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The impact of the organisational structure and project organisational culture on project performance in Slovenian enterprises

ABSTRACT

Analyses of completed projects show that a significant number of projects exceed the planned time and costs, consequently reducing the benefits. Among many causes of project failure it is widely recognised that organisational culture has an impact on project performance. The goal of the research presented in this article was to identify the level of project organisational culture in Slovenian enterprises. We also analysed the strength of the impact of the culture on project execution. The research was focuses on the top and line management's attitudes, and some other factors connected with managers' attitudes (following the internal regulations, respecting the project manager's formal authority). We also investigated the most common project organisation types and the correlations among the organisation, the culture and project performance. The research showed a high level of project organisational culture and high impact level of measured culture factors on project performance. A matrix project organisation is in use in two-thirds of the enterprises considered; and an increasing level of project manager authority in different organisation types positively impacts on several cultural dimensions and also has a direct impact on the project's performance.
Keywords: project, organisation culture, organisation structure

1 INTRODUCTION

The "information revolution" in the 1980s has since enabled progressive enterprises to increase their market shares: processes supported by information technology (IT) have been made faster, the Internet has enabled searches for cheaper suppliers around the world, computerised production technology has led to greater production with fewer errors, and sophisticated products with internal "IT logic" have become "hits" of the market. To survive, "slower" enterprises have also had to start introducing novelties in their operations. Due to learning from "pioneers", their business solutions were significantly better so they forced the previously more successful competitors to change yet again. Everything has started to improve more rapidly (knowledge, research, technology, methodologies, tools, products etc.). Thus, the growing quantity and variety of frequently changing factors in the environment are forcing enterprises into constant

adaptation through self-modification. While projects have proven to be the most efficient way of making changes and for introducing innovations, the number of projects in enterprises is constantly rising.

Unfortunately, many projects do not bring the benefits for which they were implemented. Analyses of completed projects show that a significant number of projects exceed the planned time and costs, consequently reducing the benefits. Research conducted in 1998 by "The Standish Group" showed that only 26 percent of projects initiated were completed successfully (www.pmmaturity.com). According to Jones (White, 2006), there is only a 65% chance that an IT project will meet the project participants' expectations, while Burke (2003) states that just 18% of IT projects are executed within budget, 50% of them exceeded the planned costs, while 30% of projects are so expensive that they are cancelled before completion.

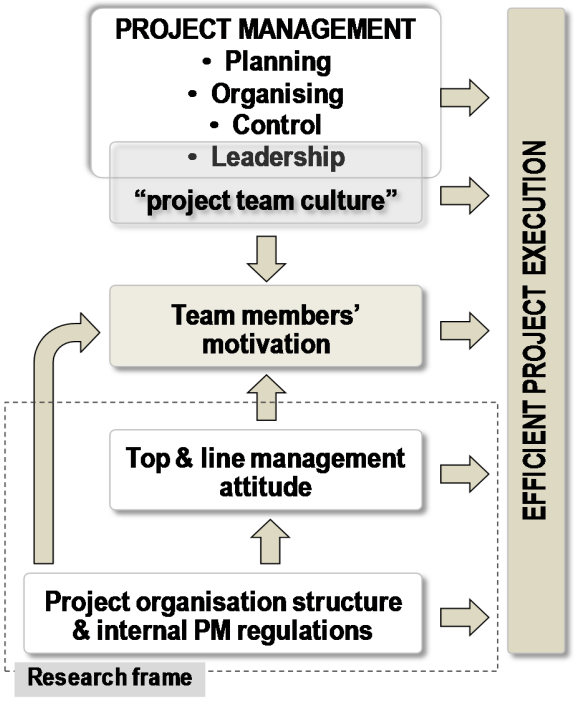
Authors indicate many causes of project failure, such as a poor definition of the objectives, an inadequate project schedule, too much uncontrolled change, insufficient control, a lack of resources, ineffective communication, an unclear role of the participants, a lack of top management support, too many teams focussing on technical solutions and neglecting the people (customer, user) etc. (Young, 2000; Andersen et al., 2004; White, 2006; The Standish Group in Young & Jordan, 2008).

In addition, the strong rise in the number of projects requires ever more employees to become involved, thus increasing the number of different relationships and frequency of contacts. The collaboration of project stakeholders basically represents a disturbance to regular work and therefore leads to short tempers and the dislike of such projects by line (functional) managers. If the roles, responsibilities, competencies and relationships between project stakeholders are not properly defined and carried into effect, even more conflicts could arise, resulting in less efficient project execution.

Slovenian enterprises have had to introduce a much bigger number of changes in the last 20 years because up until the 1990s they had fewer competitors and could even survive with less efficient operation and relatively obsolete products. Due to the mentioned weaknesses and less well organised work certain special "culture factors" can even obstruct project work today. First of all, project plans are made in haste, usually without proper risk management, with the result that improvisation is quite a common way of executing projects. The typical project organisation is a matrix, yet project managers (85% of them are entitled project leaders) are not "professional managers", but experts who perform many tasks and also co-ordinate the project. Despite the official internal rules governing how projects should be implemented, many stakeholders do not consider them. The consequences are the low level of authority enjoyed by project managers, the low level of support of line managers, and unsuitable project teams. All of these factors could be

subsumed within project organisational culture, which forms part of corporate culture.

Fig. 1: Important factors in effective project execution



It is widely recognised that **organisational culture has an impact on project performance** (Brown, 2008; Andersen et al., 2009). Many researches have been carried out and several dimensions of organisational culture have been investigated, e.g. the organisational strategy, structure, culture, systems, behavioural patterns and processes of an organisation, thereby determining the internal environment required for project management to be successful. A study of the literature reveals there are three types of organisational culture impacts:

- **corporate culture with an indirect influence** – employees' involvement, consistency (a strong internal culture, a concern with shared values), mission and long-term directions, adaptability to the environment (Kuo & Kuo, 2010); how decision-makers respond to ambiguity, complexity, and uncertainty (Shore, 2008); organisational direction, competitiveness orientation, decision-making rationale, cross-functional integration, communication philosophy, the locus of decision-making, people management style, flexibility, philosophy about people, personal competency, process and systems support, performance management (Morrison et al., 2008; Brown, 2008; Aronson & Lechler, 2009); a positive work environment, management leadership, results-oriented, commercial success, technical success, customer satisfaction (Belassi et al., 2007); strong

command and control capabilities or a more empowered work style (Moore, 2002); very lax "we are all friends here" or very formal "buttoned down" cultures (Snedaker, 2006); hierarchy, market, clan and adhocracy culture (Fong & Kwok, 2009);

- **project organisational culture** (a direct influence) – top and line management supporting/attitude, monitoring, prioritisation and project staffing (Kerzner, 2009, Andersen et al., 2009, Young & Jordan, 2008; Kearns, 2007; Tinnirello 2001; Doll, 1985); the organisational policies, procedures, rules, formal and informal roles (Cleland, 1999); support of departments in the pursuit of project goals, employee commitment to the project goals in the context of balancing them with other, potentially competing goals, project planning – the way work is estimated or how resources are assigned to projects, the performance of project teams – how managers evaluate it and how they view the outcomes of projects (Pinto, 2010); and
- **the "subculture" of the project team** (a direct influence) – effective communications, co-operation, trust and teamwork (Kerzner, 2001), a willingness to share ideas and problems among team members, social activities of the team, calling team members by first names or nicknames, the level of formality within the team (Cleland, 1999).

The latest researches around the world have mainly investigated the influence of the organisational culture of the base organisation (corporate culture) on projects. However, our research focuses more on the second viewpoint of organisational culture – top and line management's attitudes, and some other factors connected with managers' attitudes. To our knowledge, such research has not been undertaken in the last decade, especially in countries labelled "transition economy countries" in the 1990s, where the management of projects (in our view) is still less organised, where the project management profession has not been completely implemented, and where improvisation exerts a relatively big influence on work performance.

Therefore, **the goal of the research** presented in this article was to identify:

- the level of project organisational culture in Slovenian enterprises;
- which types of organisation have been implemented in Slovenian enterprises, and which organisational type is the most common;
- the impact of each type of organisation and cultural factors on efficient project execution; and
- whether efficient project execution depends more on the organisational culture or on the type of organisation.

We believe that, due to the ever greater number of projects in the future, more stress should be placed on project culture and structures will perhaps become less important or even more flexible because many employees will be members of many project teams for a short time. The issue discussed in the paper is especially important for top and line managers whose behaviour is more

crucial for the success of projects than they may be aware of.

This paper is organised in four sections. After the introduction we begin with a brief overview of the literature on project organisational culture and typical project organisational structures. In the next section we present the empirical research we conducted in Slovenian enterprises – the research method, the findings of the research (the level of the selected organisational cultural dimensions and the way projects are organised), the analysed impact of the researched factors on project performance, and a discussion of the results of the analysis. In the conclusion we outline the contribution to science and practice and suggest further avenues for research.

2 PROJECT ORGANISATIONAL CULTURE

2.1 PROJECT ORGANISATIONAL CULTURE

2.1.1 Organisational (corporate) culture

Organisational culture is one of the most influential dimensions of the work climate and consecutively the main driving force of a business. It is reflected in the way tasks are realised, goals are set and in how people are guided toward the achievement of goals. Culture affects decision-making, thinking, feeling and the response to opportunities and threats. It also affects how people are chosen for a particular task, which affects performances and decision taking. Culture is rooted in people and subconsciously influences their behaviour – it affects their performance and vice versa – the manner of these factors affects the culture. Informally, such culture can be described as follows: "That's the way we do it!" (Lipičnik, 1993) or "The way things are done around here" (Lewis, 1995). Culture is the different philosophies and approaches to doing work within an organisation (Moore, 2002).

Organisational culture has a number of underlying factors – it is formed by a set of **values, beliefs,** assumptions, common understandings, expectations, **attitudes, behaviours,** thinking, norms **and traditions** of the people in the company (Davidson, 2000; Yazici, 2009; Mobley in Kuo & Kuo, 2010; Hooijberg & Petrock in Fong & Kwok, 2009), and is also affected by ethnic cultures (Lewis, 1995). Culture also represents a person's attitudes arising out of their professional, religious, class, educational, gender, age and other backgrounds and people's capacity for learning and transmitting knowledge (Turner & Simister, 2000, PMBOK, 1987, www. maxwideman.com). It can be described by three levels: artifacts, espoused values, and basic, underlying assumptions (Eskerod & Skriver, 2007).

All of the mentioned dimensions of culture are shared by all members of an enterprise and guide how employees get work done. The organisational context of a culture serves as a foundation for

the methods of operation, an organisation's management system as well as a set of management practices and behaviours that both exemplify and reinforce those basic principles (Davidson, 2000).

2.1.2 Project culture

Project culture is one of the most influential factors of successful project implementation in enterprises and is part of the overall organisational culture (Skarabot, 1998). Project culture is the general attitude to projects within the business. Most projects do not operate in isolation; they have to operate within a business environment that should be complementary to the requirements of good project management. The culture affects strategic planning and implementation, project management, and everything else (Cleland, 1999).

Pinto (2010) reveals four ways organisational culture can affect project management. First, it affects how departments are expected to interact and support each other in the pursuit of project goals. Second, the culture influences the level of employee commitment to the goals of the project in the context of balancing them with other, potentially competing goals. Third, the organisational culture influences project planning processes such as the way work is estimated or how resources are assigned to projects. Finally, the culture affects how managers evaluate the performance of project teams and how they view projects' outcomes.

The most important issue is **top and senior management support** (Kerzner, 2001; Tinnirello, 2001). The lack of top management involvement is the primary challenge project managers felt was most deserving of their attention (Simonsen, 2007). Young & Jordan (2008) provide the following definition of top management support: CEO and other senior managers devote time to review plans, follow up on results and facilitate management problems.

The relationship between project management and **senior management** is equally important. A good relationship with executive management, specifically the executive sponsor, includes these factors (Kerzner, 2001):

- The project manager is empowered to make project-related decisions. This is done through the decentralisation of authority and decision-making.
- The sponsor is briefed periodically while maintaining a hands-off, but available, position. The project manager (and other project personnel) is encouraged to present recommendations and alternatives rather than just problems.
- Exactly what needs to be included in a meaningful executive status report has been formulated.
- A policy is in place that calls for periodic briefings.

Perhaps the most important task of top management regarding projects is to develop a mutually

agreed priority scheme for project screening and selection (Doll, 1985). That author focused on top management's involvement in projects to develop the management information system, but in our experience this issue is important across all kinds of projects. Top management decides whether projects will be executed, they establish the priorities, and they define who the project sponsors are.

Co-operative cultures require effective management support at all levels and the interface between project management and **line management** is critical. A matrix organisation is particularly important, where responsibility for the project is shared between the project manager and line managers (Levine, 2002). Effective relationships with line management are based on the following factors (Kerzner, 2001):

- Project managers and line managers are together accountable for the successful completion of a project. Line managers must keep their promises to the project managers.
- Project managers negotiate with line managers for the accomplishment of deliverables rather than for specific talent. Project managers can request specific talent, but the final decision on staffing belongs to the line manager.
- Line managers trust their employees enough to empower those employees to make decisions related to their specific functional area without continuously having to run back to their line manager.
- If a line manager is unable to keep a promise they have made regarding a project, then the project manager must do everything possible to help the line manager develop alternative plans.

Both the project and line manager can develop a mutually agreeable project culture and working relationship. There are four typical cultures (Kerzner & Saladis, 2009):

- co-operative – based on trust, communication, teamwork, and co-operation;
- competitive – each one tries to advance at the expense of the other;
- isolated – the functional unit creates its own culture, and the project manager must manage work according to that culture or risk alienating the line manager and the functional group; and
- fragmented – this appears in multinational projects and virtual teams.

Another important issue of project culture is the organisational policies, procedures, rules and strategies; the tools and principles of project work in the enterprise (Cleland, 1999; Kerzner, 2001). Its "**project management methodology**" must not simply be theoretical and found solely on pieces of paper; it must be converted into a world-class methodology in the way in which the corporate culture executes the methodology. Companies which excel in project management have co-operative cultures where the entire organisation supports a singular methodology.

People often strongly resist following a standardised process (Tinnirello, 2001). This is especially difficult in an environment where people have not been educated in the methods, and the project has been carried out for many years in an ad hoc environment. Employees also fear that such a process stifles creativity and the empowerment of people. However, standardisation enables the efficient and effective execution of project activities through consistency; it enables the better integration of activities because team members can see the interrelationships of their work with that of others; and third, it reduces rework because it enables the use of output developed in earlier projects. Regardless of how the organisation obtains a standardised process, the key is to develop or adopt one that people can agree on and that it is compatible with the **company's culture**.

According to Skarabot (1994), project organisational culture is best exemplified by the **position of the project manager** in the company and the attitude of employees to the project. The project manager's authority should depend on the level of the project; the manager of a project with a high priority should have similar competencies as line managers and should be paid as a manager. However, the informal role of a project manager could be even more important (Cleland, 1999).

Based on the theory presented above, we postulate:
H1: a **project organisational culture** provides for the more efficient execution of a project.

2.2 PROJECT ORGANISATIONAL STRUCTURES

To avoid or at least to minimise the number of potential conflicts related to project work, enterprises have established different types of organisations. The best known types are functional, matrix and projectised organisations. Each of them establishes different relations between project stakeholders, especially between project and line managers.

A definition of the different types of project organisational structures can be found in almost every project management book published in the last 30 years. In this paragraph I will briefly summarise some definitions. Since it is strongly connected with the project organisational culture, the formal and informal role of line/functional managers in a matrix organisation is particularly important. Therefore, this issue is described in more detail.

The functional organisation is the classical organisation and consists of purchasing, HRM, production, sales, the finance department etc. If a company starts such a project, this structure is unsuitable unless some changes are introduced. Employees from different departments are required to undertake additional project tasks, while the project's management is assigned to a person within the functional organisation. All project activities including management represent

additional tasks. The advantage of this solution is that nothing changes within the existing organisational structure by the introducing of such projects. The main disadvantage is that team members always give priority to their usual or functional duties. We can argue that this solution is appropriate in the case of starting a few projects.

In the case of a projectised organisation, the project is assigned to a group of employees who are organised within a new department. Members of the project team only work on project tasks so being occupied with other regular activities is no excuse. The project manager, with the same authority as line managers, is responsible solely for the project and there is no need for co-operation with line managers. Strong team work exists in the department. The main disadvantages are team members who are not fully occupied, the reduced connection of team members with the business functions, and the problem of employment after the project finishes.

The project matrix structure is a combination of the abovementioned structures. Every employee can carry out their regular activities within the business function and at the same time be assigned to the project to conduct some unique project activities. The member is thus subordinated to the line manager (for their regular work) and to the project manager. The matrix structure is characterised by the simultaneous presence of both project and functional components. These components are administratively independent, but interdependent in the execution of projects. This arrangement permits functional components to maintain an independent existence and to pursue their regular activities, while providing the specialised resources needed for the execution of projects. In general, the specialists remain permanently under the authority of the line managers but their services are lent out to the projects on a temporary basis in line with project needs. The functional components thus become centralised reservoirs of specialised resources.

The advantages of a matrix organisation include the more direct contact among different disciplines, the fact that people can work on a variety of problems, a strong technical base can be developed, and much more time can be devoted to complex problem-solving, and shared authority and responsibility. Yet, it has also some weaknesses: a two-boss syndrome and dual reporting, management co-operation is required, the balance of power between the functional and project organisation, a conflict of priorities amongst different projects (Dinsmore, 1993; Forsberg et al., 2005; Kerzner, 2003).

The project manager has total responsibility and accountability for the project's success. The functional departments, on the other hand, have functional responsibility to maintain technical excellence in the project. Each functional unit is headed by a line manager whose prime responsibility is to ensure that a unified technical base is maintained and that all available information can be exchanged for each project. Line managers must also keep their people aware

of the latest technical developments in the industry (Kerzner, 2003).

Three types of the matrix organisation are applied in practice. A weak matrix has many characteristics of a functional organisation with one important difference – a project co-ordinator is defined. One has little authority (co-ordinates different departments) but also fewer responsibilities – line managers are responsible for task execution and the motivation of employees. A strong matrix has many of the characteristics of the projectised organisation, and can have full-time project managers with considerable authority and full-time project administrative staff. While a balanced matrix organisation recognises the need for a project manager, it does not provide the project manager with full authority over the project (PMBOK, 2004).

The most important aspect for our research is the division of competencies among project and functional managers in different types of organisations. From functional across all types of matrix to the projectised organisation the competences of project managers increase, whereas the competencies of functional managers decrease. In the case of a low project culture some functional managers do not want to hand their authority over to project managers. In addition, their low support for a project can result in less qualified team members being delegated to a project, while their low level of interest in the project can also lead to the poor quality of the results connected with the profession that one's department covers.

Based on the theoretical research of motivation factors, we developed the second **hypothesis:**
H2: the **project organisational structure** impacts on the efficient execution of a project.

The research of the literature confirmed the lack of similar researches regarding a suitable organisational structure and a project organisational culture's influence on project performance. We found a few researches on project organisation conducted in the last ten years (although they did not research the same issues), so we had to identify the theoretical basics from the books. However, we did find a few articles focused on the impact of top management's attitude to project performance, yet we did not find any researches on the impact of line managers, even though Kerzner (2009) wrote a book on this issue. Moreover, as I wrote in the introduction already – in the last decade the role of informatics has become more significant and the number of projects has grown. We believe that similar researches should be conducted at least every ten years.

3 EMPIRICAL RESEARCH

3.1 RESEARCH METHOD

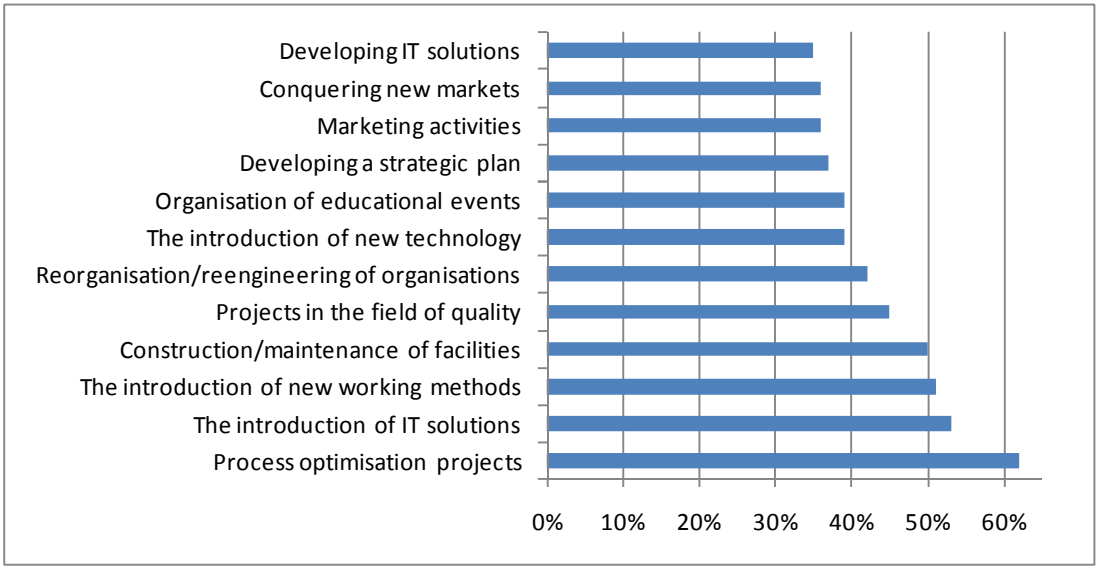
The hypotheses were tested against empirical quantitative research involving 137 Slovenian enterprises (the questionnaire was sent to 950 enterprises). The results collected in the Web questionnaire were analysed with a multivariate analysis using the SPSS V17.0 software. We analysed the acquired data with a multivariate analysis, specifically by determining the correlations and regressions. With the correlation analysis we verified whether the existence of a particular variables reduces (or increases) effective project implementation. By calculating a linear regression of individual variables we found the degree to which they impact on efficient project implementation. The integrated model and its interacting parts were checked with a multiple linear regression.

Demographics of the respondents:

- female: 25%, male: 75%;
- average age: 40 years (42% of respondents were between 30 and 40);
- the majority of respondents were university-educated (87%), 26% of them had an MSc or a PhD;
- the majority had some kind of project management training (96%); 33% had taken a course at the faculty, 16% had graduated in the field of project management, 11% had obtained an international certificate; and
- average years of experience: 10 years of project work, 6 years as a project manager.

We present the most repeated projects in the enterprises in Figure 2, and the type and size of the enterprises in Table 1.

Fig. 2: The most repeated projects in the enterprises



Tab. 1: Enterprises involved in the study

Types of enterprises		
Production companies	45	33%
Service companies	27	20%
Public administration enterprises	17	13%
Engineering / construction companies	16	12%
IT companies	9	7%
Other budgetary users	9	7%
Trading companies	7	5%
Financial institutions	5	4%

Number of employees		
less than 20	23	17%
20 - 50	10	7%
50 - 100	22	16%
100 - 500	39	29%
500 - 2000	32	24%
over 2000	10	7%

To identify the level of project organisational culture in Slovenian enterprises (the first goal) we have chosen project culture dimensions represented the second range of independent variables (Table 4). We used a five-level Likert scale and the respondents had to estimate the level of their culture dimensions:

- Top management attitude: 1 – they have no interest in projects, 5 – regular communication and monitoring
- Priorities of projects: 1 – priorities are not defined, 5 –each project has a priority to be considered
- Line management attitude: 1 – a negative attitude, 5 – they support projects
- Project management regulations: 1 – regulations are ignored, 5 – strictly followed
- Project manager's authority: 1 – competencies are only on paper, 5 – formal

competencies are put into force

Tab. 2: Project culture dimensions included in the research

Culture dimension	Definition
Top management attitude	Plan review, project monitoring and evaluation of the performance, problem facilitating, the role of project sponsors, rewarding the team after the project closes (Prioritising projects)
Clear priorities of projects	A definition of the priorities (business case, feasibility study…), team recruitment, sponsor selection, solving bottlenecks
Line management attitude	Supporting projects, staffing the project team (allocation of suitable and available employees), expert adviser, respecting project priorities
Projects follow the internal regulations	Process, decision-making, responsibilities and competencies, typical phases and milestones, documents
Respect of project manager's formal authority	Official vs. real competencies, formal and informal roles, position in the hierarchy, possibility of motivating project team members

The second goal of the research was to identify which types of organisation have been implemented in Slovenian enterprises, and which organisational type is the most common. The question was: "What is the most typical organisational structure in your enterprise" and the respondents had to choose from among functional, projectised, and three types of matrix organisation (weak, balanced and strong).

To identify the impact of each type of organisation and cultural factors on efficient project execution (the third goal), we first defined two efficiency factors: project delay and cost surplus. We used the ratio (%) between the baseline and the actual factors (indicated at the end of the project) and these became the dependent variables in the subsequent analysis. The respondents had to estimate the average final deviations of projects within their enterprises.

Tab. 3: Project delays and overbudget projects in Slovenian enterprises

	Time	Cost
Number of enterprises indicating a surplus	122 (89%)	119 (87%)
Average delay / overbudget	**20.8%**	**14.5%**
Standard deviation	19.2	14.2
Number of enterprises with a surplus over 50%	26 (19%)	13 (9%)
Number of enterprises with a surplus over 20%	67 (49%)	45 (33%)

The research showed that in almost 90% of Slovenian enterprises projects are executed with delays and overbudget costs (Table 3). On average, projects are prolonged in time by 20.8%, while costs are 14.5% overbudget.

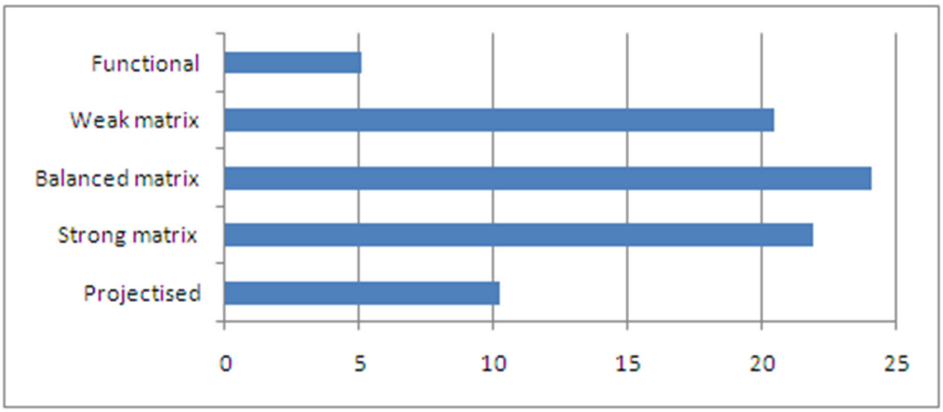
We first analysed the impact of the organisational and cultural factors with a correlation analysis. We verified whether the existence of a particular variables reduces (or increases) effective project implementation. By calculating a linear regression of individual variables we found the degree to which they impact on efficient project implementation. To confirm both hypotheses and to ascertain whether efficient project execution depends more on the organisational culture or on the type of organisation (the fourth goal), the integrated model and its interacting parts were checked with a multiple linear regression.

3.2 RESULTS AND DISCUSSION

We found that all types of project organisational structures are used by Slovenian enterprises (Figure 3), and a matrix organisation is used by two-thirds of them.

The correlation showed that no particular type has a prominent impact on effective project execution. We also tried to join all three types of matrix organisation in one, and again there was no correlation. We believe this is connected to the less well defined position of project managers in different enterprises (and types of structures). As we already knew that many enterprises had no "professional" project managers (employed full-time as a manager), but instead experts managed projects in addition to their professional work, it is understandable that the results are not clear-cut. The research showed only 15% of people who managed projects were employed full time as project managers. 19% of them spend 90% of their time managing the project, while 27% of "project managers" manage the project for less than 50% of their working time.

Fig. 3: Organisational structures most often used by the enterprises



(the share (in %) of enterprises that usually use a particular type of organisation)

However, considering the increasing level of authority (from little authority in a functional

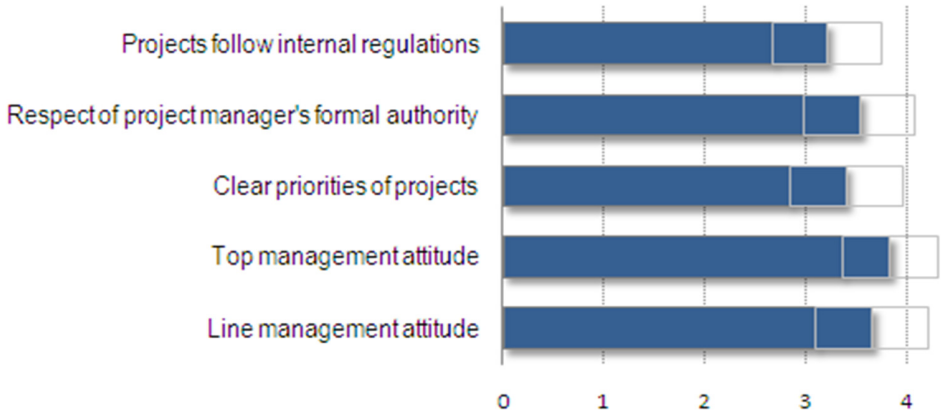
organisation to maximum authority in the projectised organisation), an organisational structure where the project manager has greater authority leads to reductions in project delays (Pearson Correlation C 0.176, Sig. 0.045), and costs (C 0.203, RSq 0.021).

In addition, the respondents' answers showed the correlation of the organisational structure and the level of respect of a project manager's formal authority (C 0.290, Sig. 0.002), the following of project management regulations (C 0.254, Sig. 0.009), and the line manager's attitude (C 0.237, Sig. 0.012). All of these correlations are shown in Figure 4.

When analysing the impact of a particular style of organisation on project execution, we found that it only explained 8% of the variability of project delays, with a reliability rate of 0.065 (i.e. a 6.5% chance that the variable does not impact on delay), while we found that it explained 6% of the variability of overbudget projects, with a reliability rate of 0.165.

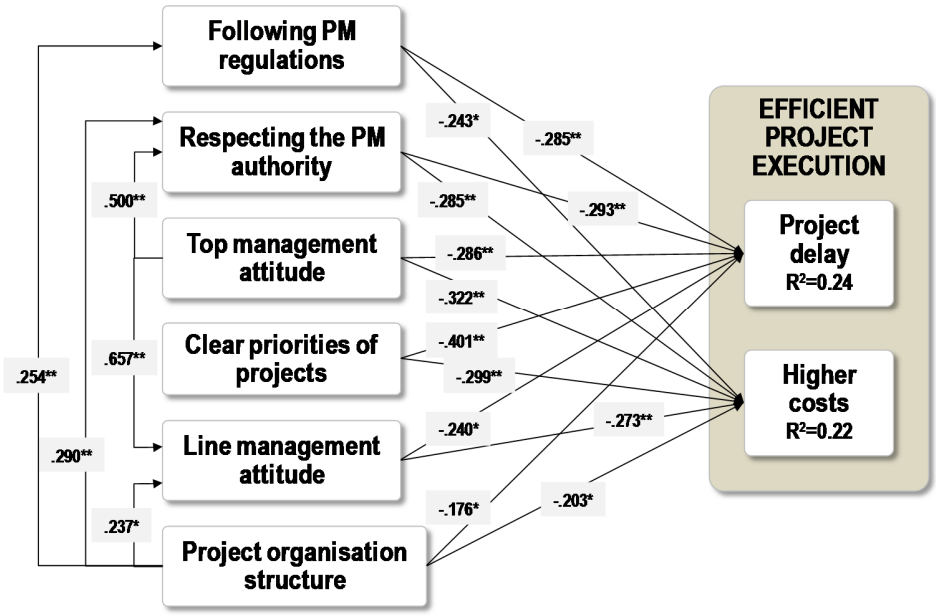
The level of project organisational dimensions in Slovenian enterprises is relatively high, on average above 3.5 (values ranging from 1 to 5, Figure 4), which was relatively surprising compared to the low level of efficient project execution shown in Table 1.

Fig. 4: Level of dimensions of the project organisational culture (with standard deviations)



The analysis of organisational culture factors shows the high level of importance of selected organisational culture factors on the implementation of projects (Figure 5). Relatively high is the correlation among top management attitude and the following of internal regulations (C 0.500), and line management's attitude (C 0.657). The results were expected and we believe they do not require further discussion.

Fig. 5: Correlations among the cultural dimensions, organisational structure and effective project execution



The multiple linear regressions showed that the examined dimensions of **organisational culture** have a combined positive impact on effective project execution. They mostly contribute to reducing project delays: R 0.478, R_{Sq} 0.228, Sig. 0.000 – the joint correlation is 0.478, and the included variables explained 22.8% of the variability of project delays. Cost reduction was a little less pronounced (R 0.450, R_{Sq} 0.203, Sig. 0.001).

By calculating the reliability or probability that each independent variable does not affect a delay in the project (*it should be less than 5%*), the most reliable variable of project delay proved to be the clear priorities of projects (0.014), while the reliability of following the internal project management regulations was 0.163. The most reliable variable of overbudget costs proved to be the following of internal project management regulations and top management's attitude, although their reliability was lower (0.207 and 0.191).

4 CONCLUSION

The research into the selected organisational cultural dimensions in Slovenian enterprises showed a high level of project organisational culture. This was relatively surprising in the context of the poor project performances (almost 90 percent of projects exceed the planned time and costs). The highest level proved to be top and line managements' attitude, while the most influential factors of project performance were top management's attitude and projects having clear priorities.

The research showed that a matrix project organisation is in use in two-thirds of the enterprises

considered. Still, the analyses of the project organisational structures showed that no structure stands out in its contribution to better project performance. However, an increasing level of project manager authority (from a low level of authority in a functional to the highest level in a projectised organisation) positively impacts on several cultural dimensions (line management's attitude, following the internal regulations, respecting the project manager's formal authority) and also has a direct impact on the project's performance.

The results of the research contribute to both science and practice in several ways. In the future, due to the ever greater number of projects, more stress will have to be placed on key project stakeholder behaviour and their relations, and structures will become less important. Once again it was proven that project organisational culture exerts a strong impact on project performance; even though we measured different cultural dimensions than most other recent researches. The findings of our research are especially useful for top and line managers in "transition countries" who have so far not been aware of how important their behaviour is for the success of projects conducted in their enterprises.

To clarify the impact of the presented cultural dimensions we propose further research in two directions. The first should examine the dimensions in more detail – it should measure the individual factors presented in Table 3 (e.g. project monitoring, team recruitment, sponsor selection). More project success indicators (customer satisfaction, added value) could be added to those measured in our research (time, costs). In addition, researches only focussing on one type of project (IT, product development, civil engineering) could also yield useful findings. The second direction would involve researching the impact of the presented culture dimensions on team motivation in comparison with the leadership characteristics of project managers and the different ways the project team is rewarded.

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