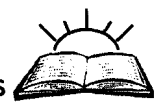
Unit 26

Reliability, Validity and Triangulation

Contents

Learning Objectives



It is expected that after reading Unit 26, you would be able to ensure that

- Data you have collected are reliable in terms of their consistency, precision and repeatability
- While being reliable, data collected are at the same time valid in the sense of giving a true description/ measurement of "social reality"
- Application of triangulation technique/ methodological pluralism/ multiple methods has enabled you to make an accurate measurement/description of the social reality.
- As a researcher you keep in mind ethical considerations to protect the subject of your research from physical/psychological harm, breach of privacy and confidentiality of the subject and acquire the informed consent of the subject for carrying out field research.

26.1 Introduction

In this chapter, we are concerned with the issues of reliability, validity and triangulation[¥]. In other words, we study the criteria for evaluating qualitative research that has been conducted by an investigator. We will examine various techniques that enable the researcher and the reader to evaluate the extent to which the data gathered and analysed represent the ground reality. We will also introduce you to certain method-specific criteria for evaluating qualitative research that have gained popularity in recent years. We will discuss the technique of triangulation to further ensure accuracy of the data collected and then conclude by examining some key ethical issues that need to be kept in mind while embarking upon a qualitative study. Basically moral and ethical questions come up at all stages of research, from selecting the topic, area of study, source of funding, to publication of research findings.

26.2 Concepts of Reliability and Validity

The aim of qualitative research is to bring to light facts about the phenomena. In that sense, it is "objective". According to Kirk and Miller (1986: 12-13),

It is our view that qualitative research can be performed as a social science. Understanding the workings of a scientific endeavour, whether it is of the natural or social variety, entails an appreciation of its objectivity. By this convention, the objectivity of a piece of qualitative research is evaluated in terms of the reliability and validity of its observations.

By reliability is meant the extent to which a measurement procedure yields the same answer however and whenever it is carried out. Validity is the extent to which it gives the correct answer. Kirk and Miller give an example from the physical world. Suppose a thermometer shows the same reading of 82°C every time it is plunged in boiling water. It is obviously a reliable thermometer. But a thermometer that gives different readings near about 100°C each time it is placed in boiling water may not be reliable, but it is certainly quite valid. In other words, validity refers to the truth-value of a finding. For a piece of research to be judged as "objective", it has to be both reliable and valid. Let us fully grasp one by one each of the two concepts.

Reliability: You can clearly state that reliability is about consistency. Your research would be reliable if, when repeated, using the same methods, it brings the same results. Sociologists need to establish the usefulness of the data they gather to ensure answers of the following questions.

- How accurate a profile of social life one is able to get
- Whether the conclusions reached are representative enough to be applicable to everyone
- Is it possible to repeat the research if others want to carry it out and will there be similar results if they did?

We can ensure the above kind of usefulness by using the two concepts of reliability and validity. Reliability of the data is our main concern because if we do not have reliable data, the conclusions reached on their basis will be quite useless.

Box 26. 1 What is Data Reliability Concerned With?

The following ideas figure in making data reliable.

Consistency: It is important to obtain consistently similar responses to the same questions in similar circumstances.

Precision: One has to know how systematic is the form of data that is based on asking people questions about things that they know little about.

Repeatability: If others want to carry out the same research as you have completed, would they get similar results? If the answer is "yes",

then your research has repeatability of the data collection method.

As per the formulations of Kirk and Miller (1986), there are three types of reliability. Basing on Kirk and Miller, we will discuss each type in the following section.

26.3 Three Types of "Reliability"

Kirk and Miller discuss three kinds of reliability. Understanding the difference between them will help you to figure out whether the data you have gathered in your qualitative study is reliable.

i) **"Quixotic"© reliability**: This refers to the circumstances in which a single method of observation yields the same measurement over and over again. In an ethnographic study, this kind of "reliability" of data indicates that the investigator has managed to elicit "rehearsed" or "politically correct" information. For example, a study is conducted on gender discrimination, and the subjects are asked the question "Do you believe in the equality of men and women?" Unfailingly, the answer obtained is "Yes". However, the reality observed around us is actually quite different. We may then conclude that the finding has only "quixotic reliability", because people are giving the answer they think is "correct", because they do not wish to offend anyone. So, it is probably a good idea to ask a different kind of question, like, "Do you think that women professionals are as competent as their male colleagues?" Perhaps the answers to this question will be more varied and reflect reality better.

ii) **"Diachronic"© reliability**: This refers to the stability of an observation over time. Some examples include the "test-retest" paradigms of experimental psychology and survey research, in which surveys are conducted afresh after a gap of time to see if the results are the same. However, in the context of socio-cultural phenomena in which the rate of change is rapid, obtaining similar results over a period of time is unlikely. Continuing the example of gender discrimination, it is seen that over the past few years, women's participation in the work force has changed, they are no longer ignored for selection for certain kinds of jobs, and in fact are given preference over males in areas of telemarketing and the hospitality services industry.

iii) **"Synchronic"© reliability**: This refers to the similarity of observations within the same time period, which can be evaluated by comparisons of the same data by different methods. Unlike quixotic reliability, synchronic reliability involves observations that are consistent in nature. However, Kirk and Miller sensitise us to a very interesting paradox; synchronic reliability is often more useful if it is absent. In other words, if different methods or approaches to a problem throw up different results, it may alert the qualitative research to certain aspects of the problem that he had not considered before.

26.4 Working towards Reliability

How can a qualitative researcher go about increasing the reliability of his data and their interpretations? A key factor is the quality of recording and documenting data. The field notes taken by the researcher must be documented in such a way that they can be compared and shared with other fieldworkers and colleagues. Berreman (1966) recommends "extensive, explicit and perceptive field notes, self-analytical reporting of research procedures and research contexts, documentation of sources, documentation of the bases for inferences and documentation of the ethnographer's theories of society and his biases". To make your field notes accessible to others, certain guidelines must be followed that enable others to separate the concepts of the observed from those of the observers.

Flick (1998) has adapted a format for conventionalisation of field-notes which is given in the table below:

Table 26.1 Format for Conventionalisation of Field Notes

Sign	Convention	Use
" "	Double quotation marks	Verbation quotes
' '	Single quotation marks	Paraphrases
( )	Parenthes	Contextual data or fieldworker's interpretation
< >	Angled brackets	Emic concepts (of the member)
/ /	Slash	Etic concepts (of the researcher)
____	Solid line	Beginning or end of a segment

Reliability for interview data can be increased by training the interviewers and by checking interview guides in test interviews or after the first interview.

In the case of observation, training before entering the field and regularly evaluating what has been observed can promote the reliability of findings.

In a nutshell, reliability in qualitative research demands that the data are presented in such a way that the reader can clearly differentiate the voice of the subject from the interpretations of the researcher. It also demands that the procedures used by the researcher constantly be re-checked and tuned so that the data obtained may be considered dependable.

Reflection and Action 26.1

Suppose a fellow learner of MSO 002 at your Study Centre wants to study the status of education in a State and draw conclusions after interviewing at a school function whoever s/he could find willing to talk. What would you advise her for making the data reliable as an indicator of what is going in the education? Write your answer in 300 words.

After completing Reflection and Action 26.1, let us move on to the criterion of validity. Validity as mentioned earlier, refers to the "truth value". In the context of qualitative research, validity refers to the extent to which the data reflect the thoughts, views, actions and experiences of the subjects in an accurate manner.

26.5 Procedural Validity

Validity refers to the accuracy of the data generated by the research instrument, whether it is an interview or questionnaire or some other means of research. If we ask the questions: Have the methods that I used colour the results of my research? Were there other factors that came in the way?

Answers to such questions refer to the internal validity of a research.

Validity of a research is also about answering the questions: How valid is one's conception of the situation? How generalisable are one's results?

Answers to these questions refer to the external validity of your research.

Face validity means statistical measure of validity. For example, Type I error will require rejection of the hypothesis when it is true. Type II error will require acceptance of the hypothesis when it is false.

A qualitative research is more likely to be valid than quantitative research. As long as there is adequate sampling and precision of observation, and subtle changes in environment and people are observed carefully, it is not difficult to establish the validity of one's data collection method. You can safely say that the concept of validity refers to the extent to which your data provide a true measurement of social reality. Take an example of shortage of power supply. You may be quite sure of the statistics about power shortage, week by week. You also have to be sure how valid or accurate a picture of power shortage in the whole town or the state your statistics represent. If you were to compare your figures with those collected by a government agency, its figures may be reliable but the government's definition of power shortage may not be the same as is used in your research. If this is the case, then the two sets of statistics are not valid for the purpose of comparison because the comparison is not between two things alike and therefore not valid. How do we achieve validity in our research? Let us look at procedural validity.

Guidelines to Procedural Validity

To bring about validity in the research process, Wolcott (1990a) has suggested the following guidelines.

i) Refrain from talking. When you are in the field, listen as much as possible.

ii) Produce field-notes that are as exact as possible.

iii) Begin to write early, so that you will not forget the little detail that separate good research from the ordinary.

iv) Write in such a way that your readers can see for themselves the points you are trying to bring out. In other words, provide enough data to enable readers to draw out their own inferences and follow the ones you are making.

v) Your report should be as complete as possible.

vi) It should be as candid as possible.

vii) Seek feedback on your findings and presentations from your colleagues.

viii) Your presentation should be characterised by a balance between the various aspects you have studied rather than leaning too heavily on one or the other aspect.

ix) Your presentation should display accuracy in writing.

How can you use field research as a means of checking the validity of your research? For answering this question go to the next section.

26.6 Field Research as a Validity Check

The very nature of fieldwork is its flexibility and openness, which will enable you to study your data in a variety of ways. In a field situation, routine contact with people on a day-to-day basis over an extended period of time will help you to test your emerging hypotheses. This method is very sensitive to discrepancies between meanings presumed by investigations and those understood by the target population.

The field is a zone controlled by those investigated rather than the investigator; the researcher is at the mercy of his subjects and not vice versa as in a controlled experiment. The more disciplined your engagement with the field and the greater your receptivity to the different, sometimes contradictory, inputs you receive, the greater are the chances of your data having validity.

The process of communicative validation process involves taking the subjects/actors into confidence and involving them in the research process, so that you are able to ensure that what you have understood is actually what they meant. By showing your interviewees the transcriptions of your first interview with them, you can ask them to judge whether you have accurately reported what they said or felt. The danger is, of course, that they may later deny saying things, which they may perceive as showing them in a "bad" light. Your ability as a researcher is then called into play; you have to separate the "real" response from the "released" one.

26.7 Method Appropriate Criteria

Are the criteria of "reliability" and "validity" adequate or appropriate to evaluate qualitative data? A number of social scientists have opined that these criteria, if applied alone, fail to understand the basic nature of

qualitative research. They have attempted to evolve more "method appropriate" criteria that enable a researcher to look critically at his data. We shall briefly present the formulations of Lincoln and Guba (1985), who have included in their scheme such criteria as trustworthiness, credibility, dependability, transferability and confirmability. Let us discuss only the first two criteria, namely, trustworthiness and credibility as these two are most crucial in Lincoln and Guba's scheme. They suggest the following measures to increase credibility.

i) **Prolonged engagement and persistent observation**: Prolonged engagement refers to the amount of time spent by the researcher in the field. It enables the researcher to learn about the culture of a social setting over an extended period of time and to build a relationship of trust and establish rapport with respondents.

If the investigator spends a very limited time in the field, then distortions are likely to come. If research is being conducted in a residential school setting, the fieldworker will find the month before the summer break a very atypical one, as students and teachers are under tremendous pressure due to examinations, evaluation and declaration of results. By observing just this one-month in the life of the school, the researcher would get a very distorted picture. However, if he does not observe the activities of this month, then he would not understand the totality of this social setting.

Other distortions include those brought in by the researcher's own "biases", e. g., s/he may only listen to the views of those teachers whose views match her/ his own world view; some respondents may deliberately want to please the investigator or even to confuse or deceive her/ him. Prolonged engagement helps the researcher to sift fact from "fiction" (see Box 26.2 on persistent observation).

Box 26.2 Persistent Observation

Persistent observation refers to detailed observation that provides depth to research, helping to sort out relevancies from irrelevancies. Persistent observation involves looking out for any odd incidents or atypical behaviours that may shed light on the problem. To continue the example of the school, a researcher may observe behaviour patterns of the childern in the residential school and draw a hypothesis that childern who have spent a longer time in the school display greater levels of confidence and independence. However, while accompanying the students on a school trip to another town, the researcher observes that one of the "old" students who he had judged as "confident" and "independent", clings to the hand of the teacher. This rather "atypical" response may lead the sensitive researcher to explore the possibility that the "confidence" and "independence" of these children is displayed in familiar settings of their school, and outside that familiar setting they are as vulnerable as any other child who may have joined school very recently.

As a further measure, Lincoln and Guba recommend "triangulation" of different methods, researchers and data (see Section 26.8).

ii) **Peer debriefing**: This refers to regular meetings with other

people who are not involved in the research, in order to discuss findings, hypotheses and results and gain their insights as well.

It is important that the debriefer should be a peer and not an authority figure (eg. a professor in one's department) in order to prevent views being "imposed". Friends and colleagues are ideal debriefers. The researcher studying the residential school may have as a debriefer a friend who also is a parent of a schoolgoing child. The debriefer would then be able to understand, challenge and contribute to the findings of the researcher by introducing a parent's perspective.

iii) **Member checking**: According to Lincoln and Guba (1985), this technique is the most important in establishing credibility. It refers to the process by which members of stakeholding groups are allowed to test the categories, interpretations and conclusions. They thus have a chance to recognise whether the investigator has imposed his constructions upon them or whether their views have been adequately expressed. Member checking is basically communicative validation referred to in the previous section on "validity".

iv) **Maintaining a reflexive journal**: According to Lincoln and Guba (1985), a reflexive journal is a kind of diary in which the investigator records information about herself/ himself on a regular basis. It provides information about the researcher's schedule, methods and insights, and provides a valuable guide to understanding the direction the research process takes.

v) **Analysis of negative cases in the sense of analytic induction** : Analytic induction refers to the process by which a hypothesis formulated to understand a phenomenon is applied to a specific case. If it does not fit the case, then it is reformulated and applied again. Each individual negative case helps to further refine the hypothesis. Further cases are studied until the stage arrives when a universal relationship is established. Hence each negative case calls for re-definition or reformulation of the problem, thereby enhancing credibility.

To check the dependability of the research, the concept of "auditing" is used, based on the procedure of audits in the field of finance. Briefly, the auditing trail that has to be checked includes:

- the raw data, their collection and recording;
- data reduction, i.e. summaries, short descriptions of cases, memos, etc.;
- the reconstruction of data into themes, definitions and relationship and the findings inferred from them;
- process notes, and decisions regarding methods;
- personal notes about one's intentions, one's ideas about research and expectations of the participants; and
- the pilot study and preliminary plans of the research.

The auditing trail helps to account for the manner in which the research was conducted and its outcome.

As said previously, qualitative research includes the subjectivity of the researcher. And yet, it is ultimately judged in terms of its 'objectivity' (i.e. its ability to bring to the forefront the lives, experiences and relationship of people).

Unlike other scientists, qualitative researchers do not report on studied objects, rather they report on their **interaction** with the objects they study, namely, cultures. That is why objectivity is difficult and yet essential, according to Kirk and Miller (1986). In this context, the views of Harvey Sacks (1992) may be cited. Sacks believes that serious work includes paying attention to details, and if something matters, it should be observable. For Sacks, "observations study" meant observing the activities that members of a society did, rather than speculating about their motives and inner thoughts.

We will now look at the use of multiple methods in sociology. It is also referred as triangulation/ methodological pluralism. But we will go to the topic of triangulation after completing Reflection and Action 26.2.

Reflection and Action 26.2

Take an example of your friend studying the problem of unemployment in your State. She collects unemployment statistics from the Employment Exchange. We may take the statistics to be quite reliable, recorded year by year. She considers her sample of figures pertaining to one decade to be adequate to perceive a trend. But you find that in a period of one decade, there were several changes in definitions of what constitutes unemployment. In such a situation, what sort of problems do you find in her research method? Write a note to help your friend to see the problem with her research and suggest how she can get, in terms of research method, a more accurate picture of unemployment in your state.

26.8 Triangulation

You would have by now realised that various methods of gathering data have different advantages and disadvantages. Apparently as a researcher you would like to use methods with more advantages than disadvantages. You would also like to avoid a weakness in one method and use a second method, which is strong in the sphere in which the first is weak. Take the example of interview method. You can say that the interview method has a weakness in the sense that we are not always sure that the interviewee is telling the truth. In order to avoid this weakness of the interview method, you may decide to cross-check the information you have gathered by using the method of observing the everyday life of the interviewee to find out what the person actually does and what she/he tells.

The use of multiple methods for assessing the validity of your research data may be more specifically called between-method or cross-

method triangulation.

In this fashion you are able to combine different methods and obtain a better picture of the subject of your research. Generally surveyors use the technique of triangulation in their work. The theory behind the concept of triangulation is quite simple. The aim of triangulation is to obtain accuracy in measurement between two points for which you require a way of measuring that is reliable. You can obtain reliability by replication, but repeating the same procedure does not ensure complete reliability. Here mathematics helps us. If we take three different measurements between three points, we can ensure that the measurement of the distance between point A and point B is absolutely correct by using the mathematical principle that each angle of an equilateral triangle is always 60 degrees. So we just triangulate our measurement by taking three different measurements. The theory of triangulation provides us in social research some degree of control over the accuracy of the data we gather.

There are two types of triangulation, namely, methodological triangulation and theoretical triangulation.

- ❖ Methodological triangulation refers to the way we use different methods in the research process.
- ❖ Theoretical triangulation is the way we use various theoretical perspectives in our research.

Let us briefly discuss each type.

Methodological triangulation

In *Doing Sociology: A Practical Introduction,* Harvey and MacDonald (1993) describe the following three types of methodological triangulation.

- ❖ One researcher uses two or more research techniques.
- ❖ Two or more researchers use the same research technique.
- ❖ Two or more researchers use two or more research techniques.

You may use methodological triangulation for the following purposes.

- ❖ To gather different types of information, for example qualitative and quantitative
- ❖ Two or more researchers use the same method and then compare their results to find out if they agree that they have similar findings
- ❖ To check that material collected in one form is both reliable and valid.

Theoretical triangulation

This form of triangulation is not popular among sociologists. It is of course possible to study a social group from theoretical perspectives of a structuralist and an interactionist. The structuralist perspective would require you to look at institutional relationships that exist in a social

group, for example "the family". From an interactionist perspective you would look at family life from the point of view of individual members of different families or of particular family groups.

Generally, sociologists working from the point of one perspective would not be inclined to look at the subject of their researches from another theoretical perspective. This is why we find that theoretical triangulation is quite uncommon.

Clearly, by using multiple methods or more than one method, you can enjoy the benefit of each method and the different types of data they generate, for example both statistical and oral accounts. The advantages of one method help to overcome the limitations of another method.

Let us now examine some of the key ethical considerations that a qualitative researcher must keep in mind. Before going on to the next section, complete Reflection and Action 26.3.

Reflection and Action 26.3

Consider if it is feasible always to combine various methods in one research. State what kinds of problems you are likely to face as a researcher when you attempt to combine quantitative and qualitative methods?

26.9 Ethical Considerations in Qualitative Research

Field work is one of the key methodological tools employed in qualitative research Fieldwork raises some unique ethical issues because the researcher is participating in the lives of the people under study. It often becomes difficult to draw the line between the researcher's role as a "participant" and as on "observer". Some social scientists believe that the researcher should make it clear to her/ his subjects what s/he is doing and under no circumstances should the subject withhold her/ his true intentions. In other words, s/he should make it clear that s/he is conducting a research inquiry.

However, in reality this is easier said than done. Suppose a researcher is attending a wedding in the community s/he is studying. This is an excellent opportunity to interact with several members of the community and elicit information. If the researcher announces her/ his intentions on such an occasion, she/he is likely to alienate members or cause a lot of discomfort to them. Shils (1959) tries to draw a distinction between the "observations of everyday life" and the "observations of field" research. The former refer to observations that result from the social relationships that arise out of intentions other than observations. The observer has not created the relationship merely for the purpose of doing research. What happens, however, when observations from daily life, where there is no intention of "doing research", later acquire significance for research? Kidder and

Judd (1986) cite the instance of a researcher working as a volunteer with rape victims in a hospital emergency ward. Her work as a volunteer helped her gain insights in the victims' methods of coping that appeared to contradict the current psychological theories of coping and taking control. Could she use her findings? The women she had talked to had not been informed that she was doing research, because at the time she was working with them she was not in fact conducting research but doing voluntary work (see BOx 26.3 for another example).

Box 26.3 Example of Ethical Concern in Research

Another example quoted by Kidder and Judd (1986) pertains to a white American woman researcher who participated extensively in the lives of black women she studied in an economically poor neighbourhood. Since the researcher had a car, she was often asked to run errands by the black women (e.g. taking sick children to the clinic, collecting provisions, laundry etc.) She also developed genuine friendship with many women there. Did her friendships and the help she gave these women make her observations more ethically correct or less so? It takes a great deal of maturity on the part of the investigator to avoid misusing information gathered and not treating all kinds of sensitive and personal information as "data".

Erlandson et al (1993) identify the following ethical considerations that a researcher must bear in mind:

i) Protecting the subject from physical or psychological harm;
ii) Protecting the subject's privacy and confidentiality;
iii) Protecting the subject against unjustifiable deception; and
iv) Acquiring the informed consent of the subject.

The above points are interrelated. For example, in order to protect the subject from physical/psychological harm the researcher must also protect his privacy and not deceive him. Erlandson et al (1993) quote the example of a researcher studying a prison system. Because some staff and inmates were in highly sensitive situations, revealing their identities could seriously harm their personal safety and career. The same apples to research pertaining to homosexuals, sex workers etc., who are stigmatised in our society. The researcher should take into account the potential risks the participants face if they are identified. The prison researcher decided to use pseudonyms and omitted information that was potentially damaging. He also made the decision not to disguise his own role or the reason why he was in the organisation. The issue of "deception" (or concealing one's identity) is a very tricky one. It is argued that sometimes, a researcher can gain access to society's "darker side" by gaining entry into it and becoming "one of the group". One reads of journalistic "coups" in which writers "pretend" to be prisoners and live in a prison in order to gain the "inside information", or pretend to be potential clients of sex workers, or massage parlours operating as "sex shops" in order to write about their sensational exposes. However, serious social science is not journalism. Erlandson et al (1993) opine that deception is subversive to

the research effort and counterproductive to the search for multiple social constructions that individuals hold.

To obtain the "informed consent" of the participants, the researcher must explain to them clearly the goals of her/ his research and allay their natural fears. Suppose a researcher is studying inter-religious marriages, and is trying to obtain the consent of couples that have had such marriages. Some of the natural fears the potential participants might have could include the following: Is the researcher working on behalf of some politico-religious organisation that wishes to "identify" and "expose" them? Will their privacy be guarded? Will their families be subject to social embarrassment or censure? Will parents have problems in arranging the marriage of a younger sister or brother if it is known that the older sister married into another religion against her parents' wishes?

By discussing these issues frankly and clarifying the strategies by which their privacy and confidentiality can be protected, the researcher may be able to obtain their "informed consent", and thus accord them due respect and safeguard their dignity and human rights. In order to further appreciate the point of ethical concerns of ethnographers, complete Reflection and Action 26.4.

Reflection and Action 26.4

Beteille (1975) opted to identify himself with the resident Brahmins of the village where he carried out his field research in Tamil Nadu. He had access to their homes and temples. When his Harijan informants came to visit him, the Brahmin neighbours and also his host objected and Beteille then changed the mode of his contact with them. In this example you may be able to find the evidence of the problem of conforming to the value-system of the people one is studying. Find at least two more examples of respect for the interests of the citizens one is studying. You would be able to find examples in Betelille and Madan (1975).

26.10 Conclusion

The issues of validity and reliability are problematic ones in qualitative research precisely because qualitative methods demand a lot of personal engagement from the researcher. The risk of the researcher "going native", i.e. identifying herself/ himself so completely with the people under study that s/he then becomes a spokesperson for their issues and interests is also significant. The researcher must at one and the same time be both a participant and an observer, doing research and yet interacting with subjects in their own territory, on their own terms. Several techniques have been identified by which the researcher keeps a scrupulous and detailed record of the work done, separating the views of the actors from one's own. This includes the technique of triangulation. Interwoven with these methodological considerations is the moral imperative that the need to recognise and respect the fact that

the "subjects" of research are human beings who must be treated with respect and accorded the dignity that every human being deserves.

Further Reading

Foster, J. 2003. *Qualitative Research*. Sociology Review 12(4):

Hobson, A. 2000. *Multiple Methods in Social Research*. Sociology Review 10(2):

Shaw, M. and R. Widdowfield 2003. *Ethics and Doing Health Research*. Sociology Review 12(4):