Chapter 4 Research methodology

4.1 Research design – a questionnaire survey

To test the research hypotheses, the empirical research involves a questionnaire survey comprising a cross-sectional design\textsuperscript{17}. A questionnaire survey or social survey research is to administer predominantly standardised questionnaires to some or all of a specified group of people in order to collect statistical information about the “attributes, attitudes or actions” (Buckingham & Saunders, 2004, 13) of the group in connection with different variables that are then examined to detect patterns of association (Bryman, 2004) to explain the attitudes or behaviours. As Kerlinger (1977) demonstrates, statistics help to make decisions to accept or reject hypothesized relations between the phenomena, and then to aid in making reliable inferences from empirical researches.

In this empirical research, a questionnaire survey is therefore of critical advantage in testing the hypothesised model of reproduction and reconstruction in and through online socio-cultural networks of the migrant youth in space of informal learning. In detail, it helps to formulate the assumed typology of online socio-cultural networks among the migrant youth, namely, bonding and bridging groups. In connection with this, the hypothesised relations can be examined between online socio-cultural networks and various actions of Internet use as well as competence development, based on which the supposed network-related inequalities in Internet use, as a new perspective, can be tested. In addition, a questionnaire survey is also of vital help to construct the assumed model of social milieus of the migrant youth so as to explain the formation of the online socio-cultural networks of the migrant youth. Based on all these statistics that can be reliably provided by a questionnaire survey, the supposed contingency of reducing educational inequalities for the disadvantaged migrant youth through online bridging networks can be ultimately tested, and a landscape of reproduction of structural inequalities and reconstruction of social capital for Bildung chances through online socio-cultural networks embedded in informal learning space then can be inferred.

\textsuperscript{17} A cross-sectional design entails the collection of data on more than one case (usually quite a lot more than one) and at a single point in time in order to collect a body of quantitave or quantifiable data in connection with two or more variables (usually many more than two), which are then examined to detect patterns of association (Bryman 2004, 41).
4.2 Instrumentation

4.2.1 Operationalisation of theoretical hypotheses

For the operationalisation of the research assumptions, a standardised questionnaire was developed as the research instrument consisting of the measurable concepts or subquestions as the necessary specification of the four research hypotheses that are formulated at the end of chapter 3.

Firstly, in order to explore and formulate the typology of socio-cultural networks that the migrant youth are supposed to construct when they use Internet – as formulated in the first hypothesis, bonding and bridging networks online, a subquestion is necessary to be specified, asking *what social cultural backgrounds the people have, with whom the migrant youth often communicate online and have made friends since using Internet.*

To test the second hypothesis of the online network-related inequalities – the differences between bonding and bridging networks – in influencing Internet use of the migrant youth, the attributes and patterns of their Internet use then need to be understood above all. Based on the discussion in chapter 2 on informal learning online, Internet use is comprehended in this research as a crucial process of informal learning and competence acquisition in virtual space. In this respect, two subquestions then can be specified, exploring 1) *how migrant youth learn informally in virtual space and what habits and preferences of learning they have,* and 2) *how competent they are or what competences they have in online informal learning.* As formulated in chapter 2, there are four patterns of informal learning online, namely, networked-intentional, networked-incidental, individual-directed and individual-incidental informal learning. The four models will be employed to generalise the attributes of informal learning online of the migrant youth. In addition, the three dimensional Internet competences in terms of the holistic life competences will be used to understand what competences the migrant youth have in using Internet. Based on the above two subquestions, the third relevant measurable subquestion is then to ask *what associations the online bonding and bridging networks have with the informal learning models as well as the Internet competence development of the migrant youth, and what differences there are between the two types of networks in fostering informal learning and competence acquisition of the migrant youth.*
The above question is also closely related with the third hypothesis that online bridging networks are supposed to function as reconstructive social capital in reducing the offline social and educational inequalities of the disadvantaged migrant youth, and that online bonding networks in contrast presumably work as reproductive social capital in reproducing the inequalities further into the virtual space. To operationalise this assumption, another subquestion is clearly still needed, that is, what influences the offline social cultural backgrounds, especially the educational level of the migrant youth have on their online informal learning activities and competence acquisition. According to the existent studies on digital inequality, these offline social cultural characters are important indicators to explain inequalities in Internet use. Based on the comparison between the role of online networks and that of the offline indicators in affecting informal learning of the migrant youth, the hypothesised reproduction and reconstruction through online networks can be examined.

Finally, to operationalise the last hypothesis of the relations between the online networks and the offline milieus of the migrant youth, based on which the supposed contingency of reconstruction of online social capital can be examined, three subquestions needs to be specified. Firstly, it is to inquire how the offline social milieus of the migrant youth are formed or which indicators, including social-hierarchic, cultural-differentiating as well as personal-differential dimensions, constitute their social milieus. Secondly, it is to ask what kinds of offline social milieus there are among the migrant youth. The last is then to find what relations there are between the offline social milieus and the online socio-cultural networks of the migrant youth, and whether the personal characters of the migrant youth play a role in between. Based on this, the reproduction of social inequalities as well as the radical contingency of reconstruction of social capital for new Bildung chances through online informal learning networks then can be inferred holistically.

4.2.2 Questionnaire design- devising measures of concepts

The above subquestions indicate the basic concepts essentially related with the research hypotheses. They include various social, cultural, migration-related, educational and personal backgrounds of the migrant youth, online bonding and bridging socio-cultural networks, online informal learning models and Internet competences. In addition, the basic nature of Internet use, like access to Internet, place of access and frequency of use etc. is also necessary to provide a general view of the Internet use conditions of the migrant youth.
A questionnaire then can be designed to devise relevant measures of each concept so as to operationalise all the aspects of the research hypotheses. The basic structure of the questionnaire with the concepts discussed above and the relevant measures as well as variables is shown in the following table 4-1.

Table 4-1: structure of the questionnaire: concepts and measures

<table>
<thead>
<tr>
<th>Main concepts</th>
<th>Measures and variables</th>
</tr>
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<tbody>
<tr>
<td>Demographical background</td>
<td>gender, age</td>
</tr>
<tr>
<td>Socio-economic background</td>
<td>socio-economic status of family, vocations of parents, family structure</td>
</tr>
<tr>
<td>Migration-related background</td>
<td>nationality, place of birth, time living in Germany, ethnical identity, birth countries of parents, language orientation at home</td>
</tr>
<tr>
<td>Educational background</td>
<td>school types, highest school leaving certificates</td>
</tr>
<tr>
<td>Peer structure</td>
<td>ethnic and educational background of peers, language orientation with peers</td>
</tr>
<tr>
<td>Individual characters</td>
<td>attitudes towards and motivations for social integration and keeping in contact with own ethnic culture</td>
</tr>
<tr>
<td>Basic nature of Internet use</td>
<td>access, time of using, places of access, frequency of using, favourite websites, frequent online actions</td>
</tr>
<tr>
<td>Informal learning models</td>
<td>habits and preferences of using Internet, habits and preferences of online communication, strategies of solving problems through using Internet etc. in forms of networked-intentional, networked-incidental, individual-intentional and individual-incidental informal learning models^{18}</td>
</tr>
<tr>
<td>Internet competences</td>
<td>purposes of using Internet, purposes of looking for information, motivations of online communication, attitudes toward and purposes of online communication, preferences of chatting partners, strategies of solving problems through using Internet, difficulties in using Internet, changes brought about by using Internet etc. in the three dimensional Internet competences^{19}</td>
</tr>
<tr>
<td>Bonding and bridging socio-cultural networks online</td>
<td>social, cultural, ethnic and educational backgrounds of people, with whom the migrant youth communicate and interact in virtual space</td>
</tr>
</tbody>
</table>

^{18} The variables listed in table 4-1 to measure the concept of “online informal learning models” are still not measures but the indicators of the concept because compared with measures such like gender, age or nationality etc. they still cannot be directly measured. The final measures or variables can be referred in the questionnaire in the appendix.

^{19} It is the same to 18.
4.3. Sampling

4.3.1 Defining respondents – youth with Turkish migration background

Young people with Turkish migration background aged from 14 to 21 years old were chosen as the migrant youth sample in this questionnaire survey due to the special socio-cultural background and especially the disadvantaged educational situation of this ethnic group in Germany.

While children and young people with Turkish migration background constitute the largest proportion of the school students from immigrated families in Germany, they perpetually belong to the most disadvantaged group compared with peers of other migration background in German educational system (Esser, 1990; Alba, Handl & Müller, 1994; Hunger & Thränhardt, 2001; Kristen, 2002; Stanat, 2003; Ramm et al., 2004; Müller & Stanat, 2006). The Turkish migrant youth are the largest group visiting “Hauptschulen” – the lowest level schools in the German secondary school system – and distinctively have fewer chances to go to “Gymnasien” – the highest level schools in the same school system (Alba, Handl & Müller, 1994). Their distinctive educational disadvantages can be identified not only in respect of their participation in schools but also in respect of the competence level they have achieved from schools (Baumert & Schümer, 2001; Stanat, 2003; Ramm et al., 2004). For instance, as indicated by the results of PISA 2000 and PISA 2003, the situation of the youth with Turkish migration background in Germany again turned out to be more disadvantageous than that of the other migrant peers with regard to the performances in the tested competences fields (Stanat, 2003; Ramm et al., 2004; Müller & Stanat, 2006).

In addition to their disparity in German educational system, the youngsters with Turkish migration background are also characteristic of a distinctive socio-cultural background that, from the perspective of social and cultural capital, has a critical association with their disadvantageous educational processes and especially competences achievement at school (Esser, 2001; Ramm et al., 2004; Müller & Stanat, 2006; Karatas, 2006). On the one hand, socio-economically, the main motivation for

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20 The statistics provided by “Statistical Publications of Conference of Minister of Education” (Statistische Veröffentlichungen der Kultusministerkonferenz) in October 2002 showed that from 1991 to 2000 the students whose origin country was Turkey reached almost 502,000 in 2000, which amounted to 43, 4% in the whole population of the foreign school students in Germany. This largest proportion still maintains currently with a rate of about 43, 1% from 2004 to 2006 as shown by the statistics from the “German federal statistics office” (Statistisches Bundesamt Deutschland). See: http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/EN/Content/Statistics/BildungForschungKultur/Schulen/Tabellen/Content75/AuslaendischeSchuelerStaatsangehoerigkeit.psml.
immigration among the Turkish families is based on financial reasons; but in general, they still have a rather disadvantageous socio-economic status in the hosting German society. According to Müller and Stanat (2006), their socio-economic disparity is especially a distinctive direct influence on the competences achievement of the Turkish migrant youth, for example on their performances in reading competence in PISA 2000.

On the other hand, socio-culturally, in comparison to migrant youth from other origin countries, the Turkish migrant youth grow up and get socialised in a social milieu that generally maintains a distinctive bonding character. Or in other words, the Turkish ethnicity and culture plays a dominant role in the everyday life of the Turkish immigrant families. Above all, as shown in the study of Esser (2001) and also in Müller and Stanat’s (2006) research, the tendency of Turkish immigrants to speak German in families is peculiarly slighter. This is firstly likely related with the worse German knowledge of the Turkish parents compared to other migrant parents for instance in the former Soviet Union and Italian families. Secondly, their language habits are also likely associated with the situation that the Turkish migrants more often live in their own spanned ethnical communities, in which Turkish is the predominant spoken language (Esser, 2001). This forms another critical aspect of the bonding character of the socio-cultural life settings of the Turkish migrant youth. In addition, such bonding characters can also be identified in other aspects. For instance, they differentiate themselves from other ethnic groups in their eating habits, in the music they often listen to, in reading newspaper as well as in watching television programs etc. (Alba, Handl & Müller, 1994). All these aspects interconnect with one another and constitute a distinctive socio-cultural milieu, in which the Turkish migrant youth grow up and acquire milieu-specific habitus. It therefore also establishes a differential informal learning context for them. Such social milieu with strong bonding characters on the one hand can help maintain and develop the Turkish ethnic culture. On the other hand it can also raise the tendency toward cultural distance and segmentation from other culture and especially the culture of the accepting society. Especially concerning informal learning processes and acquisition of life competences, such bonding structure is likely to restrict the intercultural contacts for learning opportunities among the Turkish migrant youth (Müller & Stanat, 2006) and therefore helps to explain their perpetuating educational disparities. According to the specifically disadvantaged socio-economic and educational positions as well as the distinctive socio-cultural features of the everyday life context of
the Turkish migrant youth, this group exactly can be involved as a necessary and also
typical sample to test the research hypotheses.

In addition, choosing Turkish migrant youth who belong to the most disadvantaged
groups as the empirical sample can also help to deepen the understanding of their
perpetuating disparities in German educational system that so far have not been
completely clarified. As the studies of Müller and Stanat (2006) indicate, although the
(economic, social and cultural) capital-related structure of conditions can partly explain
the differences in competence performances between young people with and without
migration background, the general indicators especially those concerning social cultural
capital\(^{21}\) cannot explain the low competence development among the Turkish migrant
youth so well as among other migrant groups like the former Soviet Union peers.
Therefore it is still of crucial necessity to develop new criteria of social and cultural
capital to further explain the educational disparities of the Turkish migrant youth.

4.3.2 Convenience sampling

With regard to sampling, two factors need to be concerned: sample size and
sampling method. Both together decide the representativeness of the research findings.

Drawing upon Buckingham and Saunders (2004), sample size is normally decided
by the accuracy of estimating and the confidence the research needs to be able to put in
the estimates. Normally, the bigger the sample, the more precise the estimates can be
expected with the higher levels of confidence. In the following, the table shows a list of
possible sample sizes required for different precise estimates of a population parameter
at a 95 per cent confidence level.

\(^{21}\) In Müller and Stanat’s studies, perspectives of social and cultural capital of the migrant youth are
modelled respectively as the general criteria of socio-cultural structure including socio-economic status and
educational level of parents and the general criteria of socio-cultural process including the cultural practice,
the communicative practice as well as the consumptive behaviours of the migrant families. These
socio-cultural criteria however exactly lack the perspective of bonding and bridging socio-cultural
networks that are also critical aspects of social and cultural capital. In their studies, it is found that
especially in the Turkish families the value on communicative practice that can be considered as social
capital is higher than that in the families from the former Soviet Union. In detail for example, the Turkish
parents generally spend more time with their children and speaking with them than in other families. This
higher social capital, as shown in the research of Müller and Stanat, however cannot explain the slighter
educational performance of the Turkish migrant youth. But if from the perspective of bonding and bridging
socio-cultural networks, this higher social capital in the Turkish families can also indicate their strong
bonding socio-cultural networks that further can influence the informal learning opportunities for Turkish
youth for instance to learn German language and other culture. As assumed in this dissertation research, this
is also likely to explain their perpetuating educational disparity.
Table 4-2: sample size required to achieve a 95 per cent confidence level for estimates of varying degrees of precision with a heterogeneous population

<table>
<thead>
<tr>
<th>Sampling error (%)</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10,000</td>
</tr>
<tr>
<td>2</td>
<td>2,500</td>
</tr>
<tr>
<td>3</td>
<td>1,100</td>
</tr>
<tr>
<td>4</td>
<td>625</td>
</tr>
<tr>
<td>5</td>
<td>400</td>
</tr>
<tr>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: David de Vaus, Surveys in Social Research, 1993

This table shows that a sample of 300 to 400, with 95 per cent confidence level, can help to make a rather accurate estimate of the target population with a 5 per cent varying degrees of precision (plus or minus 5 per cent), or a 5 per cent sampling error. Based on this, the sample size of this questionnaire survey in this dissertation project was reasonably decided to be about 300. Altogether 324 youngsters with Turkish migration background aged from 14 to 21 years old participated in this survey. The final cases valid for analysis are 300\(^{22}\). Based on this, it is 95 per cent confident that the research findings that will be discussed in later chapters are precise to estimate in the target Turkish migrant youth population in the sampling area, plus or minus 5 per cent.

The sampling method utilized in the questionnaire survey was convenience sampling, a non-probability method. Compared with random or probability sampling strategy, convenience sampling is not ideal because of its problems in generalisation. But it is simply available to the researcher by virtue of its accessibility and can guarantee a high response rate. As Bryman (2004) argues, convenience sampling is at least fairly to be employed when the chance best presents itself to gather data from a convenience sample. In this questionnaire survey, this was exactly the similar situation in which convenience sampling method provided the most direct and effective way to reach the respondents and therefore the best possibility to gather required data. This is also related with choosing sampling places and will be explained in the following part. Besides, convenience sampling also holds clear advantages especially when practical reasons like time and financial limits need to be considered.

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\(^{22}\) According to the statistics provided by “city research, statistics, and elections” (Stadtforschung, Statistik und Wahlen) of Bielefeld city, the population of Turkish migrant youth from 14 to 21 years old till October 31 2004 in Bielefeld was 2,365. The sample size of 300 is a bit more than 10 per cent of the whole target population.
Based on the convenience sampling strategy, the sampling places were chosen especially for the purpose of more accessibility to the Turkish migrant youth respondents. The sampling area was confined to be mainly in the city of Bielefeld and then in its close vicinity including the city of Gütersloh, Herford and Dortmund.

Concerning concrete places of sampling, youth centres were first of all chosen to reach the respondents because they are not only the most important out-of-school social pedagogical settings for youngsters to meet and interact with peers but also the most frequently visited places where especially the migrant youth can use computer and Internet. Considering the convenience to reach the respondents, the youth centres that the Turkish migrant youth often visited were chosen as the main survey field. Altogether, 20 youth centres including 2 youth Internet cafes were chosen from all the 10 urban districts of Bielefeld. Then from the vicinity of Bielefeld, 8 youth centres in Gütersloh, 3 in Herford and 1 in Dortmund were also involved. In addition to youth centres, 1 city library and 4 commercial Internet cafes in Bielefeld were also selected to reach the respondents. The Internet cafes were run by Turkish migrant people and also frequently visited by Turkish youth.

4.4 Questionnaire administering and data processing

The whole questionnaire survey was carried out with the structured interviewing method. After getting the permit from the selected youth centres, Internet cafes and the library, the researcher or the interviewer entered the research field to look for the possible voluntary respondents. After acquiring their voluntary acceptance to participate in the survey, the interviewer started to present the respondent the questions exactly in the same order as they appeared on the questionnaires and then filled in the replies from the interviewee. Concerning the questions, the answers of which were displayed in a fixed scale for example of different levels of agreement, a small piece of scale card was shown to the respondent to choose the answer. The similar process to administer the questionnaire survey was then done to other respondents.

Based on the collected data, five types of analyses were accomplished by utilizing SPSS to explore the research questions: descriptive analyses, factor analysis, classification analyses like cluster and quick cluster analysis, mean comparison analyses like one-way ANOVA analysis, and correlation analysis.

Firstly, primary descriptive analyses were done to achieve a general distribution of the social, cultural, migration and educational background of the Turkish migrant youth
respondents as well as a basic nature of their Internet use. In addition, these analyses were also carried out to acquire a general distribution about how they use Internet or learn informally online and what Internet competences they have.

Factor analysis or principal component analysis was employed to extract out the factors related to the hypothesised online bonding and bridging socio-cultural networks of the Turkish migrant youth. Based on the factor analysis, cluster analysis and quick cluster analysis were then done to categorize the bonding and bridging indicators into different online groups, including pure bonding, pure bridging, both bonding and bridging, and no network groups. Factor analysis and cluster analysis were also employed to formulate the offline social milieus of the Turkish migrant youth respondents.

One-way ANOVA analysis was applied to compare differences in Internet use and Internet competences of Turkish migrant youth a) among groups of different offline social, cultural, migration and educational background, and b) between different online network groups especially between bonding and bridging networks online.

Finally, correlation analysis was done to find out the hypothesised associations of online socio-cultural networks to the differences in Internet use and Internet competences of the Turkish migrant youth. Together with one-way ANOVA analysis, both analyses were employed to explain the differences in online informal learning as an important aspect of digital inequalities and further reproduction of social inequalities. In addition, the correlation analysis was also used to find out the relationships between the offline social milieus and the online socio-cultural networks of the Turkish migrant youth in order to explain the formulation of both bonding and bridging socio-cultural networks so as to test the hypothesised reproductive and reconstructive networks in reproducing and in breaking the educational inequality of the disadvantaged Turkish migrant youth.

4.5 Limitations of the research methods and discussions

As the last part of the research methodology, here it is necessary to explain and discuss the limitations of the research methods utilised in this empirical research.

The first limitation is related with generalisation. As described above, different from random sampling, a convenience sampling directly limits the research findings to be generalised from the respondents to the whole target population, namely, the whole Turkish migrant youth in Germany. Further more, the Turkish migrant youth cannot
stand for the whole migrant youth population; therefore, the results can not be simply and completely used to generalise the situation for the whole migrant youth. However, it is necessary to argue that the results still can be reliably utilised to infer the situation of the whole Turkish migrant youth population at least in the sampling area in Bielefeld and its vicinities since the sampling was achieved through visiting a fairly complete list of the possible sampling fields, namely, youth centres and Internet cafes. The representativeness or the generalisation of the findings to the Turkish migrant youth among these social pedagogic settings in Bielefeld and its vicinities can be reliably done especially because the focus in this research is from the perspective of out-of-school and social pedagogic settings. Therefore, according to Slavin (1984), the results of this survey can also be generalised to the similar settings or situations like youth centres and Internet cafes. In addition, despite the results cannot completely infer the situation of the whole migrant youth population in Germany, it can definitely provide critical evidences to understand the similar issues and new perspectives to initiate further research.

Similarly related to sampling, the second limitation is the gender divide between girl and boy respondents in involvement. This problem, however, could not be avoided and easily solved because the questionnaires survey was administered in the public settings including youth centres, Internet cafes and library that were much less visited by Turkish migrant girls. Compared with Turkish boys, the girls spend more free time at home. Even on special “girl days” offered by the youth centres or youth cafes, the Turkish girl visitors rarely visited there. But this is not a crucial question in this research since the gender difference is not the main focus in the research questions.

Despite of the two aspects of limitation in research methods, this research still provides certain reliable inferences and especially critical indications to understand and explain the attitudes and actions of this specified group of Turkish migrant youth in the investigated aspects. Besides, it also provides a springboard and new possibilities as well as priorities for further research in the similar field.