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CHARACTERISTICS OF EMPIRICAL MATERIALS IN META-ANALYSIS*

Summary

One of the most important stages of a meta-analytic research is correct recognition of research material, i.e. appropriate selection of investigation methods. This stage is, first of all, characterized by unlimited research space, which, in consequence, results in using unlimited quantity of research for meta-analysis. The basic distinctness of traditional quantitative reviews is limited possibility for integration. That is why, in such reviews, selection of research studies is neither located in the centre of attention of a researcher, nor in that of a reader. This is, because the essence of reviews is systematizing and describing the results of research studies, while integration is more qualitative than quantitative. The paper discusses the methodological discussion of criteria for the collection of empirical evidence for meta-analysis. It is pointed out to some of the cognitive and practical benefits of meta-analytical research approach.

Key words: meta-analysis, quantitative research, quantitative integrations, results synthesis, empirical material.

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A meta-analysis is a synthesis of a research, including summing up results of other studies in a meaningful connected display, that enables derivation of general conclusions. Therefore, a meta-analysis units are not subjects, but studies, and this is what characterizes this method. Using the meta-analysis, researchers can choose among the two strategies so they can respond to problems: easy integration of studies dealing with the same problem, in order to respond to it precisely, and mutual comparison of different studies, which may not necessarily be oriented to the same problem, in order to test hypotheses that are tested by the initial research.

Kulik and Kulik, who studied it both theoretically and empirically, dealt with the selection issue very intensively. Due to requirements of meta-analysis, they also studied the integration practice used for research studies so far. They have proved that, in quantitative reviews, selection of studies was more often accidental than deliberately made by making allowances for traits studies and their methodological model (Kulik and Kulik 1989, 221–340). Possibilities of meta-analysis allow noticing another aspect of the discussed issue. For a meta-analyst, there are no quantity limits concerning researches that he or she takes advantage of. This may result in a suggestion that selection of studies is just a side issue in meta-analysis. However, this feeling is illusory, because, on considering the fact that in meta-analysis one analyses traits of studies, their selection turns out to be a much more serious task than in quantitative reviews.

Selection of studies has its content-related and methodological aspects. The former are strictly associated with defining a research problem, while methodological aspects concern mainly settlement of selection criteria.

RECOGNITION OF MATERIAL FOR INVESTIGATION AND CONTENT-RELATED ASPECTS OF SELECTION

The issue of content-related aspect of selection is presented on the grounds of analysis of Sagadin's ideas, concerning main phases of non-experimental empirical research (Sagadin 1993, 168–74).

The fact that initial determination of a research problem is not ultimately determined in meta-analysis is indisputable. A meta-analyst is obliged to become familiar with the field of the conducted researches not later than in the initial phase of problem defining. This is not sufficient for ultimate determination of the problem, however. Becoming familiar with the theoretical part of the researches, as well as obtaining a review of achievements of empirical studies made so far in the selected field becomes equally necessary.

Following the first phase, involving initial definition of the problem, one should discuss actions to be taken in the second phase, i.e. learning theories concerning phenomena that are meant for further consideration. Critical analysis of theoretical conclusions concerning a given

problem aims at making the problem more familiar in all its aspects, as well as at indicating theoretical starting points. Such an analysis should provide answers to questions, which allows further determination of a possible research problem.

The next stage involves reviewing the section of reality that will be meta-analysed. It is this phase that makes the greatest difference between meta-analysis and other researches. Determination of a research problem depends heavily on empirical researches that have been carried out so far. The reality studied in meta-analysis does not directly constitute an upbringing practice. This is why it is necessary to determine new borderlines of reality under research. Review of empirical research made so far clearly indicates full range of the investigated field.

This provides a starting point for the decision which research will be meta-analysed. The need for later categorization of traits of the applied individual researches necessitates considering consultations with practitioners (teachers, educators, etc.) and reviewing practices used in the course of the initial research. Another basic aspect of reviewing the research practice is a later selection of the results of individual studies. It is obvious that the main decisions related to the selection of the results shall be made when the research programme is finally determined and the phase of selection of empirical material for meta-analysis is initiated. Within the confines of commonly accepted actions, it is advisable that the review of state of empirical studies allows the last phase of ultimate determination of the research issue.

The main purpose and result expected by the researcher at this stage is isolating detailed research questions that should be answered in the subsequent stages of the research (Sagadin 1993, 170). As soon as the issue is presented in detail and the research questions are formulated, the assumed research hypotheses are admitted as predicted answers to the questions formulated earlier. Ultimately determined research issue allows isolating unequivocal criteria of selection of studies. The criteria depend on the method of determination of the research issue in empirical research literature. The criteria must provide appropriate restrictictiveness. Too generally defined issues can result in vague and weakly determined meta-analyses, while too restrictive criteria may excessively limit finding sufficient quantity of research studies. There is also another disadvantage of restrictive criteria, namely, too small a dispersion of traits of individual research studies. Meta-analysis should integrate empirical results, which are the basis for deriving criteria. Meta-analysis requires new theoretical conclusions. When it is assumed that meta-analysis confirms only those hypotheses, which have been already partly verified in single studies, it is not considered to be a very effective method. This is why it is postulated that empirical material for meta-analysis should be sufficiently dispersed and diverse. The dispersion, however, cannot threaten content-related unequivocality and clarity of the studied issue.

METHODOLOGICAL ASPECTS OF SELECTION

From the point of view of the criteria of quality of a methodological model, the meta-analysis develops in two main directions. Glass and his students, who approve of greater tolerance when considering methodological quality and characteristics of studies were first to isolate the direction (Glass, McGaw and Smith 1981; Hunter and Schmidt 1990; Rothstein, Sutton, and Borenstein, 2005). According to the researchers mentioned above, meta-analysis can at the same time include both, experimental and quasi-experimental research studies, or experiments with different methods of inner controlling of the experimental situation etc. The need for studying effect of traits can be regarded as an argument supporting such an approach. In order to find correct answers to the research questions, meta-analysis must be based on a sufficiently large empirical basis. This is possible when meta-analysis includes studies whose traits are sufficiently dispersed.

The other direction mentioned above involves more restrictive requirements to be met by methodological criteria of selection of the meta-analysed studies. The most outstanding representative of this outlook is Slavin, who claims that not all studies are equally appropriate to be included in meta-analysis. What is most important in the procedure of selection of researches is to take into consideration the methodological model and to select only the studies that possess sufficiently high methodological value. This means selecting studies that contain results obtained by means of the methodology that guarantees their sufficient reliability. The presented approach concerning selection of studies derives from the postulate that the level of reliability of final settlements depends more on poorer results than on better ones. It is true that, in scientific research studies, one of the most significant criterions is correctness and reliability of new settlements. Is the level of final settlements really determined by the poorest of the used results, though? It is difficult to find any significant argument supporting this approach. On the other hand, it cannot be ignored that all results affect correctness and reliability of the new settlements.

Solution of this problem can be found in a reasonable association of these two trends concerning the quality of studies. The main idea of Slavin's theory, concerning different loads of individual studies deriving from their methodological traits, should be accepted. On the other hand, Glass's postulates concerning statistical control and a need for taking these traits into account should also be considered seriously. Therefore, in meta-analysis, there is a need to use all methodological traits that allow quantitative description as variables. As a result of applying such a method, the best methodological studies would possess the greatest significance, weaker studies would possess a correspondingly smaller significance, and the most doubtful studies could occasionally be completely excluded from meta-analysis.

An additional answer to such a dilemma can be obtained from the experiences resulting from the research practice made so far. Re-analysis, discussed by McGaw (1988, 679), seems to be a fundamental operation in the considered problem. The authors of the study, Landman and Daves, analysed experimental research studies on the effectiveness of psychotherapy. The studies were integrated within the confines of Glass and Smith's meta-analysis (Smith and Glass 1977). Out of the total number of 475 investigations, Landman and Daves selected those, which, in their opinion, were the most correct in terms of methodology. The power of effect obtained on such grounds turned out to be very similar to the power of effect obtained in the research of the entire set. This enabled the authors to confirm the findings of Smith and Glass concerning selection criteria of studies included in meta-analysis. In the opinion of McGaw, that argument was sufficiently strong to confirm the approach in which methodological traits (considered as a quality) form the basis for statistical analysis, but do not serve as selection criteria for studies included in meta-analysis.

It is difficult to accept such arguments without reservations. Results of Landman and Daves's analyses can be interpreted as a confirmation of the correctness of the attitude that more restrictive criteria of study selection are appropriate. Including the whole set of studies, as postulated by McGaw, did not yield significantly different results. This means that the presented approach is insignificant in meta-analysis. The results confirm, at least partly, the correctness of Slavin's theory.

In view of the presented attitudes, there arises a question: how to measure the significance of each investigation or each single result? The simplest solution was that offered by Slavin, who rejected any research that did not meet the assumed criteria, and, therefore, their determined significance was equal to zero. At the same time, any study included into meta-analysis was given the same significance. However, such an approach is satisfactory only when there is no possibility to measure the significance of the researches more precisely.

The only possibility of correct determination of the value of individual studies is their assessment by methodologists. Such assessments are subjective, however. Therefore, there is a need for a greater number of methodologists and their assessments. Rosenthal (1991) proposes double procedure of evaluation of methodology of studies, which involves double evaluation by the same expert. The first evaluation should be made on the grounds of description of methodology of each study report. It is the fact that the first evaluation is made before the expert knows the results of the evaluated study that is important in the author's opinion. When doing the second evaluation, the expert should take into account the description of methodology and interpretation of the results. To implement such a method of evaluation, several questions should be prepared, starting from

the most general ones and ending with the most detailed ones. To each question, the expert is expected to give an answer, which is the evaluation. The final result is the sum of all evaluations or their average.

The evaluations should be used as scales when determining the quality of the studies. When a given study has a three times higher evaluation, it should be given a three times higher scale in statistical analyses. This means that the contribution of each study to the final conclusions is directly proportional to its methodological quality. This approach should be regarded as a significant step in searching for more objective methods of selecting studies.

THE PROCESS OF COLLECTING SOURCES IN RESEARCH INTEGRATION

The action of looking for studies in meta-analysis is not significantly different from searching for studies in traditional quantitative reviews. In both cases, the purpose is to find and obtain all results concerning a given field. Contents of this part of the paper focus on the problem of describing methods of finding and selecting studies, and on determination of the results, the use of which is an absolute necessity in works on meta-analysis. What is presented here is both procedures of searching for results, and mechanisms of processing results and their reliability.

In the process of collecting source studies for meta-analysis, the initial stage involves acquiring and analysing published abstracts. However, in the course of the process, one should do much more than just analyse abstracts. Due to material, obtained by mere analysing abstracts, it is impossible arrive at precise settlements concerning the power effect of individual studies. Therefore, it is necessary to undertake actions involving statistic control of methods and extent in which traits of the studies affect their results. In meta-analysis, the process of analysing abstracts can suffice only in incidental cases. It is just the first stage of collecting information about studies included in meta-analysis that can be based on abstracts only.

Nowadays, there are many registers publishing abstracts of the conducted studies: Sociological Abstracts, Ulrich's International Periodicals Directory, Psychological Abstracts, Linguistics and Language Behaviour Abstracts, International Bibliography of Periodical Directory, etc. All the registers mentioned above provide easy access via computer. This is why, in most cases, the phase of collecting information does not take much time. Abstracts obtained in this way allow introductory orientation in the field of one’s search. They are mostly abstracts of books and periodicals. In spite of the fact that the published books and periodicals do not constitute the sole source of meta-analytic searching, in most cases, they form the most important element, and they provide a meta-analyst with a significant majority of the necessary research material.

In the subsequent phases of searching for studies, collection of sources should be commenced on the grounds of information obtained from the abstracts. What is significant in meta-analysis is categorization of publications. On one hand, it facilitates systematic collecting of sources, on the other hand – it allows statistical analysis of the effect of traits of studies on their statistical results.

The sources can be divided into five categories:

1. books or monographies,
2. scientific periodicals (journals),
3. master's and doctor's thesis,
4. specialist periodicals, information bulletins, unpublished study reports (which are often available only in libraries of scientific institutions, in few copies),
5. other unpublished works.

Due to categorisation a question arises about reliability of sources in meta-analytic studies. Rosenthal discusses results of several meta-analytic reviews (Rosenthal 1991). He deals with reliability of measure of effect in sources of various origin. Due to the fact that the results derive from meta-analyses known worldwide, Rosenthal's scientific researches will be presented here in their entirety (Rosenthal 1991, 37). It should be emphasised that Rosenthal distinguishes only four categories of sources. The table 1 presented above shows results of twelve meta-analyses. Each of the meta-analyses considers the measure of power effect, established by means of at least two sources.

Table 1. Reliability of information sources for a sample of meta-analysis (Rosenthal 1991).

sources	number of meta-analyses	reliability	p level of reliability
journal: thesis	10	0,89	0,0005
journal: unpublished	7	0,65	0,06
thesis: unpublished	7	0,85	0,008
book: journal	6	0,82	0,025
book: thesis	4	0,96	0,02
book: unpublished	3	1,00	0,005

Although majority of reliability indicators are high, there are significant differences observed between them. Quantity of the reviewed meta-analyses is not too large. This is why it is inadvisable to draw firm and unquestionable conclusions from the obtained results. On the other hand, quality of the performed meta-analyses (most of them were made by Glass et al.) guarantees great accuracy of the obtained results. When

searching for the most important answers, carrying out subsequent empirical analyses and justifying the obtained indicators theoretically is very important.

However, the results presented in the table show certain tendencies that are significant even from the up-to-date point of view of development of meta-analysis. The results from the table can also be interpreted in the light of Slavin's methodology. If all the sources used possess a similar degree of reliability, it is difficult to find even one argument that would allow drawing meta-analysis conclusions from just a fraction of the available research material, or part of the sources used. In spite of the fact that Slavin did not directly indicate use of sources, his theories indirectly concern their use. When selecting the most significant studies (as assumed by Slavin's method), one should always determine the selection criteria. Slavin is not alone in his attitude. Other researchers of the problem put forward similar postulates. However, there are some differences as to the type of the criteria accepted. According to Slavin, the postulated criteria should be mainly methodological contrary to the generally accepted models of meta-analysis giving priority to the content-related criteria. Thus, high reliability of sources does not justify Slavin's views in their entirety. It should be noted, however, that Slavin's ideas are justified to a certain extent, regarding the observed differences in reliability of the used sources. Although not very significant, the differences deserve attention, because they prove that the origin of sources can be significant.

The issue concerning measures of the effect size, originating from different sources cannot be neglected, either. The measures can differ from one another in spite of high reliability indicators. The basis for settling the level of reliability is the correlation method. Correlation coefficient indicates uniformity of the obtained results, but not their being identical. In spite of situations, in which a given source systematically indicates lower measures of the effect size than another source, the correlation coefficient may be high. When the ratio between the obtained measures of effect size remains constant, which indicates high reliability, there can be significant differences between quality measures. In its superficial formulation, the fact completely refutes the results obtained by Rosenthal. The reality, however, is different. Differences in the measures of effect size affect further analysis of the effect of traits of the studies on their results. The analysis allows completing the interpretation of the discussed differences.

The fact indicating significant differences between the measures of size effect, despite their high reliability, is illustrated by two other tables taken from Rosenthal's considerations (Rosenthal 1991, 39). Both tables pertain to the twelve discussed meta-analyses. Table 2 lists mean values of effect power, obtained from individual sources.

Table 2. Average effect sizes obtained from journal information for meta-analysis in which other sources were or were not available (Rosenthal 1991).

source	source available	source anavailable
book	0,44	0,64
thesis	0,51	0,40
unpublished	0,50	0,49
mean	0,48	0,51

The first column contains effect size of studies that allowed use of at least one additional source apart from the basic material. The second column lists values of effect size of studies in which the basic material was the only available source. The average value of all studies is presented in the third column Table 3 contains comparison between average values of effect size for six pairs of sources. The columns of the table display results in the following order: the quantity of the used meta-analyses, the value of the effect size obtained from the first source in a given pair and value of the effect size obtained from the second source in the pair.

Table 3. Pairwise comparisons of effect sizes obtained from four information sources Table 1. Reliability of information sources for a sample of meta-analysis (Rosenthal 1991).

pairs of Sources	number of meta-analyses	first mean ES	second mean ES
journal: thesis	10	0,56	0,30
journal: unpublished	7	0,56	0,64
thesis: unpublished	7	0,31	0,64
book: journal	6	0,34	0,42
book: thesis	4	0,40	0,27
book: unpublished	3	0,31	0,68

The table 3 indicates significant differences between the effect size in cases when additional sources are available and when they are not available. Only the last example in the table indicates only a small, insignificant difference. It also means that in meta-analysis, there is a need for certain distance and for critical analysis of the results obtained in single case studies. The indicated differences should be taken into consideration, at least in the final phase of interpretation.

Differences listed in this table are even greater than those revealed in the previous one. All the comparisons made, indicate that authors of scientific monographies and theses are most critical in evaluation of measuring of effects. It also proves that there is a strong need for strict (statistical) control of influence of this trait of the sources.

SELECTION OF RESULTS

The procedure of collecting sources requires clear determination and formulation of common grounds for the results that are included in meta-analytical considerations. As has been proved by scientific research conclusions so far, information about the selected results turns out to be extremely helpful in the process of determination of the measures of effect size. Apart from the results mentioned above, data related to testing statistical hypotheses are also required.

When primary studies include research problems that are more extensive than the meta-analysis itself, selection of the results indispensable. The selection is determined by the definition of the meta-analysed research problem. Results of primary studies may be very diverse, so one should select those that are really necessary for the meta-analysis. When making such a selection, it is necessary to review all the studies and to acquire insight into their character. Such a review allows determination of type of the necessary results.

When calculating and integrating the measures of effect size, one should consider the following data:

1. data showing effect of a single study (arithmetic means and variances of all trials or populations used in the study, percentages, as well as correlation coefficients obtained in all groups),
2. data on the number of trials,
3. data concerning value of parameters obtained from testing statistical hypotheses and the significance level obtained in each individual test.

In the course of performing statistical analysis, there is an immense diversity of the necessary data. On one hand, statistical analysis is determined by the general research problem of meta-analysis, on the other hand – by results of review of individual studies selected for meta-analysis. Rosenthal presents a Table with seventeen groups of data concerning each individual study. It was compiled after a few decades of experience in carrying out meta-analytical studies (Rosenthal 1991, 42-43).

It is extremely difficult to meet the presented requirements, in practice. Especially when attempting to include in the meta-analysis a maximum number of available studies on a given issue. Collecting such detailed data requires from the researchers of the primary studies excellent knowledge of meta-analysis methodology, the knowledge that meta-analysts possess, as a rule. However, it can certainly be assumed that, unfortunately, the requirements concerning methodological knowledge are quite unrealistic. Thus, it can be considered that they constitute a model that is a guideline for each meta-analyst. At the same time, it should be mentioned that complete realization of the model is possible only in incidental cases and in completely exceptional circumstances. Such circumstances give rise to a question: "How should one deal with studies that do not contain all data of those mentioned by Rosenthal?"

The principle saying that there is no place for compromise in scientific research is unimportant. Sporting a bit of humourous attitude, one can say that the size of the described problem can be defined as follows: it is not enough to copy Rosenthal's list and send its copies all over the world, to all researchers in the field of pedagogy. The problem is much more extensive and contains one of more difficult dilemmas of meta-analytic methodology. In each specific meta-analysis, one should re-determine relationships between the researcher's expectations and opportunities provided by research practice. It should, however, be remembered that a situation when the intention of detailed collecting empirical data results in narrowing of the whole study (i.e. omission of some primary studies, their results and conclusions) is not allowed. Each individual primary study provides material that is an attempt to answer questions resulting from scientific studies. Making no allowances for any of the primary studies results in incomplete answers to research questions put by meta-analysis. This is why any specific circumstances concerning the available empirical material should be carefully investigated. In certain cases, there is a need to extend Rosenthal's list, in other ones – to reduce it.

Preliminary stages of meta-analysis, i.e. a review of study literature and selection of studies, are much more complicated than in quantitative reviews that have been completed so far. Describing and categorizing of the study traits that are to be statistically controlled in meta-analysis are at least equally or even more complicated. This is what makes meta-analysis fundamentally different from ordinary reviews. To allow calculation of the significance of results of individual studies and measurement of their contribution to final settlements of a given meta-analysis, their basic traits should be quantitatively described and statistically analysed. This refers to both methodological and content-related traits of the studies. Categorization and description procedures provide a researcher with the necessary empirical material.

REFERENCES

Brzeziński, Jerzy. 1978. *Elementy metodologii badań psychologicznych*. Warszawa: PWN.

Cohen, Jacob. 1988. *Statistical power analysis for the behavioral sciences*, 2nd edition. Hillsdale, NJ: Erlbaum.

Cook, Thomas D. 1992. Some generic issues and problems for meta-analysis. In *Meta-analysis for explanation: A casebook*, edited by Thomas D. Cook, 283–320. New York: Russell Sage foundation.

Cooper, Harris M. 1989. *Integrating research: A guide to literature reviews*, 2nd edition. Newbury Park, CA: Sage publications.

Cooper, Harris M. & Robert Rosenthal. 1980. Statistical versus traditional procedures for summarizing research findings. *Psychological Bulletin* 87 (3): 442–49.

Fraser, Barry J., Herbert J. Walberg, Wayne W. Welch, and John A. Hattie. 1987. Syntheses of educational productivity research. *International Journal of Educational Research* 11 (2): 73–145.

Glass, Gene V., Barry McGaw, & Marry L. Smith. 1981. *Meta-analysis in social research*. Beverly Hills, CA: Sage publications.

Hunter, John E. & Frank L. Schmidt 2004. *Methods of meta-analysis: Correcting error and bias in research* findings, 2nd edition. Newbury park, California: Sage publications.

Kožuh, Boris. 2005. *Metaanalitična integracija pedagoških raziskav*. Ljubljana: Znanstveni inštitut Filozofske fakultete.

Kožuh, Boris & Jelena Maksimović. 2009. Prednosti i ograničenja meta-analize u pedagoškim istraživanjima. *Nastava i vaspitanje* 58 (4): 603–16.

Kulik, Chen-Lin C. 1990. Effectiveness of mastery learning programs: A meta-analysis. *Review of Educational Research* 60 (2): 265–99.

Kulik, Chen-Lin, James. A. Kulik & Robert L. Bangert-Drowns. 1990. Effectiveness of mastery learning programs: A meta-analysis. *Review of Educational Research* 60 (2): 265–99.

Kulik, James & Chen-Lin Kulik. 1989. Meta-analysis in education. *International Journal of Education Research* 13 (3): 221–340.

Landman, Janet T. & Robyn M. Dawes. 1982. Psychotherapy outcome: Smith and Glass` conclusions stand up under scrutiny. *American Psychologist* 37 (5): 504–16.

McGaw, Barry. 1988. Meta-analysis. In *Educational research, methodology and measurement: An international handbook*, edited by John P. Keeves. Oxford: Pergamon.

Pilch, Tadeusz. 1995. *Zasady badań pedagogicznych*. Warszawa: Wyd. Żak.

Rosenthal, Robert. 1991. *Meta-analytic procedures for social research*. Beverly Hills, California: Sage publications.

Rothstein, Hannah R., Alex. J. Sutton, & Michael Borenstein. 2005. *Publication bias in meta-analysis: Prevention, assessment and adjustments*. London: Wiley.

Sagadin, Janez. 1993. *Poglavja iz metodologije pedagoškega raziskovanja*. Ljubljana: Zavod RS za šolstvo in šport Strmčnik.

Slavin, Robert E. 1984. Meta-analysis in education: How has it been used? *Educational Researcher* 13 (8): 6–15.

Slavin, Robert E. 1986. Best-evidence synthesis: An alternative to meta-analysis and traditional reviews. *Educational Researcher* 15 (9): 5–11.

Smith, Marry L. & Gene V. Glass. 1977. Meta-analysis of psychotherapy outcome studies. *American Psychologist* 32 (9): 752–60.

Wolf, Fredrick M. 1986. *Meta-analysis: Quantitative methods for research synthesis*. Beverly Hills, California: Sage publications.

Zaczyński, Wladyslaw P. 1997. *Statystyka w pracy badawcze nauczycieli*. Warszawa: Wyd. Żak.

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ОБЕЛЕЖЈА ЕМПИРИЈСКОГ МАТЕРИЈАЛА У МЕТА-АНАЛИЗИ

Резиме

Један од најважнијих корака у метааналитичком истраживању је препознавање материјала који се истражује, другим речима, у коме се врши адекватан одабир метода истраживања. Ова фаза се, најпре, карактерише неограниченим простором за истраживање, што код мета-анализе има за последицу неограничену количину материјала који се истражује. Основно дистинктивно обележје традиционалних квантитативних прегледа јесте ограничена могућност интеграције. Због тога, код таквих прегледа, питање како су студије за анализу изабране није у центру пажње нити истраживача нити читалаца. То је зато што прегледи имају основни циљ да систематизују и опишу резултате истраживачких студија, док је интеграција више квалитативни него квантитативни задатак. У раду се говори о методолошкој дискусији критеријума за прикупљање емпиријског материјала за мета-анализу. Такође је указано на неке од сазнајних и практичних бенефита мета-аналитичког истраживачког поступка.

Кључне речи: мета-анализа, квантитативна истраживања, квантитативне интеграције, синтетички резултати, емпиријски материјал.