

# Influence factors in change methods choice and their impact on change deficiencies: A case study of construction industry in transition economy\*

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*The basic purpose of this research is to examine if influence factors in change methods choice are linked to an inappropriate approach (i.e. deficiencies) towards change. A combination of qualitative and quantitative approaches to research work was applied. The data were obtained by a semi-structured interview together a questionnaire, and then processed using the method of factor analysis and multiple regression. Based on research findings we can conclude that between the factors of choice of change methods and deficiencies in the implementation of change taken as a whole, there is no direct link. However, two dimensions of the factors in the choice of method of change have a positive influence on deficiencies arising during the implementation of change.*

*Der Hauptzweck dieser Untersuchung ist es zu überprüfen, ob die Einflussfaktoren auf die Wahl der Methoden des Wandels mit einer ungemessenen Einstellung (bzw. Defiziten) gegenüber dem Wandel in Zusammenhang stehen. Eine Kombination aus qualitativen und quantitativen Forschungsansätzen wurde verwendet. Die Daten wurden durch halbstrukturierte Interviews und Fragebogen gewonnen, und dann mithilfe von Faktorenanalyse und Mehrfachregression verarbeitet. Basierend auf den Forschungsergebnissen können wir feststellen, dass es keinen direkten Zusammenhang zwischen der Wahl von Methoden des Wandels und den Defiziten in der Durchführung von Wandel als Ganzes gibt. Jedoch haben zwei Dimensionen der Methodenwahl einen positiven Einfluss auf Defizite, die bei der Durchführung des Wandels entstehen.*

*Key words:* Change management, management, change methods

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## 1. Introduction

The extensive changes in business operations, which are the result of globalization, the development of new technologies and the escalation of market competition, require companies to adopt new ways of responding to challenges from the environment. In order to improve their competitive position, and thus to increase business successes, management introduces changes. Changes to companies can originate from spontaneous, intuitive management measures, as is possible in simple companies and in stable external environments (Češnovar 2003). In more dynamic and complex external and internal company environments, however, it is more appropriate to introduce a deliberate and formalized process of change, which is known as the method of change. Such approaches foresee a range of various measures or steps which management must implement in the company in order for the changes to be successfully realized and for their positive consequences to be preserved in the long term. Following the research studies of the consultancy firm Bain & Company (Rigby 2001), which in the year 2000 comprised 451 world companies in North and South America, Europe and Asia, it was found that the companies studied were using on average 10 different methods of change out of a range of more than 65. Here it is recognized that the methods of change are situationally or contingently conditioned, which means that their success is dependent on the organization's operating environment, type of organization, current phase in the organization's life cycle, culture of the organization and style of leadership (Nohria 1996; Rigby 2001).

Although numerous professional articles and papers have been presented at conferences on the advantages of individual methods of change, there are unfortunately still relatively few scientifically based research studies which would advise top management on matters such as: which method in the given circumstances is the most suitable, what the positive and negative effects of a particular method may be, which approaches are complementary and which are exclusive, what forms of initial knowledge are required and, last but not least, what the suitability of an individual method is with regard to the existing culture of the company's internal and external environment (Češnovar 2003). The correct choice of the method of change enables the company to recognize and utilize its core capabilities and thus to improve its business success, while an inappropriate choice may lead to over-use of resources and a consequent reduction in the financial success of operations, a deterioration in the work climate and, in extreme instances, even to the company's collapse (Kotter 1996).

When there is a lack of information which would enable the management, in given circumstances, to make a more reliable choice, the non-critical selection of the method of change represents a potential danger for the company. The flood of diverse methods of change which various management gurus, consultancy firms and sellers of information technology recommend are usually motivated

by the aim to increase their own earnings and are offered as “fix-all” solutions. What is more, these dubious recommendations most often arouse among the top management inappropriate expectations, which are then further stimulated by the ever higher expectations of investors and the more rapid tempo of business operations (Mintzberg 1996; Porter 1996).

In practice, the methods which promise to management the achievement of the desired future, with the least effort and in the shortest time, are better accepted than those which demand greater effort and more time. For top management, therefore, it is critical that they know the basic application laws of methods of change, which will enable them to distinguish between methods useful for their company and those which are merely transitory fads, and hence prevent them employing unsuitable methods. This thesis is substantiated by the research findings of the Harvard Business School (Nohria 1996) on the use of approaches towards change among 100 American companies, in which as many as 75% of the respondents declared themselves dissatisfied with the effects achieved.

This is even more important if we consider management in the so-called post-transition and transitional economies. During the transition from one economic, political and social régime to another many laws, rules and economic conditions are radically changed (McKenzie 2000; Chiaburu 2006). As Tan and Litschert (1994) point out, the transition from a planned to a market-based economy changes fundamental managerial assumptions, criteria and decision making approaches, and represents a genuine transformation of the business. The transition from a central planning regime to a financial and administrative independence and autonomy together with tremendous pressure from powerful foreign multinationals and rapidly increasing level of business competition forces management to learn and change quickly (Peng/Heath 1996). On the other hand, management in transition economies has an even weaker starting-point for making the optimal choice, since the methods of change are mainly taken over from environments that are politically, economically and culturally different (Dubrovski 2007).

The basic purpose of our research is to study which factors influence the choice of methods of change and if these are linked to deficiencies presented in the change process. We believe effectiveness of change is influenced by the change method selected as well as by deficiencies in its implementation. Based on the above supposition, influence factors in change method choice have at least an indirect impact on change outcomes through the change method applied. However, if influence factors in change methods choice are directly linked to the deficiencies in change method implementation, then their importance is even greater and understanding them can significantly increase the probability of successful change. As over the last two decades companies in transition economies were under more pressure than Western companies to employ different change methods, we believe that answers to our hypotheses can be best

found by doing research within an industry in a transition country such as Slovenia in the period 1995 – 2005.

The article is divided into four parts. The introduction is followed by a theoretical description of the factors which influence the choice of individual methods of change in part two. This is followed by an empirical section in part three comprised of a description of the research, analysis and discussion of the results. The fourth and final part is the conclusion, in which the main results of the research are summarized and guidelines are proposed for comparable studies in the future.

## 2. Literature review

As is stated in the literature from the field of change, each method of company change is optimal in different circumstances, and its selection is influenced by many factors in a company's internal and external environment (Currid 1994). Since a company is a political entity composed of interests of diverse participants from the internal and external environments, in selecting the method of change consideration must be given to their relation to the mode of change of the company (Bertoncelj/Kovač 2007). Arising from the stakeholders' interests are the company's aims, which must be harmonized with the aims of the particular method of change. This in turn requires understanding of the existing structure, processes, systems and culture of the company itself. When the management, in choosing the method of change, makes its decision on the basis of unsuitable factors, there exists the danger that it will select an inappropriate method of change and thus cause material and non-material damage to the company in the final phase.

We have defined the factors in selecting the method of change in the first phase on the basis of the literature about change management, organization, and strategic management. The factors thus defined were then checked by means of a semi-structured interview which we conducted with four directors of medium- and large-size construction companies in Slovenia. Owing to limitations of space this interview is not described in full detail in the article. On the basis of the analysis of the professional literature, we divided the factors in the selection of method of change into eight groups, as presented in Table 1.

In respect of changes in the environment and the loss of government support and direction, firms in the transition economies of the CEE have found themselves in the position of different internal limitations (i.e. this suggests our Group 8 factor: Company resources) as for example, limited resources, unqualified staff, unchanged core values, heterogeneous ownership, immobile structures and inadequate control systems, as well as external limitations such as growing foreign competition, new trade and supply structures and strong unions (Blazejewski et al. 2003). At the same time their markets were aggressively

attacked by international competitors (Chadraba/Springer 2008). These were all good reasons to look around and select the best possible method of change or a mix of them.

*Table 1. Group of influence factors in the choice of method of change*

Group of factors	Factors of selection
1. Dynamic characteristics of the external environment	Predictability of environmental influences Complexity of environmental influences Degree of newness of environmental influences Speed of environmental influences
2. Influential stakeholders in the external environment	State and society Customers Suppliers Owners
3. Company philosophy and aims	Concept of the company's response to environmental influences Threat to company's aims and needed time for response Harmonisation of method with company's aims Aims of method of change
4. Leadership structure	Characteristics of the leadership structure Direction of implementation of changes Level of involvement of operational level employees in implementation of changes Inclusion of management in implementation of changes Competence for decision making
5. Characteristics of change process	Scope of process of change Course of process of change
6. Management systems	System of rewarding Information system and technology
7. Company culture	Company culture Anticipated resistance from the internal environment Degree of risk of method of change
8. Company resources	Use of company resources Available knowledge and experience Time required for introducing change

Generally the aim of organizational change is an adaptation to the external environment (Leana/Barry 2000) or an improvement in performance (Boeker 1997). Regarding companies in transition economies, both of the mentioned aims are very important. As Brada (2003:55) says “the success of the transition in East Europe depended on the ability of the former state-owned firms in the region to increase the efficiency with which they employed resources and to

conform to the dictates of the market". Only if productivity, profitability and competitiveness at the firms' level improved could state product grow, income increase and integration into the global economy begin (Brada 2003). However, most firms in the transition economies of the CEE decided to go for evolutionary, incremental, or first order changes by short-term adjustments to outputs and inputs. Only fewer firms decided on strategic, transformational, or second order changes by strategic adjustments (i.e. this suggests our Group 3 factor: Company philosophy and aims, and our Group 5 Factor: Characteristics of change process). Nevertheless, as Stütting et al. (2003) confirm, these short-term adjustments could effectively influence their ability to implement bold long-term strategies for survival and growth.

As political and economic changes were quite similar in the different transition economies, also the path dependence of the firms' responses to transition were very similar (Brada 2003). Effective short-term responses which included changes in the firms' marketing function, decision-making processes and information systems, human resource development and corporate governance were critical for getting access to outside funds and other vital resources such as skilled managers and workers (Likar et al. 2008). Irrespective of the scope of changes made, what was very important for the firm's ability to change was the relationship with local authorities as well with new employee shareholders (i.e. this suggests our Group 2 Factor: Influential stakeholders in the external environment). Good relations with local authorities, especially where there was a high risk of economic and social downfall, were sometimes an indirect source of extra allowances due to the desire to keep firms operating. Also vital to the success of firms' changes was the effective division of labour between managers and the various boards that formed the organs of corporate governance and where employees had their own representatives (Prašnikar/Gregorič 2002; Orazem et al. 2005). Where it was the management of the firm who devised strategies and took care of the difficult decisions regarding day-to-day operations, the probability of success was higher than in other firms where this was not the case, even if some managers were not up to this task and made some serious business mistakes for different reasons (i.e. this suggests our Group 4 Factor: Leadership structure). The power held by employee shareholders could prevent or at least was sufficient to delay needed workforce reduction, organization values change, and a new organization and marketing approach (i.e. this suggests our Group 7 Factor: Company culture).

On the basis of these eight defined groups of influence factors and following the semi-structured interview, we have drawn up thirty factors which influence the choice of method of change as presented in Table 2.

The first three factors represent a response of the company to the influence from the external environment. According to Ansoff (1990), the company's choice of mode of response to environmental influences depends on the characteristics of

influences from the external environment on the company and on the consequent endangering of the company's aims, in which important factors are the unpredictability, complexity and innovatory degree of the external influences.

*Table 2. Influence factors in the choice of method of change*

Factors in choice of method of change
1. Intensity of changes in the environment.
2. Availability of time for the company to respond to environmental influences.
3. Company's failure to attain its set objectives.
4. Company's available resources (financial, human, material).
5. Company's available knowledge.
6. Presumed resistance to changes.
7. Fit with company's aims.
8. Fit with strategies already being conducted by the company.
9. Fit with methods of change already being used by the company.
10. Company culture: values, habits, customs, behaviour, norms of employees.
11. Culture of the social environment: relation towards changes, entrepreneurial spirit, risk taking.
12. Employees' interests.
13. Top management's interests.
14. Syndicates' interests.
15. Buyers' interests.
16. Suppliers' interests.
17. Owners' interests.
18. Bank creditors' interests.
19. State interests.
20. Wider society's interests.
21. Time required for introducing changes in the company.
22. Resources required for introducing changes in the company.
23. Changes in the company's top management.
24. Changes in power relations within the company's business-functional units.
25. Familiarity with methods of change on the part of the company's top management.
26. Top management's transitional experience (negative, positive) with the introduction of changes.
27. Popularity of the method of change in the company.
28. Popularity of the method of change within the branch.
29. Recommendations by the professional public.
30. Anticipated usefulness derived by the company from implementing the method of change.

The various methods of change require different use and mix of the company's resources (financial, human, material, and knowledge). Consequently, the choice of method of change is highly dependent on the company's disposable resources (Porter 1996). Too great a difference between the existing and required forms of knowledge needed for introducing the method of change may become the generator of resistance against the changes, and therefore a planned approach must be taken in bridging the gap (Blanchard 1997). Resistance to change can be also a result of threatened benefits and security, fear in face of the unknown,

professional insecurity, and a different ordering of power sources (Robbins 1991). Successful introduction of change requires timely recognition of the various forms of resistance and their bearers as well a level of fit with the company's existing aims and strategies (Tavčar 1999).

While some individual methods of change are mutually complementary, others may be exclusive. What is important for top management is to understand the essence of the approach so they are able to choose methods that are mutually complementary (Rigby 2001). Related to this is inappropriate and enforced changes in company culture that may be of far greater damage than of use. Knowledge of the key characteristics of the company's culture is, therefore, one of the more important elements in the choice of approaches (Schneider 1994). Not only the company's culture itself but also the influence of the culture of the social environment on the choice of approaches is reflected in the relation of the environment towards individual elements of the approach, for instance the relation towards radical changes, fellow-beings, and also risk-taking (Tavčar 1999). In short, introduction of the method of change is more effective if it is consistent with the prevailing social norms of the internal and external environment.

A crucial influence on the viability of the changes is exerted by the interests of the internal (employees, top management, syndicates) and external (buyers, suppliers, owners, credit banks, the state, wider society) stakeholders, who must be at least mutually harmonized as the systems theory of organization suggests (Kast/Rosenzweig 1985). According to the research studies of the consultancy firm Bain and Company (Rigby 2001), the interests of the external environment represent the second most frequent factor influencing the choice of method of change. The interests of external participants are important mainly in cases when the changes reach beyond the company's borders (Johansson 1994).

Introducing changes requires time to be fully effective. The time needed is, among other considerations, dependent on the scope of the changes and on the state of development of those elements of the company that are intended to be changed by introduction of the method. Furthermore, the way in which the company responds to external challenges also depends upon the time it has available to introduce the changes (Ansoff 1990).

Key responsibility for the company's choice and use of the method of change lies with the top management, who must have a sound knowledge of the internal and external environment of the company as well of the change method per se. In addition to the past experiences (negative and/or positive) derived from introducing changes, the top management must also be the prime actor in the process of change; one who is capable of drawing together the influential participants from the company and of transforming the process of change into a process of joint learning (Mintzberg 1996). Due to the lack of information on methods of change, top management frequently looks for models among

comparable companies or by benchmarking the top companies within the industry. Together with neglecting knowledge of the key characteristics, the choice of approach is frequently conditioned by its popularity (Grint 1997).

In the end the basic purpose of the change process is to improve the company's own attributes and to achieve greater business success. In the research conducted by the consultancy firm Bain and Company, the choice of approach to change was greatly influenced by the subjective estimation of the future usefulness of implementing the approach (Rigby 2001).

Making changes in a company is a risky and demanding process which, in order to be successfully implemented, requires regular involvement of the executive management, great effort and considerable time invested by middle management, and the regular inclusion of external consultants - all of which is further reflected in considerable use of the company's resources. On the basis of the literature studied and for the purposes of quantitative research, in the text that follows we have outlined 21 potential deficiencies or errors that can be made by management when introducing and implementing individual methods of change. The list and description of the deficiencies is given below:

1. Introduction of method of change with inadequate knowledge of its basic characteristics

Introduction of the method of change without knowledge of its basic characteristics is one of the most frequent errors of top management. It is caused by their being overburdened with everyday events, and having too little available information on the approaches and on the popularity of individual approaches (Huczynski 1993; Grint 1997).

2. Inadequate knowledge of the business process or function which is being changed

Inadequate knowledge of the entire business process which is being renewed results from time pressure in implementing the approach, introducing too many approaches, and lack of knowledge about the demands of the approach (Price Waterhouse 1995).

3. Over-extensive prior analysis of the existing state

Over-extensive prior analysis of the existing state is another of the most frequently mentioned errors in implementing re-engineering, and consequently results in overuse of resources and diminished readiness of the internal environment to accept change (Hammer/Stanton 1995).

4. Deficiencies in the planning phase of implementing the method of change in the company

Deficiencies in the planning phase of implementing the method of change derive from a lack of knowledge of the characteristics of the selected approach, the

features of the internal and external environment, and lack of time for introducing the approach (Mintzberg 1994).

5. Immediate introduction of the method of change without pilot testing

Particularly in cases of more far-reaching changes, it is recommended that pilot testing be conducted on the planned changes. This will enable detection of weaknesses and their elimination during the implementation of change (Currid 1994).

6. Unsuitable organizational climate during the process of implementing the method of change

An unsuitable climate in the company during the process of implementing change results from inadequate communication, threats to participants' benefits, large gaps between existing and required knowledge, a technocratic relation towards performers, and non-cooperation of performers in the process of instituting change (Poyssick/Hannaford 1996).

7. Inadequate communication between the leader of the change project and the top management

Participants should be informed immediately about interim goals achieved during implementation of the method of change, otherwise enthusiasm for the changes will be dissipated (Mintzberg 1996). Inadequate and deficient communication is one of the most frequent causes of unsuccessful implementation of change in a company (Argenti/Foreman 2001).

8. Unsystematic introduction of change with individual critical elements of the system remaining unchanged

Superficially introduced changes reduce the efficiency of the changes implemented, and may lead to the new system gradually relapsing to the former state (Robbins/Finley 1997).

9. Insufficient attention paid to implementation of the method of change

Due to the company's limited resources for full implementation of change, the responsibility for this must be entrusted to management, who are required to ensure the allocation of appropriate human, material and financial resources (Ho 1999).

10. Method of change in the company not being fully embraced

For every change in the company, there exists the danger that it may revert to its original state after some time. The changes, therefore, should be renewed for as long as it takes them to become a constituent part of the company's culture (Hersey/Blanchard 1988).

11. Method of change not becoming a constituent part of the company's culture (see Deficiencies 10)

**12. Insufficient managerial staff for implementation of the method of change in the company**

Economising on human resources, or a lack of the best staff to implement the method of change, greatly reduces the possibility of successfully introducing the approach (Hammer/Stanton 1995).

**13. Inadequate employee knowledge**

On account of the new requirements accompanying introduction of the approaches, inadequate training and further qualification of the employees can hinder/ successful implementation of the approach and generates resistance towards change (Corrigan 1997).

**14. Inappropriate company response towards changes that have occurred during implementation of the method of change**

A successfully implemented method of change requires timely awareness of the means and types of resistance, and of planned ways to overcome it (Robbins 1991).

**15. Delayed realization of planned changes, leading to loss of support for implementation of the method of change**

If the realization of the planned changes is too tardy, it may lead to loss of the support necessary for implementing the method of change. Likewise, if participants wait too long for the results of implementing the method of change, their support for the changes is considerably reduced. Therefore, it is necessary to introduce intermediate goals which, when achieved, reassure the participants that the changes are feasible and have positive effects (Hammer/Stanton 1995).

**16. Neglecting the needs of the people carrying out the method of change**

Neglecting the needs and wishes of the people carrying out the change reduces the motivation of the key bearers of change to ensure its implementation.

**17. Insufficient leader competence in introducing the method of change**

Introducing an approach without the appropriate resources and competences greatly reduces the possibility of successful implementation (Grover et al. 1995).

**18. Insufficient support from top management for the changes brought about by the method of change**

The approaches frequently bring about changes which radically and wholly transform the existing manner of work. If top management as initiator of the changes does not itself adjust to the new circumstances, it is difficult to expect change from the employees (Al Mashari/Zair 1999).

**19. Insufficient financial resources in the company to introduce the method of change**

Various approaches require different use of company-resources (financial, human, and material). What is characteristic for reengineering, in particular, is that the introduction of expensive information technology requires a substantial use of funds. For this very reason, the approach must be adjusted to suit the company's available resources (Porter 1996).

20. Unreal expectations in the company with regard to the results of the method of change

Popularization of the approaches, poor awareness of the internal and external environment, and of the approaches themselves on the part of top management, arouses excessive expectations regarding the outcomes (Grint 1997).

21. The complexity of the method of change is not suited to the company's level of development

The complexity of the approach should not be greater than the company's level of development. This means that the company must select approaches that it is capable of implementing in such a way that the benefits will be greater than the funds invested (Rigby 2001).

### **3. Data and methods**

#### **3.1. Aims and hypothesis of the research**

The aim of the proposed research is to determine the dependence between factors in the choice of method of change and deviations from theoretical norms when introducing change into companies (hereafter referred to as deficiencies).

The hypothesis, which will be tested in the research, is to ascertain whether the factors underlying the choice of method of change have a direct influence on the extent of the deficiencies defined.

#### **3.2. Sample framework**

Right from the beginning of the 1990s, the construction industry in Slovenia made a loss. It was only in 1998, and largely due to the flourishing motorway construction programme, that for the first time in a long time it was operating with a net profit. This branch of the industry is, however, still encountering an unfavourable business environment, the absence of mechanisms for financing small companies, and also the financial indiscipline that usually affects smaller companies and subcontractors in particular. In addition to fierce competition and huge increases in the cost of reinforced steel, non-ferrous metal products and oil, the constricting factors in the construction industry are compounded by the chronic lack and high cost (taxes, contributions etc.) of labour.

All the abovementioned factors indicate that within the Slovenian construction industry there exists a need for change and for adaptation to the new needs of

the business environment. This industry like many others is becoming increasingly global and open to competition. For these reasons we consider that this branch to be suitable for testing our hypothesis.

According to the data by the experts in the field of company restructuring in small companies where the owners are also the managers and executive management, the systematic application of change methods (Office for Macroeconomic Analysis and Development of the Republic of Slovenia 2006). For this reason we involved in our research only companies with more than 50 employees. In the register of the Chamber of Commerce and Industry of Slovenia (2006), 85 companies with more than 50 employees were registered on 1 January 2005 (Ramovs et al. 2006). Five out of these 85 companies were identified as companies “undergoing a bankruptcy procedure” and so were excluded from the research. This means the research study included the remaining 80 companies, which comprised the population sample.

Pursuant to Article 55 of the Companies Act (ZGD-1), which classifies companies into micro-, small-, mid- and large-size companies (Državni zbor Republike Slovenije 2006), the studied population in the research consisted of 18 small-size (22.5 %), 32 mid-size (40.0 %) and 30 large-size companies (37.5 %).

### 3.3. Questionnaire

The questionnaire comprised five groups of questions. By applying the Likert five-degree scale ranging from 1 (totally irrelevant) to 5 (very important), the respondents evaluated the importance of 30 factors affecting the selection of change methods for deficiencies within the change process. The design of factors was based on the interpretation of data obtained through previously conducted, semi-structured interviews. The first group of questions related to basic information about the company. The second group contained questions relating to the methods of change used during the period of 1995 — 2005. The third group enquired into the factors which influence the choice of method of change. The fourth group dealt with the deficiencies which top managers had detected in implementing change, while the fifth group covered possible undesirable consequences resulting therefrom. For the purpose of this article we will use and present only data obtained from the first, third, and fourth group of questions. In order to assess the clarity and understandability of the questions, before the research began the questionnaire form was piloted with the aid of a selected control group composed of six top managers, who were also later included in the research. Five members of the pilot group fully approved the content of the questionnaire and the comprehensibility of the questions; one member of the project group, however, noted duplication in two factors in the choice of method of change, and proposed that they be rationally conjoined. In

response to this accepted comment the form of the research questionnaire was adjusted accordingly.

The questionnaire forms were posted to the directors of the selected construction companies. After a lapse of 7 days, those recipients of the questionnaire who had not yet returned it were - for the first time - requested by telephone to participate in the research. These telephone invitations to co-operate in the research were repeated at intervals of 14, 21 and 28 days following distribution of the questionnaire.

Altogether, 74 valid responses were received, i.e., a response rate of 95%. In reviewing the structure of the received samples by size of construction companies, it can be concluded that participants in the research included: 15 small size companies (93.75% response), 30 medium size (93.75% response), and 29 large companies (96.66% response), the latter therefore yielding the highest response rate.

### 3.4. Representativeness of the sample

We divided the studied population into two groups (participating and non-participating companies in the research) and calculated the arithmetic means of the financial indicators of both groups for the period 2001-2005 (Table 3).

*Table 3. Arithmetic means of financial indicators of participating and non – participating companies*

Indicators	Participating	Non-participating
Net profit for the business year*	33,148.3378	82,268.5
Return on equity**	0.05950	0.32575
Equity-to-Assets**	0.29770	0.31500
Loans to Assets	0.95280	0.83000
Value added per employee*	4,785.61	4,449.25

\*Amounts are in 1,000 SIT

\*\*Amounts are in percentages

Source: iBON 2006

It is evident that certain differences exist between the two groups of companies, since the non-participating companies are better in four of the five indicators (net profit for the business year, net profitability of capital, financial independence, and degree of indebtedness) while the participating companies are better only in the value indicator of value added per employee. However, on account of the small number of non-participating companies (only 4), we believe it is not necessary to confirm the statistically significant differences by applying the Student's t-test. Although certain differences between the participating and non-participating companies do exist, we can confirm that the sample is representative since the deviations are not statistically significant.

### 3.5. Data analysis

The importance of influence factors is evaluated quite differently based on different company size: State interests are evaluated as the least important (2.31), while the highest importance was placed on the owners' interests (4.23), whose importance normally gains in merit with the growth of the size of the company they own. In mid-size companies, the top management's interests (4.27) turned out to have the most importance along with the owners' interests (4.20). In small-size companies, the employees' knowledge is represented as the most important feature (4.13), with the owners' interests also having substantial importance (3.87) along with the company's available resources (3.73) and the company culture (3.67). Generally speaking, the above factors in the selection of change methods are considered least by small-size companies.

*Table 4. Cronbach's coefficient ( $\alpha$ ) of a scale reliability*

Dimensions of factors in choice of method of change	Cronbach coefficient of reliability ( $\alpha$ )	Factors of choice*
1. Soft factors	0.675	f5, f6, f10, f11, f12,
2. Interests of primary external participants	0.696	f1, f2, f13, f17
3. Harmonization with company's strategic orientations	0.732	f7, f8, f9
4. Direct economic interests	0.678	f15, f16, f18, f20
5. Interests of secondary external participants	0.559	f14, f19
6. Non-attainment of established aims	0.755	f3, f4
7. Top management	0.757	f23, f24, f25, f26, f30
8. Popularity of method of change	0.671	f27, f28, f29
9. Required time and resources	0.514	f21, f22

\* see Table 2

Since the number of units included in the sample was too small, it was not possible to apply the method of Principal Component Analysis for the group of all thirty factors in the choice of method of change together, and they were therefore divided into two groups. We have named the first group of twenty-one factors as "general" factors. These must be respected by the executive management during the process of change since they are important from the point of view of general (strategic) assurance of successful implementation of change. The second group consists of ten "operational" factors, by means of which the management can operate, after prior analysis and assessment of the strategic factors of choice. With regard to content, the operational factors are

subordinated to the strategic factors and their significance is greater or lesser depending on which strategic factors were crucial for the management in deciding upon the method of change. Through the use of Varimax with Kaiser Normalization<sup>1</sup>, six dimensions were derived from the first group and three from the second group, together forming the nine dimensions of influence factors listed in Table 4. The Cronbach coefficient values are acceptable (above 0.60), except for two dimensions which we did not include in the subsequent calculation.

In order to study the influence of the dimensions of the factors of choice on the deficiencies, we applied the method of Multiple Regression Analysis.

*Table 5. Influence of dimensions of factors on deficiencies in implementing change*

Model	Dimensions of factors in choice of method of change	B*	Standard error	t-test	$\alpha$
1	(Constant)	.709	0.524	1.353	.181
	1. Soft factors	-.017	0.152	-0.111	.912
	2. Interests of primary external participants	.162	0.129	1.255	.214
	3. Harmonization with company's strategic orientations	.014	0.105	0.138	.890
	4. Direct economic interests	.055	0.126	0.439	.662
	5. Interests of secondary external participants	-.059	0.081	-0.723	.472
	6. Non-attainment of established aims	.131	0.089	1.473	.146
	7. Top management	.157	0.147	1.068	.290
	8. Popularity of method of change	.154	0.113	1.356	.180
	9. Required time and resources	.075	0.102	0.730	.468

\*Non-standardized beta coefficient

Our analysis was conducted by using two statistical regression methods: the Enter Method and the Stepwise Method, which take into consideration the criteria for the inclusion of individual independent variables into the regression model. Calculation by the Enter Regression Method (Table 5) indicated that none of the nine dimensions of factors had any significant influence on the deficiencies in implementing change. Application of the Stepwise Method, however, revealed that two dimensions of factors did have a positive influence on the deficiencies in implementing change. The difference between the results

1 Results obtained by applying Varimax with Kaiser Normalization are available upon request from the first author of the article.

obtained by use of the Enter and Stepwise methods is derived primarily from the fact that the dimensions are mutually independent.

Following the Stepwise Method, we obtained two models: included in the first (1) is an independent variable of Non-attainment of established aims, by which the first model clarifies the 14.80% variance of the dependent variable; with the second (2) model, in which we also include the dimension of Popularity of method, the proportion of explained variance rises to 21.70%. By including a second dimension (Popularity of method of change), on account of its considerable contribution to the clarified variance, we have opted for the latter model. As mentioned above, the Stepwise Regression Method (Table 6), revealed that two dimensions of factors in the choice of methods of change have a positive influence on deficiencies in the implementation of change, namely non-attainment of established aims ( $\beta = 0.23$ ;  $t = 3.15$ ;  $\alpha < 0.01$ ;  $\alpha$  effectively = 0.002); and popularity of method of change ( $\beta = 0.26$ ;  $t = 2.71$ ;  $\alpha < 0.01$ ; effectively = 0.01).

*Table 6. Influence of dimensions of factors of choice on deficiencies in implementing change*

Model	Dimensions of factors in choice of method of change	B*	Standard error	t-test	$\alpha$
1		1.960	0.281	6.975	0
	Non-attainment of established aims	0.278	0.075	3.696	0
	(Constant)	1.420	0.335	4.237	0
2	Non-attainment of established aims	0.233	0.074	3.151	0.002
	Popularity of method	0.259	0.096	2.706	0.009

\*Non-standardized beta coefficient

*Table 7. Regressional model of influence of dimensions of factors on deficiencies*

Model	r*	R2**	Adjusted R2	Standard error
1	0.399	0.160	0.148	0.60720
2	0.488	0.238	0.217	0.58217

\*Pearson's correlation coefficient.

\*\*Share of explained variance

Analysis has shown that these two factors together (Table 7) explain the 21.70% variability of the dependent variable - in this case deficiencies in implementing change.

On the basis of the above mentioned figures, it emerges that certain influence factors (i.e. 1. for the dimension of non-attainment of the established aims: non-attainment of the company's established aims and the company's disposable

assets; and 2. for the dimension of popularity of the method of change: popularity of the method of change within the company, recommendations of the professional public, popularity of the method of change within the branch) have a specific influence on deficiencies in implementing the methods of change, although on the basis of the results obtained, we are not able to confirm our hypothesis.

### 3.6. Discussion

It is a well-known fact that organizational change is a complex, nonlinear process (Coghlan 2000; Doyle et al. 2000) that directly and /or indirectly impacts and is impacted upon by groups' and individuals' initiatives and decisions. Thus, knowing the influence factors in change methods choice is crucial for better understanding management decisions, their interests, the risk they run and the coalitions that oppose or favour change. Understanding the influence factors can help us to relate the operational environment to the cognitive modelling (i.e. "cognized environment") of change that stakeholders develop according to their different values and interests (Aligica 2006).

Even if we cannot confirm the hypothesis based on our research results, it is interesting to find and explain reasons why the two identified dimensions account for 21.70% of variability in deficiencies during the change process, and why other influence factors are not directly related to deficiencies as the hypothesis presumes.

Our supposition regarding the first dimension is that organizations need to follow the old wisdom "do not fix what is not broken". We believe that the relationship between the first dimension and deficiencies is based on management's belief that changes within an organization are a sign of a healthy organization and competent management. In practice an organization does not always need change simply because current results do not align with established aims. A deviation from the established aims can be a result of many different transitory factors and after some time things can change for the better if the organization keeps its focus on the long term. However, as management is under an enormous pressure from the financial market to achieve positive results in each quarter, management often implements change initiatives simply to give a clear signal that they are able to fix "the problem". In many instances such initiatives lack clear objectives and they may obstruct and perhaps even destroy initiatives appropriately implemented in the past. In such cases it is not the market that has brought problems to the organization but management itself.

The second dimension is in line with evidence presented by many other authors (Mintzberg 1996; Porter 1996; Rosenzweig 2007) and also aligns with the institutional theory and the concept of isomorphism, on which the theory is based. Each organization is embedded in both its own internal institutional environment, which consists of the values, structures, systems and processes

established in the past (Meyer/Rowan 1977), and in an external institutional environment, a context shared with other organizations (Granovetter 1985). Management in situations of uncertainty is willing to follow any solution that has been applied by a majority of organizations in the perceived external environment or at least appears to lead to better results. This is realized by the desire of the organization to fit with its external environment, which can be achieved by conforming to institutional pressures from other organizations (Martinez/Dacin 1999) and stakeholders. This isomorphic tendency often leads to mimetic behaviour or uniformity in decisions and homogeneity in organizational form (DiMaggio/Powell 1983) and the change method applied.

This behaviour occurs as a result of the process of mimetic isomorphism, which includes three types of imitation: frequency-based, trait-based and outcome-based imitation (Haunschild/Miner 1997). Frequency-based imitation, as the purest form of mimetic isomorphism, includes the tendency to imitate practices that have been adopted by a large number of organizations (Lu 2002). Compared to frequency-based imitation, trait-based imitation is a more selective mimetic process in which an organization imitates a subset of the most successful organizations. There is an underlying belief that a decision used by a successful organization is likely to also have a positive outcome for the imitator. Like trait-based imitation, outcome-based imitation is a selective mimetic process based on the imitation of decisions and practices that generate successful outcomes. Mimetic process per se is not a problem if we put aside the strategic supposition that an organization needs to be different if it wants to have a sustainable competitive advantage (Porter 1996). However, mimetic behaviour is a problem when it means blindly following popular change methods. Uncritical application of different change methods that are not in line with the culture or other organization's characteristics can begin a downward spiral for an organization.

We presume that the main reason why our hypothesis was not confirmed is the two-phase nature of change method selection and change method application. We believe based on our results that in the first phase management is focused only on making an appropriate choice among different change methods. In this phase influence factors represent management's preferences regarding certain change methods, the way management acquires, processes, and uses information, and the decision criteria it uses. However, in this phase management is unable, because of their cognitive limits, to include participants, positions, actions, potential outcomes, and subsequent information when the change method is applied. In other words, influence factors are elements of the cognized environment used to make a choice among change methods and not to predict the future state of things once the change process is underway.

## 4. Conclusion

The methods of introducing change in companies in the majority of instances promise more than the actual effect of their application. The correct choice and implementation of the method of change can/will enable improvement in both the company's characteristic qualities and the achievement of better business effectiveness. On the other hand, the wrong choice can lead to overuse of resources, a reduction in the successfulness of business operations and, in extreme cases, possibly even the ruin of the company. In all this the factors influencing the choice of methods of change perform a critical role. Despite this, in the professional literature in the field of management of change these factors are rarely dealt with separately.

The results of the empirical research, in contradiction to the hypothesis posited, have revealed that only two dimensions of the factors in the choice of method of change have a positive influence on deficiencies arising during the implementation of change. This indicates that there is no direct correlation between influence factors in the choice of method of change and deficiencies during the implementation of changes.

It is our conviction that the results of the empirical research and the comprehensive survey of the characteristics of factors in the choice of methods of change contribute towards easier identification of potentially usable methods of change and choice factors that need to be applied, at least in the case of the construction industry. However, it is likely that on a broader scale this may also be true in the conditions of transition or post-transition economies. We should, nonetheless, point to the limitations of our research, so that future studies might extend the range of research to other industrial branches and to countries with different economic, cultural and political environments (Reber/Auer-Rizzi 2003). As well, quantitative methodology can be complemented by case studies which employ qualitative techniques to map out roles and interpersonal relations, and in which the focus is more on institutions, situations and events than on variables and regularities.

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