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MANAGEMENT MODELS OF CHANGES – THE EMPIRICAL STUDY IN SLOVAK COMPANIES

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Abstract. *Purpose* – Change management depends on the type and extent of the implemented change. The aim of the paper is to identify management model of changes in Slovak enterprises and to define conditions of effective change management for the prevailing type of changes.

Research methodology – The main method of the research was primary quantitative research via questionnaires. Outputs from the questionnaires were evaluated by statistical methods, pivot tables, and chi-square test.

Findings – Slovak enterprises apply functional approach to change management based on financial improvement. Mostly performed changes are operative. The success of changes can increase focus on improvement of internal processes, force field optimization and project elaboration via log frame.

Research limitations – The limitations of the research consist in a chosen quantitative method which doesn't enable discovery of a qualitative and psychological sides of managing changes and the research sample including mostly small sized enterprises in Slovakia.

Practical implications – The detected conditions of an effective change management can inspire the enterprises to increase the success by implementation of changes.

Originality/Value – New empirical knowledge concerning change management in the practise of Slovak enterprises, identification of the applied model by managing the changes and conditions for an effective management of changes.

Keywords: change, change management model, incremental changes, enterprise.

JEL Classification: M10, O3.

Introduction

Current changing business environment forces the enterprises to be able perform changes anytime. How to successfully achieve change during economic crises is being asked by many organizations (Ashurst & Hodges, 2010). Digital technologies are breaking down industry barriers, destroying long-successful business models making the traditional competitive advantage deteriorate rapidly by Rometty (2016), Weill and Woerner (2015). Change

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management as a managerial skill, has been marked as a critical competency in executive surveys (McCauley, 2006). The importance of change management in the present pandemic crisis was higlighted by several authors (Fusch et al., 2020; Hartmann & Lussier, 2020; Zainol et al., 2021).

Many authors have suggested methods to implement change; nevertheless, in recent years, it has become more recognized that one or even two methods to change cannot cover the vastly different change situations (Burnes & Jackson, 2011).

The general process for managing the change and types of changes were described by several authors (Hiatt, 2006; Kotter, 2012; Kubíčková & Rais, 2012; Ashkenas, 2013). According to Aljohani (2016), the process of change is driven by strategic considerations that include the need for improving business processes and integrating ways of working. Such considerations result in well-structured change management programs based on the assumption that the management of change would be done with limited interventions that are objective, linearly manageable and measurable in a short period of time. The research results of Yaqub et al. (2017) indicate that the relationship between the speed of strategic change and bottom-up learning is weakened by resource flexibility but strengthened by coordination flexibility; the inverted U-shaped linkage of bottom-up learning on the magnitude of strategic change is positively moderated by both resource flexibility and coordination flexibility.

Implementation of a successful change program is full of challenges. Achieving goals and positive effects of changes remains complicated. The success factors by leading the changes were examined in several studies (Zainol et al., 2021; Kotter, 2012; Dobrovič & Timková 2017; Sung & Kim, 2021; Biggane et al., 2017). Most of success factors are common and relate to human factor, learning and communication activities during implementing changes.

The changes focused on business processes and the management of changes based on process principles were emphasized in previous research of paper's authors (Sujová et al. 2018). Research results confirmed a positive influence of changes in business processes on corporate performance (Remeň & Sujová, 2018). To reach higher performance is possible by using modern process methods and indicators (Sujová et al., 2019).

Review of existing literature showed that methodology and process for management of individual types of change has been solved insufficiently. Moreover, research studies didn't examine the relationships between aspects of change management. Different impulses or goals of changes can lead to different types of changes. We suppose that each type of change has its own specifics, and it requires a different approach and methods. It led us to focus our research on finding the management and implementing changes in practical conditions of enterprises. Research findings also enable identification of best practises as success factors by managing changes in Slovak enterprises.

The aim of the paper is to identify the types of performed changes and approach to their management in Slovak enterprises and to define the conditions of effective change management for the prevailing type of changes.

The absence of the results of the examining the relations within aspects of change management and the aim to identify the management models of changes in Slovak enterprises were impulses to establish following research hypotheses:

Ha: There is a relationship between the main goal of implementing change and the enterprise size in Slovak companies

Hb: There is a relationship between the types of change and impulses to the implementation of change in Slovak companies

Hc: There is a statistically significant relationship between the types of change and the analyses taken to before implementing the changes in Slovak companies.

The research results extend existing knowledge in findings how management of changes requires different approach depending on impulses and type of change.

The proposed conditions of successful changes respect the most often changes implemented in enterprises and reflect best practises of Slovak enterprises. They are derived from the research results. The proposal represents the practical implication of the research for an effective management of the changes mostly implemented in small enterprises.

1. Literature review

There are many reasons and causes that can lead to changed conditions in the environment of a firm, and thus, to changes in the requirements or demand structures of customers (Abdulai et al., 2020). Some changes can, if not recognized and interpreted, lead to obsolescence of existing technologies and products, and thus, shake firms to their very foundations (Furukawa, 2013). Recent reports suggest that executives believe only one out of three planned organizational change interventions succeed (Hussey, 2000; Jarrel, 2017). To understand and minimize negative consequences, organizational change research has started to focus on the role of employees' change appraisals (Biggane et al., 2017).

McLaughlin (2017) and Kane et al. (2018) pointed out that the digital transformation represents an organisational change process. There is developing new ways to use technology to build innovation in products, services, and business processes. Authors Puaschunder (2019), Bowen and Morosan (2018), Liu and Zawieska (2017), Furman and Seamans (2018) note that the rapid development of new digital technologies such as artificial intelligence, robotic machines and quantum mechanics will bring about such changes that people will be replaced by machines and artificial intelligence in many parts of routine work in manufacturing, retail, banking, services, and hospitality.

The authors of Iakymenko et al. (2020) focused on examining change management strategies, procedures, and tools in different production environments. The authors Karasvirta and Teerikangas (2022) present a framework for assessing the maturity of organizations for societal change, research on the typology of change, change teams and individual changes involving different dimensions in eleven large Finnish companies. Zainol et al. (2021) pointed to existing indications that demonstrate a strong relationship between effective management and their significant impact on the successful management of the organization, as well as its practical application in the future direction of companies. Fusch et al. (2020) reaffirmed the importance of implementing change management in response to the COVID-19 global pandemic, in which business leaders must swiftly implement change and address breakthrough innovations by adopting new technologies, mitigating resistance to change, fostering a sense of stakeholder and impact on employees. Hartmann and Lussier (2020), states that these

changes are intended to protect the customers, employees, and communities in which the organization operates, as well as to transform new business as usual to grow and survive. The importance of supporting leadership and communication is a key success factor.

Kubíčková and Rais (2012) divide changes into incremental (gradual), radical (transformational, stepwise) and changes based on a combination of the previous two methods. Mikuš (2010) states that in an enterprise the process of change can take place in several ways: incrementally (gradually), transitionally (by leap) and transformational (forced).

The most well-known change model is the model according to Kotter (2012) based on an 8-point procedure, which must be implemented gradually and thoroughly. The implementation of the change goes through several phases at once, too fast a procedure or omitting one step can lead to a problem. Kotter uses Lewin's knowledge and divides the individual steps of his model into three phases – thawing (steps 1–4), shifting (steps 5–7) and freezing (steps 8).

Another model according to Hiatt (2006) – ADKAR is a practically oriented model of change, consisting of five consecutive steps: a*wareness of the need for change, desire and willingness to change*, k*nowledge of how to change, ability to implement change.*

The results of a study by Sung and Kim (2021) in the public sector showed that effective change management (organizational goal, transformational leadership, education training, participation, and communication) for public organizations can change the characteristics of members' implementation of change and ultimately achieve organizational innovation. Conversely, if change management activities are not carried out effectively, increasing their critical tendency to change, and increasing performance through future changes will be more difficult.

Dobrovič and Timková (2017) say that enterprises often face obstacles with change management such as inadequate planning of changes, absence of employee training, lack of time needed to adapt to implement the change, defending employees against change, an inappropriate culture of the company or not implementing checks and verifications into the process of change that can easily disrupt the smooth implementation of the change itself.

2. Materials and methods

Relevant data from the field of change management and information from enterprises in the Slovak Republic were obtained through an online research questionnaire. The core sample for the research was a database of 524 enterprises. According to the calculation of the minimum statistical research sample via the online application at www.raosoft.com, this is a representative sample with 92% confidence and 8% standard deviation. The questionnaire consists of 5 general, classification questions and 30 business-area management issues. The questionnaire was published online, and the data collection was in the first half of year 2018. Enterprises were also interviewed directly through employees and indirectly via e-mail communication. This paper analyses partial results of the questionnaire survey of Slovak enterprises focused on main aspects of change management.

Mathematical – statistical methods were used to examine and evaluate the interrelationships and individual factors in the management and implementation of changes. In the research, we used descriptive statistics for one variable in the analyses, such as absolute,

relative, and cumulative abundances, pie, and bar graphs. The evaluation of the questionnaire was carried out using the software program Statistica 12 CZ – Stat Soft. Inc. (2013), where the imported database was created in MS Excel. PivotTables for statistical analysis were used. A PivotTable is a method of organizing and analysing data by groups, categories, or classes that allows them to be compared. It combines the frequency distribution of two variables and represents an extension of a simple frequency table (Pacáková et al., 2018). The results of the analysis of PivotTables consist of selected statistical indicators, namely Pearson's chi-square and the level of statistical significance "p". Pearson's chi-square is the most common test of the significance of the relationship between qualitative variables. The test is since we can calculate the expected abundances (i.e., the abundances we expected if there were no relationship between the variables). The chi-square test of independence can be used to test the significance of contingency coefficients. The precondition for the use of the chi-square test is the rule that the expected frequencies must not be very small, less than 5. The level of significance (p-value) was chosen at the level of 5%. The comparison of found and theoretical frequencies is the basic idea of the χ^2-test of good agreement:

$$\chi^2 = \sum_{j=1}^{s}\sum_{i=1}^{r}\frac{\left(O_{ij} - E_{ij}\right)^2}{E_{ij}}, \tag{1}$$

where: E_{ij} – expected abundances,
O_{ij} – observed abundances.

Pearson contingency coefficient:

$$C = \sqrt{\frac{\chi^2}{n + \chi^2}}, \tag{2}$$

where: χ^2 – calculated test criterion,
n – total number of measurements.

It follows from the relationship that for the zero value of a square contingency, the Pearson contingency coefficient acquires a value of zero. Approaching the value of the contingency coefficient to the value of 1 signal an increasing intensity of the dependence between the characters A and B.

3. Results

In the research sample the most of enterprises were small sized (86%). Official Slovak statistics (Statistical Office of the Slovak Republic, 2021) in 2018 reported 98% of small enterprises, where 78% are micro sized up to 19 employees. It can be concluded that the research sample represents the Slovak business environment. The subject of activity was trade and services in 59% and production in 36% of surveyed companies. The most of companies have a domestic owner. In achieved values of ROE, 48% of companies reached values up to 4% and 22% companies up to 7%.

The chosen research results that enabled identification of change management models applied in Slovak enterprises are presented in following text.

From the results of the questionnaire survey in Figure 1, can be seen that the most frequent changes were made in the organizational structure by 49.81% of respondents and in

the production program by 41.22% of respondents. Production technologies and information systems were areas mentioned by respondents from 30.73–33.21%. In the areas of management systems and methods and business processes, respondents reported the implementation of changes ranging from 12.17% to 15.85% of respondents. 10.50% of respondents did not make any changes.

According to contingency analysis it was found out that the number of implemented changes is not influenced by enterprise size. It cannot be stated that several changes implemented in more areas depends on number of employees.

The results of the research presented in Figure 2 showed the types in which companies most often implemented changes in the last 10 years. Among the most common types of changes were gradual optimization changes in 53.63% of respondents. Emergent, unplanned but necessary types of changes made by 21.53% of respondents and the implementation of financial restructuring was reported by 21.18% of respondents. 19.27% of respondents did not make any changes. The smallest percentages reached the answers of the respondents with a transformational restructuring change of 8.56% and a radical reengineering change of 6.49%.

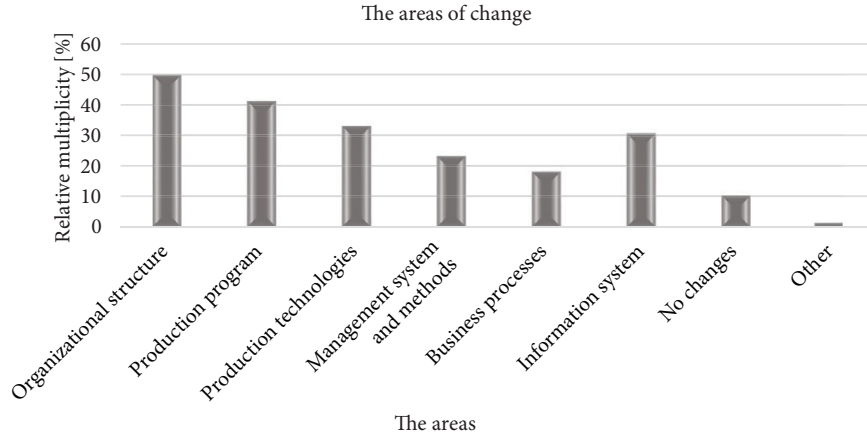

Figure 1. Areas of change (source: own processing)

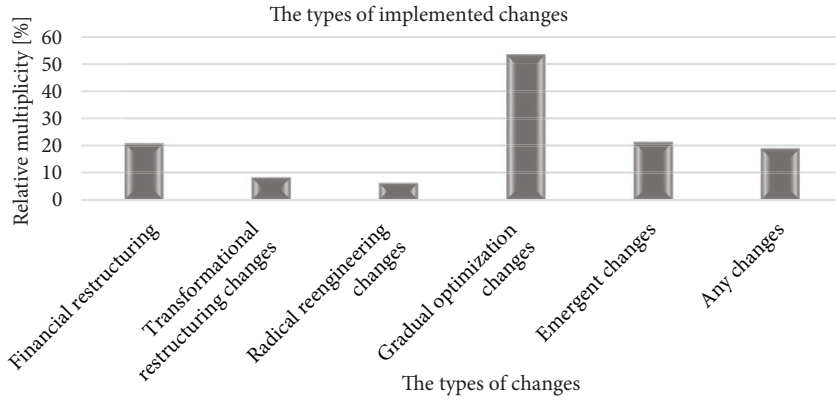

Figure 2. Types of changes (source: own processing)

Figure 3 shows the results of the examination of the main impulses and the reasons for the implementation of the change.

The most frequent impulses included a change in customer needs and requirements with 48.09% and competitive pressure with 42.37%. Impulses such as the existence of market opportunities were reported by 27.86% of respondents, financial problems by 22.14% of respondents, and legislative changes by 20.23% of respondents. Customer dissatisfaction, dysfunctional processes, and low efficiency and product quality were impulses by respondents ranged from 13.93–16.98%. Other impulses were given by 3.05% of respondents.

Figure 4 shows the results of question concerning the main goal of the change. These results showed that in the current period, in terms of increasing business performance, process changes are coming to the fore to increase customer satisfaction by 53.24% and to increase quality by 50.38%. The graph also shows that gaining a competitive advantage is an important

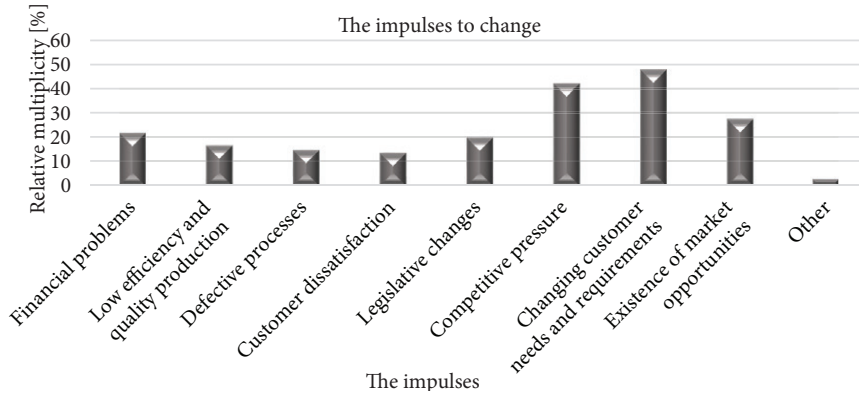

Figure 3. Impulses to change (source: own processing)

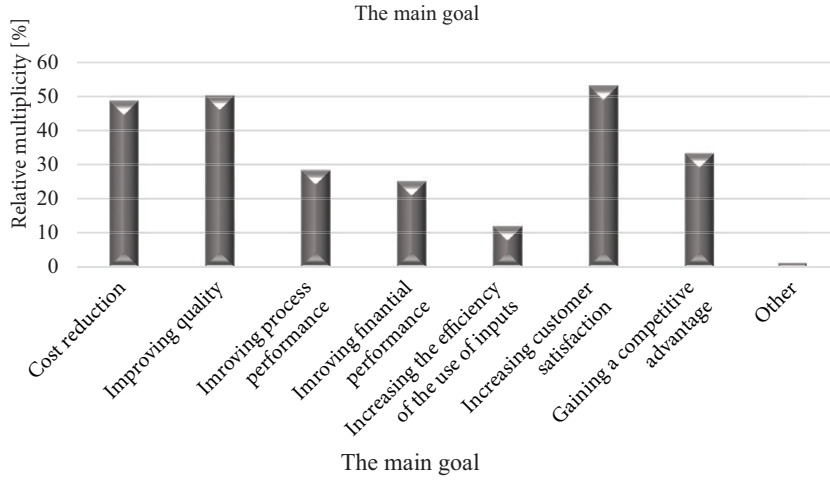

Figure 4. The main goal of the change (source: own processing)

goal of implementing changes, which was started by 33.59% of respondents. Other goals that companies consider important in the category of goals were to improve the performance of processes in 28.63% of respondents and to improve financial performance in 25.38% of respondents.

Answers to question "Which of the following steps do you take to implement changes in your business processes? were focused on the following eight steps: the first step – aanalyses of the initial situation, the second step – identification of necessary changes and analysis of the change request, the third step – defining the goal and identifying the necessary resources to implement the change, the fourth step – build a project team and an agent (team leader) change, the fifth step – preparation of variants of the change project and action plan for the implementation of the proposed changes, the sixth step – financial and economic evaluation of the proposed changes, the seventh step – monitoring the effects of change, and the eighth step – we do not perform any of these steps.

As can be seen from the research results in Figure 5, the largest percentage of the response was 34.35% in the second step in identifying the required changes and analysing the change requirements, and in the sixth step in the financial and economic evaluation of the proposed changes 34.16%. The third step – defining the goal and identifying the necessary resources for implementation was mentioned by 25.76% of respondents and approximately the same percentage of 23.28% of respondents stated that they use the first step – introducing the initial situation when introducing changes in business processes. 16.60% of respondents attach importance to the seventh step – monitoring the effect of changes. 11.07% of respondents answered that, among other steps, they pay attention to the fourth step – setting up a project team including an agent (team leader) of change and 8.21% of respondents that they are preparing variants of the change project and action plan for implementing proposed changes. 15.84% of respondents do not perform any of these steps. The average number of answers to this question with the possibility of multiple answers was 1.7, which means that companies took 1–2 steps in the implementation of changes.

Research findings on question concerning analyzes performed before the change in Figure 6 showed that 46.57% of respondents carry out an analysis of customer satisfaction and needs before implementing a change in its preparation. The financial analysis is performed

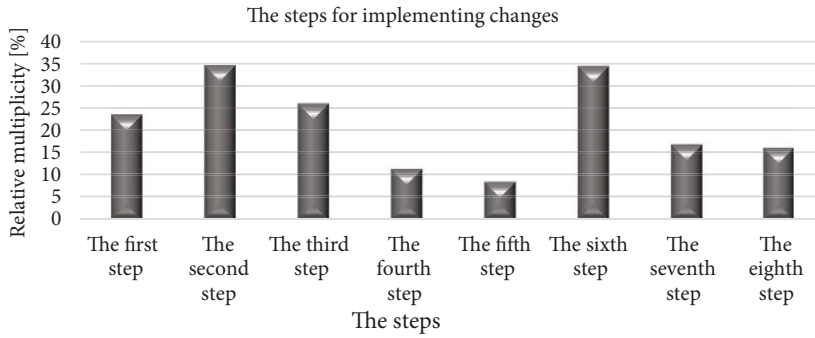

Figure 5. The steps for implementing changes (source: own processing)

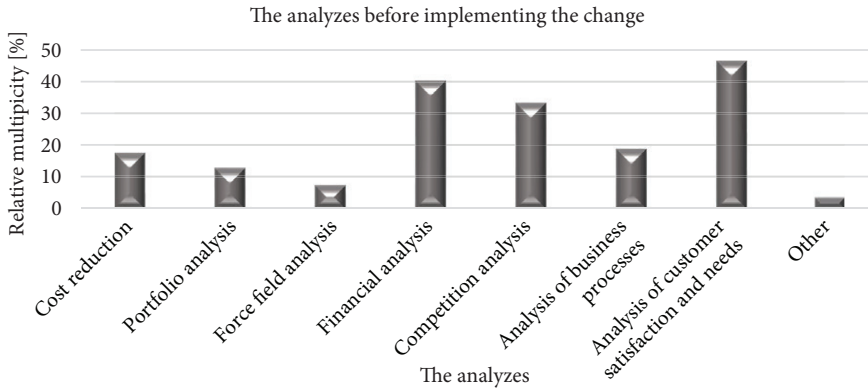

Figure 6. The analyses before implementing changes (source: own processing)

before the change is implemented by 40.27% of respondents and the competition analysis was provided by 33.40% of respondents. 19.08% of respondents analyze business processes. Lower percentages in the responses were achieved in the SWOT analysis of 17.75%, in the portfolio analysis of 12.98%, and in the analysis of the force 7.63%. The average number of answers to this question was 1.81, which shows that companies performed 1–2 analyzes before implementing the change in its preparation.

Monitoring of achieved effects of changes after implementation is provided by 360 enterprises, that is 68.7%. The used indicators by monitoring the effects of changes were financial indicators, customer satisfaction index in 40.46% and production productivity in 24% of surveyed enterprises.

In the second part of our research the relationships between variables were observed via pivot tables. The Table 1 analyses relationship between enterprise size and the goals of the change. From the results can be seen that in 61% of enterprises with 11–50 employees the main goal of the change was the cost reduction, and the second goal was the quality improvement. In the quality improvement were interested large sized companies with more than 250 employees, which was proved by 68.12% of answers. The improvement of process performance was the goal in the large sized companies the most. Generally, it can be stated that with rising number of employees, the call on goals of changes in particular areas were higher.

The Table 2 shows relationship between performed type of change and impulses to change. The results show that 58.82% of enterprises implemented reengineering changes because of changes in customer requirements, 41.18% because of competition pressure and 35.35% because of a market opportunity. The competition pressure was the main impulse to financial restructuration in 47.75% of surveyed enterprises. The existence of a market opportunity was the reason for realization of transforming restructuring change in the most of enterprises. It can be concluded that impulses to change affect the type of change performed in the enterprise.

Table 3 analyses the relationship between type of change and analyses which were carried out before change. In both cases it was possible to mark more options by answers. From the results can be seen that the most analyses before change by its preparing were carried

Table 1. Pivot table for enterprise size and goal of change (source: own processing)

Goal of change realization	Number of employees					SUM
	0–10	11–20	21–50	51–250	over 250	
Cost reduction	102 43.04%	40 61.54%	45 60.81%	38 48.10%	27 39.13%	252
Quality improvement	107 45.15%	32 49.23%	40 54.05%	39 49.37%	47 68.12%	265
Process performance improvement	60 25.32%	14 21.54%	21 28.38%	29 36.71%	26 37.68%	150
Improvement of financial performance	58 24.47%	16 23.08%	19 25.68%	20 25.32%	20 28.99%	133
Improvement of effectiveness by utilization of inputs	14 5.91%	8 12.31%	15 20.27%	13 16.46%	14 20.29%	64
Increase of customer satisfaction	123 51.90%	30 46.15%	35 47.30%	45 56.96%	45 65.22%	278
Achievement of a competitive advantage	83 35.02%	16 2.62%	21 28.38%	29 36.71%	27 39.13%	176
Other	5 2.11%	1 1.54%	0 0.00%	1 1.27%	1 1.45%	8
SUM	552	157	196	214	207	1326
Relative frequency	41.63%	11.84%	14.78%	16.14%	1.61%	100%

Table 2. Pivot table for type of change and impulses to change (source: own processing)

Impulses to change	Type of change						SUM
	Financial restructuration	Transformation change	Reengineering change	Gradual optimizing changes	Emergent necessary changes	No changes performed	
Financial problems	32 28.8%	13 28.89%	6 17.6%	56 19.9%	27 23.89%	17 16.83%	151
Low production efficiency and quality	25 22.5%	12 26.7%	13 38.2%	58 20.6%	19 16.8%	5 4.95%	132
Non-functioning processes	24 21.6%	11 24.44%	12 35.3%	50 17.8%	11 9.73%	6 5.94%	114
Customer dissatisfaction	22 19.8%	9 20.0%	9 26.5%	39 13.9%	15 13.27%	5 4.95%	99
Legislative changes	23 20.7%	11 24.44%	7 20.6%	69 24.6%	23 20.35%	17 16.83%	150
Competition pressure	53 47.7%	19 42.22%	14 41.2%	131 46.6%	35 30.97%	36 35.64%	288
Change in customer needs and requirements	51 45.9%	21 46.67%	20 58.8%	143 50. 9%	57 50.44%	41 40.59%	333
Existence of a market opportunity	29 26.1%	15 33.33%	11 32.3%	87 30.9%	34 30.09%	27 26.73%	203
Other	1 0.90%	1 2.22%	1 2.94%	1 0.36%	3 2.65%	1 0.99%	8
SUM	260	112	93	634	224	155	1478
Relative frequency	17.6%	7.58%	6.29%	42.9%	15.16%	10.49%	100%

out by gradual optimizing changes (562 answers), by emergent change (242 answers) and by financial restructuration (232 answers). An interesting finding can be seen by optimization changes, where the frequent analyses was SWOT analysis, typical for transformation or reengineering change. By reengineering change the most of enterprises carried out analyses of a customer satisfaction, competition, and internal processes. By financial restructuration the enterprises carried out the same analyses as by reengineering. Financial analysis was carried out by all types of changes. It can be stated, that by each type of change was used a combination of three analyses, which were dominated, and they affected the choice of type of the change.

The second part of Table 3 shows the expected frequencies and results of chi square test. According to calculated p-value, p = 1.94E-19 it can be stated that between type of change and analyses carried before change a significant statistical dependence exists.

Table 3. Pivot table for type of change and analyses carried out before change (source: own processing)

	Analyses carried out before change									
Type of change	SA	PA	FFA	FA	CA	AIP	CSA	Other	SUM	Rel. Freq.
Financial restructuration	22	18	12	59	47	20	54	0	**232**	17%
Transformation change	17	15	4	21	12	9	17	1	**96**	7%
Reengineering change	12	9	2	12	15	14	18	0	**82**	6%
Gradual optimization	63	42	18	139	100	69	129	2	**562**	42%
Emergent changes	23	18	9	58	40	36	56	2	**242**	18%
No changes	3	3	6	20	28	8	48	16	**132**	10%
Expected frequencies	p = 0.05 chi square test: 1.94E-19									
	Analyses carried out before change									
Type of change	SA	PA	FFA	FA	CA	AIP	CSA	Other	SUM	Rel. Freq.
Financial restructuration	24.1	18.1	8.8	53.3	41.7	26.9	55.5	3.6	232	17%
Transformation change	10.0	7.5	3.6	22.0	17.3	11.1	23.0	1.5	96	7%
Reengineering change	8.5	6.4	3.1	18.8	14.7	9.5	19.6	1.3	82	6%
Gradual optimization	58.5	43.8	21.3	129.0	101.0	65.1	134.4	8.8	562	42%
Emergent changes	25.2	18.9	9.2	55.6	43.5	28.0	57.9	3.8	242	18%
No change s	13.7	10.3	5.0	30.3	23.7	15.3	31.6	2.1	132	10%
SUM	140	105	51	309	242	156	322	21	1346	
Relative frequencies	10%	8%	4%	23%	18%	12%	24%	2%		100%
Expected value is lower than a real one					Expected value is higher that a real one					

Notes: SA – SWOT analysis, PA – portfolio analysis, FFA – force field analysis, FA – financial analysis, CA – competition analysis, AIP – analysis of internal processes, CSA – customer satisfaction analysis.

The results of managing changes in the most successful enterprises in the research (reached ROE over 10%) are presented in Table 4.

Table 4. Aspects of change management in enterprises with ROE over 10% (source: own processing)

Aspect	Items of aspect/relative frequency (%)						
Impulse	Financial problems	Low production quality	Non-functioning processes	Customer needs	Legislative changes	Competition pressure	Market opportunity
	8.6	*13.8*	*19.0*	*72.4*	*32.8*	*36.2*	*31.0*
Analysis	SWOT	Portfolio	Force field	Financial	Competition	Internal processes	Customer
	15.5	*17.2*	*25.9*	*36.2*	*48.3*	*60.3*	*53.4*
Type	Gradual optimization	Financial restructuring	Emergent change	Reengineering change	Transformation change		
	50.0	36.2	29.3	12.1	10.3		
Goal	Cost reduction	Quality increase	Higher process performance	Higher financial performance	Increasing effectiveness of inputs utilization	Customer satisfaction increase	Competitive advantage
	37.9	*63.8*	*37.9*	*19.0*	*32.8*	*69.0*	*32.8*
Area	Organization structure	Production program	Production technologies	Management systems	Business processes	Information system	
	51.7	48.3	29.3	20.7	34.5	44.8	
Steps	1st	2nd	3rd	4th	5th	6th	7th
	20.7	*51.7*	*29.3*	*8.6*	*12.1*	*36.2*	*13.8*

The results of the best enterprises in the research in Table 4 showed that this group of enterprises pay more attention to business processes. Non-functioning process was the impulse for change in 19%, the analysis of internal processes was carried out in 60.3% and the change was focused on business processes improvement in 34.5% of enterprises. It means that changes in more areas were performed through process improvement to reach different goals. Whereas in the sample of all enterprises the main impulse and goal of change the financial results were, in this part of the sample, the customer satisfaction (69%), quality increase (64%) and process performance improvement (38%) were the goals of changes. This group of enterprises carried out 2 analyses and at least 2–3 steps in process of change (identification of needed changes, goal and resources needed and economic evaluation of the proposed changes). As for analyses, the higher attention is paid to force field analysis, in 26% of enterprises. The most frequent change is gradual optimization in 50% and then financial restructuring in 36% of the sample. Emergent changes were performed in 29% of enterprises. The changes were carried out especially in organization structure, production program, information systems and business processes.

3.1. Management models of change applied in Slovak enterprises

Based on research findings it can be stated that Slovak companies perform smaller operative changes in crisis by financial problems as also by aim to improve performance and to

develop the business activities. Models of change management applied in Slovak enterprises can be identified as follows:

- *Incremental model*: series of gradual small changes focused on optimization.
- *Emergent model*: solution of critical financial situation and changes due to external market and legislative changes.

Process by management of changes in Slovak companies can be described as it is depicted in Figure 7.

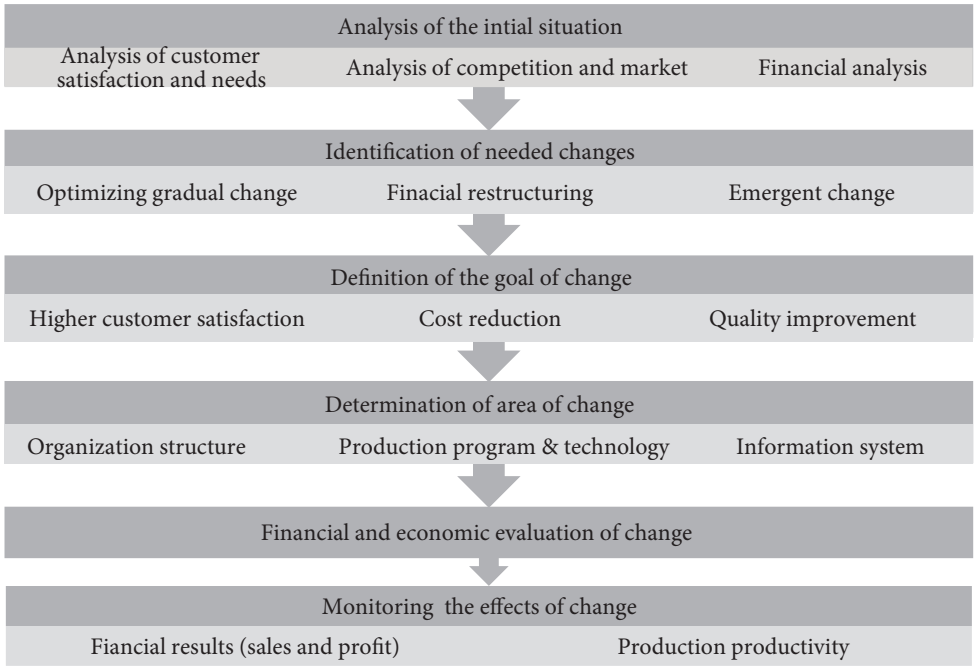

Figure 7. The process by implementing changes in Slovak companies (source: own processing)

The process presented in Figure 7 includes all steps by managing changes used in surveyed enterprises and the most frequent analyses, type of change, goals defined for changes, areas of performed changes that were found out in the empirical research. It is the real situation in Slovak enterprises in the field of change management. Some important parts for successful implementation of changes are missing in Slovak enterprises.

3.2. Conditions of the effective change management

Efficient, i.e., successful change management allows the company to acquire the ability for change, which in the current globalized market of constant change is considered a competitive advantage of the company. Considering the scientific knowledge and the results of Slovak enterprises involved in the research, conditions for an effective management of changes can be identified regarding operative, optimizing changes, that are predominant in Slovak enterprises as follows (see Figure 8).

– *Early capture of the signal to change* because the company needs to change faster than the surroundings and competition to maintain its competitive position on the market. Early impulse capture allows the use of systematic methods of searching for and anticipating changes (e.g. patching method based on constant monitoring of the conditions of the business environment).
– *Creating a favourable force field*, which means that the forces supporting change are stronger than the forces blocking change. To create a favourable force field, it is necessary to mitigate blocking forces by eliminating fear of change and overcoming resistance to change through intensive communication, awareness of upcoming changes and their objectives, education, and involvement of people in change.
– *Preparation and implementation of the change project*: change management must be understood as a project. Thorough project preparation and detailed analysis of the starting point are important. The application of the principles of process management and focusing on changes in business processes is highly recommended.
– *Monitoring the achieved effects of the change*: implemented changes need to be stabilized, compliance with changed procedures, processes should be constantly monitored and possibilities for further improvement can be designed. Monitoring can then create a corporate culture supporting changes.

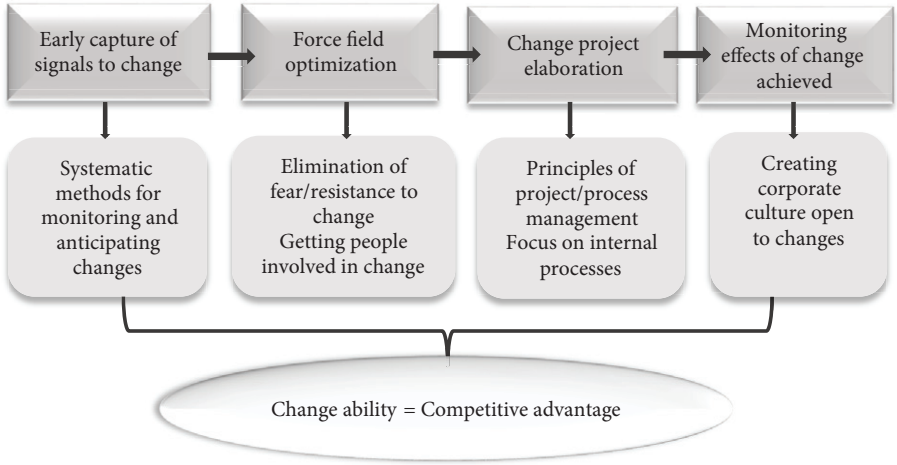

Figure 8. The conditions of an effective change management (source: own processing)

The key success factor by management of operative optimizing and emergent changes, the fast preparation of change is. The project of change must be simple, clear, and enforceable so that implementation of changes will be successful. An effective and recommended method for creating a model of change is the logical framework of the project, the so-called log frame. The logical framework describes the unambiguous link cause-effect, allowing a logical plan to be compiled very quickly.

4. Discussion

The research results can be summarized as follows. The enterprises carried out changes in two areas in average, the most frequent areas were organization structure, product portfolio,

production technology and information systems. Companies with the highest performance were focused on product innovations. 10% of surveyed companies didn't carry out changes at all, mostly small sized companies which achieved the lowest performance. As for the type of change, the prevailing changes were gradual optimizing and financial restructuration. Companies performed one or two changes at average. Reengineering changes were noticed in area of production, supply, and logistics.

The impulses leading to change were mostly external market factors concerning customer needs, competition pressure and a new market opportunity. The next frequent impulse was financial critical situation especially in companies with a low ROE value.

The enterprises stated 2 or 3 goals of change at average. Small sized companies aimed the cost reduction, middle and large sized companies preferred higher customer satisfaction and product quality.

By implementing the changes, the companies carried out two steps at average: identification of needed changes and financial evaluation of a change. The number of carried out steps corresponds the number of analyses carried out before change. The least of analyses were focused on processes and a force field. The type of analysis depends on type of change. It was statistically proved that each type of change required different analyses.

The weakness or default of Slovak enterprises by managing changes can be seen in negative attitude of managers to changes, absence of the force field analysis and its optimization. The second default is insufficient preparing the changes via projects. Only 8% of surveyed companies prepare variants of the change project and action plan for implementing proposed changes. It corresponds with results of Dobrovič and Timková (2017) who claimed that insufficient preparation of people to realization of changes as also inadequate planning of changes cause the failure in implementation process.

The next factor that can decrease the desired results of implemented change is attention to processes. Only successful Slovak enterprises with reached ROE over 10% pay attention to analysis and changes in internal processes. The results of previous authors' research also confirmed the importance of process approach to changes.

The research results allow to identify conditions of effective change management. Creation of a favourable force field including preparing people to change, and elaboration of the change project are the most important success factors. Compared to a study by Abdelouahab and Bouchra (2021), similar success factors for the implementation of change were identified and revealed.

The process of change according to Kotter (2012) and Hiatt (2006) models emphasize the basic common principles of involving people in change from the very beginning, working with their feelings of change and supporting change through good behaviour in communication and cooperation. These aspects of change management were not possible to evaluate due to quantitative methods used in the research.

The limitation of the research consists in a chosen quantitative method which doesn't enable discovery of a qualitative and psychological sides of managing changes. The second limitation is seen in the research sample which includes mostly small sized enterprises. The proposed model for managing changes will be useful for small businesses at most. The limitation also stems from the conduct of the research under conditions of Slovakia.

Conclusions

The change is an integral part of an existence and working of enterprises. Successful managers need to understand the need of change and take their realization into obligations.

General framework of managing changes was provided by several authors. However, the model for change management can be different in relation to type and range of the change. The research revealed relations between impulses, goals, type of change and methodology by managing changes. The findings brought new empirical knowledge concerning the models, weaknesses, and success factors by managing changes in Slovak enterprises.

Slovak business environment as also the research sample is represented mainly by small sized enterprises. Mostly performed changes are simple, operative that don't require using complicated methods and tools. More gradual optimizing changes carried out in enterprise led to successful implementation and a higher performance.

The research results have shown that Slovak enterprises apply mainly traditional, functional approach to management of changes based on financial results improvement. It appears to be remaining barrier of reaching more positive effects by change implementation.

However, if the enterprises are interested in achievement of a higher performance, they should pay more attention to internal processes and their innovations. This fact is followed by the enterprises reaching the highest performance. The success of changes implemented can also increase the force field optimization and better preparation of each change via project.

The contribution of the paper is new empirical knowledge of a change management from the practise of Slovak enterprises and identification of the applied model by managing the changes. The research findings lead to following recommendation for successful change management in Slovak SMEs: realization of several small gradual changes; focus on business process improvement; emphasis on preparing people to change and creation of a positive force field; monitoring the situation and effects after change.

The detected conditions of an effective change management can inspire especially the small sized enterprises to increasing the effectiveness of a change management and the success by implementation of changes.

To overcome existing limitations of presented research described in discussion part, the future research will be focused on qualitative factors by leading the changes using appropriate qualitative research methods, and a research sample will be extended to all sized enterprises evenly and to more countries.

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Author contributions

AS conceived the study and was responsible for the design, development of the data analysis and data interpretation. LS was responsible for data collection and analysis. AS and LS wrote the first draft of the article.

Disclosure statement

Authors declare that they have no competing financial, professional, or personal interests from other parties.

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