, it is important for management to maintain congruency between management action and its communications.

**Hypothesis 3:** The extent to which the information concerning management action is available for staff members is positively associated with the degree of cultural integration.

**5.2.3 Interaction and contact among different groups of staff**

The influence of formal or informal institutions on development of common values may also take place through affecting the contact of individual members. As indicated by Martin (1994), for example, the ways how new governance structure and regulations are designed will affect the staff relationships
and the extent to which members share a new organisational culture. One aspect to characterise the formal institutions is concerned with the extent to which different groups of academic staff have contact with one another. This is clearly reflected in the psychological version of inter-group theory where it is argued that inter-group attitudes can be improved via contact (Allport, 1954; Williams, 1947). Accordingly, an observation has been made in industry mergers that integration at the cultural level requires intensified contact between members of both merger partners (Nahavandi & Malekzadeh, 1988). In the higher education sector, Eastman and Lang (2001, p.186) reveal that the contact and integration between pre-merger groups are important for staff integration in post-merger universities, since “talking is a prerequisite for appreciating and eventually overcoming cultural differences”.

The day-to-day interaction between members of pre-merger groups is, however, not a sufficient condition for cultural integration. Interaction may facilitate or work against cultural integration (Eastman & Lang, 2001, p.186), depending on the patterns of interaction—cooperation or competition. DiMaggio and Powell (1983, p.154) propose that the interdependency between organisations lead the organisational isomorphism: “The greater the dependency of an organisation on another organisation, the more similar it will become to that organisation in structure, climate and behaviour focus”. Expanding the notion, I argue from a micro perspective that the relationships between the groups of academic staff of pre-existing institutions can affect the process of developing common organisational culture. In Schein’s (1988, p.181) vision, to prevent conflict between groups, it is important to establish organisational conditions to stimulate collaboration rather than competition, because culture contains implicit components that cannot be grasped without extensive collaboration. Gaertner et al. (1993, p.9) claim that “inter-group cooperation transforms members’ cognitive representations of the memberships from two groups to one group”. By contrast, they think that competitive interactions between merging groups will have a reverse consequence. The implication of these arguments leads to the following hypotheses.

**Hypothesis 4:** The higher the degree of collaboration between academic staff members of pre-existing institutions, the higher the degree of cultural integration which will be achieved.

When people have worked physically together, the possibility of being cooperative between academics of pre-merger groups is also related to the academic work environment which confronts each individual. When academics are in an environment where team work is preferred, it is more likely for them to estab-
lish some sort of collaborative work relations with those members from other pre-merger institutions.

**Hypothesis 5:** The cooperative work environment is more likely to lead to inter-group collaboration between academic members of pre-merger groups.

According to Schein, as mentioned earlier, the patterns of interaction are dependent on organisation conditions. In a merger setting, the condition may be of multifaceted. Among many other things, one is concerned with administrative arrangements about the merger. In merged Chinese universities, for instance, there were generally two ways to assign people to colleges or departments, based respectively on functions and the locations of previous institutions. The first arrangement tended to separate members along the old organisational lines. Under such arrangement, academic staff members work in different locations though officially belonging to the same college or department. In the other, the new administrative structures of a merged university were arranged based on academic function, meaning that those of similar disciplinary background and of similar work attributes were arranged together. Such a way increased the likelihood of day-to-day interaction between members of the groups that were merging. In some cases, the merger implementation started with the first strategy and changed to the second one after a transition period. The merger implemented according to the second strategy has often been called a substantial merger, referring to the fact that the members of pre-merger staff have physically worked together with intensive contact or interaction among staff members of pre-merger institutions. The physical or geographic divisions of an academic unit in a post-merger institution might be the necessary condition for cooperation between members of pre-merger institutions. This implies:

**Hypothesis 6:** The longer the period of pre-merger groups working in separate locations following the merger, the more difficult will be inter-group collaboration.

### 5.2.4 Organisational relations to external environment

**– organisational identity change**

Besides being influenced by structures and management processes, the internal values and cultures are subject to changes in external institutions. This section will mainly discuss the impact of organisational identity change on cultural integration. Organisational identity, as was earlier mentioned, is defined in terms of an organisation’s relationship to its environment; it reflects a social institu-
tional template that the organisation adapts to. A merged university, in order to survive, must pursue its legitimacy or appropriateness in its external environment. For example, it will redefine its functions by conforming to certain classificatory meanings. Specifically, it needs to identify what types of HEIs they are supposed to be. Such a process reflects the organisation’s conformity to the norms, values and beliefs institutionalised in a given type or population of HEIs.

Organisational identity has a major impact on intra-organisational culture, as it has been shown, for example, that cultures shared by academics are often subject to institutional identity along with other external circumstances. (Austin, 1992; B. R. Clark, 1983, p.75; Välimaa, 1998). This understanding has a special implication on understanding the human side of post-merger integration. Merger normally brings previously independent groups together, which have been imprinted by their old organisation’s identities and cultures (Daniel & Metcalf, 2001, p.27). To reduce frictions and conflicts between the two groups, as the de-categorisation approach in the inter-group literature suggests, it is important to degrade the salience of the two-groups’ identities (Gaertner et al., 1993, p.5). Mergers, to varying extents, lead to the loss of organisational identity, but the organisational cultures shared by separate groups are relatively hard to change simply by an organisational combination. Further organisational efforts are required. A social psychological version of inter-group theory suggests that conflicts between groups may be reduced by establishing common or cross identities (Gaertner et al., 1993, p.5; Edgar H. Schein, 1988, p.181). Following this strategy, the conflicts between groups of pre-merger institutions can be resolved by developing a new organisational identity in the post-merger institution. With a common or overlapped identity, members from both groups may to some extent consider them as one community, rather than always having the strong feeling of “us” and “them”.

A university’s identity to a large extent reflects its functions and production orientation. A common perception is that the more research oriented an institution is, the more prestige or status it is likely to have. According to new institutionalism, the identity change is related to the changes of external institutional template in use. However, the new institutional theory does not tell much about how external challenges result in internal dynamics for change. As an effort to solve this problem, Greenwood and Hinings (1996) point out two important precipitators of pressures for change, namely interest dissatisfaction and value commitments. Since organisations are “arenas in which coalitions with different interests and capacities for influence vie for dominance”
(Parmer et al., 1993, p.103), one potential pressure for change or inertia is concerned with the extent to which groups are dissatisfied with how their interests are accommodated within an organisation. It is not difficult to believe that conflict and disaffection are more salient in the case of merger. Greenwood and Hinings (1996) also maintain that dissatisfaction cannot simply provide direction for change, unless it is associated with certain types of value commitments. The organisational identity will influence internal values through providing a template for value commitment. It is consistent with what Buono and Bowditch (1989, p.165) suggest that in a merged organisation culture can be affected through “getting organisational incumbents to ‘buy in’ a new configuration of beliefs and values”.

Value commitment here refers to organisation members’ attitude to external institutional templates in use. The external institutions affect individuals’ internal value preferences by conferring identity to individuals (Douglas, 1986). When individuals are put into a social group, they will think and behave according to the norms constructed by the group. For example, when people consider themselves to be in first-class university, the organisational identity will constrain their behaviour (X. Zhou, 2003b, p.83). In a post-merger process, if the staff members feel that their organisation has been transformed to the one with higher prestige, the new identity will accordingly change their ways of thinking as well as behaviour orientation. Staff members, especially academics, are more likely to accept the situation when their institution is transformed into a more prestigious one after the merger (Eastman & Lang, 2001, p.179), because pursuing higher academic status is academics’ common value and behaviour tendency. This corroborates one influential perspective in social psychology that group behaviour (cohesiveness, cooperation and attraction to other group members) comes about when individuals adopt a ‘group identity’ in favour of a ‘personal identity’ (Turner, 1985; Turner et al., 1987).

Therefore, the change of identity to a higher level can increase staff members’ commitment, because the individuals’ internal values tend to change toward convergent values and beliefs associated with the new organisational identity. When most staff members of pre-merger institutions conform to same external institutional templates, the integration of internal values is likely to happen. In contrast, when staff members feel that mergers deprive them of prestige, the internal values shared by members will hardly be of harmonious. Therefore, the following assumption is expected:

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Hypothesis 7: The higher the prestige level an organisation or unit is transformed to after merger, the more likely are the internal values or cultures among academic staff members in the organisation or unit to change to be consistent with the values and norms attached to the new identity, through which cultural integration may be more easily be achieved.

The above elaboration and hypotheses can be summarised in the following model (Figure 6).

**Figure 6. Analytical model for understanding the human aspect of post-merger integration**
While most findings discovered by the pilot study have been covered by the theoretical framework, one exception is about merger type. Both the higher education literature (Eastman & Lang, 2001; Goedegebuure, 1992; G. Harman, 1989; G. Harman & Harman, 2003; Lang, 2002a, 2002b; Skodvin, 1999) and the pilot case study itself have evidenced the relationship between merger type and the consequence of post-merger integration. Mergers take several different forms, and the international research literature has developed a variety of ways to categorise merger forms (Eastman & Lang, 2001; Goedegebuure, 1992; G. Harman, 1989; G. Harman & Harman, 2003; Lang, 2002a, 2002b; Skodvin, 1999). These empirical studies have taken place mainly in western countries. Despite few studies on Chinese mergers appearing in international journals, recent years have seen a growing Chinese literature on the subject. Some have made their contribution to merger classifications (Duan, 2001; Z. Wang, 2001; Xue, 2000; Q. Zhou, 2003a). However their studies are ambiguous, lacking in normative criteria and theoretical bases. Against this background, this chapter tries to develop a typology of mergers in Chinese higher education with reference to international experiences.

6.1 Forms of merger

The importance of being sensitive to the type of merger was first addressed through studies of corporate mergers (Cartwright & Cooper, 1990; Napier, 1988), where mergers have been distinguished by different criteria, such as the changes of legal organisational entity (Greenwood et al., 1994), the ways to reduce or avoid interdependency (Pfeffer, 1972) and the strategic motivations for merger (Trautwein, 1990). There appears to be a similar research interest in the higher education literature; mergers have also been categorised according to a variety of perspectives.
6.1.1 Inputs to mergers

One common approach used to classify mergers is based on the characters of the participating institutions. In terms of the academic areas or fields covered by participating institutions, Skodvin (1999) distinguishes between two forms of merger: integration and diversification. Integration mergers take place between institutions in similar academic areas with the intention to increase academic integration and collaboration, such as the so-called Dawkins reforms in Australia, the Dutch HBO reforms and the Norwegian state college reforms. The diversification merger is often adopted when the partners are in different but preferably complementary areas, and the aim is to diversify academic profiles. The examples of diversification mergers include most of the mergers in American higher education, and the latest mergers in the Netherlands and the UK.

Mergers can also be differentiated by the sectors to which merger partners belong (G. Harman, 1991, p.179; G. Harman & Harman, 2003, p.32). The sectors can be divided according to institutions’ missions and roles. For example, specialized colleges or polytechnics may be considered as one, while universities are another. Prior to the late 1980s, there had been mergers in Australian higher education, but these mainly concerned colleges of advanced education (CAEs) in one sector. The CAEs were teaching-only institutions. By contrast, the late 1980s mergers were cross-sectoral, between universities and CAEs.

By translating the categories of business mergers into a higher education context, Goedegebuure (1992) has developed a more sophisticated typology, which incorporates the above two dimensions. In the business sector according to the strategic purpose underlying the merger decision, mergers have been classified into four types, namely horizontal, vertical, diversification and conglomerate. These types can be distinguished by the features of merger partners: their line of business and the type of products they produce (Table 5). In a broad sense, all universities and colleges are in the same business, but differences exist in academic areas and disciplines. The types of products they ‘produce’ are largely determined by the missions and functions of HEIs. Accordingly, Goedegebuure (1992, p.23-24) provide the definitions of four strategic types of mergers in higher education:

A horizontal merger is a merger between institutions that operate in similar academic fields and are oriented towards a similar type of product.
A vertical merger is a merger between institutions that operate in similar academic fields and are oriented towards a different type of product.

A diversification merger is a merger between institutions that operate in different academic fields and are oriented towards a similar type of product.

A conglomerate merger is a merger between institutions that operate in different academic fields and are oriented towards a different kind of product.

Table 5. Typology for merger in profit sector

<table>
<thead>
<tr>
<th>Line of business</th>
<th>Type of product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar</td>
<td>Similar Vertical</td>
</tr>
<tr>
<td>Different</td>
<td>Horizontal Diversification</td>
</tr>
</tbody>
</table>

Source: Goedegebuure (1992, p.19)

6.1.2 Organisational outcomes

While Martin and Samels (1994b) imply that nowadays mutual growth mergers are mainly about shared vision rather than power, Eastman and Lang (2001, p.127-128) based on the recent experiences in Canada argue, “even in mergers based on mutual interest, power shapes outcomes in profound ways”. The power is concerned with the size of the student body, academic and other staff, budget, and the relative size. The power determines organisational outcomes.

Sharing similar propositions with Eastman and Lang, Grant Harman (1991, 2003) distinguishes between consolidations and acquisitions (or take-overs), according to how the merger partners were originally fitted together and subsequently transformed to a new one. A consolidation involves at least two institutions, normally with equal size and power. In the process of consolidation, all participating institutions lose their autonomy and are transformed into a new entity. Based on the recent mergers in Canada, Easter and Lang (2001) find that few mergers resulted in a well-integrated new unit or organisation. This provides evidence for Bengtsson (1992) and Chambers’ (1984) argument, that there might be no real consolidation even in the mergers of institutions of
similar size. The unlikelihood of consolidation in practice has been explained by Chamber (Chambers, 1984, p.19): “when the difficult questions of control, identity, mission, property, and prestige were finally engaged in concrete terms, the concept of equality gave way to perceived dominance by one partner”. Nevertheless, for Grant Harman, the understanding of consolidation focuses primarily on the changes of organisational structure. For instance, the combination of two or more CAEs to form a new institution in Australia can be seen as a consolidation.

The acquisition refers to the mergers in which one institution or unit was dwarfed by its partner in terms of size and power, and merger forced the smaller one to conform to the larger one’s culture and organisation. This process is underlined by the nature of organisations—seeking stability. When uncertainty arises from the prospect of merger, organisations “seek to minimize that uncertainty by imposing and implementing their own terms—and the larger and more powerful an organisation is, the more readily it can do this” (Eastman & Lang, 2001, p.130).

Acquisitions can also take other forms, mainly transformative acquisition and semi-autonomous acquisition (Lang, 2002b). The transformative acquisition has a strong impact on the acquiring organisations’ existing structures through the integration of human and material resources from the acquired ones (Bengtsson, 1992). In a semi-autonomous acquisition, the acquired institution remains as an independent school with relatively high autonomy, since it normally operates in different areas than the acquiring institution.

The organisational outcomes and the strategic types provide two dimensions from which to observe mergers (Table 6). Although the matrix indicates 12 types of mergers, only four are most likely to happen in practice, because one strategic type will only lead to certain kinds of organisational outcomes. For instance, consolidations are likely to take place between institutions in the same sector, including either horizontal or diversification mergers. In contrast, acquisitions are cross-sectoral in character: vertical mergers often result in transformative acquisitions, while conglomerate mergers can be accompanied by semi-autonomous acquisitions.
6.1.3 Motivations

Mergers have also been distinguished by the motivations for them. In general, the motivation for merger is to achieve economies of scale, administrative efficiency and academic benefits (K. Harman & Meek, 2002a). In academic cases, for example, the rationale behind mergers can be divided into three categories, namely “eliminating duplicative programs”, “increasing academic integration and collaborations” and “diversifying academic profiles” (Skodvin, 1999, p.69). These motivations are related to the strategic types. For instance, “eliminating duplicative programs” and “increasing academic integration and collaborations” are mainly concerned with mergers between institutions in similar academic areas, while “diversifying academic profiles” are related to diversification mergers.

6.1.4 Implementation models

Skodvin (1999) and Grant Harman (2003) label voluntary or involuntary mergers in terms of who initiated the mergers. A voluntary merger is identified when the action is initiated by institutions themselves, while in a forced merger the initiator is external to the institutions. In practice, however, it is hard to find purely voluntary mergers especially in public systems, since in most cases...
educational authorities are the initiators. Nevertheless, the ways in which mergers are implemented are not the same. Some were arranged entirely by the educational authorities with little freedom for individual institutions to choose partners, while some systems allowed the affected institutions to choose their partners voluntarily. Therefore, it is more relevant to draw a distinction between forced and voluntary mergers in the implementation process. Skodvin (1999) uses the dichotomy of “top-down” and “bottom-up” to distinguish the implementation process, implying that forced mergers are likely to be associated with a top-down implementation process, and voluntary mergers with a bottom-up one.

6.1.5 Typology of mergers in higher education

Based on the above analysis, mergers in higher education can be generally classified by strategic types and implementation models (Table 7). The typology perfectly applies to mergers between two partners. In practice there are growing multi-partner mergers (G. Harman & Harman, 2003, p.32). In the research settings of a multi-partner merger, an option for analysis is to make observations on each combination of pair partners.

Table 7. Typology of mergers in higher education

<table>
<thead>
<tr>
<th>Implementation Models</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top-down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom-up</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.2 Debates on classifying mergers in Chinese higher education

Now it is the time to shift our attention from international experience to Chinese practices. The Chinese literature has identified that there are three kinds of classifications.

The first categorisation simply suggests two types of merger (Chen, 2002; Zuo, 2000). One is about mergers between institutions in similar academic fields. For instance, the merger between Shanxi Institute of Finance and Economics and Shanxi Institute of Economic Administration in creating Shangxi University of Finance and Economics in 1997. The aim had been to increase academic integration and cooperation, such as creating multi or inter disciplinary programs. In contrast, the other type stresses diversification of academic profiles; the participating institutions are in different but often in areas complementary to each other. The best example is the creation of the new Zhejiang University in 1998 through a merger between the former Zhejiang University, Hangzhou University, Zhejian Agriculture University and Zhejiang University of Medical Science.

From the second perspective, mergers are differentiated by their aims (Q. Zhou, 2003a). Accordingly, four models are identified: “xueke fazhang xing” (disciplinary development), “guimo kuozhang xing” (scale expansion), “cengci tisheng xing” (upgrade), and “buju tiaozheng xing” (distribution adjustment). The first type is associated with the purpose of diversifying academic profiles, in a hope to build world class or comprehensive universities. The second type emphasises expansions of campus areas, scale of staff and enrolment. Merger in this type consequently results in more or less the extension of academic fields. The third type of mergers are those between small institutions, such as three-year program (Dazhuan) colleges and adult education institutions. By combining together, the new institutions are able to offer four-year (Bachelor Degree) programs. In the last type, partners are mainly those institutions that are transferred from ministries to local administrations or that are co-administrated by both ministries and local authorities. Local governments merge these institutions with local universities and colleges, as a means of optimizing regional educational resources.

The third classification is based on the features of participating institutions (Xue, 2000). The first type is called “qiangruo hebing” (strong-weak merger), referring to the mergers between higher ranking HEIs and those at relatively
lower levels. Mergers of this type take place in the form of acquisition, for example, between ministry-run institutions and regional ones, with an aim of strengthening the certain disciplinary areas of the former. The second type is called “qiangqiang hebing” (strong-strong merger), meaning both partners have a long history and strong academic power. Mergers between equally strong institutions are frequently driven by the motivation to build up world-class or comprehensive universities. However, mergers of this type are often controversial and problematic, with few successful examples. The third one is called “shuiping hebing”. Although the direct translation in English is horizontal merger, its meaning differs from Goedegebuure’s definition. Rather it refers to the mergers between smaller institutions for pursuing economies of scale. The last type is called “diqu hebing” (regional merger), referring to the mergers of institutions that are geographically close to each other.

Compared to international experiences, the classifications by Chinese researchers lack normative standards, ignoring some important dimensions emphasised by the international literature. First, little attention has been given to the initiators of merger, and implementation models, partly because of the fact that mergers in China are mostly initiated by various levels of government, and the implementing processes represent a clearly top-down approach (Chen, 2001; Duan, 2001). Only in a very few cases have mergers not been entirely forced and implemented according to a top-down model. For example, the merger between Beijing University and Beijing University of Medical Science started with an voluntary inter-institutional cooperation in 1995 and followed up a substantial merger five year later when motivations for merger were generated on both sides (Min, 1999).

Another neglected factor is the organisational outcomes of mergers, consolidations or acquisitions. Chinese governments have avoided using the term “acquisition” or “take-over”. All kinds of institutional combination are labelled as mergers in the sense of consolidation. This is probably because the word “acquisition” might sound fearsome and cause stress for those in the acquired institutions. In reality, however, acquisitions, both transformative and semi-autonomous, did take place frequently. An example of semi-autonomous acquisition was the merger between Beijing University of Technology and Beijing College of Computer Science in 1993. Since the former had no involvement in the area of Computer Science, the latter remained as an independent school after the merger. A good example of a transformative acquisition was the merger between Tianjin Normal University, Tianjin Special School of Teacher’s Education, and Tianjin College of Education in 1999. Although the first institution
absorbed the other two, it was also affected through the take-over process as a result of the creation of a new administrative body, the formation of institutional cultures, and the expansion of university functions.

Although the disciplinary area and institutional production orientation have, in one way or another, been used by Chinese researchers to classify mergers, they are not used in a systematic and meaningful way. The two dimensions have not been incorporated in the manner suggested by Goedegebuure. Moreover, so far as the types of institutions are concerned, most Chinese researchers tend to refer to a strong-weak dichotomy, but this dichotomy may be overly simplistic. The terms “strong and weak”, or “big and small” also suffer from ambiguity in definitions. For a study based on scientific method, we need more accurate and meaningful labels. In this respect, the typology developed in a Western context may serve as a basis for observing mergers in Chinese higher education.

6.3 Implications of international experiences on merger types for Chinese practices

As most mergers in Chinese higher education have been implemented by a top-down approach, the observation of mergers in Chinese higher education can concentrate primarily on the strategic types, based on the disciplinary areas and the functions of participating institutions. How can Chinese HEIs be categorised by disciplinary areas, in a horizontal dimension, and by types of functions, in a vertical dimension?

In the horizontal dimension, the official categorisation of HEIs, for example used in Chinese Education Statistics Year book, includes 12 types, namely (1) comprehensive institutions, (2) science and technology institutions, (3) agriculture institutions, (4) forest institutions, (5) medical science institutions, (6) teacher education institutions, (7) humanities and social sciences institutions, (8) economics and finance institutions, (9) politics and laws institutions, (10) creative and performing arts institutions, (11) physical education institutions and (12) minority ethnic institutions. Although the classification is based mainly on disciplinary areas, teacher education institutions and minority institutions do not belong to this category. Wu Lianshu (Wu, 2002) has revised this category and developed a new one consisting of 12 types: (1) comprehensive type, (2) humanities, social sciences and sciences type, (3) sciences type, (4) humanities
and social sciences type, (5) technologies type, (6) agriculture type, (8) medical science type, (9) laws type, (10) humanity type, economics and finance type, (11) physical education type and (12) art type. In most cases, teacher education institutions belong to the humanities, social sciences and sciences type. The categories can be basically used in making distinctions between merger partners, though in some settings a more meticulous differentiation may be required. In the case of the creation of Hebei University of Technology through the merger between Hebei Institute of Light Chemical Industry, Hebei Institute of Machine and Electronics, and Hebei Workers’ College of Textile Industry, although all the participating institutions belong to the technology type, their specialisations differ in separate industry areas. Therefore, these partners may be considered as being in different areas.

In the vertical dimension, the types of HEIs can also be understood as levels or sectors, in terms of the functions or production orientations of HEIs. Although there is no official classification, debates emerge among a number of scholars. Among different views, Wu Lianshu’s (2002) classification is most commonly cited. He divides HEIs into four levels, research universities, research and teaching institutions, teaching and research institutions, and teaching only colleges based mainly on the scale and orientation of research activities.

However, his classification confronts some challenges. He pays much attention to the academic roles of Heist, but neglect that there are another two important functions of HEIs, namely to bring out competent talents and to offer service to society. The next drawback of Wu’s classification is its exclusion of those institutions offering three-year professional or application-oriented programs. Moreover, the differences between “research/teaching” and “teaching/research” are not clear-cut in a practical sense.

Against these problems, Chen Houfeng (2004) modifies the classification and categorises HEIs as being of research type, research/teaching type, teaching only type and application type. The characters of Chen’s four types of institutions are summarised in Table 8.

Thus, the typology described in Table 6 may be relevant to the Chinese context. The development of a typology is useful and serves a purpose by allowing for an understanding the human aspect of post-merger integration. In general, the strategic type is a determinant of the degree of human integration. In conglomerate mergers (type 4), the acquired institutions may operate relatively autonomous. As such, integration mainly takes place in the financial and structural aspects, while the human integration tends to be minimal. In
horizontal (type 1) and vertical (type 2) mergers, human integration is required, largely by contract. The degree of human integration in diversification mergers (type 3) may generally fall between the above two situations. In higher education, there are almost no two institutions that operate in entirely different academic fields without any overlap. Even when two “unrelated” institutions were consolidated, fusing together some previously separate academic units is unavoidable. Although the majority of academic departments remain relatively intact, the academic staff members may more or less be involved in a process of integration, due to the transfers of previous departments to new locations, the transforms of organisational structures, and the changes of administrative body. Nevertheless, in this study only type 1 and type 2 are investigated.

In many Chinese cases, mergers consist of more than two partners, and therefore, more than one type of merger can be found in a single case of merger. However, the merger between each pair partners, normally only one type of merger is dominant.

The synthesis of the Western literature on merger classifications reveals that four merger types are most important and relevant in merger classifications. These types reflect both the characteristics of merger partners and the organisational outcomes of mergers. Besides, by implementation approach is another significant perspective to classify mergers. As Chinese mergers have mainly followed a top-down model, few distinctions can be made in terms of implementation model. Therefore, it is suggested that the four type typology can be applied in the Chinese context.

Table 8. Four levels of higher education institutions

<table>
<thead>
<tr>
<th>Levels</th>
<th>Characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>Take overall responsibilities for cultivating talents, conducting research and offering social service. Provide mainly elite education: offering mainly doctoral and Master’s degrees, though also granting bachelor degrees. Research focuses on national and regional key projects.</td>
</tr>
<tr>
<td>Research/Teaching</td>
<td>The main functions are cultivating talents and conducting research, and, in the meantime, also offer social service. Elite education and mass education are equally important. Emphasise both research and teaching. Mainly offer Master’s and bachelor degrees. In only a few disciplinary areas, can grant doctoral degrees. Research activities concentrate on regions and industrial sectors.</td>
</tr>
<tr>
<td>Teaching</td>
<td>The primary functions are teaching and teaching-related research. The main body of students is pursuing bachelor degrees. Masters’ degree programs operate only in a few subjects.</td>
</tr>
<tr>
<td>Application</td>
<td>Mainly offer three-year program (zhuanke), cultivating students with a particular emphasis on application ability and practical skill. Also include adult education institutions.</td>
</tr>
</tbody>
</table>

Source: Chen (2004, p.207-208)
This typology may provide guidance for observing and studying mergers in Chinese higher education. It may also serve as a bridge connecting Chinese and international studies. With a common framework, the empirical studies on merger in Western higher education and Chinese practices become more comparable.

6.4 Implications of merger type in understanding post-merger integration in a Chinese context

The reason that one chapter has been devoted to a discussion of the typology of mergers is based on the assumption that merger types have implications on the outcomes of post-merger. Mulvey (1993) has stated that the character of the merger processes and of the institutions involved are in general vitally important factors for the outcome of a reorganisation process.

There have been few studies about the relationships between merger types and staff integration in post-merger processes in the Chinese context, the implications of merger types for institutional processes of staff integration have been observed in the western literature.

First, the similarity or difference between the academic fields of merger partners determines the extent to which academic staff becomes integrated. Existing experiences in the business sector have evidenced that the mergers between partners in unrelated areas (Type 3 and Type 4) “tend not to have any large-scale impact on the working lives of the vast majority of employees” (Cartwright & Cooper, 1996, p.6). In contrast, the mergers of organisations in similar areas result in fusion or integration of human resources (Type 1 and Type 2). As the focus of this study is on staff integration, merger type 1 and merger type 2 have been studied.

In the higher education context, Skodvin (1999) drew a distinction between two types of merger, namely integration and diversification. The former refers to mergers between partners in same or similar disciplinary areas, while the latter refers to mergers between those in different disciplinary areas. He thinks that the two types of merger, to some extent, determine the degree of tension and conflict with respect to academic development in post-merger processes. Mergers of the former type are more controversial than mergers of the latter type. As such, “the greater the differences are in regard to size and course programs between the institutions involved, the greater the probability that the mergers will be successful” (p.73).
However, his conclusion may be too simplistic, because he does not differentiate between merger partners according to the levels or sectors to which they belong.

Second, the sector differences between merger partners may produce varying outcomes. In this respect, it has been observed:

Mergers appear to work better where there exists greater possibility of integration and articulation between the goals and visions of the institutions in question, that is ‘horizontal’ mergers between institutions whose missions and cultures are complementary. Cross-sectoral or ‘vertical’ mergers such as those between a university and a college of education are less likely to be successful unless the merger and post-merger phases are managed very effectively. (G. Harman & Harman, 2003, p.38)

However, their statement cannot be supported by all the empirical evidence. For instance, in the U.S.A., when Widener University merged with relatively small institutions, such as a law school, a junior college and later with a doctoral program in clinical psychology, the merger was very successful (J. Martin & Samels, 1994a). In Meek’s (1987) assessment, the cross-sectoral (that is, university/college mergers) are most successful. With respect to cross-sectoral mergers in the United Kingdom, he wrote:

In cross-sectoral university/college mergers, the outcome of merger is always a university. Since the university is usually the most powerful partner in a merger, the success of a university/college merger largely depends on the attitudes adopted by university personnel. Warwick, Exeter and Loughborough have produced successful mergers because university leaders believed in the potential benefits of the merger and saw that the acquisition of a college would give them the opportunity to pursue activities otherwise closed to the university (Meek, 1988).

The different arguments and observations concerning cross sector mergers may be due to the ambiguity of their understandings or definitions of cross-sector merger. The scholars in the debate neglect the fact that that a distinction could be made according to whether the merger partners are in the same academic fields or not.

Despite the existing observations and understandings about the relationships between merger types and merger outcomes, there have been few studies
which have produced empirical evidence of the relationship. In the mean time, “There appears to be a gap between the research about the various classifications of mergers and the research about the role culture plays in the overall implementation of mergers” (Nahavandi & Malekzadeh, 1988, p.80). The similar challenge is more severe in China. With the merger types defined in this chapter, the empirical part of this study will try to discover the relations between merger type and academic staff integration in a one case of merger in Chinese higher education.
Before going further with the quantitative measure of major concepts, this section will first emphasise organisational culture in a merger context. Among other concepts or variables, culture is the most important one and is most difficult to be measured.

As more and more universities enter into merger arrangements, the need to assess organisational cultures becomes more important. The term ‘organisational culture’ has proved difficult to define, but several of its important components are agreed on by most researchers. These include the norms, perspectives, values, assumptions and beliefs shared by organisational members. Due to the abstract nature of these elements, there is a considerable challenge for external researchers who want to assess organisational culture. It is even difficult for members of an organisation to describe their own culture. Cameron and Freeman (1991, p.31) use the old proverb “Fish discover water last” to illustrate the problem of assessing culture among those immersed in it.

The study of organisational culture is important in post-merger institutions because the cultures of the pre-merger organisations are often different. Although many researchers have claimed that cultural differences exercise a profound influence on post-merger integrations (Buono et al., 1985; Cartwright & Cooper, 1993b, 1996; Sayan Chatterjee et al., 1992; Datta, 1991; Olie, 1994), the higher education literature has been relatively silent as to how one might empirically measure this phenomenon. The difficulty is compounded by two major interrelated problems in organisational research, namely a lack of empirical knowledge about the concept of culture and a lack of a unified conceptual framework to identify the content of culture.

Since the culture shared by the members of each pre-existing institution will usually be different from each other, the processes involved in assessing the culture of the post-merger institution become more ambiguous and complex. However this complex situation provides a better setting for capturing organisational cultures, because organisational cultures can become more obvious when compared or contrasted with the other organisational cultures (Xenikou & Furnham, 1996). As noted by Daniel & Metcalf (2001, p.29) “there is no more obvious contrast than during a merger or an acquisition”.

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The aim of this study is to provide insight into the construct of culture in the context of post-merger higher education institutions, and to discuss possible approaches to its measurement for the use of this study. As a discussion on how the concept of organisational culture is understood in the setting of post-merger higher education institutions has been presented in Chapter 4, this chapter starts with a brief introduction to the tradeoffs between qualitative and quantitative approaches to assess culture. Next, it reviews instruments that can be used to measure cultures, either in business mergers or between higher education institutions. Based on the basic psychometric requirements for measuring culture, this study concludes by identifying some of the implications of selecting or designing instruments for assess cultural differences in post-merger higher education institutions.

7.1 Qualitative vs. quantitative assessment of culture

In addition to the debates on definition of culture come questions of how to measure culture. The approaches to the study of cultures in organisations depend on researchers’ perspectives. Many studies on organisational culture are from insiders’ perspectives, such as ethnographic or phenomenological investigation within a small number of organisations. The common methods are, for example, in-depth interview and participation observation. This strategy requires participation over a long period as well as a huge amount of information in specific cases. Such qualitative approaches stress the uniqueness of organisational culture, and provide “an opportunity to maximise the values of heurism, flexibility, adaptiveness, depth and realism” (Tucker et al., 1990, p.5).

Despite its advantages, the qualitative approach has inherent weaknesses (Delobbe et al., 2002; Sackmann, 1991; Tucker et al., 1990). First, the validity of cultural assessment is often dependent on the researchers’ training and experiences. Experienced researchers are supposed to be aware of their biases and are expected to obtain and analyse interview data objectively. Second, these approaches are not only time consuming but costly to both the subjects and the investigators. Due to time and financial constraints, investigation cannot usually cover a large sample, and therefore it is difficult to draw firm conclusions for generalisation. The idiosyncratic nature leads to the difficulty of applying results to another context. Accordingly, this approach does not allow systematic comparison between organisations or between sub-cultures within one organisation.
The other approach from an outsider’s perspective is quantitatively orientated. It usually consists of questionnaires administered to large numbers of organisation members within or across organisations. “Quantitative methods provide an opportunity to maximise the values of precision, systematisation, repeatability, comparability, convenience, large scale, unobtrusiveness and cost-effectiveness” (Tucker et al., 1990, p.5). However, the critics are very sceptical when it comes to the application of formalised questionnaires to a specific organisation, due to the inaccessibility (Edgar. H. Schein, 1985) and unique nature of culture (Smircich, 1982). For this reason, the reliability of the questionnaires measuring organisational culture cannot necessarily be guaranteed.

The above description of the strengths and limitations of the two research strategies implies, to some extent, that qualitative and quantitative assessment of cultural complement each other (T. Scott et al., 2003). Cameron and Freeman (1991, p.31) argue that the important and common ingredient in all types of methods is “the requirement for the researchers to provide a stimulus to organisation members which encourages them to interpret their organisation’s culture”. The stimulus in quantitative measurements is scenarios or statements, and respondents are expected to describe how these are similar to their own experiences. The design of scenarios or statements relies heavily on the results of initial inductive studies. On the other hand, the application of a questionnaire to a large sample helps validate broader generalisations of qualitative findings. The qualitative approach can also be used to explore the meaning of quantitative findings, so that the reliability of the questionnaires can be further verified. On this understanding, combined quantitative and qualitative approaches will enhance the validity and reliability in investigating organisational culture. The multiple methods have been used by, for example, Siehl and Martin (1988), who construct questionnaires based on qualitative data derived from in-depth interviews, and Hofstede et al. (1990), who conduct qualitative interviews to enrich an existing questionnaire.

The above considerations indicate the advantages of multi-methods, but in a specific research setting, one approach may have a higher priority than the other. The choice of research methods depends on the purposes of study and conditions for research. Culture studies in merger literature are often associated with the subjects of cultural fit or compatibility, which require evaluation of similarities or differences of two different organisational cultures. In this circumstance, qualitative approaches may be limited, because they “do not readily lend themselves to such systematic comparisons” (Tucker et al., 1990, p.5), and are too costly and time consuming in studies of large and complex
merged organisations such as universities. In contrast, pre-structured questionnaires have their merits in this respect.

The quantitative measurement in culture studies adopt either a typological approach or a dimensional approach (T. Scott et al., 2003, p.928). The former tends to identify types of organisational culture, while the latter describes a culture by its position on a number of continuous variables. In spite of their differences, both emphasise a number of important elements and provide concrete empirical measures for systematic comparisons. There is little agreement between researchers as to which instrument is the most appropriate when measuring the key elements of culture (Trice & Beyer, 1984). This brings a considerable challenge if researchers are seeking to apply existing instruments to specific investigations. As Scott et al. (2003, p.929) put it, “While a range of instruments is available, and researchers would have to justify developing yet another new tool from scratch, all of them have limitations in terms of their scope, ease of use, or scientific properties”.

Currently no specific instrument is available to measure cultures, particularly in post-merger universities. However, the existing assessments of cultures in business mergers or in higher education institutions may shed light on the design of a measurement tool suitable for analysis of post-merger higher education institutions.

7.2 Measure of cultures in higher education

7.2.1 Contributions from qualitative studies

Within the higher education literature dealing with culture, material on qualitative methods tends to be dominant. Some of these studies have tried to conceptualise institutional culture into a number of categories, which not only enable potential comparisons across institutions or sub-units, but also form an empirical basis for the development of quantitative instruments to assess culture. These studies fall into two tracks.

The first track emphasises the identification of certain key elements of institutional cultures. Following an anthropological approach, Tierney (1988) has provided an initial attempt to identity the essential categories for studying institutional culture, namely environment, mission, socialisation, information, strategy and leadership, based on a case study. Although, this framework offers little valid implication for assessing institutional cultures in a quantitative way
(Maassen, 1996, p.40), it indicates that cultural can be understood or potentially measured by certain dimensions.

On the other track, researchers try to develop typologies of institutional culture. For instance, Bergquist (1992) outlines four types of cultures that exist in the contemporary university: collegial culture, developmental culture, managerial culture, and negotiation culture.

The collegial culture consists of values and beliefs that traditional universities believe they espouse, such as academic freedom and faculty (academic staff) autonomy in teaching, scholarship and research.

The developmental culture values teaching and learning as the heart of the academic enterprise, instead of scholarship and research. It focuses on collaboration, and has a real commitment to inclusiveness in decision-making and planning as well as an emphasis on conflict resolution. As such, missions and goals are of particular importance.

For the managerial culture, outcomes and accountability are primary concerns. Therefore, fiscal responsibility and effective management are highly valued.

The negotiation culture has two particular values: equity and egalitarianism. This type of culture is likely to lead to a collective bargaining process. The requirement of membership in the collective bargaining unit is antithetical to academic freedom.

Bergquist contends that most higher education institutions may exhibit values of any of the four cultures in specific situations, but that collegial values dominate contemporary higher education institutions.

### 7.2.2 Quantitative measures

Few quantitative instruments to measure culture have been developed in the higher education field. These measures often use dimensional approaches. In some early studies, Pace and Stern developed the College Characteristics Index as an instrument for measuring institutional cultures from the perspective of students (Pace, 1962; Pace & Stern, 1958). This index consists of 300 statements about college life concerning curriculum, college teaching and classroom activities, rules, regulations and policies, student organisations, activities, interests, and various other features of the campus. Students respond to these statements by indicating “true” or “false”. The responses describe the cultures of their institutions.
The culture interested by this study is however not concerned with the perception of students, but of academic staff. In this respect, a relatively mature instrument has been developed and used in American higher education. The Higher Education Research Institute at the University of California initiated a triennial series faculty survey in 1989. The survey includes emphasis on faculty procedures and practices, professional priorities, opinions and perceptions of the institutions, and a satisfaction rating. Since 1989, over 300,000 faculty at more than 1,100 two-year and four-year colleges nationwide have participated in this survey. Based on the 1998 faculty survey (Sax et al., 1999), Lee (2004) studied the departmental cultures in five academic fields as well as their relations to institutional culture. She found that the cultures in the five disciplines can be mostly distinguished in terms of institutional orientation, affective/multicultural orientation, interpersonal orientation, and reputation orientation.

In the European context, Maassen (1996) developed 13 items to measure institutional cultures, with an emphasis on the values and beliefs shared by academics, in his study of Governmental Steering and the Academic Culture. The instrument focuses on three dimensions, namely competition, evaluation and decentralisation.

Some quantitative studies on higher education culture have been based on the typological approach. The measure is not derived from Bergquist's culture type, partly because the four types of culture categorised by Bergquist are arbitrary and lack epistemological roots (Maassen, 1996, p.41). Rather, some instruments developed in the business field are applied. The one used most commonly is related to Competing Values Framework, which was first introduced as a typological tool in a empirical research on the question of what makes organisations effective (Quinn & Rohrbaugh, 1981). It has since been largely applied to issues concerning leadership, management styles or organisational change. Although the framework is most often thought of as a leadership tool, it has also shown that it can be used for all aspects and levels in organisations. This framework refers to whether an organisation has a predominant internal or external focus and whether it strives for flexibility and individuality or stability and control. The cross-hairs of this model result in four quadrants which represent four types of organisational culture: Clan, Hierarchy, Adhocracy, and Market (Figure 7).

The application of the Competing Value Framework in the higher education literature has been for different purposes. To study the relationship between organisational culture and effectiveness, Cameron and Freeman (1991) have surveyed and compared 334 higher education institutions. Their empirical
results prove that culture type was a significant factor in determining organisational effectiveness. The different types of cultures are found to be associated with different aspects of organisational effectiveness. The measure of culture type focuses on four dimensions, namely institutional characteristics, institutional leadership, institutional glue and institutional emphases, and uses a 16 item, scenario based questionnaire. Some other researchers (Smart, 2003; Smart & John, 1996) have re-examined this phenomenon in different sampling by using similar instruments, and the results generally appear to be consistent with Cameron and Freeman’s finding. These studies suggest that the clan culture and adhocracy culture are the most effective.

Culture type has also been thought of as being important for understanding the organisational transformation or innovation in higher education. Obenchain, Johnson and Dion (2003), for instance, have empirically verified a clear
relation between organisational culture and innovation in a large sample, where
1,912 institutions were involved. The instrument used to measure culture type
comprised a 12 item survey questionnaire adopted from Yeung, Brockbank
and Ulrich (1999). The results of their study suggest that an adhocracy culture
is associated with higher levels of organisational innovation than other types
of culture.

All of these studies suggest that no institutions can be characterised by a
single culture type. In some institutions one type is clearly dominant, while
some institutions report no dominant culture type. Findings consistently sug-
gest that the clan culture is the most frequent one among higher education
institutions.

In tune with these propositions, Berrio (2003) has attempted to describe
the dominant culture type in a case study of Ohio State University Extension.
The questionnaires used in this study were mainly based on the Organisational
Culture Assessment Instruments (OCAI) developed by Cameron and Quinn
(1999). Compared to the instrument used by Cameron and Freeman (1991),
Berrio’s questionnaire added two additional organisational culture dimensions,
namely management and criteria for success.

7.3 Measuring cultural differences in merged organisations

Numerous and consistent findings among merger studies demonstrate that
the success or failure of mergers or acquisitions is dependent heavily on how
compatible the two cultures of pre-existing organisations were (Buono et al.,
1985; Cartwright & Cooper, 1993b; Sayan Chatterjee et al., 1992; Datta, 1991;
Elsass & Veiga, 1994; Olie, 1994). This proposition suggests the importance
of understanding cultural differences and managing cultures in specific merger
processes. For such purposes, one must know first how to identity and assess
cultures and the differences between them. While the measure of cultures in
merged higher education institutions has remained a blank area, the corporate
realm has taken efforts to develop quantitative instruments for measuring cul-
tures in merged organisations.

In a study on cultural differences in related mergers, Chatterjee et al. (1992)
designed questionnaires and sent them to the top managers of 198 acquired
firms, asking them to rate how they perceived the cultural differences between
the acquiring and acquired firms on seven dimensions of cultural orientation: innovation and action orientation, risk-taking, lateral integration, top management contact, autonomy and decision making, performance orientation, and reward orientation. By analysing questionnaires from 30 selected firms, they empirically supported their hypothesis that mergers in which cultural differences were rated as large would be less successful. The same instrument was used in Weber’s (1996) study of conflicts of management cultures in firm mergers or acquisition between 1985 and 1987 in the USA, and by Weber et al.’s (1996) empirical study on national and corporate cultural fits in mergers and acquisitions.

Datta (1991) examined the impact of organisational differences between merger partners on post-acquisition performance. The understanding of differences relies on two dimensions, namely management styles and organisational reward & evaluation systems. In particular, the former dimension is intertwined with organisational culture. The management styles were measured by a 17 item Likert-type questionnaire adapted from Khandwalla’s (1977) instrument. The findings indicate that the differences in top management styles have a negative impact on performance in acquisitions.

While these studies tend to use dimensional approaches to measure the extent to which cultures are different between pre-merger groups, (particularly among top managers), some other researchers advocate a typological tool. For instance, Harrison’s (1987) typology of organisational culture has been used by Cartwright and Cooper (1989, 1993a, 1996) in understanding the cultural differences and cultural fits in post-merger organisations. According to Harrison, four types of organisational culture can be distinguished, namely power type, role type, task/achievement type and person/support type, despite these types not necessarily being mutually exclusive in a single organisation. The instruments used to measure the culture types have been developed over time (J. R. Harrison, 1987; R. Harrison & Stokes, 1990, 1992). Normally it requires respondents to rate a number of statements on a six-point Likert-type scale. In a merger setting, the respondents are requested to complete the measure as it applied retrospectively to their pre-merger organisations and the present culture of the post-merger organisations.
7.4 The relevance of existing approaches to measure cultural differences in post-merger higher education institutions

Many merger studies using dimensional approaches (Sayan Chatterjee et al., 1992; Datta, 1991; Khandwalla, 1977; Y. Weber, 1996; Y. Weber et al., 1996) have tended to measure cultural differences in merger settings. The convergent validity of such instruments is often checked by the within-group variance or consensus among multiple respondents for each item. The empirical results often demonstrate validity at a satisfactory level. Some dimensional instruments, such as Chatterjee et al.’s (1992) questionnaires, have been repeatedly used with different samples, but have resulted in similar conclusions being drawn. This to some extent illustrates its reliability.

However, these measures are often used in the business sector and focus particularly on management cultures. There are considerable challenges in trying to apply them to post-merger universities.

First, this type of cultural difference instrument is normally based on five point Likert scales, ranging from very similar to very different. It usually measures the extent to which cultures differ between two pre-merger groups. However, this technology will be less methodologically effective if more than two partners are involved in a merger, which occurs frequently in the higher education context. It will be cumbersome for respondents to compare differences between their own culture with that of each other group, item by item. In this situation, one solution may be to ask respondents to indicate their agreement with the statements of cultural attributes of their own group on Likert scales, for example, anchored at 1=strongly disagree and 5=strongly agree. Based on the original data, the researchers will figure out the cultural difference between each pair partners by using statistical tools.

Second, there are few valid dimensional instruments in the higher education setting. There is no evidence to show that cultural dimensions or items developed in the business realm can also be relevant in the study of cultures differences in post-merger higher education institutions. One possible solution is to apply the instruments which have been used to measure cultures in higher education institutions, such as the faculty survey initiated by the Higher Education Research Institute of University of California or the instrument for measuring academic culture in Dutch and German higher education institutions designed by Maassen (1996). However, a common challenge is that both
the validity and reliability will be examined when using these instruments to higher education mergers.

Third, the dimensional instruments normally consist of a large number of items and require respondents spending a long time to complete them.

Compared to the dimensional approach, typological measurement has advantages. These include its high face validity, limited time required from respondents, and the concrete understanding of the cultural orientation. In merger settings, Harrison and Stokes’ instrument has been strongly recommended (R. Harrison & Stokes, 1990). However, it was originally designed for the industrial context and might not match the cultures in higher education institutions. In higher education studies, the Competing Value Framework is often applied, although it is not often used in merger settings. However this instrument could be relevant to assess cultures in post-merger higher education institutions. In the higher education context, a large number of institutions have been investigated by using Competing Value Framework-based instruments in a variety of contexts (Berrio, 2003; Obenchain et al., 2004; Zammuto & Krakower, 1991). The results of these studies indicate that culture type can be used to identify differences among higher education institutions. At the minimum, the cultures of higher education institutions can be distinguished by the extent to which the different cultural types are manifested. Besides, the reliability and validity of Competing Value Framework-based instruments has been tested by a number of studies in a business context, (Quinn & Spreitzer, 1991; Yeung et al., 1991) and in the higher education field (Berrio, 2003; Obenchain et al., 2004; Zammuto & Krakower, 1991). Moreover, the generic features of the Competing Value Framework instrument have been verified by a large number of samples, so it may be a convenient choice when there is a lack of pre-empirical understandings of cultural elements in specific higher education institution. Finally, this kind of instrument requires less of respondents’ time, compared to dimensional questionnaires.

The limitation of using Competing Value Framework is that it is a tool which is primarily concerned with management values and styles, while other aspects of institutional culture are neglected. In most mergers, arguably, the cultural differences affecting integration are mainly those concerned with management cultures. Based on the above arguments, this study will use Competing Value Framework as a basic approach to measure culture.
Reichenbach (1951) made a well-known distinction between two phases of empirical research—
1. the context of discovery in which a new idea is conceived and
2. the context of justification in which the idea is justified, defended and tested.

Most of the previous chapters were engaged mainly in the first phase, trying to explore less known phenomena and develop specific hypotheses. However, the validity of these hypotheses depends on whether they are empirically testable, and this leads to the second phase of empirical research.

Hypothesis is normally defined as “a proposition that implies a relationship between two or more concepts, which is located on a lower level of abstraction and generality than the theory, and which enables the theory to be transformed into terms that can be tested empirically” (Corbetta, 2003, p.61). In order to test an hypothesis, the relevant concepts must be transformed into empirical terms or variables, which could be operationalised. First of all, the concepts should be changed into attributes or properties of the specific objectives to be studied. The next step is to provide each property an operational definition that specifies how to measure the property. To make the variables useful for testifying hypotheses, the validity and reliability of the variables must be ensured.

This chapter has two purposes. First, it introduces the techniques used to collect data in the case study post-merger university in China. The second part focuses on the operationalisation of the concepts embedded in each hypothesis. In the mean time, the validity and reliability of these variables will be verified. This verification process is technically or statistically oriented. As a space-saving measure, most of the statistical tables have been collected in Annex 3.

8.1 Survey

Most variables or concepts in this study are about measuring perceptions, beliefs, attitudes, feelings, and expectations, rather than openly manifested be-
haviours. The survey is the scientific tool which has been used to gather information about these concepts. “Survey” can be defined as “a technique of gathering information by questioning those individuals who are the objective of the research, belonging to a representative sample through a standardized questioning procedure with the aim of studying the relationships among the variables” (Corbetta, 2003, p.117).

8.1.1 Survey questionnaire design

Formulating questions and drawing up a survey questionnaire is a difficult and challenging task, in that there is no precise set of rules. Nevertheless, it is useful to keep in mind that the purpose of designing a question is to use it as a measure (Fowler, 1984, p.74). Therefore, the first task is to clarify which things are supposed to be measured by this survey. In this study, the objective is to measure the relevant variables derived from the hypotheses. The second task is to ensure that every potential respondent understand and answer the questions in the same way. Dillman(2000) provides a list of criteria for writing good questions, which become principles and specific tools for writing questions for a self-administered survey.

One of the most important issues is about how to have a good knowledge of the population to which the questionnaire is to be administered. It has been suggested that “before writing a draft of a structured set of questions, it often is valuable to conduct focused discussions in which the questions are not structured fully” (Fowler, 1984, p.100). However, I faced a considerable challenge. I have been doing my Ph.D. in Finland, but the field of empirical study was in China. I was only allowed to take one trip to China to collect survey data. This means that I need to have a ready-made survey questionnaire before the trip. Therefore, it was unlikely that I would be able to spend enough time in China to hold discussions with the representatives of the study population to further develop my survey questionnaire. Nevertheless, the understanding of respondents was ensured in several ways. First of all, I studied the questions that have been used by other researchers to measure similar or related concepts. I gleaned ideas from their experience about how to phrase specific questions and format a questionnaire for my own use. The second source of information that helped me understand the respondents was the interviews that I conducted in the summer of 2004. The knowledge I gained from the interviews not only helped me formulate specific questions but also provided me
with a sense about how the respondents might interpret the questions. Third, I held telephone discussions with a few potential respondents from the case study university when I was drafting the questionnaire.

When the first draft questionnaire was ready I made a pre-test—online web survey—in November, 2005. All together I received 31 returns. Besides recording their reports on the structured questions, the survey also asked the respondents:

1. to express their attitudes to the study,
2. to make evaluation on the question wording, and
3. to point out any difficulties or inconveniences.

A preliminary analysis of the pre-test survey and the respondents’ suggestions were used to help to improve the final questionnaire design (An English version is attached in Annex 2, but a Chinese version was used in practice).

### 8.1.2 Strategies of data collection

For a variety of reasons, the strategies to carry out the survey changed several times between the planning stage and the final implementation.

**On-line survey in the pre-test**

After I drafted the survey questions in September 2005, I decided to conduct a pre-test. As I was in Finland far away from the case study university in China, I designed an online survey. I thought that this would be a convenient and efficient solution. Theoretically, the online survey would be easily accessed and that it would take respondents less time to respond to on-screen questions than to mark their responses on paper. Moreover, when I receive respondents’ feedback, the data would be well organised in an electronic database.

For the pre-test, I chose five post-merger colleges at the case study university as the investigation targets. Within each college, some academics respectively from different pre-merger institutions would be invited to be respondents to the online survey questionnaire. Principally, three persons from each pre-merger institutions are required. At the end of September, I contacted a colleague at the case study university and asked him to find respondents and arrange for them to answer the online survey. He kindly agreed to my request and prom-
ised to make the necessary arrangement. Two weeks latter, my colleague and I both realised that the job would not be as easy as we had thought.

There were mainly two difficulties. First, the Chinese university had restrictions on Internet connections to abroad. The university only provided domestic internet connection for the computers on its campuses free of charge. If some users wanted to access foreign websites, they were required to pay fees to the university’s computer centre. The reality was that only a very few users had international connection and most of these were administrators. This meant that the potential respondents (academic staff members) could not easily access the online survey which was located on the server of University of Tampere in Finland. Most of those who responded to the online survey did it from home. We realised that the inconvenience of having internet connection abroad would be a barrier in carrying out this survey investigation.

The second difficulty concerned survey administration. My colleague found five contact persons respectively from the five target colleges. Each contact person agreed to invite 3 academic staff members from each pre-merger group at his or her college to answer the questionnaire. However, after two weeks only eight returns appeared in the database. Obviously most academics who were asked to answer my questionnaire had not yet done so. To make the survey administration work more efficient, I asked my colleague to provide me with the telephone numbers of the contact persons. Then I started to make direct contact with them. Almost every day I made phone calls from Finland to China, talking with the contact persons about the numbers of returns I had received and how many I needed. Because the survey was anonymous, I could only identify the respondents by college and pre-merger group. Based on my daily report, the contact persons either tried to find new persons to respond my survey or checked if those selected respondents had responded or not.

With their kind assistance and patient cooperation, I finally received 31 returns by the beginning of November. It took me a much longer time than I had expected to complete this pre-test survey, but the lessons and experiences gained through this process helped me find a more efficient way to conduct survey later.

**Updated plan for implementation**

Before I travelled to China in the middle of November 2005, I made a new plan for collecting survey data. I abandoned the online survey to avoid the difficulties mentioned above. My intention with this plan was to get as many
respondents as possible, and to ensure the efficiency of survey administration. The updated strategy could be summarised as followed.

1. A paper version of the questionnaire was used. The number of copies to be distributed was to be the same as the number of potential respondents.
2. I sent questionnaires to all respondents by post and ask them to reply by a date.

8.1.3 Sample

The purpose of the survey was to test the hypotheses developed earlier within the context of the case study university. Therefore, only a specific group of academics or population in this university was concerned; the questionnaires were delivered to every individual within this population. In this sense, there was little involvement with sampling selection.

To be included in the population, a respondent had to simultaneously meet the following three criteria. The respondent had to:

1. be engaged in teaching or research work;
2. have previously worked one of the pre-merger institutions;
3. be currently working in a post-merger college in which his or her pre-merger department had been one of the merger partners.

Accordingly, 751 people out of over 4000 university staff members were identified as potential respondents. The mailing of the questionnaires to them resulted in a total of 165 returns. This represented a response rate of 22%. The rate is not high but might be considered satisfactory if taking into consideration the fact that the issues concerning merger are generally viewed by the staff members as a sensitive topic. Data which could be used for statistical analyses were available from 143 of the 165 returned questionnaires.

The 143 respondents were distributed across 17 different colleges. Eighty respondents were male; 54 were female and 9 did not indicate their gender on the questionnaire. Figure 8 shows the respondents’ distribution in terms of their work period in the pre-merger institution at the time the merger took place. Figure 9 displays the respondents’ distribution in terms of the professional qualifications.
8.2 Measurement

8.2.1 Units of analysis and participants

It should be stressed again that the basic observation and analysis units to examine the hypotheses in this study are placed on an organisational (or inter-group) level. In other words, the concepts reflect attributes of organisations or groups, instead of individual members. As I did not have enough time to stay at the case study university, it was not possible to use observation to assess the behaviour and values at the organisational level. However, the organisational behaviour and value could be reflected in the every day activities of the members of the university. As such, organisational members’ perceptions and feelings could help in understanding the organisational attributes. In particular,
the perception of each pre-merger group or each pair of pre-merger groups about the relevant issues within a post-merger college would be a basic unit for examination. Therefore, the measurement of variables at the group or inter-group level relies on individual organisation members’ reports on survey questions. To convert the individuals’ responses to the measurement of variables at the group level, a computing process was required.

In this case study university, three pre-merger groups originally from three pre-merger institutions can be identified. Before going further with the discussion of variables and data processing, the following explanation of terminology will be clarified.

“Pre-merger group 1” or “group 1” refers to the academic staff members from pre-merger institution A in a college of the post-merger university.

“Pre-merger group 2” or “group 2” refers to the academic staff members from pre-merger institution B in a college of the post-merger university.

“Pre-merger group 3” or “group 3” refers to the academic staff members from pre-merger institution C in a college of the post-merger university.

“nj1” represent the number (n) of respondents from group 1 in the post-merger college j.

“nj2” represent the number (n) of respondents from group 2 in the post-merger college j.

“nj3” represent the number (n) of respondents from group 3 in the post-merger college j.

8.2.2 Variables

There are basically eight variables embedded in the hypotheses to be testified. These are 1) Physical Division Periods, 2) School Level Change (Upgrading), 3) Balance Strategy, 4) Transparency of Management, 5) Cooperative Environment, 6) Cultural Differences, 7) Inter-group Collaboration 8) Inter-group integration and 9) Cultural Integration.
Physical Division Period

“Physical Division Period” describes the period (years) that two pre-merger departments or pre-merger groups have been separated since the announcement of their merger. This could be found in the university’s documents. Therefore, it did not require a survey investigation.

$V_{PD}$ is used to mark variable “Physical Division Period”.

$V_{PD(1+2)}(j)$. It represents the number of years that group 1 and group 2 in the college j had been physically divided since the merger was announced.

$V_{PD(1+3)}(j)$. It represents the number of years that group 1 and group 3 in the college j had been physically divided since the merger was announced.

$V_{PD(2+3)}(j)$. It represents the number of years that group 2 and group 3 in the college j had been physically divided since the merger was announced.

School Level Upgrading

Chen Houfeng (2004, p.207-208) has suggested four levels (types) of higher education institution in China, namely research type, research & teaching type, teaching only type and application type. Application institutions are colleges that offer three years non-degree, practical oriented programs. The questionnaire provided respondents with a summary of the characters of the four types of institutions. According to the described features of these types of institutions, respondents are asked to report respectively what type of their pre-merger department was and what type of the post-merger college is. In practice, some institutions could lie somewhere between two adjacent types. Therefore, three midway options are added between each adjacent institutional type, such as the one between research type and research & teaching type, the one between research & teaching type and teaching only type, and the one between teaching only type and application type.

Next, relevant variables and the computing process will be discussed in which the measures of individual responses are converted to the variables at group level.
Variables at the individual level:

\( V_{SL-Pref}(i) \). It represents each individual’s report on the level (or type) of the pre-merger department in which he or she used to work.

\( V_{SL-Post}(i) \). It represents each individual’s report on the level (or type) of the post-merger college in which he or she is currently working.

\( V_{SU}(i) = V_{SL-Post}(i) - V_{SL-Pref}(i) \). It represents each individual’s perception of the degree of school level change or school level upgrading.

Variables at the group level:

\( V_{SL(1)}(j) = \sum_{i=1}^{n1} (V_{SL-Post(i)} - V_{SL-Pref(i)}) / n1 \). It represents the pre-merger group 1’s average perception of the extent of school level upgrading in post-merger college j.

\( V_{SL(2)}(j) = \sum_{i=1}^{n2} (V_{SL-Post(i)} - V_{SL-Pref(i)}) / n2 \). It represents the pre-merger group 2’s average perception of the extent of school level upgrading in post-merger college j.

\( V_{SL(3)}(j) = \sum_{i=1}^{n3} (V_{SL-Post(i)} - V_{SL-Pref(i)}) / n3 \). It represents the pre-merger group 3’s average perception of the extent of school level upgrading in post-merger college j.

\( V_{SU(1+2)}(j) = (V_{SU(1)}(j) + V_{SU(2)}(j))/2 \). It represents the extent to which school level has been upgraded since merger, are perceived by both group 1 and group 2 in college j.

\( V_{SU(1+3)}(j) = (V_{SU(1)}(j) + V_{SU(3)}(j))/2 \). It represents the extent to which school level has been upgraded since merger, are perceived by both group 1 and group 3 in college j.

\( V_{SU(2+3)}(j) = (V_{SU(2)}(j) + V_{SU(3)}(j))/2 \). It represents the extent to which school level has been upgraded since merger, are perceived by both group 2 and group 3 in college j.
**Balance Strategy**

There are five statements about which individual respondents were asked to report, on a five-point Likert-type scale from strongly agree to strongly disagree, to measure their perception of the extent to which a balance strategy has been applied in their post-merger organisations. The design of the five items is based on the knowledge gained from both the interviews conducted at the case study university in 2004 and a case study of Sichuan University by Wan Yinmei (2004).

The use of multiple indicators follows the guiding premise that “multiple responses reflect the ‘true’ response more accurately than does a single response” (Hair, 1998, p.10). A true measurement of the concept is based on a good indication of scale reliability. In so doing, the inter-correlations between the five indicators (items) should be high; all indicate high levels of internal consistency. Two basic tools can be used to ensure that all the items effectively share a common general concept: 1) the alpha coefficient, which serves to judge the scale’s overall degree of internal consistency, and 2) the item-scale correlation, which serves to pick out scale items that are not consistent with the others.

There are four items to measure balance strategy and the Cronbach’s Alpha based on all of these four items is 0.586. The correlation test (Table 8.1) indicates that item 4 (There is a fair and competitive mechanism for professional title evaluation as well as appointment, while little attention is paid to who comes from which institution.) does not have a significant, positive relationship with item 1 and item 2. Eliminating this item will produce a significant increase in alpha (0.737), and therefore item 4 is considered to be unsatisfactory and will be removed from the scale items.

The reliability analysis (including item-scale correlation and alpha coefficient check) is designed specifically to ascertain that all the items are indicators of the same property. However, it is not sufficient to guarantee the validity or unidimensionality of the scale items, meaning that all the items measure a same factor. In some cases, the items might correspond to two or more distinct properties that are correlated but very different. The unidimensionality can be checked by factor analysis. The factor analysis (Table 8.2) carried out on the three selected items has revealed the existence of only one factor (factor loadings of items 1, 2 and 3 are 0.824, 0.791 and 0.816). In other word, the scale items are one-dimensional.

For the purpose of testifying hypotheses, the scores of balance strategy at the organisational or group level will be acquired. Next, the computing proc-
ess will be described in which the variables at individual level are converted to those at group level.

Variables at the individual level:

$V_{BS}(i)(t)$ is used to represent the No. $i$ individual’s rating on the No. $t$ item concerning balance strategy. Therefore, we can derive the following formula.

$$V_{BS}(i) = \frac{\sum_{t=1}^{3} V_{BS}(i)(t)}{3}.$$  It represents the average score of an individual respondent’s perception of the extent to which balanced strategies applied to his or her college in the post-merger university.

Variables at the group level:

$V_{BS(j)}(j) = \frac{\sum_{i=1}^{nj1} V_{BS}(i)}{nj1}$. It represents the extent to which balance strategies have been applied in college $j$ as perceived by pre-merger group 1.

$V_{BS(j)}(j) = \frac{\sum_{i=1}^{nj2} V_{BS}(i)}{nj2}$. It represents the extent to which balance strategies have been applied in college $j$ as perceived by pre-merger group 2.

$V_{BS(j)}(j) = \frac{\sum_{i=1}^{nj3} V_{BS}(i)}{nj3}$. It represents the extent to which balance strategies have been applied in college $j$ as perceived by pre-merger group 3.

**Transparency of Management**

There are five statements that ask individual respondents to report, on a five-point Likert-type scale, on the degree of management transparency in their organisations. The design of the five items is mainly based on knowledge gained from the interviews I conducted at the case study university.

Five items are used to measure transparency of management. The scale items display a high alpha value (0.859). They seem immediately to be satisfactory. Analysis of the item-scale correlation (Table 8.3) also reveals a high value of item-consistency (correlation is significant at the 0.01 level). The unidimensionality of the scale items is confirmed by a further factor analysis (Table 8.4), where the factor loadings of the five items are between 0.770 and 0.841. Thus, it can be concluded that the management transparency scale reasonably meets the criterion of reliable and valid measurement.
Next, the computing process will be described in which the variables at individual level are converted to those at inter-group level.

Variables at the individual level:

\[ V_{TM}(i)(t) \]. It represents the No. \( i \) individual’s rating on the No. \( t \) item concerning transparency of management.

\[ V_{TM}(i) = \frac{\sum_{t=1}^{5} V_{TM}(i)(t)}{5} \]. It represents each individual’s report on the degree of management transparency in the merged college where he or she is working.

Variables at the group level:

\[ V_{TM1}(j) = \frac{\sum_{i=1}^{n1} V_{TM}(i)}{n1} \]. It represents the degree of management transparency in college \( j \) as perceived by pre-merger group 1.

\[ V_{TM2}(j) = \frac{\sum_{i=1}^{n2} V_{TM}(i)}{n2} \]. It represents the degree of management transparency in college as perceived by pre-merger group 2.

\[ V_{TM3}(j) = \frac{\sum_{i=1}^{n3} V_{TM}(i)}{n3} \]. It represents the degree of management transparency in college \( j \) as perceived by pre-merger group 3.

Cooperative environment

The measurement of the cooperation environment has been derived from the higher education literature on organisational behaviour and organisational culture (Jin, 2005; Maassen, 1996). Specifically, five descriptions about the cooperative work environment in a respondent’s college will be constructed. Based on the description, the respondents are asked to report, on a five-point Likert-type scale, the extent to which they agree (or disagree) with them.

The Cronbach’s Alpha based on the five items is 0.677. Among these items, the second item (My work is less dependent on others) does not have significant correlations with item 4 and item 5 (Table 8.5). The re-check of alpha efficient with exclusion of no. 2 item has resulted in an obvious increase (alpha=0.724). Thus, the no. 2 item is taken away from the final scale calculation. The rest items have been tested as one-dimensional by a factor analysis (Table 8.6) with the factor loadings between 0.797 and 0.869.
Next, relevant variables and the computing process will be described in which the variables at individual level are converted to those at inter-group level.

Variables at the individual level:

\[ V_{CE}(i)(t) \] It represents the No. \( i \) individual’s rating on the No. \( t \) item concerning cooperative environment.

\[ V_{CE}(i) = \sum_{t=1}^{4} V_{CE}(i)(t) / 4. \] It represents each individual’s perception of the degree of cooperative atmosphere in the merged college where he or she is working.

Variables at the group level:

\[ V_{CE}(1)(j) = \sum_{i=1}^{n_1} V_{CE}(i) / n_1. \] It represents the degree of cooperative atmosphere perceived by the pre-merger group 1 in college \( j \).

\[ V_{CE}(2)(j) = \sum_{i=1}^{n_2} V_{CE}(i) / n_2. \] It represents the degree of cooperative atmosphere perceived by the pre-merger group 2 in college \( j \).

\[ V_{CE}(3)(j) = \sum_{i=1}^{n_3} V_{CE}(i) / n_3. \] It represents the degree of cooperative atmosphere perceived by pre-merger group 3 in college \( j \).

**Culture differences**

Instead of directly measuring individuals’ perceptions of cultural differences, respondents were asked to report on the cultures which existed in their own pre-merger departments. The instrument used was based on and adapted from the OCIA developed by Cameron and Quinn (1999). Cameron and Quinn’s framework is based on six organisational culture dimensions (dominant characteristics, organisational leadership, management of employees, organisational glue, strategic emphases, criteria for success) to capture four dominant culture types: clan type, adhocracy type, market type and hierarchy type. The questionnaires in this study only consider four of the six dimensions, namely dominant characteristics, organisational leadership, organisational glue and strategic emphases, because these four dimensions have been proved to be useful in a higher education context (Cameron & Freeman, 1991; Smart, 2003; Smart & John, 1996). Sixteen written descriptions of cultural scenarios were borrowed...
from Cameron and Quinn’s OCAI in order to measure the four corresponding cultural dimensions. They will be used to assess perception of relative presence of four types of organisation cultures incorporated in the Competing Value Framework, namely (A) clan type, (B) adhocracy type, (C) market type and (D) hierarchy type. These scenarios serve as “word pictures” that help respondents to indicate the extent to which their organisations provide evidence of the attributes associated with the four ideal culture types along the four dimensions.

A number of studies have reported that the instruments measuring perceptions of the four organisational culture types have acceptable levels of reliability and validity in a variety of higher education institutions, but mainly in the American context (Cameron & Ettington, 1988; Cameron & Freeman, 1991; Obenchain et al., 2004; Smart, 2003).

In the original design by Cameron and his colleagues, individual respondents are asked to divide 100 points among four alternative questions (A, B, C, D) on each dimension, depending on the extent to which each alternative is similar to their organisations. However, this study uses a 5-point Likert scale instead of the 100-point allocation method. Such a technique has been applied by Yeung, Brockbank and Ulrich’s (1991) in a study of organisational cultures among business firms and by Obenchain, Johnson and Dion (2004) in a study of culture types of higher education institutions. In each question, respondents are asked to indicate the extent to which each alternative statement describes the characteristics of their own organisations (departments) before merger, ranging from 5 (strongly agree) to 1 (strongly disagree). As each alternative corresponds to an attribute of one culture type, a mean score of a set of corresponding alternatives in all dimensions can be calculated, yielding a numerical score representing a respondent’s perception of the extent to which the features of one culture type exhibits in his or her organisations.

The reliability test shows that the measures of culture type A, culture type B and culture type D have high value of alpha efficient (A: 0.798, B:0.758 and D:0.690). The factor analyses on the three variables culture type A, B and D (Table 8.7, Table 8.8 and Table 8.9) also prove the unidimensionality of these scale items.

However, the Chronbach’s Alpha is very low (alpha=0.177) on the four items measurement of culture C. The inter-correlation test (Table 8.10) indicates the second item about leadership (The leadership in the organisation is generally considered to exemplify entrepreneurship, innovating or risk taking,) does not have significant, positive correlations with other items. Eliminating this item produces
a satisfied value of Chronbach’s Alpha (0.512) and the unidimensionality of
the other three items has been affirmed by the factor analyses (Table 8.11).
Next, the computing process will be described in which the variables at in-
dividual level are converted to those at group level.

Variables at the individual level:

\[ V_{\text{Type}A(i)}(t) \] It represents the No. \( i \) individual’s rating on the No. \( i \) item concern-
ing culture type A.

\[ V_{\text{Type}A(i)}(t) = \frac{1}{4} \sum_{i=1}^{4} V_{\text{Type}A(i)}(t) / 4 \] It represents each individual’s perception of the extent to
which the culture of his or her pre-merger department is close to culture type A.

Variables at the inter-group level:

\[ V_{\text{Type}A1}(j) = \frac{1}{n_1} \sum_{i=1}^{n_1} V_{\text{Type}A(i)}(j) / n_1 \] It represents the extent to which the characteristics of
culture type A exist in the pre-merger department, as perceived by the group 1 in the
post-merger college j.

\[ V_{\text{Type}A2}(j) = \frac{1}{n_2} \sum_{i=1}^{n_2} V_{\text{Type}A(i)}(j) / n_2 \] It represents the extent to which the characteristics of
culture type A exist in the pre-merger department, as perceived by the group 2 in the
post-merger college j.

\[ V_{\text{Type}A3}(j) = \frac{1}{n_3} \sum_{i=1}^{n_3} V_{\text{Type}A(i)}(j) / n_3 \] It represents the extent to which the characteristics of
culture type A exist in the pre-merger department, as perceived by the group 3 in the
post-merger college j.

Accordingly, we can derive the following variables.

**Table 9. Variables of culture type at group level**

<table>
<thead>
<tr>
<th>College j</th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Type D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-merger group 1</td>
<td>V_{\text{Type}A1}(j)</td>
<td>V_{\text{Type}B1}(j)</td>
<td>V_{\text{Type}C1}(j)</td>
<td>V_{\text{Type}D1}(j)</td>
</tr>
<tr>
<td>Pre-merger Group 2</td>
<td>V_{\text{Type}A2}(j)</td>
<td>V_{\text{Type}B2}(j)</td>
<td>V_{\text{Type}C2}(j)</td>
<td>V_{\text{Type}D2}(j)</td>
</tr>
<tr>
<td>Pre-merger Group 3</td>
<td>V_{\text{Type}A3}(j)</td>
<td>V_{\text{Type}B3}(j)</td>
<td>V_{\text{Type}C3}(j)</td>
<td>V_{\text{Type}D3}(j)</td>
</tr>
</tbody>
</table>
The cultural differences between each pair of pre-merger groups will be calculated by using the “city block distance” technique, which examines the absolute differences between coordinates of a pair of objects.

\[ V_{\text{IC}(1+2)}(i)(t) = |V_{\text{typeA}(1)}(i)(t) - V_{\text{typeA}(2)}(i)(t)| + |V_{\text{typeB}(1)}(i)(t) - V_{\text{typeB}(2)}(i)(t)| + |V_{\text{typeC}(1)}(i)(t) - V_{\text{typeC}(2)}(i)(t)| \]

It represents the extent of cultural difference between group 1 and group 2.

\[ V_{\text{IC}(1+3)}(i)(t) = |V_{\text{typeA}(1)}(i)(t) - V_{\text{typeA}(3)}(i)(t)| + |V_{\text{typeB}(1)}(i)(t) - V_{\text{typeB}(3)}(i)(t)| + |V_{\text{typeC}(1)}(i)(t) - V_{\text{typeC}(3)}(i)(t)| \]

It represents the extent of cultural difference between group 1 and group 3.

\[ V_{\text{IC}(2+3)}(i)(t) = |V_{\text{typeA}(2)}(i)(t) - V_{\text{typeA}(3)}(i)(t)| + |V_{\text{typeB}(2)}(i)(t) - V_{\text{typeB}(3)}(i)(t)| + |V_{\text{typeC}(2)}(i)(t) - V_{\text{typeC}(3)}(i)(t)| \]

It represents the extent of cultural difference between group 2 and group 3.

**Inter-group Collaboration**

Five statements described the situation concerning inter-group collaboration. Each respondent was asked to report, on a five-point Likert-type scale, the extent to which the situation is likely to reflect the collaboration between his/her group and others. Specifically, the three items measurement apply to the inter-group collaboration between group 1 and group 2, the inter-group collaboration between group 1 and group 3, as well as the inter-group collaboration between group 2 and group 3. The alpha coefficient has been respectively checked in the three cases, and the Chronbach’s alphas are 0.614, 0.581 and 0.698, all at a satisfactory level. The factor analysis (Table 8.12) indicates that these items are of one dimension measurement.

Next, relevant variables and the computing process will be described in which the variables at individual level are converted to those at inter-group level.

Variables at the individual level:

\( V_{\text{IC-12}}(i)(t) \): The No. \( i \) individual’s rating on the No. \( t \) item concerning the perception of the collaboration between group 1 and group 2.

\( V_{\text{IC-13}}(i)(t) \). It represents the No. \( i \) individual’s rating on the No. \( t \) item concerning the perception of the collaboration between group 1 and group 3.
$V_{IC,23}(i)(t)$. It represents the No. $i$ individual’s rating on the No. $i$ item concerning the perception of the collaboration between group 2 and group 3.

$$V_{IC,12}(i) = \sum_{t=1}^{5} V_{IC,12}(i)(t) / 3.$$ It represents each individual’s perception of the extent to which group 1 and group 2 can collaborate with each other in the college where he or she is working.

$$V_{IC,13}(i) = \sum_{t=1}^{5} V_{IC,13}(i)(t) / 3.$$ It represents each individual’s perception of the extent to which group 1 and group 3 can collaborate with each other in the college where he or she is working.

$$V_{IC,23}(i) = \sum_{t=1}^{5} V_{IC,23}(i)(t) / 3.$$ It represents each individual’s perception of the extent to which group 2 and group 3 can collaborate with each other in the college where he or she is working.

Variables at the group level:

$$V_{IC,12(1)}(j) = \sum_{i=1}^{n_{j1}} V_{IC,12}(i) / nj1.$$ It represents the degree of collaboration between group 1 and group 2 in college $j$ as perceived by group 1.

$$V_{IC,12(2)}(j) = \sum_{i=1}^{n_{j2}} V_{IC,12}(i) / nj2.$$ It represents the degree of collaboration between group 1 and group 2 in college $j$ as perceived by group 2.

$$V_{IC,12(3)}(j) = \sum_{i=1}^{n_{j3}} V_{IC,12}(i) / nj3.$$ It represents the degree of collaboration between group 1 and group 2 in college $j$ as perceived by group 3.

$$V_{IC,13(1)}(j) = \sum_{i=1}^{n_{j1}} V_{IC,13}(i) / nj1.$$ It represents the degree of collaboration between group 1 and group 3 in college $j$ as perceived by group 1.

$$V_{IC,13(2)}(j) = \sum_{i=1}^{n_{j2}} V_{IC,13}(i) / nj2.$$ It represents the degree of collaboration between group 1 and group 3 in college $j$ as perceived by group 2.

$$V_{IC,13(3)}(j) = \sum_{i=1}^{n_{j3}} V_{IC,13}(i) / nj3.$$ It represents the degree of collaboration between group 1 and group 3 in college $j$ as perceived by group 3.
Inter-group integration measures the respondents’ general feeling and impressions about inter-group integration. The five statements used to reflect the situation regarding cultural integration were derived from relevant literature (B. Liu, 2001) as well as the interview I conducted at the case university. These statements describe the situation concerning inter-group integration with particular respect to the cultural dimension. Each respondent will be asked to report, on a five-point Likert-type scale, the extent to which his group and others has been integrated.

The five items measurement apply to the inter-group integration between group 1 and group 2, the inter-group integration between group 1 and group 3, as well as the inter-group integration between group 2 and group 3. The alpha coefficient has been respectively checked in the three cases, and the Chronbach’s alphas are high (0.878, 0.870 and 0.770). The factor analysis (Table 8.13) indicates that these items are of one dimension measurement.

Next, relevant variables and the computing process will be described in which the variables at individual level are converted to those at inter-group level.

Variables at the individual level:

\[ V_{\text{Int-12}}(i)(t) = \sum_{j=1}^{n_1} V_{\text{Int-12}}(i) / n_1 \]  
It represents the degree of collaboration between group 1 and group 2 in college j as perceived by group 1.

\[ V_{\text{Int-13}}(i)(t) = \sum_{j=1}^{n_2} V_{\text{Int-13}}(i) / n_2 \]  
It represents the degree of collaboration between group 1 and group 3 in college j as perceived by group 2.

\[ V_{\text{Int-23}}(i)(t) = \sum_{i=1}^{n_3} V_{\text{Int-23}}(i) / n_3 \]  
It represents the degree of collaboration between group 2 and group 3 in college j as perceived by group 2.
\[ V_{\text{Int},12}(i) = \sum_{t=1}^{5} V_{\text{Cl},12}(i)(t) / 5. \] It represents each individual’s perception of the extent to which group 1 and group 2 have been integrated in the college where he or she is working.

\[ V_{\text{Int},13}(i) = \sum_{t=1}^{5} V_{\text{Cl},13}(i)(t) / 5. \] It represents each individual’s perception of the extent to which group 1 and group 3 have been integrated in the college where he or she is working.

\[ V_{\text{Int},23}(i) = \sum_{t=1}^{5} V_{\text{Cl},23}(i)(t) / 5. \] It represents each individual’s perception of the extent to which group 2 and group 3 have been integrated in the college where he or she is working.

Variables at the group level:

\[ V_{\text{Int},12}(j) = \sum_{i=1}^{nj1} V_{\text{Cl},12}(i) / nj1. \] It represents the degree of integration between group 1 and group 2 in college j as perceived by group 1.

\[ V_{\text{Int},12}(j) = \sum_{i=1}^{nj2} V_{\text{Cl},12}(i) / nj2. \] It represents the degree of integration between group 1 and group 2 in college j as perceived by group 2.

\[ V_{\text{Int},12}(j) = \sum_{i=1}^{nj3} V_{\text{Cl},12}(i) / nj3. \] It represents the degree of integration between group 1 and group 2 in college j as perceived by group 3.

\[ V_{\text{Int},13}(j) = \sum_{i=1}^{nj1} V_{\text{Cl},13}(i) / nj1. \] It represents the degree of integration between group 1 and group 3 in college j as perceived by group 1.

\[ V_{\text{Int},13}(j) = \sum_{i=1}^{nj2} V_{\text{Cl},13}(i) / nj2. \] It represents the degree of integration between group 1 and group 3 in college j as perceived by group 2.

\[ V_{\text{Int},13}(j) = \sum_{i=1}^{nj3} V_{\text{Cl},13}(i) / nj3. \] It represents the degree of integration between group 1 and group 3 in college j as perceived by group 3.

\[ V_{\text{Int},23}(j) = \sum_{i=1}^{nj1} V_{\text{Cl},23}(i) / nj1. \] It represents the degree of integration between group 2 and group 3 in college j as perceived by group 1.
Cultural integration

Cultural integration is a calculation of degree of differences between the preferred organisational values between two pre-merger groups. In the related questions, the same descriptions of cultural scenarios that measure organisational culture types were applied. However, a respondent was asked to rate his or her organisation as he or she thinks it should be in five years in order to be highly successful. The ratings range from strongly prefer (5) to strongly not prefer (1).

The scale reliability test shows that the measures of value type A, value type B and value type D have high value of alpha efficient (A: 0.889, B:0.872 and D:0.787). The factor analyses on the three variables value type A, B and D (Table 8.14, Table 8.15 and Table 8.16) also prove the unidimensionality of these sale items.

However, the Chronbach's Alpha is very low (alpha=0,177) on the four items measuring value type C. An inter-correlation test (Table 8.17) indicate the second item about leadership (The leadership of the organisation is generally considered to exemplify entrepreneurship, innovating or risk taking.) does not have a significant, positive relationship with other items. Eliminating this item produces a satisfactory value of Chronbach's Alpha (0,563). The unidimensionality of the three items has been affirmed by the factor analyses (Table 8.18).

Next, relevant variables and the computing process will be described in which the variables at individual level are converted to those at inter-group level.

Variables at the individual level:

\[ V_{P_{TypeA}(i)} (t) \] It represents the No. \( i \) individual’s rating on the No. \( t \) item concerning the extent to which culture type A is preferred.

\[ V_{int_{23}(2)}(j) = \sum_{i=1}^{nj2} V_{CL_{23}(i)} / nj2 \] It represents the degree of integration between group 2 and group 3 in college \( j \) as perceived by group 2.

\[ V_{int_{23}(3)}(j) = \sum_{i=1}^{nj3} V_{CL_{23}(i)} / nj3 \] It represents the degree of integration between group 2 and group 3 in college \( j \) as perceived by group 3.
Accordingly, we can get the following variables.

Variables at inter-group level:

\[ V_{\text{PTypeA}(1)}(j) = \sum_{i=1}^{n_{11}} V_{\text{PTypeA}}(i) / nj1 \]  
It represents the extent to which the characteristics of value type A are preferred by group 1 in college j.

\[ V_{\text{PTypeA}(2)}(j) = \sum_{i=1}^{n_{12}} V_{\text{PTypeA}}(i) / nj2 \]  
It represents the extent to which the characteristics of value type A are preferred by group 2 in college j.

\[ V_{\text{PTypeA}(3)}(j) = \sum_{i=1}^{n_{13}} V_{\text{PTypeA}}(i) / nj3 \]  
It represents the extent to which the characteristics of value type A are preferred by group 3 in college j.

Accordingly, we can get the following variables.

**Table 10. Variables of value type at group level**

<table>
<thead>
<tr>
<th>College j</th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Type D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-merger group 1</td>
<td>VPTypeA(1)(j)</td>
<td>VPTypeB(1)(j)</td>
<td>VPTypeC(1)(j)</td>
<td>VPTypeD(1)(j)</td>
</tr>
<tr>
<td>Pre-merger Group 2</td>
<td>VPTypeA(2)(j)</td>
<td>VPTypeB(2)(j)</td>
<td>VPTypeC(2)(j)</td>
<td>VPTypeD(2)(j)</td>
</tr>
<tr>
<td>Pre-merger Group 3</td>
<td>VPTypeA(3)(j)</td>
<td>VPTypeB(3)(j)</td>
<td>VPTypeC(3)(j)</td>
<td>VPTypeD(3)(j)</td>
</tr>
</tbody>
</table>

The value of differences between each pair pre-merger groups are calculated by using the “city block distance” technique.

\[
V_{\text{PD}(1+2)}(j) = |V_{\text{PTypeA}(1)}(j) - V_{\text{PTypeA}(2)}(j)| + |V_{\text{PTypeB}(1)}(j) - V_{\text{PTypeB}(2)}(j)| + |V_{\text{PTypeC}(1)}(j) - V_{\text{PTypeC}(2)}(j)| + |V_{\text{PTypeD}(1)}(j) - V_{\text{PTypeD}(2)}(j)|. 
\]

It represents the degree of value difference between group 1 and 2 in college j.

By observation, the maximal value of the value difference is 4.41. Then the value of cultural integration is calculated by 5 reducing the value of value different.
Merger type

For the variable of merger type, there is lack of theoretical basis or empirical experience to predict how they might affect cultural integration. The data gathered are limited to one case study university with only two possible merger types, and therefore it is not sufficient to draw a statistical conclusion on the relations between the type of merger and the results of cultural integration. The variable merger type here will be mainly considered as a possible control variable when make correlation analyses between relevant variables. A detailed discussion about how to empirically identify two merger groups will be arranged in the next chapter.

8.3 Database for analyses

This chapter finishes with two databases undertaking statistical analyses (Table 11 and Table 12). As there was only one respondent from the colleges 7, 13, and 17, there are no pair group data concerning these colleges in Database II. When make statistical analysis based on Database I at the individual level, the respondents from these three colleges have been excluded, in order to retain consistence with the data in Database II.

While the reliability of the variables at the individual level has been verified, a considerable challenge is to check whether the variables at the group level are also valid or reliable. The variables at the group level are simply derived
by averaging ratings on a corresponding concept made by individuals in a pair group. To further ensure the reliability or validity of each variable at inter-group level, we need also to check the variance of the average ratings by the individuals within the pair group. However, there are too few persons in each pair group, and in some pair group there are only two individual respondents. As such, the analysis will lack statistical meanings. The underlying assumption for calculation of the variables at the inter-group level is that if the validity and reliability of variables at the individual level are ensured, the sum or average of the individuals’ ratings would reflect the truth at the group level.

Table 11. Database I at individual level for analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Respondent</td>
<td>(i)</td>
</tr>
<tr>
<td>School level Change</td>
<td>VSU((i))</td>
</tr>
<tr>
<td>Balance Strategy</td>
<td>VBS((i))</td>
</tr>
<tr>
<td>Transparency of Management</td>
<td>VTM((i))</td>
</tr>
<tr>
<td>Cooperative Environment</td>
<td>VCE((i))</td>
</tr>
<tr>
<td>Inter-group Collaboration 1+2</td>
<td>VIC_12((i))</td>
</tr>
<tr>
<td>Inter-group Collaboration 1+3</td>
<td>VIC_13((i))</td>
</tr>
<tr>
<td>Inter-group Collaboration 2+3</td>
<td>VIC_23((i))</td>
</tr>
<tr>
<td>Inter-group Integration 1+2</td>
<td>VCI_12((i))</td>
</tr>
<tr>
<td>Inter-group Integration 1+3</td>
<td>VCI_13((i))</td>
</tr>
<tr>
<td>Inter-group Integration 2+3</td>
<td>VCI_23((i))</td>
</tr>
</tbody>
</table>
Table 12. Database II at inter-group level for analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>j</td>
</tr>
<tr>
<td>Group</td>
<td>1     2     3</td>
</tr>
<tr>
<td>Pair group</td>
<td>1+2   1+3   1+2   2+3   1+3   2+3</td>
</tr>
<tr>
<td>Physical Division</td>
<td></td>
</tr>
<tr>
<td>Period</td>
<td></td>
</tr>
<tr>
<td>Merger type</td>
<td>1     2     1     2     2     2</td>
</tr>
<tr>
<td>School Level Upgrading</td>
<td></td>
</tr>
<tr>
<td>Balance Strategy</td>
<td></td>
</tr>
<tr>
<td>Transparency of Management</td>
<td></td>
</tr>
<tr>
<td>Cooperative Environment</td>
<td></td>
</tr>
<tr>
<td>Cultural Differences</td>
<td></td>
</tr>
<tr>
<td>Inter-group Collaboration</td>
<td></td>
</tr>
<tr>
<td>Integration</td>
<td></td>
</tr>
<tr>
<td>Cultural Integration</td>
<td></td>
</tr>
</tbody>
</table>

Academic staff integration.indd   145
14.8.2007   15:24:05
9 The relationships between possible factors and academic staff integration

The aim of this chapter is to verify the hypotheses by analysing the empirical qualitative survey data. As discussed in the previous chapter, the data have been processed into two databases. Database I derives directly from the original data provided by individual respondents’ answers to the questionnaires. It is used to test the reliability of the relevant variables. The data in Database II are the results of calculating and transferring individual data to a group level.

The statistical analyses here are mainly concerned with the second database. In the analyses, two statistical techniques have been applied, namely variance analysis, and correlation analysis. The variance analysis forms a basis for further correlation tests. The correlation analysis is used to verify the relations between pair variables included in each hypothesis in Chapter 5.

As discussed in the previous chapter, the survey resulted in only 143 returned responses. The available data has been used to check the reliability of the variable operationalisation. When it comes to the verification of hypothesis the data might be too limited to drawn firm conclusions. First of all, the data only represent around 20% of the total population of the potential respondents. Moreover, the 143 respondents were not distributed evenly across the post-merger colleges and pre-merger groups with the colleges. The variables in Database II represent corresponding measurement at the group level. In other words, the values of these variables are the average of individual respondent ratings. As such, the accuracy of the values requires a large number of individual responses. However, in some pre-colleges only one or two respondents returned their questionnaires. The relatively small respondent rate and the uneven distribution of the respondents across pre-merger groups might result in a biased sample. Even though the analyses provided some empirical findings, the study here is only a preliminary attempt.

9.1 Merger type as control variable

Although each hypothesis deals with the relationship between two variables, the phenomenon of post-merger integration is obviously more complicated
than what can be captured by two variable correlations. Often researchers want to consider three or more variables when they have discovered a relationship between two variables, and want to find out

1. if the relationship might be due to some other factor(s),
2. how or why the variables are related, or
3. if the relationship is the same for different types of cases.

The third factor is called control or test variable. A control variable is a variable introduced into a statistical analysis to see if a statistical relationship holds among cases that are alike on a particular characteristic. The process of using a control variable in the analysis is called elaboration and was developed at Columbia University by Paul Lazarsfeld and his associates. In this study, merger type is regarded as a control variable.

All the mergers at the departmental level in the case study university took place between the departments in the same academic fields. Among the department mergers, two forms can be identified according to whether the pair merger partners are at the same level (having similar functions) or not. A merger of pair pre-merger departments is defined as Type I (equal consolidation or horizontal merger) when the gap between the levels of the two pre-merger departments is less than 2. A merger of pair pre-merger departments is defined as Type II (transformative acquisition or vertical merger) when the level gap is more than 2. The average school levels of the pre-merger and post-merger organisations have been summarised in Table 13.
Table 13. The respondents’ perception on the level of pre-merger department and post-merger colleges

<table>
<thead>
<tr>
<th>College</th>
<th>Pre-merger group</th>
<th>Number of respondents</th>
<th>Level of pre-merger department</th>
<th>Level of post-merger college</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>4</td>
<td>4.00</td>
<td>4.75</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>8</td>
<td>4.00</td>
<td>4.63</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>7</td>
<td>5.43</td>
<td>5.71</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5</td>
<td>3.60</td>
<td>5.40</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>5</td>
<td>5.20</td>
<td>5.20</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10</td>
<td>4.30</td>
<td>4.80</td>
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<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1.00</td>
<td>5.50</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>5</td>
<td>4.80</td>
<td>5.20</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
<td>2.00</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td>5.00</td>
<td>4.75</td>
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<td>3</td>
<td>17</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>2</td>
<td>3.50</td>
<td>4.50</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7</td>
<td>4.29</td>
<td>4.29</td>
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<td>1.00</td>
<td>3.00</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>5.00</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td>8</td>
<td>1</td>
<td>5</td>
<td>3.60</td>
<td>4.80</td>
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<td></td>
<td>2</td>
<td>4</td>
<td>3.75</td>
<td>4.50</td>
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<td>1.00</td>
<td>5.00</td>
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<td>9</td>
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<td>5.33</td>
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<td>4.67</td>
<td>4.83</td>
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<td>4.29</td>
<td>4.43</td>
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<td>3.17</td>
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</tr>
<tr>
<td>11</td>
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<td>2</td>
<td>3.00</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>4.33</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
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<td>12</td>
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<td>2</td>
<td>4.00</td>
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<td></td>
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<tr>
<td>15</td>
<td>1</td>
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<td>4.38</td>
<td>4.63</td>
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<td>4.00</td>
<td>5.50</td>
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<td>3</td>
<td>1.00</td>
<td>4.67</td>
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<tr>
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<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td></td>
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</tr>
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<td>17</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>3.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>
This study assumes that the relationships between the factors and integration might be different between the two forms of mergers. Following such assumption, merger type is treated as a control variable. The variance analysis technique is used to study the difference between the two groups of data divided by merger type for each variable involved in the correlation tests.

The analysis of variance requires certain assumptions be met, if the statistical tests are to be valid. The most fundamental assumption is normality, referring to the shape of the data distribution for an individual metric variable correspondence to the normal distribution. The Kolmogorov-Smirnov test (Table 14) has affirmed the normal distribution features of all relevant variables in Database II.

Table 14. Kolmogorov-Smirnov test of variables in Database II

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>School Level</th>
<th>Balance</th>
<th>Transparency</th>
<th>Cooperative</th>
<th>Cultural</th>
<th>Intergroup</th>
<th>Intergroup</th>
<th>Cultural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Parameters</td>
<td>1.9010</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Mean</td>
<td>Std Deviation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Extreme</td>
<td>.89778</td>
<td>.55182</td>
<td>.55598</td>
<td>.52742</td>
<td>.88134</td>
<td>.49386</td>
<td>.45052</td>
<td>1.23673</td>
<td></td>
</tr>
<tr>
<td>Differences</td>
<td>148</td>
<td>.126</td>
<td>.130</td>
<td>.964</td>
<td>1.52</td>
<td>.969</td>
<td>.969</td>
<td>1.145</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.114</td>
<td>.061</td>
<td>.130</td>
<td>.964</td>
<td>1.52</td>
<td>.969</td>
<td>.969</td>
<td>1.145</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>-1.48</td>
<td>-1.26</td>
<td>-0.79</td>
<td>-0.94</td>
<td>-0.94</td>
<td>-0.94</td>
<td>-0.94</td>
<td>-1.145</td>
<td></td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.125</td>
<td>.968</td>
<td>.968</td>
<td>.718</td>
<td>1.155</td>
<td>.700</td>
<td>.966</td>
<td>1.096</td>
<td></td>
</tr>
<tr>
<td>Asym. Sig (2-tailed)</td>
<td>.158</td>
<td>.317</td>
<td>.203</td>
<td>.982</td>
<td>.139</td>
<td>.710</td>
<td>.768</td>
<td>.181</td>
<td></td>
</tr>
</tbody>
</table>

Moreover, the variances should be equal between the two groups. To access the equality of variance assumption, Levene’s test of homogeneity of variance can be used. If the assumption of homogeneity cannot be met for some variables, T-Test will be applied to examine how these variables make the difference between the two merger groups. The variance analyses of relevant variables will be discussed later when the hypotheses are tested.

9.2 Variables of academic staff integration

The current literature does not provide a clear-cut definition of what constitutes “cultural integration” in merger settings. This was a considerable challenge when I was designing questions to measure the integration. As discussed in the previous chapter, academic staff integration is measured in two different ways. One represents the average respondents’ subjective evaluation of the ex-
tent to which two pre-merger groups have been integrated in general, though it has an emphasis on the cultural aspect.

The other measurement focuses particularly on the cultural dimension. It is based on the understanding that post-merger integration is a process of adjustment mutual respects and acceptance between different values and cultures inherited from the pre-merger groups. Therefore, this measurement is a calculation of the differences between the preferred values between two pre-merger groups. It follows that the less the difference between the two groups’ preferred values, the better cultural integration is likely to be.

Since the integration concerning people’s basic assumptions and values at the deep cognitive level could not easily be detected, academic staff members’ general feelings or impressions of inter-group integration may not really reflect the integration at the cultural dimension. For this reason, it was not expected that there is a significant association between the two different indicators measuring integration. Nevertheless, it was still surprising when a very low coefficient between the two variables was founded (coefficient=0.039, p=0.777).

The result indicates that people’s observation or feeling of inter-group integration might not be determined by the value consistence between two pre-merger groups. When people talked of inter-group integration, they tended to regard it as same as inter-personal relations at the behaviour level. For instance, several interviewees stressed the point that academic staff integration required contact or cooperation between members of different pre-merger institutions. They thought that academic staff integration was a process that started from developing work relationships and then moved towards interpersonal relationships. In other word, they understood inter-group integration as a similar concept of inter-personal relation.

When it comes to the outcomes of merger, both inter-group integration and cultural integration are important subjects. Despite of lack of association between the two concepts, they could be inter-related. We just lack knowledge of the mechanism behind their relationship. It could be too complicated to be captured by a single correlation test. Although most of the hypotheses cope with the relations between relevant factors and cultural integration, an understanding of how these factors affect inter-group integration may be also important. Therefore, both inter-group integration and cultural integration are considered, when testifying the hypotheses.
9.3 Factors and their correlations with integrations

All the hypotheses derived in Chapter 5 are about the relationship between possible factors and integrations. Specifically five factors are identified:

1. Cultural difference,
2. School level upgrading,
3. Balance Strategy,
4. Transparency of Management,
5. Inter-group integration.

In addition, two factors have been hypothesised to be associated with the inter-group integration through their relationships with inter-group cooperation, namely Physical division period and cooperative environment. Next, the relationship between each pair variables will be analysed.

9.3.1 Cultural Difference

Hypothesis 1: The achievement of cultural integration is inversely related to cultural differences of pre-merger institutions.

The relationship between cultural difference and cultural integration

This hypothesis has been clearly verified by the significant negative relationship between the cultural differences and cultural integration in Database II in all cases (including data in both merger type 1 and merger type 2) (Table 15). A significant negative relationship between the two variables is also replicated within each category of merger type. The partial relationships demonstrated the same magnitude and direction as the correlation in all cases, despite of lower strength of the significance. Therefore, the third variable—merger type is eliminated as a possible source of explanation for the relationship between cultural differences and cultural integration.
Table 15. Bivariate correlation between cultural differences and cultural integration

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-.497**</td>
<td>-.565*</td>
<td>-.431*</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.000</td>
<td>.006</td>
<td>.010</td>
</tr>
<tr>
<td>N</td>
<td>57</td>
<td>22</td>
<td>35</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level
**Correlation is significant at the 0.001 level

The relationship between cultural difference and inter-group integration

The bivariate correlation test between cultural difference and inter-group integration in Database II (Table 16) shows that the cultural difference is not related to inter-group integration. Neither is there a significant relationship between the two variables in either merger type categories. This result implies that the inter-group integration is not essentially determined by cultural issues.

Table 16. Bivariate correlation between cultural difference and inter-group integration

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-.075</td>
<td>-.196</td>
<td>-.039</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.581</td>
<td>.382</td>
<td>.827</td>
</tr>
<tr>
<td>N</td>
<td>56</td>
<td>22</td>
<td>34</td>
</tr>
</tbody>
</table>
Variance analyses

As the analyses have treated merger type as a control variable and compared the correlation between each merger types, it is necessary to examine how each pair variables differ between the two types of merger.

This study has assumed that the effects of integration might be different between two merger types. The Levene Statistics (LS) of both inter-group integration (LS=0.60, p=0.808) and cultural integration (LS=2.326, p=0.133) show that the two groups formed by merger type are homogenous in variances. As the assumption of homogeneous variances is met, ANOVA could be conducted to test the differences between the two groups on the variables of both inter-group integration and cultural integration. The results show the p value is significant (if taking the 5% level of probability) for both the variable of inter-group integration (0.037) and the variable of cultural integration (0.039). This indicates that each of the two variables measuring integration reflect the difference between merger types.

The extent of the differences on both inter-group integration and cultural integration between the two merger types can be described by the comparison of the means of the variables in different merger types. The comparison shows that the average level of inter-group integration is higher in merger type 2 (2.9359) than that in merger type 1 (2.6777), while for cultural integration it is higher in merger type 1(3.2400) than merger type 2 (2.4986).

For the variable of cultural difference, the Levene statistics (LS=15.053, p=0.000) shows that the two groups divided by merger type are not homogenous, violating an assumption of ANOVA (Table 9.2). An independent samples T-test shows that there is an almost significant difference in the variable of culture differences between the two merger types, as the significance level is 0.052 (equal variances not assumed), which is a little bit higher than 5%. A comparison of the means between the two merger type shows that the average degree of cultural differences in merger type 2 (1.7867) is higher than that in merger type 1 (1.3873).
9.3.2 Balance Strategy

Hypothesis 2: The more balance strategy has become central in management processes, the more difficult it may be for the integration of academic staff, particularly at the long run cultural dimension.

The relationship between balance strategy and cultural integration

This hypothesis is not formulated clearly because it is under a condition related to a time. When the interview was conducted in 2004, quite a few people believed that the balance strategy was helpful in getting people together and reducing the inter-group conflict in the earlier stage of the merger. In the mean time, they though that it would enhance the “us and them” antagonism in the long run. Nevertheless, no one could clearly define when the balance strategy would exert a significant negative influence on the staff integration. Therefore, the hypothesis could hardly be tested by the simple data collected in this case study university. Nevertheless, I still try to enrich my understanding about this subject through analysing the available data. In Database II, the bivariate correlation tests between balance strategy and culture integration (Table 17) show that balance strategy has no significant relationship with cultural integration in any category (the category of all cases, merger type 1 or merger type 2), although the direction of their relationships is negative.

Table 17. Bivariate correlation between balance strategy and cultural integration

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-.165</td>
<td>-.275</td>
<td>-.249</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.219</td>
<td>.216</td>
<td>.148</td>
</tr>
<tr>
<td>N</td>
<td>57</td>
<td>22</td>
<td>35</td>
</tr>
</tbody>
</table>

The relationship between balance strategy and inter-group integration

The bivariate correlation tests between balance strategy and inter-group integration in Database II (Table 18) shows that balance strategy has no significant relation with inter-group integration in all cases and in merger type 2. However, a significant negative correlation (though the significance is relatively low) exists between the two variables in merger type 1. This might indicate that the use
of balance strategy has already resulted in some negative effects in inter-group integration in the mergers between equally strong partners (merger type 1).

Table 18. Bivariate correlation between balance strategy and inter-group integration

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-.210</td>
<td>-.461*</td>
<td>-.060</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.119</td>
<td>.031</td>
<td>.734</td>
</tr>
<tr>
<td>N</td>
<td>56</td>
<td>22</td>
<td>34</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level

For the variable of balance strategy, the result of Levene statistics (LS=0.075, p=0.772) shows that the two groups divided by merger type are homogenous, not violating an assumption of ANOVA. The ANOVA test shows that the p value (0.151) is not significant, and therefore the variable of balance strategy is not influenced by merger types.

9.3.3 Transparency of Management

Hypothesis 3: The extent to which the information concerning management action is available for staff members is positively associated with the degree of cultural integration.

The relationship between transparency of management and cultural integration

The correlation tests between transparency of management and cultural integration in Database II (Table 19) show that the two variables have strong significant positive relationship in all cases. In merger type 1, transparency of management also has significant positive relationship with cultural integration, although the significance level is lower than the magnitude of correlation test in all cases. In merger type 2, the transparency of management has no significant relation with cultural integration. The results indicate that the relationship between transparency of management and cultural integration must be specified: the transparency of management only affects the cultural integration in merger type 1.
Table 19. Bivariate correlation between transparency of management and cultural integration

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>.357**</td>
<td>.426*</td>
<td>.303</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.006</td>
<td>.048</td>
<td>.077</td>
</tr>
<tr>
<td>N</td>
<td>57</td>
<td>22</td>
<td>35</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level
**Correlation is significant at the 0.01 level

The relationship between transparency of management and inter-group integration

The correlation tests between transparency of management and inter-group integration in Database II (Table 20) reveal significant positive relationship between transparency of management and inter-group integration in each category. The significance level is relatively low in merger type 2. This demonstrates that making the management processes transparent to the staff members is vital to a successful inter-group integration.

Table 20. Bivariate correlation between transparency of management and intergroup integration

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>.439**</td>
<td>.664**</td>
<td>.394*</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.001</td>
<td>.001</td>
<td>.021</td>
</tr>
<tr>
<td>N</td>
<td>56</td>
<td>22</td>
<td>34</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level
**Correlation is significant at the 0.01 level

For the variable of transparency of management, Levene statistics (LS=0.08, p=0.928) shows that the two groups divided by merger type are homogenous, not violating an assumption of ANOVA. The ANOVA test shows that the p value (0.519) is not significant, and therefore the variable of transparency of management does not make the difference between merger types.
9.3.4 Inter-Group Collaboration

Hypothesis 4: The higher the degree of collaboration between academic staff members of pre-existing institutions, the higher the degree of cultural integration which will be achieved.

The relationship between inter-group collaboration and cultural integration

The correlation tests between inter-group collaboration and cultural integration in Database II (Table 21) show that there is no significant relationship between inter-group collaboration and cultural integration in any category. It means that how academics from different pre-merger groups collaborate with each other in the post merger college has little effect on the integration in the cultural dimension.

Table 21. Bivariate correlation between inter-group collaboration and cultural integration

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-detailed)</td>
<td>.747</td>
<td>.517</td>
<td>.677</td>
</tr>
<tr>
<td>N</td>
<td>54</td>
<td>22</td>
<td>32</td>
</tr>
</tbody>
</table>

The relationship between inter-group collaboration and inter-group integration

The bivariate correlation test between inter-group collaboration and inter-group integration in Database II (Table 22) indicates that the inter-group collaboration have a significant positive relation with inter-group integration, but the significance level is relatively low (p=0.047). In the elaboration analysis, there is no significant relationship between inter-group collaboration and inter-group integration in either merger type. Merger type could be identified when the merger took place, and therefore it is a variable that occurs earlier before both inter-group collaboration and inter-group integration takes place. In this case, merger type is an antecedent control variable. Due to non-association in the partial correlation tests, it can be conclude that the original association is explained away by the merger type. In other words, there is a spurious associa-
tion between the inter-group collaboration and inter-group integration. This has been further tested by the partial correlation (merger type as a control variable) in which the correlation (p=0.246) is not significant.

For the variable of inter-group collaboration, the Levene statistics (LS=0.666, p=0.418) shows that the two groups divided by merger type are homogenous, not violating an assumption of ANOVA. The ANOVA test shows that the p value (0.462) is not significant, and therefore the variable of inter-group collaboration does not make the difference between merger types.

There are two factors (cooperative environment, period of separation) that have been assumed to affect the integrations through their relationships with integration cooperation.

**Hypothesis 5:** The cooperative work environment is more likely to lead to inter-group cooperation between academic members of pre-merger groups.

**Hypothesis 6:** The longer the period of pre-merger groups working in separate locations following the merger, the more difficult will inter-group collaboration be.

As the statistical analysis has just rejected the association between inter-group collaboration and integrations, it might be less meaningful to continue the study of the correlations between the two factors and inter-group cooperation when it comes to understand how the two factors affect on integration.

The correlation tests between cooperative environment and inter-group cooperation (Table 23) show that there is no significant relation between the two variables in any category. Therefore, the hypothesis 5 has been rejected. This result could be explained by an assumption that there might be some unknown interfere variables work in the between.

---

**Table 22 Bivariate correlation between inter-group collaboration and inter-group integration**

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>.270*</td>
<td>.345</td>
<td>.088</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.047</td>
<td>.116</td>
<td>.626</td>
</tr>
<tr>
<td>N</td>
<td>55</td>
<td>22</td>
<td>33</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level*
For the variable of cooperative environment, the Levene statistics (LS=1.878, p=0.176) shows that the two groups divided by merger type are homogenous, not violating an assumption of ANOVA. The ANOVA test shows that the p value (0.307) is not significant, and therefore the variable of cooperative environment does not make a difference between merger types.

The hypothesis 6 has also been rejected by a correlation test (Table 24), which shows that there is no significant relation between the period of separation and inter-group collaboration in any category.

Table 23. Bivariate correlation between cooperative environment and inter-group cooperation

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-.019</td>
<td>-.080</td>
<td>.018</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.892</td>
<td>.725</td>
<td>.920</td>
</tr>
<tr>
<td>N</td>
<td>55</td>
<td>22</td>
<td>33</td>
</tr>
</tbody>
</table>

For the variable of separation period, the Levene statistics (LS=4.293, p=0.043) shows that the two groups divided by merger type are not homogenous, violating an assumption of ANOVA. An independent samples T-test shows that there is a significant difference in the variable of culture differences between the two merger types (p=0.013, equal variances not assumed).
Despite the above findings, I still believe that allocating members from different pre-merger groups together is necessary for a successful merger. Without working together, it is meaningless to talk about integration. However, working in the same office does not automatically lead to the cooperation between pre-merger groups. Close inter-group interaction may also result in the confrontation and competition between the two groups, rather than cooperation. In order to ensure a positive result—effective inter-group cooperation, the management is the key.

### 9.3.5 School Level Upgrading

**Hypothesis 7:** The higher the prestige level an organisation or unit is transformed to after merger, the more likely are the internal values or cultures among academic staff members in the organisation or unit to change to be consistent with the values and norms attached to the new identity, through which cultural integration may be more easily achieved.

**Relationship between school level upgrading and cultural integration**

The correction tests between school level upgrading and cultural integration in Database II (Table 25) reveal a significant negative relation between the two variables in all cases. However, the partial correlation tests show that there is no significant relation between the two variables in any merger type.

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-.297*</td>
<td>-.200</td>
<td>-.026</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.025</td>
<td>.371</td>
<td>.882</td>
</tr>
<tr>
<td>N</td>
<td>57</td>
<td>22</td>
<td>35</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level

For the variable of school level upgrading, the Levene statistics (LS=1.083, p=0.303) shows that the two groups divided by merger type are homogenous, not violating an assumption of ANOVA. The ANOVA test shows that the p
value (0.000) is highly significant, and therefore the variable of school level upgrading does make a difference between merger types.

The reason why there is no significant relations between school level upgrading and cultural integration in each merger type could be due to the fact that school level upgrading make the difference on merger types. Generally speaking, school level upgrading could be negatively associated with cultural integration. However, in each single merger type the school level upgrading is not a factor affecting the integration in the cultural dimension.

These statistical results seemingly go against the theoretical hypothesis that assumes a positive relation between school level upgrading and cultural integration. According to what has been discussed in Chapter 5, academics are more likely to accept the situation when their institution is transformed into a more prestige one after merger, because pursuing higher education academic status is both a common value and behaviour tendency among academics. Therefore, if the academics feel that their organisation has been transformed into one with higher prestige, the new identity will accordingly change their ways of thinking and behaving towards the values supporting the new identity. As such, when a college is transformed to a higher level, the degree of value difference will tend to become smaller.

Is the theoretical assumption wrong? Simply based on the result of statistical analysis, it is very likely to say “yes”. However, it is also important to note that what has been described by the theoretical assumption is a rather complicated and is a long term process.

When the school level has been transformed to a higher one, the members from both sides tend to change their values towards convergence. However, this may take a long time before reaching such an end. No literature can give a clear hint that how long this period could be. Moreover, the variable of cultural integration here is a just calculation of the absolute degree of discrepancy between the values held by two pre-merger groups ten years after a merger. Technically, the value of the degree may be affected by the original cultural differences between two merger partners.

When there was a large gap between the cultures and values of the two pre-merger groups at the start of the merger, even though values of both sides are converging, it could still be possible to see a larger absolute value difference between the two groups. This could be the fact in the case study university.

What underlines the theoretical assumption is that the values held by academics will move towards a convergence when the school level has been upgraded significantly. Therefore, the higher level perceived by an academic staff
member about the post-merger college in which he or she is involved, the greater the extent his or her values will change (towards a consistency). In order to verify this assumption, the original data at individual level (Database I) are used. The correlation test between school level change and value change among individuals indicates a significant positive correlation between the two variables at the significant level of 0.024 (coefficient=.192). This confirms that the school level change have a significant association with individual academics’ value change.

**Relationship between school level upgrading and inter-group integration**

The correlation tests between school level upgrading and inter-group integration in Database II (Table 26) indicate that the two variables have a significant positive correlation with inter-group integration in all cases. Compared to the correlation between school level upgrading and cultural integration, the significance level is higher here. The partial correlations tests reveal that there is no significant relationship between school level upgrading and inter-group integration in either merger type. Like the discussion concerning the relationship between school level upgrading and cultural integration, the interpretation of this result should also take into account of the significant differences between school level upgrading discriminated by merger type.

Table 26. Bivariate correlation between school level upgrading and inter-group integration in all cases

<table>
<thead>
<tr>
<th></th>
<th>All cases</th>
<th>Merger type 1</th>
<th>Merger type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>.364**</td>
<td>.334</td>
<td>.203</td>
</tr>
<tr>
<td>Sig. (2-detailed)</td>
<td>.006</td>
<td>.129</td>
<td>.250</td>
</tr>
<tr>
<td>N</td>
<td>56</td>
<td>22</td>
<td>34</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level**

The statistical results indicate that in general the higher prestige level to which an organisation has been transformed to after merger, the more inter-group integration will be achieved between them. When academic staff members from
a pre-merger department feel that the level of their post-merger college has been upgraded to a relatively higher level, the more positive attitude that may have towards the merger. Hence, the degree of inter-group integration will be increased. However, within each merger type, the school level upgrading is not a significant factor affecting inter-group integration.

9.4 Summary of the analyses

Based on the above analysis of correlations between each possible factor and integrations, we can make the following summaries as indicated by Table 27. It should be noted that the factors having significant relationships with inter-group integration are not as same as those having significant relationships with cultural integration. This is partly due to the reason that the two variables measure different concepts. In other words, people’s general feelings about inter-group integration might be quite different from the consistence between cultures or values of two pre-merger groups. However, this result might not simply exclude the possible relationships between the two variables. It could be assumed to be an impact of inter-group integration on cultural integration, but possibly with a time lag. The examination of the factors that affect inter-group integration could be relevant for studying the predictors of cultural integration too.
### Factors associated with inter-group association

The analyses have revealed that two factors are associated with inter-group integration with relatively strong significance level, namely transparency of management and school level upgrading. The transparency of management has also been proved to be associated with inter-group integration in each merger type, despite the significance level in merger type 2 being relatively low.

#### Table 27. The correlations between factors and integrations

<table>
<thead>
<tr>
<th>Factors</th>
<th>Inter-group integration</th>
<th>Cultural integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All cases</td>
<td>Type 1</td>
</tr>
<tr>
<td>Cultural Difference</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Balance Strategy</td>
<td>N</td>
<td>-*</td>
</tr>
<tr>
<td>Transparency of Management</td>
<td>+**</td>
<td>-*</td>
</tr>
<tr>
<td>Inter-group Collaboration (specious association)</td>
<td>+*</td>
<td>N</td>
</tr>
<tr>
<td>School level upgrading</td>
<td>+**</td>
<td>N</td>
</tr>
</tbody>
</table>

- N: no significant correlation;
- + significant, positive correlation;
- - significant, negative correlation;
- * significant at 0.05 level;
- ** significant at 0.01 level.

**9.4.1 Factors associated with inter-group association**

The analyses have revealed that two factors are associated with inter-group integration with relatively strong significance level, namely transparency of management and school level upgrading. The transparency of management has also been proved to be associated with inter-group integration in each merger type, despite the significance level in merger type 2 being relatively low.
According to the correlation tests, school level upgrading has a significant relationship with inter-group integration if the merger type is not considered. When looking into the situation in each merger type, the school level upgrading become unimportant. From a statistical perspective, the mechanism through which school level upgrading affects inter-group integration must be explained with the third variable—merger type. In other words, it is the merger type rather than school level upgrading that influences the result of inter-group integration. School level upgrading is determined by merger type.

9.4.2 Factors associated with cultural integration

The correlation tests also show that three factors are more or less associated with cultural integration, namely cultural difference, transparency of management and school level upgrading.

Among those, the most essential factor related to cultural integration might be the cultural difference. The association between the two variables exists in both types of merger, even though the significance level in each merger type is lower than that in all cases. This result corroborates the findings and assumptions from most research literature.

Unlike its relationship with inter-group integration, the factor of transparency of management only has significant relation with culture integration in the merger type 1. The relationship in merger type 1 is not as strong as that in all cases.

The relationship between school level upgrading and cultural integration has been verified by the data on the individual level. It has been confirmed that the school level upgrading has a significant positive relationship with individuals’ value change, but the strength of this relation is relatively weak.

9.5 Discussion

This chapter has tried to verify the hypotheses established in chapter 5. The hypotheses are based on a conceptual framework underlined by institutional organisation theory, which considers post-merger integration as a process of institutionalisation. The convergent objective of a merger is to establish equilibrium between the different cultural backgrounds of the pre-merger in-
stitutions. The change of cultures in post-merger processes relates to an organisation's relationship with both the external environment and its internal dynamics. First, post-merger universities try to obtain new legitimacy from the environment by conforming to accepted norms in their new surroundings. These norms are the external rules imposed by the organisation's environment. Second, as a radical form of restructuring an organisation, merger involves processes both of redesigning organisational structures, and of blending different sets of norms, values and beliefs. Organisational regulations and structure are considered to be formal rules, while values and cultures are informal. All of these conform to internal organisational rules, which are those driven by a group itself and are embodied within an organisation. The changes in organisational rules are heavily reflected in the processes of academic staff integration. All these elements that might affect academic staff integration, such as environment, culture and regulations, can be categorised in formal / informal and external/internal dimensions.

9.5.1 Institutional environment and academic staff integration

In this study, both informal and formal aspects of external institutions have been treated as a whole, and have been referred to as the institutional environment. The institutional environment is in parts of the whole organisational environment. It is parallel with the other parts of the organisational environment, such as the technical environment.

For studies of higher education organisations, more attention should be paid to the institutional environment. To understand the relationship between the institutional environment and an individual HEI in the process of organisational change (especially in the context of mergers), the organisational population must be considered. In a higher education context, the populations can be identified by different categorisations, such as, in a Chinese context, research institutions, research & teaching institutions, teaching only institutions, and application institutions. Mergers often result in organisational status change across these categories. From an institutional organisation perspective, whether an organisation or unit is transformed to a higher level of prestige after merger is a factor affecting academic staff integration. In particular, it assumes a positive relationship between school level change and academic staff integration at the cultural dimension. The analyses of empirical data have confirmed that the school level upgrading did exert a positive influence on
the inter-group integration (Hypothesis 7). The analyses also revealed that the transformation of institutional status to a higher level resulted in a significant change of individual values.

**9.5.2 Informal internal institutions and academic staff integration**

The informal institutions within HEIs here are mainly associated with organisational culture. Culture is the micro image of an institution, while it is in the process of establishing and externalising its new culture. Culture consists of shared norms, values, ideologies and beliefs that determine the behaviours of members within an organisation. It is an important element in an organisation that holds the organisation together. In the post-merger context, however, the staff members from different pre-merger institutions often have different ways of thinking and behaving. Therefore, the ways in which a strong and common organisational culture can be developed is the key to binding different people together. The common perception in merger studies is that the greater the differences between the cultures of the merger partners, the more difficult it will be to develop a convergent and integrated culture. This point has been verified by the empirical data, that there is a negative significant relationship between cultural differences and cultural integration (Hypothesis 1).

**9.5.3 Formal internal institutions and academic staff integration**

Although cultural change in the post-merger process is difficult and time consuming, it can be achieved intentionally. The accomplishment relies heavily on the formal aspects of institutions. In an organisation, formal institutions are created on the foundation of informal conventions and norms shared by organisational members. However, once formal organisational rules are designed, they also affect the informal institutions in the organisation.

The formal institutions within HEIs refer to the formal structures and authority relationships that control how people coordinate their actions and use resources to achieve organisational goals. Merger, by nature, will result in a process of reorganisation in terms of structures, regulations and management procedures. The design and implementation of formal organisational rules in post-merger process are intertwined management procedures. Organisational
structure and management processes embrace a range of issues. In this study, two concrete aspects have been identified, namely the transparency of management and balance strategy.

The former is about how the information and procedures concerning management and decision-making actions are open to academic staff members. The openness of management processes is appreciated in most organisations. In post-merger processes, its role is even more important. In a post-merger organisation, the organisational members from separate pre-existing organisations not only have different values but also have different or sometimes even contradictory interests. People’s interpretations of policies, decisions, regulations and managers’ attitudes are often influenced by the “us and them” syndrome. Sometimes even a simple and normal arrangement in the management might be perceived as a form of discrimination against some people. If the organisational members have more knowledge of the rationale behind the administration as well as the processes of the administration, this will enhance the mutual understandings between administrators and staff members and also enhance the mutual understandings between the mergers of pre-merger groups. The empirical findings clearly confirmed that the transparency of management has a significant, positive relation with academic staff integration (Hypothesis 3).

The latter is about how the managerial emphasis has been given on balancing the powers between pre-merger groups. However, the hypothesis concerning the relation between balance strategy and cultural integration (Hypothesis 2) has not been well formulated. This hypothesis assumes a negative relationship between the two variables but under a condition, namely “in the long run”. Before the negative relation becomes obvious, a balance strategy might facilitate the post-merger processes at the beginning of merger. However, it is hard to establish when the turning point was in the case study university. If the hypothesis exists, we could consider that at the time which is quite close to the turning point, the relationship between the two variables would be not significant. That means that the further in time away from the turning point, the more significant will be the relationship between the two variables, either positive or negative. The statistical results show that there is no significant relationship between the two variables. If the hypothesis was correct, the time at which the survey was conducted might have been close to the turn point. As the hypothesis could not be verified by the available data, what has been discussed here might be speculative.
9.5.4 Interaction and contact among different groups of staff

The development of common values takes place through interaction and contact among individual members. First, inter-group attitudes can be improved via contact. Second, integration at the cultural level requires intensified collaboration between members of different merger partners.

However, the analyses have rejected all the three hypotheses concerning the relationship between inter-group cooperation and cultural integration as well as possible factors affecting inter-group cooperation (Hypothesis 4, 5, 6). The rejection of these hypotheses has indicated that some issues are unclear and has raised some questions for further study:

Why does inter-group collaboration have no relationship with cultural integration?

Why does the period of separation have no effect on inter-group cooperation?

Why aren’t the cooperative environment and inter-group cooperation associated?

The empirical data available for this study could not give accurate answers to these questions. A further understanding of the relationship between these variables might require an independent study. What could be concluded here is that some undiscovered intervening factors might work between each of the pair variables.

It should be noted that the hypotheses developed in this study could capture only a very few factors of the many other really at work. The empirical findings here might only shed light on a tip of the iceberg of the phenomenon of academic staff integration.
10 Predictors of integration and implications for management

In the previous chapter, the correlation tests revealed several factors associated with academic staff integration (either cultural integration or inter-group integration). The relationships between the factors and the integration could be also analysed by multiple regression analysis. More useful than correlation tests, the regression technique attempts to model the relationship between two or more explanatory variables and a dependent variable by fitting a linear equation to observed data. The human behaviour in the post-merger process is inherently ‘noisy’ and therefore it is not possible to produce totally accurate predictors. The multiple regression analysis can only help to identify a set of predictor variables which together provide a useful estimate of a likely result.

Through conducting multiple regression analysis, this chapter will attempt to find linear models that indicate what the most important predictors of integration are. It will also discuss the implications for the management in the post-merger process.

10.1 Predictors of inter-group integration

The multiple regression analysis was conducted first to examine the relationships between the factors and inter-group integration. Because the statistical analyses in the previous chapter already revealed the correlations between the predictors and the variables of integration, stepwise linear regression was applied as the method for specifying the regression models to be estimated. This approach allows researchers to examine the contribution of each independent variable to the regression model. Each variable is considered for inclusion prior to developing the equation. The independent variable with the greatest contribution was added first. Independent variables were then selected for inclusion based on their incremental contribution over the variable(s) already in the equation.

The multivariate linear regression analyses were conducted to fit linear models concerning the relationships between relevant factors and inter-group integration to three groups of data.
1. All cases: data in both merger type 1 and merger types 2.
2. Type 1: data in merger type 1.
3. Type 2: data in merger type 2

The regression analyses of the three groups of data have been summarised in Table 28. In the analysis of all cases, three regression models were found to explain the relationships between the factors and inter-group integration. The most common standard used to compare regression models is overall predictive fit, and R-square provides this information. The R-square somewhat overestimates the success of the model when applied to the real world. Among these three models, model 3 is the most successful one due to it producing the highest R-square. Specifically, R-square is 0.395 and it could be interpreted that the model has explained 39.5% of the original variability, leaving 60.5% of

Table 28. Model summary of multiple regression concerning factors and inter-group integration

<table>
<thead>
<tr>
<th>Group of Data</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Cases</td>
<td>1</td>
<td>.417(a)</td>
<td>.174</td>
<td>.159</td>
<td>.40787</td>
<td>.174</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.587(b)</td>
<td>.345</td>
<td>.320</td>
<td>.36682</td>
<td>.170</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.628(c)</td>
<td>.395</td>
<td>.359</td>
<td>.35604</td>
<td>.050</td>
</tr>
<tr>
<td>Type1</td>
<td>1</td>
<td>.583(a1)</td>
<td>.340</td>
<td>.307</td>
<td>.34694</td>
<td>.340</td>
</tr>
<tr>
<td>Type2</td>
<td>1</td>
<td>.387(a2)</td>
<td>.150</td>
<td>.123</td>
<td>.40371</td>
<td>.150</td>
</tr>
</tbody>
</table>

a Predictors: (Constant), Transparency of Management
b Predictors: (Constant), Transparency of Management, School Level Upgrading
c Predictors: (Constant), Transparency of Management, School Level Upgrading, Inter-group Collaboration
a1 Predictors: (Constant), Transparency of Management
a2 Predictors: (Constant), Transparency of Management
residual variability. There are three predictor factors of inter-group integration in the model, namely transparency of management, inter-group collaboration and school level upgrading.

In either merger type 1 or merger type 2, only one regression model was identified, in which transparency of management was the sole predictor of inter-group integration.

The best models in the three groups of data can be summarised as followed.

All cases: Inter-group integration = 0.931 + 0.331 Transparency of management + 0.194 School level upgrading + 0.202 Inter-group collaboration.

Merger type 1: Inter-group integration = 1.421 + 0.426 Transparency of management.

Merger type 2: Inter-group integration = 2.123 + 0.293 Transparency of management.

The regression analyses also indicated the regression coefficients as well as the significance levels of the predictive capacity of the independent variables (Table 29). The direction of the relationship between predictors and dependent variables can be identified by looking at the signs (plus or minus) of the regression or B coefficients. If a B coefficient is positive, then the relationship of this variable with the dependent variable is positive; if the B coefficient is negative then the relationship is negative.

Although the above regression analyses have to some extent confirmed the results of correlation tests, the regression models are not good enough. The best model (in all cases) only accounts for 39.5% of the variability with the variables specified by the model. Ideally, one would like to explain most if not all of the original variability. In reality, especially in the complex process of post-merger integration, it could be very hard to find a perfect model with this experimental study. Nevertheless, a model that could only explain a minority of data would have few managerial implications in practice.

The above regression analyses have been underlined by an intention to generate models that help to understand the general mechanisms in the post-merger integration processes. However, it might be too optimistic, if not naive, to draw some general conclusions or implications for management in the complex post-merger processes. At the same university, a management style
Table 29. Results of the multiple regression analysis (stepwise method) for transparency of management and other factors in relation to inter-group integration

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Inter-group Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All cases (Model 3)</td>
</tr>
<tr>
<td></td>
<td>B (Sig.)</td>
</tr>
<tr>
<td>Cultural difference</td>
<td>Ns.</td>
</tr>
<tr>
<td>Balance strategy</td>
<td>Ns.</td>
</tr>
<tr>
<td>Transparency of management</td>
<td>.331 (.000)***</td>
</tr>
<tr>
<td>Inter-group collaboration</td>
<td>.202 (.046)**</td>
</tr>
<tr>
<td>School level upgrading</td>
<td>.194 (.001)*</td>
</tr>
</tbody>
</table>

*significant at the level of 0.05;  
**significant at the level of 0.01;  
***significant at the level of 0.001

which works well in one situation might not work in another. As such, the factors affecting academic staff integration might be different depending on the circumstances. Therefore, one way to improve the regression linear models could be achieved by making distinctions between circumstances (or statistically dividing the data into sub-groups).

According to the above analyses, transparency of management is the most important predictor of inter-group integration among others. The relation between transparency of management and inter-group integration can be described in a scatter plot (Figure 10). Through observation of the scatter plot, it could be found that the data points in the left part come closer to making a straight line when plotted than those in the entire data points. To acquire a better model, therefore, one possibility is to divide the data into two groups, the one on the left side and the one on the right. What should be clearly defined here is the point at which to divide the data. Both mean and median have been applied to divide the data, but the former produces better models. Hence, the mean has been used as the dividing point.
Next, regression analyses will be made in each group of data again, but in two situations, one when the values of transparency of management are less than the mean and the other that the value of transparency of management are greater than the mean. The regression analyses in the situation where the values of transparency of management are less than the mean have been summarised in Table 30.

In the ‘all cases’ data group, the regression analysis identified two models. The second one is preferred as its R square is bigger, explaining 51.0% of the variability in the data. This model indicates two predictors of inter-group integration, namely school level upgrading and transparency of management.

In merger type one, the regression analysis identified two models. The second one explained 75.5% of variability in the data and is much better than the first model. The model consists of two predictors of inter-group integration, namely transparency of management and balance strategy.
Table 30. Summary of multiple regression concerning factors and inter-group integration (less than mean)

Models

<table>
<thead>
<tr>
<th>Group of Data</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All cases</td>
<td>1</td>
<td>.576(a)</td>
<td>.332</td>
<td>.306</td>
<td>.41186</td>
<td>.332</td>
</tr>
<tr>
<td>Mean=2.8895</td>
<td>2</td>
<td>.714(b)</td>
<td>.510</td>
<td>.471</td>
<td>.35954</td>
<td>12.917</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Type1</td>
<td>1</td>
<td>.701(a1)</td>
<td>.492</td>
<td>.446</td>
<td>.28424</td>
<td>.492</td>
</tr>
<tr>
<td>Mean=2.9505</td>
<td>2</td>
<td>.869(b1)</td>
<td>.755</td>
<td>.706</td>
<td>.20703</td>
<td>10.656</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Type2</td>
<td>1</td>
<td>.536(a2)</td>
<td>.288</td>
<td>.243</td>
<td>.43569</td>
<td>.288</td>
</tr>
<tr>
<td>Mean=2.8522</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.465</td>
</tr>
</tbody>
</table>

a Predictors: (Constant), School Level Upgrading
b Predictors: (Constant), School Level Upgrading, Transparency of Management
a1 Predictors: (Constant), Transparency of Management
b1 Predictors: (Constant), Transparency of Management, Balance Strategy
a2 Predictors: (Constant), Transparency of Management

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In merger type two, the regression analysis identified only one model. In this model only one predictor (transparency of management) of inter-group integration could be identified. However this model is poor, as it only explained 28.8% of variability in the data.

The regression analyses in the situation that the values of transparency of management are more than the mean have been summarised in Table 31. In the data group ‘all cases’, the regression analysis identified two models. The second one is preferred due to its larger R square, explaining 52.7% of variability in the data. The model consists of two predictors of inter-group integration, namely inter-group collaboration and school level upgrading.

In merger type 1, the regression analysis identified only one model and it explains 55.4% of variability in the data. This model consists of only one predictor of inter-group integration, namely inter-group collaboration.
In merger type 2, the regression analysis found two models. The second one is preferred as it explains 72.9% of variability in the data. This model consists of two predictors of inter-group integration, namely inter-group collaboration and school level upgrading.

Table 31. Summary of multiple regression concerning factors and inter-group integration (more than mean)

Models

<table>
<thead>
<tr>
<th>Group of Data</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Change Statistics</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cases</td>
<td>1</td>
<td>.644(a)</td>
<td>.415</td>
<td>.391</td>
<td>.25822</td>
<td>.415</td>
<td>17.710</td>
<td>1</td>
<td>25</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.726(b)</td>
<td>.527</td>
<td>.487</td>
<td>.23699</td>
<td>.112</td>
<td>5.679</td>
<td>1</td>
<td>24</td>
<td>.025</td>
<td></td>
</tr>
<tr>
<td>Mean=2.8895</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type1</td>
<td>1</td>
<td>.744(a1)</td>
<td>.554</td>
<td>.490</td>
<td>.26117</td>
<td>.554</td>
<td>8.691</td>
<td>1</td>
<td>7</td>
<td>.021</td>
<td></td>
</tr>
<tr>
<td>Mean=2.9505</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type2</td>
<td>1</td>
<td>.644(a2)</td>
<td>.417</td>
<td>.373</td>
<td>.24626</td>
<td>.417</td>
<td>9.316</td>
<td>1</td>
<td>13</td>
<td>.009</td>
<td></td>
</tr>
<tr>
<td>Mean=2.8522</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.854(b2)</td>
<td>.729</td>
<td>.683</td>
<td>.17496</td>
<td>.311</td>
<td>13.756</td>
<td>1</td>
<td>12</td>
<td>.003</td>
<td></td>
</tr>
</tbody>
</table>

a Predictors: (Constant), Inter-group Collaboration
b Predictors: (Constant), Inter-group Collaboration, School Level Upgrading
a1 Predictors: (Constant), Inter-group Collaboration
a2 Predictors: (Constant), Inter-group Collaboration
b2 Predictors: (Constant), Inter-group Collaboration, School Level Upgrading
### Coefficients the best models

<table>
<thead>
<tr>
<th>Group of data</th>
<th>Model</th>
<th>Standardized coefficients Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cases</td>
<td>Constant</td>
<td></td>
<td>4.562</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Inter-group collaboration</td>
<td>.685</td>
<td>4.843</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>School level upgrading</td>
<td>.337</td>
<td>2.383</td>
<td>.025</td>
</tr>
<tr>
<td>Type 1</td>
<td>Constant</td>
<td></td>
<td>2.661</td>
<td>.032</td>
</tr>
<tr>
<td></td>
<td>Inter-group collaboration</td>
<td>.774</td>
<td>2.948</td>
<td>.021</td>
</tr>
<tr>
<td>Type 2</td>
<td>Constant</td>
<td></td>
<td>1.774</td>
<td>.101</td>
</tr>
<tr>
<td></td>
<td>Inter-group collaboration</td>
<td>.951</td>
<td>5.549</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>School level upgrading</td>
<td>.636</td>
<td>3.709</td>
<td>.003</td>
</tr>
</tbody>
</table>

### 10.2 Predictors of cultural integration

The same techniques were applied to the analyses of the relationship between predictors and cultural integration. The multivariate linear regression analyses (Table 32) have also been conducted to fit linear models concerning the relationships between relevant factors and inter-group integration to three groups of data: 1) all cases, 2) merger type 1 and 3) merger type 2.

In either the ‘all data’ group or merger type 2, only one regression model has been identified and cultural difference is the only predictor of cultural integration. In merger type 1, there are two regression models. Model 2 is considered to be the most successful one, because of the higher R-square value. In this model, there are two predictors, namely cultural difference and transparency of management.
The best models in the three groups of data can be summarised as follows:

All cases: Cultural integration = 4.198-0.815 Cultural differences.

Type 1: Culture integration = 2.965-1.381 Cultural differences+0.743 Transparency of management.

Type 2: Cultural integration=3.839-0.677 Cultural differences

---

Table 32. Model summary of multiple regression concerning factors and cultural integration

<table>
<thead>
<tr>
<th>Group of Data</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
</tr>
<tr>
<td>All Cases</td>
<td>1</td>
<td>.550(a)</td>
<td>.303</td>
<td>.289</td>
<td>1.07631</td>
<td>.303</td>
</tr>
<tr>
<td>Type 1</td>
<td>1</td>
<td>.600(a)</td>
<td>.360</td>
<td>.328</td>
<td>.95978</td>
<td>.360</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.701(b)</td>
<td>.491</td>
<td>.438</td>
<td>.87813</td>
<td>.131</td>
</tr>
<tr>
<td>Type 2</td>
<td>1</td>
<td>.530(a)</td>
<td>.281</td>
<td>.257</td>
<td>1.12889</td>
<td>.281</td>
</tr>
</tbody>
</table>

a Predictors: (Constant), Cultural Differences
a1 Predictors: (Constant), Cultural Differences
b1 Predictors: (Constant), Cultural Differences, Transparency of Management
a2 Predictors: (Constant), Cultural Differences
The regression analyses also indicate the significance levels of relationships between the predictors and the dependent variable (Table 33). The direction of the relationship between variables can be identified by looking at the signs (plus or minus) of the regression or $B$ coefficients.

In merger type 1 and merger type 2, the multiple regression analyses have shown similar findings to those indicated by correlation tests. However, the regression analysis for all cases revealed only one predictor of cultural integration—culture differences. While based on the correlation analyses, there are two other predictors: transparency of management and school level upgrading. As discussed earlier, the hypothesis concerning school level upgrading and cultural integration has been verified by the data at the individual level, instead of Database II at the inter-group level. This may explain why the regression analysis based on the second database has not revealed that school level upgrading as a predictor of cultural integration.

### Table 33. Results of the multiple regression analysis (stepwise method) for the relevant predictors of cultural inter-group integration

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Cultural Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All cases</td>
</tr>
<tr>
<td>B (Sig.)</td>
<td></td>
</tr>
<tr>
<td>Cultural difference</td>
<td>-.815 (.000)**</td>
</tr>
<tr>
<td>Balance strategy</td>
<td>Ns.</td>
</tr>
<tr>
<td>Transparency of management</td>
<td>Ns.</td>
</tr>
<tr>
<td>Inter-group collaboration</td>
<td>Ns.</td>
</tr>
<tr>
<td>School level upgrading</td>
<td>Ns.</td>
</tr>
</tbody>
</table>

*significant at the level of 0.05;  
**significant at the level of 0.01;  
***significant at the level of 0.001
Although the above regression analyses have to some extent confirmed the results of the correlation tests, the regression models are not good enough. Except the models in merger type 2 which explain 49.1% of variance, the other two models (in all cases and merger type 1) explain less than one third of the data variance.

With such poor models, it is ambiguous, if not difficult, to provide concrete management implications for practical use. As has been done in studies of inter-group integration, this study has tried to find better models by differentiating the situations (or data).

According to the above analyses, the variable of cultural differences is the most important predictor of cultural integration among others. The relation between the two variables can be described in a scatter plot (Figure 11). Through an observation of the scatter plot, it could be found that the data points in the right part come much closer when plotted to making a straight line that those in the entire data points. To acquire a better model, therefore, the data were divided into two groups. The median was used as the dividing point. Actually, both mean and median were tried, but the latter produces better models.

**Figure 11. Scatter plot of the relationship between cultural difference and cultural integration**
In each data group, therefore, the regression analysis was undertaken for two situations divided by the median of cultural differences. The regression analyses in the situation that the values of cultural differences are less than the median have been summarised in Table 34.

In neither the all data group nor the merger type 2 group could any model could be found. In merger type 1, the regression analysis discovered only one model, in which school level upgrading is the only predictor. The model explains 50.9% variance of data.

Table 34. Summary of multiple regression concerning factors and cultural integration (less than median)

Models

<table>
<thead>
<tr>
<th>Group of Data</th>
<th>Model</th>
<th>R</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median=1.4400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type1</td>
<td>1</td>
<td>.713(a1)</td>
<td>.509</td>
<td>.447</td>
<td>.44781</td>
</tr>
<tr>
<td>Median=1.3300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median=1.4650</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a1 Predictors: (Constant), School level upgrading
The regression analyses in the situation where the cultural differences of management exceed the mean have been summarised in Table 35.

In the all cases data group, the regression analysis identified two models. The second one is preferred due to its larger R-square value, which explained 54.6% of variability in the data. The model consists of two predictors of inter-group integration, namely cultural differences and inter-group collaboration.

In merger type 1, only one model was found. The model explained 55.4% of variability in the data. It consisted of two only one predictor of cultural integration, namely school level upgrading.

In merger type two, the regression analysis discovered three models. The third one is preferred due to the largest R-square value, which explained 78.9% of variability in the data. In the model, there were three predictors of cultural integration, namely, cultural differences, inter-group integration and school level upgrading.

---

### Coefficients in the best models

<table>
<thead>
<tr>
<th>Group of data</th>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cases</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>3.496</td>
<td>14.186</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>School level upgrading</td>
<td>1.052</td>
<td>2.879</td>
<td>.021</td>
</tr>
<tr>
<td>Type 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>3.496</td>
<td>14.186</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>School level upgrading</td>
<td>1.052</td>
<td>2.879</td>
<td>.021</td>
</tr>
<tr>
<td>Type 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The regression analyses in the situation where the cultural differences of management exceed the mean have been summarised in Table 35.

In the all cases data group, the regression analysis identified two models. The second one is preferred due to its larger R-square value, which explained 54.6% of variability in the data. The model consists of two predictors of inter-group integration, namely cultural differences and inter-group collaboration.

In merger type 1, only one model was found. The model explained 55.4% of variability in the data. It consisted of two only one predictor of cultural integration, namely school level upgrading.

In merger type two, the regression analysis discovered three models. The third one is preferred due to the largest R-square value, which explained 78.9% of variability in the data. In the model, there were three predictors of cultural integration, namely, cultural differences, inter-group integration and school level upgrading.
Table 35. Summary of multiple regression concerning factors and inter-group integration (more than median)

Models

<table>
<thead>
<tr>
<th>Group of Data</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All cases</td>
<td>1</td>
<td>.638(a)</td>
<td>.407</td>
<td>.382</td>
<td>.89766</td>
<td>.407</td>
</tr>
<tr>
<td>Median=1.4400</td>
<td>2</td>
<td>.739(b)</td>
<td>.546</td>
<td>.506</td>
<td>.80250</td>
<td>.139</td>
</tr>
<tr>
<td>Type1</td>
<td>1</td>
<td>.744(a1)</td>
<td>.554</td>
<td>.499</td>
<td>.80242</td>
<td>.554</td>
</tr>
<tr>
<td>Median=1.3300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type2</td>
<td>1</td>
<td>.740(a2)</td>
<td>.548</td>
<td>.515</td>
<td>.80906</td>
<td>.548</td>
</tr>
<tr>
<td>Median=1.4650</td>
<td>2</td>
<td>.818(b2)</td>
<td>.668</td>
<td>.617</td>
<td>.71901</td>
<td>.121</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.888(C2)</td>
<td>.789</td>
<td>.736</td>
<td>.59716</td>
<td>.120</td>
</tr>
</tbody>
</table>

a  Predictors: (constant), Cultural Differences
b  Predictors: (Constant), Cultural Differences, Inter-group Integration
a1 Predictors: (Constant), School Level Upgrading
a2 Predictors: (Constant), Cultural Differences
b2 Predictors: (Constant), Cultural Differences, Inter-group Collaboration
c2 Predictors: (Constant), Cultural Differences, Inter-group Collaboration, School Level Upgrading
Coefficients in the best models

<table>
<thead>
<tr>
<th>Group of data</th>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Extra Setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All cases</td>
<td>Constant</td>
<td>6.893</td>
<td>7.175</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Cultural differences</td>
<td>-0.953</td>
<td>-4.275</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Inter-group Collaboration</td>
<td>-0.724</td>
<td>-2.651</td>
<td>.014</td>
</tr>
<tr>
<td>Type 1</td>
<td>Constant</td>
<td>4.525</td>
<td>7.103</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>School level upgrading</td>
<td>-2.189</td>
<td>-3.154</td>
<td>.014</td>
</tr>
<tr>
<td>Type 2</td>
<td>Constant</td>
<td>9.384</td>
<td>7.482</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Cultural Differences</td>
<td>-1.137</td>
<td>-5.720</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Inter-group collaboration</td>
<td>-0.727</td>
<td>-2.859</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td>School Level Upgrading</td>
<td>-0.888</td>
<td>-2.617</td>
<td>.023</td>
</tr>
</tbody>
</table>
### 10.3 Important factors for management in the post-merger process

The general purpose of multiple regression is to learn more about the relationships between independent or predictor variables and dependent or criterion variables. The regression analyses here found the best predictors of integration (either inter-group integration or cultural integration), as summarised in Table 36.

#### Table 36. Summary of predictors of integration in different situations

<table>
<thead>
<tr>
<th>Predictors of integration</th>
<th>All cases</th>
<th>Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency of management**(+)**</td>
<td>School level upgrading *<strong>(+)</strong></td>
<td>Transparency of management***(+)**</td>
<td>School level upgrading**(+)**</td>
</tr>
<tr>
<td>Balance Strategy**(+)**</td>
<td></td>
<td>Inter-group collaboration***(+)**</td>
<td></td>
</tr>
<tr>
<td>Inter-group collaboration**(+)**</td>
<td></td>
<td></td>
<td>School level upgrading**(+)**</td>
</tr>
<tr>
<td>Cultural differences***(+)**</td>
<td></td>
<td>School level upgrading**(+)**</td>
<td></td>
</tr>
<tr>
<td>Inter-group integration**(+)**</td>
<td></td>
<td>Cultural differences**(+)**</td>
<td></td>
</tr>
</tbody>
</table>

*significant at the level of 0.05;
**significant at the level of 0.01;
***significant at the level of 0.001

(+): positive relationship
(-): negative relationship
How the statistical findings are relevant to the practice is dependent on the quality of the regression models. The more variance in the data a model can explain, the more relevant the predictors derived from the model will be. The predictors summarised above were generated from those models that can explain almost half or more than half of the variance in the dependent variables, either inter-group integration or cultural integration. Hopefully, the understanding of the roles of these predictors could provide some implications for the management in the post-merger process.

10.3.1 What could help to improve inter-group integration

When the values of transparency of management are less than the mean, it refers to the situations where the management is relatively less transparent. In such circumstances, what mostly affected inter-group integration was school level upgrading and transparency of management. Both of the factors had a positive relationship with inter-group integration. The results have two indications. First, when the degree of management transparency is low, the situation itself can become a barrier to the achievement of inter-group integration. Second, while the management is less transparent, the outcome of inter-group integration could be better if the merger transformed the two pre-merger departments into one of higher prestige. The school level upgrading of the post-merger organisation is, to a large extent, determined by the nature of the merger, such as the characteristics of merger partners and the mission of the post-merger unit. If managers want to progress inter-group integration, it is essential for them to improve their management styles and models and to make these open and transparent to members of staff.

The managerial implications could be further specified when the type of merger is considered. In both types of merger, management transparency has a positive relationship with inter-group integration. However, in merger type 2, only a poor model was found. In type 1 mergers, the regression analysis found that balance strategy as a predictor had a negative relationship with inter-group integration. This result suggests that in the merger of equally strong partners and when the transparency of management is low, the use of balance strategy will be of not help for the inter-group integration.

When the values of transparency of management are more than the mean, it refers to situations where the management is relatively more transparent. In
such circumstances, the predictors of inter-group integration are inter-group collaboration and school level upgrading. The result indicates that when the degree of management transparency is relatively higher, the factor of management transparency does not play a significant role in the achievement of inter-group integration. Rather, two other factors are more important, and both have a positive relationship with inter-group integration. As has been mentioned before, the school level upgrading is somewhat predetermined; it could be hardly be controlled by the managers. By comparison, inter-group collaboration is more likely to be influenced by the management scheme. The managers need to create opportunities for staff members of different pre-merger groups to work together. More importantly, they must ensure that people are cooperating with each other, rather than being in competition.

10.3.2 What could help to improve cultural integration

The statistical findings from both correlation tests and regression analyses have revealed that the cultural differences have an inverse relationship with cultural integration. When the gap between the cultures of two merger partners is relatively small, the cultural integration will be easily achieved. Based on the statistical findings, no proper model has been found in the all data group or merger type 2. In merger type 1, in either situation (when the cultural differences are either less than or greater than the median), the regression models indicate that school level upgrading is positively predictive of cultural integration. This means that in the merger of equally strong partners, how the post-merger institution is transformed into a higher level institution really affects academic staff integration in the cultural dimension.

For the managers of post-merger institutions, they may face more challenges when the cultures of merger partners are more different. Therefore, the predictors of cultural integration will be discussed only in the situations that the cultural differences are relatively greater.

In all cases, when the cultural differences are relatively large (that is, more than the mean), the model indicates two predictors of cultural integration, namely cultural differences and inter-group collaboration. Both predictors have a negative relationship with cultural integration.

It is often supposed that the more people from different pre-merger groups could cooperate with each other, the more easily the cultural integration will
be achieved. However, the analysis indicates a negative relationship between inter-group collaboration and inter-group integration. The actual mechanisms underlying the relationship could hardly be detected with the available data. Nevertheless, this study will attempt to offer some possible explanation based on my experience with the case study university. When the two pre-merger groups have relatively large cultural differences, it is more likely for there to be conflict or confrontation when the staff members of two pre-merger groups work together. It could be believed that intensive collaboration between the two groups is the pre-condition for the achievement of cultural integration. Whereas at some point of the post-merger process, like the stage at which the author conducted this study, the values differences or cultural conflicts between the two groups might have been amplified due to the closer contact between the two groups’ members.

In merger type 1, school level upgrading has been found positively predictive of cultural integration. This result is consistent with what has been assumed by this study: when the merger has transformed the two pre-merger departments to a higher prestige level, the more likely the cultural integration will be achieved.

In merger type 2, when the cultural differences are relatively greater (more than the median), the model consists of three predictors, namely cultural differences, inter-group integration and school level upgrading. All predictors have a negative relationship with cultural integration. The possible explanation for the negative relationship between inter-group integration and cultural integration was discussed earlier.

As was discussed in the previous chapter, for the relationship between school level upgrading and cultural integration, the regression analyses based on the data at the group level may provide false information. The variable of cultural integration is just a calculation of the absolute degree of discrepancy between the values held by two pre-merger groups ten years after a merger. Technically, the value of the degree may be affected by the original cultural differences between two merger partners. When the cultures held by two pre-merger groups were wide, even though the values of both sides convergence, the absolute value differences in the current post-merger process could still be relatively large.
11 Conclusions

Mergers between higher education institutions occur on a regular basis in China, as it has been considered to be an acceptable response to change. However, the research on the subject is fragmented. In particular, the topic of staff integration has been little explored either empirically or theoretically. Through investigating the integration of academic staff in a post-merger Chinese university, this study has tried to develop a better understanding of this organisational phenomenon. Specifically, the study has discovered a number of possible factors affecting academic staff integration, and among those the most influential ones are concerned with administrative procedures, cultural differences, as well as the changes of school level.

Instead of repeating the empirical findings discussed in the previous chapters, this chapter will conclude with some theoretical, methodological and managerial implications.

11.1 Is the conceptual framework useful?

One aim of this study was to provide a theoretical understanding of the phenomenon of academic staff integration in light of neo-institutionalism. Chapter 3 and Chapter 4 provided a summary of the current theoretical perspectives in understanding organisation mergers in general and the staff integration in particular, pointing out two major shortcomings of these theoretical approaches. First, there is a gap between two observation levels, one that primarily deals with intra-organisation issues, such as individual behaviours, and the other that treats an organisation as a unity with an emphasis on the relations between the organisation and its environments. Second, studies into the existing understanding of the human side of integration have paid too much attention to social cognitive aspects, while the role of formal organisational and administrative structures has been neglected.

To overcome these theoretical challenges and to help fill the gaps, this study applied the concept of neo-institutionalism, which is a combination of the wisdoms of both old and new institutionalism in organisational studies. Neo-institutional theory has the potential to comprehensively explain academic staff integration in a post-merger period as a process of institutionalisation.
Although the theory is still too general to be used as a well formulated analysis tool to study academic staff integration in post-merger universities, it provides a conceptual framework to derive hypotheses from the relevant research literature as well as the findings from the interviews.

The hypotheses are about the relationships between some possible factors and integration (cultural integration or inter-group integration). Even though the analysis of qualitative interviews revealed clear connections between cultural integration and inter-group integration, the statistical findings have shown that there is no significant association between inter-group integration and cultural integration. However, this result might not simply exclude the possible relationships between the two variables. The functions behind their relationships could be more complicated than the correlation tests could capture. Based on the experiences from the pilot interview study, it could be assumed to be an impact of inter-group integration on cultural integration, but possibly with a time lag. It means that the status of inter-group integration at time A might exert a significant influence on cultural integration at time B (some period after time A). As such, the examination of the factors that affect inter-group integration could be relevant for studying the predictors of cultural integration too. There could be other explanations for the lacking statistical significance of the association between inter-group integration and cultural integration. However, due to the limited data, it would be unlikely to provide more accurate explanations here.

The hypotheses are based on a conceptual framework in which institutional elements are categorised in formal / informal and external / internal dimensions. Although not every hypothesis has been verified by the statistical analyses from the empirical survey, the analyses have revealed the three most essential factors affecting integration (either inter-group integration or cultural integration), namely school level upgrading, transparency of management and cultural difference. These three factors respectively represent different institutional elements in the conceptual framework (Table 37). This has provided evi-

<table>
<thead>
<tr>
<th></th>
<th>Formal</th>
<th>Informal</th>
</tr>
</thead>
<tbody>
<tr>
<td>External</td>
<td>Identity change (School level upgrading)</td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>Transparency of Management</td>
<td>Cultural difference</td>
</tr>
</tbody>
</table>

Table 37. The conceptual framework
dence of the relevance of applying a neo-institutional framework in studying the phenomenon of academic staff integration. Such perspective is guided by the combination of a micro emphasis on internal organisational characteristics and attention to the trans-organisational level. The perspective also considers both cognitive and regulative elements.

School level upgrading has a significant positive relationship with inter-group integration. Even though no positive relationship has been found between school level upgrading and cultural integration, it has been confirmed that the more the school level is upgraded, the greater will be the value change between individual academics. This implies the significant role played by school level upgrading in the transformation of academic values towards a convergence. School level upgrading represents a change in the prestige status or identity of a higher education institution. From an institutional perspective, the change of organisational identity is understood as a process of adaptation of an organisation to its institutional environment.

The institutional environment can be observed at different levels, such as world system, societal, organisational field and organisational population (W. R. Scott, 1995). For the purpose of this study, organisational field and organisational population are most relevant. Organisational field in the context of Chinese higher education means the Chinese higher education system. Within such an organisational field, several organisational populations can be categorised, such as research type HEIs, research and teaching type HEIs, teaching only HEIs and application HEIs. The empirical findings of the study have to a large extent confirmed that the change of identity to a higher level of “population” can increase academic staff members’ value commitment towards the norms attached to the new organisational identity. When most academic staff members of pre-merger institutions conform to the same values structured by external institutional templates, the integration is likely to be successful. As such, the level or prestige of HEIs is an important element to characterise a university’s identity.

The change of school level also forms a useful analytical tool to observe mergers. According to the merger literature, merger types are determined by the characteristics of institutions involved or the characteristics of the merger process. A number of authors have indicated that there is a closer relation between merger types and the merger consequences, while there is a no convergent view on what the relationship is. The disagreement among authors is partly due to an ambiguity of how to classify mergers. Chapter 6 has discussed the types of merger and consequently develop a typology of mergers in Chi-
nese higher education. In the case study university, two types of merger have been identified. One is the merger between academic departments of equal status (type 1), and the other is the merger between academic departments which are not at the same level (type 2).

The analyses of the empirical survey data have shown that there are differences on both inter-group integration and cultural integration between merger types. The further analyses indicated that the merger type per se does not have an effect on academic staff integration. The differences of the academic staff integration between the two types of mergers are mainly caused by the school level change. The degree of school level upgrading does make the difference between the two merger types. When a post-merger institution is transformed to a higher level, a higher degree of integration will be achieved. When a post-merger institution remained as same level as pre-merger institutions, the more difficult the integration will be.

Therefore, school level upgrading could be a new category to classify mergers, in addition to the traditional categorisations. The new category divides mergers into two groups: one in which the post-merger institutions have been upgraded to a higher level than the level of any of the pre-merger institutions, and the one in which the post-merger institutions remain at the same level as at least one of the pre-existing institutions.

Based on both the strategic types and the change of a merged institution’s level, a typology of mergers in Chinese higher education can be constructed (Table 38). It indicates eight modes of merger as marked in the table.

At the cultural dimension, this study has confirmed a common perception in industrial mergers that the greater the differences between merging partners, the more problematic the integration process will be. The cultural approach emphasises the role of value commitments in developing character of a specific organisation, while it downplays the rational and legal aspects of organis-

Table 38. Typology of mergers in Chinese higher education

<table>
<thead>
<tr>
<th>Merged institutions</th>
<th>(a) Upgraded</th>
<th>(b) Not upgraded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merger partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type I: same areas, same levels;</td>
<td>1a</td>
<td>1b</td>
</tr>
<tr>
<td>consolidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type II: same areas, different levels;</td>
<td>2a</td>
<td>2b</td>
</tr>
<tr>
<td>transformative acquisition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type III: different areas, same levels;</td>
<td>3a</td>
<td>3b</td>
</tr>
<tr>
<td>consolidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type IV: different areas and levels;</td>
<td>4a</td>
<td>4b</td>
</tr>
<tr>
<td>semi-autonomous acquisition</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the neo-institutional perspective, the value commitment is also associated with characteristics of bureaucratic organisations.

Besides the cultural issues, therefore, this study has also found the relevance of regulative aspects in the explanation of the human side of integration. For instance, the transparency of management (the extent to which the information and procedures concerning management action are open to academic staff members) is shown to have a significant positive relation with inter-group integration. In the mergers of departments that have roughly equal status (merger type 1), there is a positive association between transparency of management and cultural integration.

The empirical results corroborate the two taken-for-granted assumptions about the keys to organisational stability: “its participants’ knowledge of the rules to be followed and their sharing of a common culture” (Hirsch, 1986, p.802). The rules can be the formal organisation regulations and bureaucratic procedures, while the culture is concerned with the informal aspect of organisation. The formal and informal aspects influence each other. Cultures are formulated and changed by ongoing administrative procedures, but at the same time act as constraints and guides to future administrative activities. This perception has special implication on the understanding of the process of academic staff integration.

In a post-merger integration process, as evidenced by the analysis of the case study university, the two aspects play different roles. The formal administrative regulations and styles have a more direct impact on people’s general feeling and attitude to inter-group integration. A positive attitude is likely to result in actions and behaviours that have a potential to change various cultural elements toward a convergence. The informal aspects, such as cultural differences, are more related to the integration at the deep cultural level. As the cultural difference was one of the realities at the time of the advent of a merger, paying attention to the formal aspect would be more useful for the managers in their efforts to establish common cultural norms.

11.2 Does a mixed methodology work?

In management and organisational research, qualitative and quantitative methodological approaches have largely operated on separate tracks, despite the rich acknowledgement of the drawbacks of the methodological bifurcation. Most
quantitative research is confirmatory, involving theory verification, while much qualitative research is exploratory, involving theory generation or discovery. Unlike much research that focuses either on discovery or verification, the research question of this study had an emphasis on both. Therefore, the study tried to link the two techniques together to examine academic staff integration in a post-merger university in a hope that the mixing of qualitative and quantitative methods would result in the most accurate and complete depictions or understandings.

The mixed methods in this study have proved more than useful, providing evidence of three general advantages of using mixed methods:

1) Mixed methods research can answer research questions that the other methodologies cannot. 2) Mixed methods research provides better (stronger) inferences. 3) Mixed methods provide the opportunity for presenting a greater diversity of divergent views. (Teddlie & Tashakkori, 2003, p.14-5)

First, the mixed methods help accomplish two goals here:

1. answer exploratory question about what factors predict the academic staff integration and
2. verify the hypothesised relationship between the predictors and academic staff integration.

The first question has been explored through a qualitative pilot study. The analysis of interviews discovered a number of factors that might affect the integration of academic staff members. The empirical observation statements concerning the relationships between the factors and integration have been further developed to theoretical hypothesis by referring to an institutional framework. The analyses of the survey data have not confirmed all of these qualitatively derived hypotheses, but the theoretical framework underling these hypotheses have been proved useful.

Second, the mixed methods helped this researcher understand better and to make inferences both in depth and in breadth about the complex phenomenon of academic staff integration in the case study university. The qualitative investigation was primarily based on open-ended and in-depth interviews. In spite of a pre-prepared interview guide, the conversational interview was purely qualitative. The topics pre-specified and listed in an interview protocol were changed in sequence or order to suit circumstances. Through probing the in-
terviewees for clarity or for more detailed information, a deeper understanding of what was going on in the process of academic staff integration was gained. It was possible to form an impression of what the most important issues to be tackled were. It should be noted, however, that the interviews were expensive to administer and only a limited number of interviewees was approached. The findings from the interviews may not represent the reality of the whole university. Nevertheless, the inferences drawn from the qualitative research provided valuable information for the design of a quantitative study.

As there have been few effective instruments to measure the concepts related to post-merger integration, especially considering the cultural dimension, the inductive mode of inquiry played a very important role in designing the questionnaires to measure both dependent and independent variables. By using a combination of qualitative and quantitative methodologies, the validity of the measurement could be improved. The survey was based on a completely structured and closed-ended questionnaire. All participants filled in the same questionnaire, and all of the questions or items provided the possible responses from which the participants had to select. By using the quantitative technique, a relatively larger number of participants were involved, and hence generalisation could to some extent be made.

Third, the mixed methods provide a better opportunity for presenting a greater diversity views. According to Erzberger and Kelle (2003) the two research approaches to a research objective do not necessarily provide a coherent picture, but produce a more complete and integrated picture of the social phenomena under study. The purposeful search for divergences can be used to find new and better explanations for the phenomena under investigation and generate a starting point for further investigation.

The mixed methods applied in this study were originally designed in the way that the varying perspectives opened up by different methods might provide complementary findings. Findings from the two methods have supplemented each other to some extent. For example, both methods indicated that the more different cultures are between merger partners, the more difficult the academic staff integration will be. The quantitative study has made more precise the implication that such a relationship works mainly on the cultural dimension. Another example relates to management styles and integration. The qualitative study concluded that management may facilitate or impede academic staff integration depending on its styles and contents. This statement is too general to provide useful managerial implications in practice. The qualitative study mainly scrutinised two aspects of the management styles. One is about the balance
strategy and the other is about transparency of management. The positive relation between transparency of management and academic staff integration, especially inter-group integration, has been clearly verified by quantitative analysis.

However, some findings from the two phases of study were not always consistent. For example, the qualitative study indicated that intensive interaction between pre-merger groups is an important element in the process of inter-group integration. As such, the longer the period two merger partners have been substantially merged, the more likely that inter-group collaboration will be achieved. However, the corresponding hypotheses were not confirmed by the quantitative data.

1. There is no significant relationship between the separation period and inter-group collaboration;
2. There is no significant relationship between the cooperative environment and inter-group collaboration.

In addition, the qualitative study indicated that inter-group integration and cultural integration are two integrated and consistent aspects in understanding academic staff integration, while the quantitative study provided evidence that the two measurements are not correlated to each other at all.

From the methodological perspective, the different findings from the quantitative part of the study could be explained in the two ways:

1. As results of mistakes made in the application of the data collection or data analysis methods;
2. As a consequence of the inadequacy of the applied theoretical concepts (Erzberger & Kelle, 2003, p.475).

The reliability of the measurements of key concepts has been verified by statistical analysis. However, there is still much room for improvement of their validity. There is a practical lack of effective tools to check whether the questions formulated for the survey really measured the relevant concepts or variables. Moreover, due to the limited time for field work in China (as well as the sensitiveness of the topic) both qualitative and quantitative studies were based on relatively small samples. The conclusions drawn from the small population size might be lack of methodological soundness.
Nevertheless, the divergent empirical findings here should not be considered only as an indicator of poor research design. This could also be a pointer to new theoretical insights. If the methodological flaw cannot provide a full explanation of the quantitative empirical findings that go against people’s common assumption, researchers must consider the divergent findings as starting points for the development of new hypotheses.

11.3 What can university administrators learn?

Mergers always result in a complex situation, one which presents a considerable challenge to the development of an effective leadership team and appropriate management in the post-merger period. Although this study has only focused on issues related to academics rather than administrative staff, some interviews indicated that the integration of university administrators might be more important. This is not only because the administrators are the major management players. A united leadership team is also critical in developing a clear mission statement and an appropriate organisational culture to facilitate the process of academic staff integration. Given the profound differences between the two types of staff, the integration of administrators may need to be addressed in a separate study.

The results of this study will hopefully be of help to the university leaders and administrators involved in university mergers, and will enable them to consider some important factors in staff integration, and the cultural aspect in particular. It is not the intention of the study to provide advice for them on how to manage the merger processes. Nevertheless, this study has attempted to draw together some of the implications for consideration by the managers of academic staff members in the post-merger process. The implications go beyond what can be directly learned from the statistical analyses. Some suggestions for the administrators are also based on conversations with interviewees as well as some insights from relevant literature. These implications may hopefully provide some clues about which issues need to be tackled first, because often administrators know where they want to go but they know little about where to begin (Cameron & Quinn, 1999).
11.3.1 Managing organisational cultures

The importance of organisational cultural consistency and how it contributes to organisational effectiveness and achievement in the post-merger process is well established in the research literature. As Cartwright and Cooper (1996, p.144) put it, “A merger can only be considered to have stabilized when a clear, coherent and unitary culture has been developed throughout the organisation, and when everybody is clear as to the new organisational values and goals, shares and accepts these values and knows what is expected of them”. The results of this study have indicated that cultural difference is possibly the most critical factor influencing academic staff integration. To reduce the differences between the cultures of pre-merger groups, administrators in a post-merger university need to manipulate culture and initiate cultural change. Can culture or cultural change be managed? If yes, how should it be managed? These questions have been discussed in one way or another in the academic literature, but in the case study university and perhaps in most others, the idea of managing organisational culture is still quite new to most practitioners. In general, there are two major challenges confronting the administrators.

First, managing culture requires the university administrators to identify cultures or various elements of culture in each pre-merger group. The precise identification and understanding of cultures will form a solid basis for managers to establish strategies to manipulate the cultural integration process. Most managers have a vague sense of what the term organisational culture means: some common characters of the organisation concerned with people. However when it comes to how culture can be identified, most administrators are at a loss. The understanding of an organisation’s culture requires the administrators’ experiences and observation over a long period. In addition, a proper observation tool is necessary. Some academic insights and approaches may help to get a more comprehensive and precise view of organisational culture. One classic approach presented in this study is Schein’s (1985) model of organisational culture, in which three levels of culture are identified. The first and most superficial level is the organisational attributes that can be seen, felt and heard by the uninitiated observer. The next level deals with the professed culture of the organisational participants themselves. At this level, company slogans, mission statements and other operational creeds are often expressed within the organisation. At the third and deepest level, the organisation’s tacit assumptions are found. These are the elements of culture that are unseen...
and not cognitively identified in everyday interactions between organisational members. Many of these ‘unspoken rules’ exist without the conscious knowledge of the membership.

The methods (both qualitative interviews and quantitative questionnaires) used in this study mainly dealt with the second level, gathering organisational members’ attitudes, although I intended to come to understand ‘culture’ at the deepest level. As a researcher outside the case study university, the author is not in a position to draw out the culture at the deepest level based on the research findings of the current study. Achieving a better understanding of the deepest level of culture requires enough organisational experiences to do so. Hopefully the university administrators inside the organisation can do it better. Since the culture shared by the members of each pre-existing institution will usually be different from each other, understanding cultures seems to be very complex. However, the complex merger situation may just provide a better setting for capturing organisational cultures, in that one set of organisational cultures can become more obvious when compared or contrasted with the others.

As the culture is informal and invisible, it is very difficult to manipulate it. Moreover, the deeper the level at which a change of culture is required, the more difficult and time consuming is the culture-change process. In order to manage culture, the administrators must first have a clear understanding of that culture. In so doing, a proper approach to, and experience of the organisation, are indispensable. In practice, few managers have the skills to precisely sense the cultures of their own organisations. In such a case, some survey questionnaires may be useful for them.

When cultures of different pre-merger groups have been identified and understood, the second challenge is about how to help those cultures to converge. To change culture is difficult, as culture is not just an independent component of an organisation machine. Rather, an organisation is an open system or living organism, and culture is some invisible part inside that organism, which is connected to and dependent on others. From this perspective, the culture change is a systematic work, and culture can be changed through the changes of other manageable parts of the organisation. Administrators often lack a knowledge of organisational culture, but they normally have an intricate knowledge of goals, strategies, organisation charts, policy statements, and budgets—the more tangible aspects of their organisations. Therefore, they can start cultural change by managing those elements with which they are familiar.

The central task of culture change is to establish the “organisation glue” to hold the people from different pre-merger institutions together. What holds
academics together is their shared commitment or purpose and the common underlying assumptions and values about what they want to accomplish and how they hope to accomplish it. This is especially the case in a merger situation. These predictable and promoted behaviours and the written artefacts created by a post-merger organisation as a whole gradually become the organisational culture. Therefore, one effective approach in promoting cultural integration is to develop clear organisational objectives or missions that are in line with the demands of the competitive environment. With clear and positive organisational goals, it is more likely that all academic staff members will be able to work towards a common vision.

In the case study university, the university administrators at both top and middle levels realised that the successful future of the university was dependent to a large extent on the successful integration of staff members. They acknowledged the importance of establishing a common culture at the merged institution. However, almost ten years after the merger, there had been no satisfactory progress due to a lack of effective strategic management. University leaders must pay much attention to creating a common viewpoint among staff members about where the organisation is starting from and where it needs to go.

11.3.2 Role of leadership in facilitating staff integration

It has been commonly accepted that the awareness of a common set of goals and objectives may reinforce integrations by increasing the shared preferences towards the converged identity. Therefore, leadership plays an important role in determining university identity through making and implementing mission statements. Without a widely accepted functional mission, the new internal structure developed in a merged university is unlikely to last.

Recent research in the field of leadership suggests that, particularly in organisational transformation processes, charismatic leadership is needed (Bryman, 1992). In a merger context, the leaders should be acceptable to both sides. However, this is a considerable challenge in the case study university. Once the merger occurred, the members of different pre-existing institutions typically tended to define the situation in antagonistic terms, of “us” versus “them”. The leaders could hardly escape from this “us and them” antagonism. They often engaged in bickering for their own person’s interests over scarce resources. Due to the difficulties of having a united leadership team, the ap-
pointment of leaders from outside may be an important means, at least as an expedient solution, to resolve the conflicts and symbolise a new identity.

11.3.3 Appropriate administrative means

The study indicates that academic staff integration is not a spontaneous process. A successful integration requires strong administrative support as well as proper regulations. In order to establish new behaviour norms in an organisation, the reward and administration systems must be changed accordingly. The research literature has already had a wide discussion on what the relevant variables are. Here the case study university suggests two relevant aspects might be most important in a merger process, namely balance strategy and transparent administration.

In order to avoid being accused of favouring either side, the leaders at the central administration or college level in the case study university often used a balance strategy, to try to balance the power and interests of each pre-merger institution in a way that was regarded by either side as fair and impartial. Such an administrative means may reduce the conflicts between pre-merger groups at the beginning of merger. However, in the long run, such an arrangement may come at a great cost, because the subordinate staff members may automatically divide along the old institutional lines, and hence increase the “us and them” antagonism.

The study also provided evidence of the importance of establishing a transparent management structure and procedures. The understanding of transparency of management is three threefold.

First, it is about the transparency of the decision making process. This requires the involvement of staff members. It is very important for the staff members to understand how the decisions have been made and why. In the mean time, there should be a channel for them to have a say. The study has indicated that the participation of staff members in university’s policy making has much room to improve in the case study university. This is also a general challenge for most Chinese higher education institutions.

Second, any policy decided upon must have little ambiguity. When members of the organisation read policy documents, they should understand easily what they mean. In the university, the clarity of organisational policies and regulations has somehow been undermined by the application of a balanced strategy, because the issues of how to balance the interest and power between different
pre-merger groups could hardly be documented in papers. Rather, it relies on the administrators’ improvisational manipulation.

Third, in the implementation process, transparent communication lines between organisation leaders and staff members is required. In this respect, the roles of middle level administrators, such as deans, are crucial. One problem in the university is that the administrators have not been perceived by the academic staff as being accessible.

11.4 Further study

This study investigated only one case, in which a limited number of academic staff members were involved. As such, the conclusions and implications discussed above are preliminary and may not be relevant to other circumstances. Further studies could be expected to enrich knowledge and experiences about post-merger practices in Chinese higher education. Among all the possible options to expand knowledge in this area, two areas are particularly worthy of attention.

11.4.1 Improvement of survey technique

The research methods, especially the survey techniques, need to be improved. Even though I was intent on surveying all the relevant persons in the case study university, it ended up with low response rates due to some unexpected problems, such as having less support from the university in conducting the survey. For some leaders, the human side of integration is rather sensitive topic and therefore they are reluctant to let outsider researchers in. Because of the low response rates, the returned mail questionnaires was not an effective sample, but a biased one.

Moreover, the questionnaire itself should be improved. The questionnaire used in this study derived from both the relevant literature and the experiences of a pilot study. However, I learned more about the questionnaire after the survey was conducted and especially after the analysis was done. During the process of reliability verification, some items were eliminated, because they had no significant, positive relationship with the other items which measured the same concepts. In the open questions of the survey, a few respondents
did give me some feedback on how to improve the questionnaire. For example, one suggested that the integration of academics may also be related to the issues concerning personal interest, such as awards, allowances, promotion and workload. However, none of these were mentioned in the questionnaire. These could be the content of post-merger management. Nevertheless, there is still a good deal to be learned about how to design and use a questionnaire to maximise the quality of the measurement.

I am hoping the questionnaire can be further developed, but not only for the purpose of the study of post-merger problems. It could also be modified and used at the stage of merger planning. If the critical conflicts can be predicted by a survey, an unhappy marriage could possibly be avoided.

11.4.2 Extension of research scope

This study has already draw conclusions concerning the consistency between the hypotheses and the empirical data collected. Some hypotheses have been verified, while others have not. For the hypotheses that are contradictory to the empirical findings, there are no effective explanations or reasons. For instance, 1) Why the degree of inter-group interaction or cooperation has no significant effect on the cultural integration? 2) Why people’s general perception of inter-group integration is so different from the integration at cultural level? To answer these questions, more in-depth and focused interviews are required in the university. Moreover, I am interested in extending the study to more post-merger universities. It is possible that conclusions might be different between merger contexts.

11.5 Final remarks

Many of those who have paid special attention to this study about the human side of mergers also showed great interest in more general issues about merger. For example, a number of questions have often been asked: “What is your evaluation of the mergers between Chinese higher education institutions?” “Which mergers or merger models in China have been the most successful?” “Which merger policies could you suggest as being the best?”
These issues go beyond the focus of this study. The lessons learned from a single case study could not provide satisfactory answers. Nevertheless, a brief discussion of Chinese higher education mergers from a broader perspective but based on the experiences gained from the case study university follow.

The study has indicated that a combination of different HEIs, especially different cultures, is likely to create significant upheaval in the lives of staff members for both merger partners. The disruption caused by post-merger problems or tensions entails a number of human costs. This has been a neglected dimension not only in most of the research literature on higher education mergers, but also in actual merger practices.

Despite the problems and difficulties described in the study, one could not say that mergers are no longer be an effective tool with which to restructure higher education resources, improve efficiency, and enhance quality of education and research. What should be emphasised here is that the application of a proper approach to mergers would be the key. All the questions which have been asked are more or less related to the issue of how to achieve the results of mergers as planned. It is also a matter of how to improve the approaches to mergers. The approaches could be seen from different perspectives, and could be improved in several ways.

In terms of the implementation model of mergers or the way of initiating mergers, the Chinese higher education mergers have been seen as an example of the top-down approach. In a top-down model, the institutions have little choice in finding merger partners. When the government’s officials plan mergers, their considerations are often from an economic perspective or a strategic perspective. In the mean time, the possible implementation problems as discussed in the study have been paid less attention. The post-merger problems could largely determine the success or failure of a merger.

The current studies on mergers tend to favour a bottom-up model, in which the institutions are free to choose their merger partners. The underlying rationale is that the bottom-up approach helps merger partners reach consensus and create a common identity.

Given the current Chinese higher education administrative system it might be optimistic to expect a radical change of policy implementation from a top-down one to a bottom-up one to be seen. In the particular case of merger, the government is not only the merger initiator. It is also responsible for deciding on merger partners. Without challenging the government’s policy model, there are some suggestions which might lead to the improvement of merger results.
1. The government could take into account the human and cultural elements in their decisions processes.

2. In the discussion process, the government should provide effective channels for the participation of institutions who have been involved in mergers.

3. When a merger proposal is made, a longer negotiation period between the merger partners to study the feasibility should be allowed. Besides the institutional leaders, the staff members’ opinion should also be taken into consideration.

4. When governments feel it is difficult to predict the outcomes of a merger, the advice from a professional consulting organisation or professional consultants might be of help.

While the nation-wide mergers in China have slowed down, merger is still used by the government as a tool to reform higher education. How to avoid undesired organisational outcomes will be an important topic for both the governments and higher education researchers. Given the fact that an enormous number of mergers have already occurred in China, it might be more important to study how to improve the approaches to managing the mergers at the institutional level. The importance of leadership and management in post-merger processes has been commonly accepted, but what would be the appropriate management in practice has been less known. Even though the study has more or less touched upon this issue by discussing the role of balance strategy and management transparency, more concrete and better approaches are expected to be developed further.
Appendix 1 Interview Guidelines

Interviewee’s name:___________________ ,

Time and place of the interview:______________ ,

The name of the pre-merger institution where you worked:______________ ,

When did you join the institution:______________ ,

Post-merger academic college or administrative department you work now:______________ ,

Professional or administrative title:______________ ,

Age:______________ .

- What are your basic understandings and thoughts on mergers?
- What are the managerial emphases in your post-merger college?
- What is your greatest concern after the merger?
- What is your attitude to merger? Has your attitude changed during the merger process?
- What are cultural differences across merger partners? What aspects could describe these differences?
- How do you understand and evaluate academic staff integration.
- Do merger affect the cohesion between former colleagues?
- Does the concept of “us and them” exist?
- What factors affect academic staff integration?
- What are the patterns of cultural integration in the merged university?
Appendix 2 Questionnaire

Dear participants:

This survey questionnaire is part of my PhD research on the integration of academic staff in post-merger Chinese universities. The research is intended to reveal factors that might affect academic staff integration in post-merger processes. As an academic staff member who has experienced the merger process, your participation will help me make this study more objective and accurate. As such, the result of this study may hopefully provide practical suggestion for the administration of your institution.

The content of this questionnaire will only be used for research purpose. It should take no longer than 20-30 minutes to complete all the questions.

Thank you very much for taking the time to support my research. Any questions and suggestions are welcome; please feel free to contact me:

yuzhuo.cai@uta.fi

Yuzhuo Cai

The participants who response to this questionnaire must meet the following three criteria:

1) As an academic staff member, you must engage in teaching, research or the works related to either.
2) You must have worked in one of pre-merger institution before merger took place.
3) The department of pre-merger institution where you were working must be a merger partner of the merged college where you currently work.

Part One: Basic Information

1. The college you are currently with:

1-15 (the real college names are omitted, in case of the identity of the post-merger university being identified)
2. The pre-merger institute you were working before merger:

1-15 (the real college names are omitted, in case of the identity of the post-merger university being identified)

3. How long you had worked in this pre-merger institute prior to the merger?

1) ≤ 5 years  
2) > 5 years and ≤ 10 years  
3) > 10 years and ≤ 15 years  
4) > 15 years and ≤ 20 years  
5) > 20 years

4. Sex:

1) Male  
2) Female

5. Main work:

1) Research  
2) Teaching only  
3) Teaching assistance  
4) Administration
Part Two: Questions

I. According to the descriptions of institutional levels, please select respectively the most suitable type of your pre-merger department and your current college.

<table>
<thead>
<tr>
<th>Types</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>Take overall responsibilities of cultivating talent, conducting research and offering social service. Provide mainly elite education: offering mainly doctoral and Master’s degrees, though also granting bachelor degrees. Research focuses on national and regional key projects</td>
</tr>
<tr>
<td>Research/Teaching</td>
<td>The main functions are cultivating talents and conducting research, and, in the meantime, also offer social service. Elite education and mass education are equally important. Emphasise both research and teaching. Mainly offer Master’s and bachelor degrees. In only a few disciplinary areas, can grant doctoral degrees. Research activities concentrate on regions and industrial sectors.</td>
</tr>
<tr>
<td>Teaching only</td>
<td>The primary functions are teaching and teaching-related research. The main body of students is pursuing bachelor degrees. Masters’ degree programs operate only in a few subjects.</td>
</tr>
<tr>
<td>Application</td>
<td>Mainly offer three-year program (zhuanke), cultivating Students with a particular emphasis on application ability and practical skill. Also include adult education institutions.</td>
</tr>
</tbody>
</table>
II. The following statements describe the current situations of your college. Please select the options which reflects the extent to which you agree or disagree each statement.

<table>
<thead>
<tr>
<th>Balance Strategy</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When making a decision, the priority is given to the balance between the interests of different pre-merger groups</td>
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<tr>
<td>2. When making a decision, avoiding conflicts is a overwhelming concern.</td>
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<tr>
<td>3. The allocation of quota for professional title evaluation and appointment is underlined by a balance between different pre-merger groups.</td>
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<tr>
<td>4. There is a fair and competitive mechanism for professional title evaluation and appointment and little attention is paid to who comes from which institution.*</td>
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</tbody>
</table>

7 | 6 | 5 | 4 | 3 | 2 | 1
---|---|---|---|---|---|---
Research type | Between research type and research & teaching type | Between research type and teaching type | Teaching only type | Between teaching only type and application type | Application type

1. The type of pre-merger department
2. The type of post-merger college
<table>
<thead>
<tr>
<th>Transparency of Management</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There are clear management and decision-making mechanisms and procedures.</td>
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<td>2. The decisions are made not in a transparent way. *</td>
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<tr>
<td>3. Academic staff members are largely involved in decision making and management process.</td>
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<tr>
<td>4. There are clear-cut criteria for award and punishment and punishment.</td>
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<td>5. There are clear-cut criteria for promotion.</td>
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</table>

<table>
<thead>
<tr>
<th>Cooperative work environment</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Group performance and achievement are more important than the output of each individual academic.</td>
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<tr>
<td>2. My work is less dependent on others.*</td>
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<tr>
<td>3. Implementation of my assignment requires cooperation from others.</td>
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<tr>
<td>4. I always get effective cooperation from relevant people, when it is needed.</td>
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<td>5. I feel that I am always doing work like in a team.</td>
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</tbody>
</table>
III. The following statements describe the characteristics that your pre-merger department is most like. Please indicate the extent to which you agree or disagree on each statement.

<table>
<thead>
<tr>
<th>Dominant Characteristics</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The organisation is very personal place. It is like an extended family.</td>
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<tr>
<td>B. The organisation is very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.</td>
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<tr>
<td>C. The organisation is very production oriented. A major concern is with getting the job done.</td>
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<tr>
<td>D. The organisation is very formalized and structured place. Bureaucratic procedures generally govern what people do.</td>
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</table>

<table>
<thead>
<tr>
<th>Organisational leadership</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The leadership in the organisation is generally considered to be supportive of mentoring, facilitating, or nurturing.</td>
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<tr>
<td>B. The leadership in the organisation is generally considered to be supportive of entrepreneurship, innovating or risk taking.</td>
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<tr>
<td>C. The leadership in the organisation is generally considered to promote a no-nonsense, aggressive, results-oriented focus.</td>
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<tr>
<td>D. The leadership in the organisation is generally considered to promote coordination, organisation or smooth-running efficiency.</td>
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<tr>
<td>Organisational glue</td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Neither agree nor disagree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
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<tr>
<td>A. The binding force that holds the organisation together is loyalty and mutual trust.</td>
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<tr>
<td>B. The binding force that holds the organisation together is commitment to innovation and development.</td>
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<tr>
<td>C. The binding force that holds the organisation together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.</td>
<td></td>
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<tr>
<td>D. The binding force that holds the organisation together is formal rules and policies. Maintaining a smooth-running organisation is important.</td>
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<table>
<thead>
<tr>
<th>Strategic emphases</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
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</thead>
<tbody>
<tr>
<td>A. The organisation emphasises human development. Higher trust and morale are important.</td>
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<tr>
<td>B. The organisation emphasises growth and acquiring new resources. Readiness to meet new challenges is important.</td>
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<tr>
<td>C. The organisation emphasises competitive actions and achievement. Hitting stretch targets and winning in the marketplace are important.</td>
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<tr>
<td>D. The organisation emphasises permanence and stability. Efficiency, control and smooth operations are important.</td>
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</tbody>
</table>
IV. Please indicate as you think what your organisation should be in five years in order to be highly successful. You shall select the extent to which you prefer or not prefer the following descriptions.

<table>
<thead>
<tr>
<th>Dominant Characteristics</th>
<th>Strongly prefer</th>
<th>Prefer</th>
<th>Not sure</th>
<th>Not prefer</th>
<th>Strongly not prefer</th>
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<td>Organisational glue</td>
<td>Strongly prefer</td>
<td>Prefer</td>
<td>Not sure</td>
<td>Not prefer</td>
<td>Strongly not prefer</td>
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<td>C. The binding force that holds the organisation together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.</td>
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<td>D. The binding force that holds the organisation together is formal rules and policies. Maintaining a smooth-running organisation is important.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategic emphases</th>
<th>Strongly prefer</th>
<th>Prefer</th>
<th>Not sure</th>
<th>Not prefer</th>
<th>Strongly not prefer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The organisation emphasises human development. Higher trust and morale is important.</td>
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</tr>
<tr>
<td>B. The organisation emphasises growth and acquiring new resources. Readiness to meet new challenges is important.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. The organisation emphasises competitive actions and achievement. Hitting stretch targets and winning in the marketplace are important.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. The organisation emphasises permanence and stability. Efficiency, control and smooth operations are important.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
V. The following statements describe the inter-group collaboration between each pair of merger groups. Please indicate the extent to which you agree or disagree with each statement.

If you are from the pre-merger institution A, you don’t need to respond to the question concerning the inter-group cooperation and integration between the pre-merger institution B and the pre-merger institution C.

If you are from the pre-merger institution B, you don’t need to respond to the question concerning the inter-group cooperation and integration between the pre-merger institution A and the pre-merger institution C.

If you are from the pre-merger institution C, you don’t need to respond to the question concerning the inter-group cooperation and integration between the pre-merger institution A and the pre-merger institution B.

<table>
<thead>
<tr>
<th>Inter-group cooperation</th>
<th>Between A &amp; B</th>
<th>Between B &amp; C</th>
<th>Between A &amp; C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There are no obvious distinctions between the collaboration in which the participant members are from the same pre-merger group and the collaboration in which the participant members are from different pre-merger groups.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. In most cases of “team work”, the members are from the same pre-merger group.*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The academics from the other pre-merger groups are my major competitors. *</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*
<table>
<thead>
<tr>
<th>Inter-group Integration</th>
<th>Between A &amp; B</th>
<th>Between B &amp; C</th>
<th>Between A &amp; C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It is much more difficult to communicate with academics from other pre-merger group than those from the same group.*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Conflicts take place more often between academics from different pre-merger groups than those from the same groups.*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. There are obvious differences between pre-merger groups in terms of ways of thinking and doing things.*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. There are obvious “us and them” conceptions.*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Some confrontation clans have been developed based on the original affiliation relations.*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8.1 Correlation matrix of all scale items of Balance Strategies (Spearman's rho)

<table>
<thead>
<tr>
<th>Correlation Coefficient</th>
<th>Balance</th>
<th>Balance</th>
<th>Balance</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td>1.000</td>
<td>.476**</td>
<td>.487**</td>
<td>.017</td>
</tr>
<tr>
<td>Balance strategy 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.840</td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Balance strategy 2</td>
<td>.476**</td>
<td>1.000</td>
<td>.435**</td>
<td>-.048</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.573</td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Balance strategy 3</td>
<td>.487**</td>
<td>.435**</td>
<td>1.000</td>
<td>.310**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Balance strategy 4</td>
<td>.017</td>
<td>-.048</td>
<td>.310**</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.840</td>
<td>.573</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
</tbody>
</table>

**, Correlation is significant at the 0.01 level (2-tailed).

Table 8.2 Factor analysis on the Balance Strategy items

<table>
<thead>
<tr>
<th>Balance Strategy Items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When making a decision, the priority is given to the balance between the interests of different pre-merger groups</td>
<td>.824</td>
</tr>
<tr>
<td>2. When making a decision, avoiding conflicts is an overwhelming concern.</td>
<td>.791</td>
</tr>
<tr>
<td>3. The allocation of quota for professional title evaluation and appointment is underlined by a balance between different pre-merger groups.</td>
<td>.816</td>
</tr>
</tbody>
</table>
### Table 8.3 Correlation matrix of all scale items of Transparency of Management (Spearman’s rho)

<table>
<thead>
<tr>
<th></th>
<th>Trans</th>
<th>Trans</th>
<th>Trans</th>
<th>Trans</th>
<th>Trans</th>
<th>Trans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans Manag 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.719**</td>
<td>.596**</td>
<td>.560**</td>
<td>.476**</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Trans Manag 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.719**</td>
<td>1</td>
<td>.534**</td>
<td>.434**</td>
<td>.438**</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Trans Manag 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.596**</td>
<td>.534**</td>
<td>1</td>
<td>.575**</td>
<td>.489**</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Trans Manag 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.560**</td>
<td>.434**</td>
<td>.575**</td>
<td>1</td>
<td>.698**</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Trans Manag 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.476**</td>
<td>.438**</td>
<td>.489**</td>
<td>.696**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

### Table 8.4 Factor analysis on the Transparency Management items

<table>
<thead>
<tr>
<th>Transparency of Management Items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There are clear management and decision-making mechanisms and procedures.</td>
<td>.841</td>
</tr>
<tr>
<td>2. The decisions are made not in a transparent way*</td>
<td>.79</td>
</tr>
<tr>
<td>3. Academic staff members are largely involved in decision making and management process.</td>
<td>.798</td>
</tr>
<tr>
<td>4. There are clear-cut criteria for award and punishment and punishment.</td>
<td>.816</td>
</tr>
<tr>
<td>5. There are clear-cut criteria for promotion.</td>
<td>.770</td>
</tr>
</tbody>
</table>
Table 8.5 Correlation matrix of all scale items of Cooperative Environment

<table>
<thead>
<tr>
<th></th>
<th>Correlation Coefficient</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spearman’s rho</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CoopEnv 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>1.000</td>
<td>.175*</td>
<td>.328**</td>
<td>.317**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.037</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>CoopEnv 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>.175*</td>
<td>1.000</td>
<td>.273**</td>
<td>-.075</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.037</td>
<td>.001</td>
<td>.374</td>
<td>.142</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>CoopEnv 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>.326**</td>
<td>.273**</td>
<td>1.000</td>
<td>.196*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.019</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>CoopEnv 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>.317**</td>
<td>.075</td>
<td>.196*</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.019</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td></td>
<td>CoopEnv 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>.586**</td>
<td>.123</td>
<td>.344**</td>
<td>.569**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 8.6 Factor analysis on the Cooperative Environment items

<table>
<thead>
<tr>
<th>Cooperative Environment</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Group performance and achievement are more important than the output of each individual academic.</td>
<td>.797</td>
</tr>
<tr>
<td>3. Implementation of my assignment requires cooperation from others.</td>
<td>.807</td>
</tr>
<tr>
<td>4. I always get effective cooperation from relevant people, when it is needed.</td>
<td>.869</td>
</tr>
<tr>
<td>5. I feel that I am always doing work like in a team.</td>
<td>.812</td>
</tr>
</tbody>
</table>
### Table 8.7 Factor analysis on the Culture Type A items

<table>
<thead>
<tr>
<th>Culture Type A items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is a very personal place. It is like an extended family.</td>
<td>.818</td>
</tr>
<tr>
<td>Organisational leadership: The leadership of the organisation is generally considered to supportive of mentoring, facilitating, or nurturing.</td>
<td>.831</td>
</tr>
<tr>
<td>Organisational glue: The binding force that holds the organisation together is loyalty and mutual trust. Commitment to this organisation is higher.</td>
<td>.783</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises human development. Higher trust and morale is important.</td>
<td>.725</td>
</tr>
</tbody>
</table>

### Table 8.8 Factor analysis on the Culture Type B items

<table>
<thead>
<tr>
<th>Culture Type B items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.</td>
<td>.801</td>
</tr>
<tr>
<td>Organisational leadership: The leadership in the organisation is generally considered to exemplify entrepreneurship, innovating or risk taking.</td>
<td>.748</td>
</tr>
<tr>
<td>Organisational glue: The binding force that holds the organisation together is commitment to innovation and development.</td>
<td>.811</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises growth and acquiring new resources. Readiness to meet new challenges is important.</td>
<td>.689</td>
</tr>
</tbody>
</table>
Table 8.9 Factor analysis on the Culture Type D items

<table>
<thead>
<tr>
<th>Culture Type D items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is very formalized and structured place. Bureaucratic procedures generally govern what people do.</td>
<td>.768</td>
</tr>
<tr>
<td>Organisational leadership: The leadership in the organisation is generally considered to exemplify coordinating, organising or smooth-running efficiency.</td>
<td>.803</td>
</tr>
<tr>
<td>Organisational glue: The binding force that holds the organisation together is formal rules and policies. Maintaining a smooth-running organisation is important.</td>
<td>.595</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises permanence and stability. Efficiency, control and smooth operations are important.</td>
<td>.700</td>
</tr>
</tbody>
</table>

Table 8.10 Correlation matrix of all scale items of Culture Type C

<table>
<thead>
<tr>
<th></th>
<th>PreCul C1</th>
<th>PreCul C2</th>
<th>PreCul C3</th>
<th>PreCul C4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PreCul C1 Dominant</td>
<td>1.000</td>
<td>-.040</td>
<td>.255**</td>
<td>.245**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.963</td>
<td>.002</td>
<td>.003</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
<tr>
<td>PreCul C2 Leadership</td>
<td>-.040</td>
<td>1.000</td>
<td>-.243**</td>
<td>-.034</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.638</td>
<td>.</td>
<td>.004</td>
<td>.685</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
<tr>
<td>PreCul C3 Glue</td>
<td>.255**</td>
<td>-.243**</td>
<td>1.000</td>
<td>.369**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.002</td>
<td>.004</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
<tr>
<td>PreCul C4 Strategy</td>
<td>.245**</td>
<td>-.034</td>
<td>.369**</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.003</td>
<td>.685</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
Table 8.11 Factor analysis on the Culture Type C items

<table>
<thead>
<tr>
<th>Culture Type C items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is very production oriented. A major concern is with getting the job done.</td>
<td>.562</td>
</tr>
<tr>
<td>Organisational glue: The glue that holds the organisation together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.</td>
<td>.797</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises competitive actions and achievement. Hitting stretch targets and winning in the marketplace are important.</td>
<td>.767</td>
</tr>
</tbody>
</table>

Table 8.12 Factor analysis on the Inter-Group Collaboration items

<table>
<thead>
<tr>
<th>Inter-group Collaboration</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between group 1 and 2</td>
</tr>
<tr>
<td></td>
<td>.689</td>
</tr>
<tr>
<td>1. There are no obvious distinctions between the collaboration in which the participant members are from same pre-merger group or and the collaboration in which the participant members are from the different pre-merger groups.</td>
<td>.689</td>
</tr>
<tr>
<td>2. In most team works, the members are from the same pre-merger group.*</td>
<td>.786</td>
</tr>
<tr>
<td>3. The academics from the pre-merger groups are my major competitors.*</td>
<td>.748</td>
</tr>
</tbody>
</table>
Table 8.13 Factor analysis on the Inter-Group Integration items

<table>
<thead>
<tr>
<th>Inter-group Collaboration</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It is much more difficult to communicate with academics from other pre-merger group than those from the same group.*</td>
<td>.852</td>
</tr>
<tr>
<td>2. Conflicts take place more often between academics from different pre-merger groups than those from the same groups.*</td>
<td>.807</td>
</tr>
<tr>
<td>3. There are obvious differences between pre-merger groups in terms of the ways of thinking and doing things.*</td>
<td>.730</td>
</tr>
<tr>
<td>4. There are obvious “us and them” conceptions.*</td>
<td>.851</td>
</tr>
<tr>
<td>5. Some confrontation clans have been developed based on the original affiliation relations.*</td>
<td>.854</td>
</tr>
</tbody>
</table>

Table 8.14 Factor analysis on the Value Type A items

<table>
<thead>
<tr>
<th>Value Type A items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is very personal place. It is like an extended family.</td>
<td>.883</td>
</tr>
<tr>
<td>Organisational leadership: The leadership in the organisation is generally considered to exemplify mentoring, facilitating, or nurturing.</td>
<td>.876</td>
</tr>
<tr>
<td>Organisational glue: The binding force that holds the organisation together is loyalty and mutual trust. Commitment to this organisation is higher.</td>
<td>.928</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises human development. Higher trust and morale is important.</td>
<td>.781</td>
</tr>
</tbody>
</table>
Table 8.15 Factor analysis on the Value Type B items

<table>
<thead>
<tr>
<th>Value Type B items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.</td>
<td>.863</td>
</tr>
<tr>
<td>Organisational leadership: The leadership in the organisation is generally considered to exemplify entrepreneurship, innovating or risk taking.</td>
<td>.831</td>
</tr>
<tr>
<td>Organisational glue: The binding force that holds the organisation together is commitment to innovation and development.</td>
<td>.911</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises growth and acquiring new resources. Readiness to meet new challenges is important.</td>
<td>.799</td>
</tr>
</tbody>
</table>

Table 8.16 Factor analysis on the Value Type D items

<table>
<thead>
<tr>
<th>Value Type D items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is very formalized and structured place. Bureaucratic procedures generally govern what people do.</td>
<td>.835</td>
</tr>
<tr>
<td>Organisational leadership: The leadership in the organisation is generally considered to exemplify coordinating, organising or smooth-running efficiency.</td>
<td>.817</td>
</tr>
<tr>
<td>Organisational glue: The binding force that holds the organisation together is formal rules and policies. Maintaining a smooth-running organisation is important.</td>
<td>.737</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises permanence and stability. Efficiency, control and smooth operations are important.</td>
<td>.732</td>
</tr>
</tbody>
</table>
Table 8.17 Correlation matrix of all sale items of Value Type C

<table>
<thead>
<tr>
<th></th>
<th>Val C1 Dominant</th>
<th>Val C2 Leadership</th>
<th>Val C3 Glue</th>
<th>Val C4 Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Val C1 Dominant</td>
<td>1.000</td>
<td>.084</td>
<td>.294(***),</td>
<td>.195(*)</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.324</td>
<td>.000</td>
<td>.021</td>
</tr>
<tr>
<td>N</td>
<td>141</td>
<td>141</td>
<td>141</td>
<td>141</td>
</tr>
<tr>
<td>Val C2 Leadership</td>
<td>.084</td>
<td>1.000</td>
<td>-.248(***),</td>
<td>-.244(***),</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.324</td>
<td></td>
<td>.003</td>
<td>.004</td>
</tr>
<tr>
<td>N</td>
<td>141</td>
<td>141</td>
<td>141</td>
<td>141</td>
</tr>
<tr>
<td>Val C3 Glue</td>
<td>.294(***),</td>
<td>-.248(***),</td>
<td>1.000</td>
<td>.412(***),</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.003</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>141</td>
<td>141</td>
<td>141</td>
<td>141</td>
</tr>
<tr>
<td>Val C4 Strategy</td>
<td>.195(*)</td>
<td>-.244(***),</td>
<td>.412(***),</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.021</td>
<td>.004</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>141</td>
<td>141</td>
<td>141</td>
<td>141</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).
Table 8.18 Factor analysis on the Value Type C items

<table>
<thead>
<tr>
<th>Value Type C items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant characteristics: The organisation is very production oriented. A major concern is with getting the job done.</td>
<td>.600</td>
</tr>
<tr>
<td>Organisational glue: The glue that holds the organisation together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.</td>
<td>.808</td>
</tr>
<tr>
<td>Strategic emphasis: The organisation emphasises competitive actions and achievement. Hitting stretch targets and winning in the marketplace are important.</td>
<td>.768</td>
</tr>
</tbody>
</table>


Ministry of Education of Finland. (2002). *Background report, polytechnic education in Finland*.


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