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Analysis of Project Success Factors and Project Success Criteria in Micro and Small Firms: Evidence from Slovenia

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Background/Purpose: The aim of this paper is to examine the use of project management practices in Slovenian micro and small firms (MSFs) and to identify project success factors (SF) and project success criteria (SC).
Methods: Research was conducted on a sample of 51 micro and 41 small firms in Slovenia. Data about project SF, SC, most influential decision makers on projects, to which extent selected project management tools are used, and about employment of full-time project managers in MSFs was gathered. Descriptive statistics was used for questionnaire survey data analysis. Similarities and differences between project management practices of micro and small firms were studied.
Results: Results show that 'Clearly defined project objectives' is the most important project SF, and 'Customer satisfaction' is the most important project SC in MSFs. The owner/director of the firm has been identified as the most influential decision maker on projects. Results reveal that 'Clearly defined project objectives' are identified as the most important for project success in MSFs.
Conclusion: Understanding project SF and SC in MSFs and the involvement of project SF and SC in decision making can improve project management practices in MSFs. Based on the results of this study and other similar studies, it can be summarised that managers and decision makers can improve project success by focusing on a narrow area which is defined as project SF. A focus on clearly defined project objectives in the project planning phase is identified as the most important project SF in MSFs. Results also show that customer satisfaction regarding projects is the most important project SC and impacts project success in MSFs.

Keywords: *Project, Success, Factor, Micro, Small, Firm, Slovenia*

1 Introduction

Companies across various industries are using project management to improve company performance. Project management is defined as planning, organising, directing, and controlling of company resources to complete specific goals and objectives within deadline, within cost, and within performance (Kerzner 2009). Successful project completion can contribute to company performance as revealed in the latest research in the field (Kärnä & Junnonen 2016; Almarri & Boussabaine 2017; Bjelica et al. 2023; Kudyba & Cruz 2023; Aramali et al. 2024, Tabassum et al. 2024). Kerzner (2009) defines project success as the completion of a project within constraints such as time, cost, and performance. According to Kärnä & Junnonen (2016), project participant satisfaction has been identified as one of the key factors affecting project success. Bjelica et al. (2023) also suggest that client consultation on projects

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is a key project success factor in small and middle-sized firms (SMEs). Almarri & Boussabaine (2017), on the other hand, highlight the importance of feasibility studies before the project start and reveal that a project technical feasibility study significantly contributes to project performance, especially in completing a project within time constraints. According to Aramali et al. (2024) meeting project objectives and achieving customer satisfaction are the key project success factors that impact company performance. Similarly, Tabassum et al. (2024) report that customer participation on projects positively impacts project success and organisational performance. Kudyba & Cruz (2023) highlight the importance of human intellectual capital for project success. In summation, project success is impacted by many different factors. Some of these are related to the specific type of organisation, such as SMEs (Bjelica et al. 2023), large firms (Mathar et al. 2020; Kiani Mavi et al. 2024; Sońta-Drączkowska & Krogulec 2024; Giorgino & Barnabè 2024), or to other criteria, such as specific type or industry, as demonstrated by the study of Murphy & Ledwith (2007).

However, there is a lack of studies about project success in micro and small firms (MSFs). MSFs are not miniature version of large firms. MSFs operate on a smaller scale of the market and have limited financial and manpower resources (Comeig et al. 2014; Sommerville 2011; Ferreira de Araújo Lima et al. 2021; Nalweyiso et al. 2023). This results in limited capabilities of MSFs to adopt changes, utilise project management practices and improve operational performance compared to middle and large firms (Inan et al. 2022). Due to these differences between firms, it is not appropriate to generalise the results from project management success studies of large firms and apply them to MSFs. Specific research is required to identify which are the key project success factors that support the project success and performance of MSFs.

A lack of research into project management practices in MSFs with an emphasis on the study of key project SF and SC was identified as a research gap and attracted our attention. In this research we address the specific problem of how to increase project success in MSFs based on project SF and SC and improve the related performance of MSFs. The main research question in this research examines which are the key project SF and project SC in MSFs.

The aim of this study is to analyse the latest project management practices and identify key project SF and SC specifically in MSFs, to identify differences between micro and small firms and previous research in this field. This problem hasn't yet been addressed in the latest research in relation to MSFs. The final goal of this research is to suggest how managers can improve project success in MSFs. This study focuses on a population of micro and small firms in Slovenia. The latest data from AJPES, which is public agency for business entities in the Republic of Slovenia, reveals that MSFs present 93% of all registered firms in Slovenia; 89.7% of them are micro firms, and 8.9% of them are small firms. Data also reveals that 42% of micro firms and 51% of small firms in Slovenia are defined as fast-growing firms (AJPES 2024). Rotar et al. (2019) also reveal that micro firms contribute around 30%, and small firms together with middle-sized firms contribute approximately 20% of the total employment in the EU.

All these perspectives give additional weight and importance to a study of project management practices in MSFs with special attention paid to project SF and SC to improve the project success and performance of MSFs.

2 Theoretical background

Project success is impacted by many factors, such as: completing a project within the planned time, quality and performance (Kerzner 2009), fulfilling client expectations (Kärnä & Junnonen 2016), carrying out detailed technical studies before the project start (Almarri & Boussabaine 2017), involving client consultation on projects (Bjelica et al. 2023), meeting project objectives (Aramali et al. 2024), and customer participation (Tabassum et al. 2024).

Based on the previous research and findings of Kärnä & Junnonen 2016; Almarri & Boussabaine 2017; Mathar et al. 2020; Bjelica et al. 2023; Kudyba & Cruz 2023; Aramali et al. 2024, Tabassum et al. 2024; Tabassum et al. 2024; Kiani Mavi et al. 2024; Sońta-Drączkowska & Krogulec 2024; Giorgino & Barnabè 2024 about the importance of knowing which are the success factors for project success and the related performance of firms, because of a lack of studies that specifically address MSFs and the importance of MSFs in Slovenia and in EU, as discussed in the Introduction chapter, we have focused on a study of project SF and SC in MSFs. It is not feasible to include all of the latter in one research project, so we have focused on an analysis of the key project SF and SC which were identified as the key ones in the literature and specifically related them to MSFs, as this was identified as a research gap.

The goal of this study is to identify which are the key project SF and SC for project success and the related improved performance of MSFs. The literature distinguishes between project success factors (SF) and project success criteria (SC) (Müller & Judgev 2012).

2.1 Project success factors

Success factors can be defined as narrow areas that are vital for success and answer questions about what needs to be done specifically to achieve success. Project SF increase the probability of project success, such as completing a project within budget, estimated time, performance and fulfilling and exceeding company management and customer expectations (Müller & Judgev 2012). Identifi-

cation of project SF enables managers to impact them and improve project success. Identification of project success factors can improve a firm's overall performance (Murphy & Ledwith 2007; Mathar et al. 2020; Kiani Mavi et al. 2024; Sońta-Drączkowska & Krogulec 2024; Giorgino & Barnabè 2024). Kerzner (2009) claims, that top management support is required for project success. Ayat et al. (2021) argues that user participation, stakeholder relationship, project manager leadership skills and top management support are the most important project SF, especially on ICT projects. The study of Correia & Martens (2013) also reveals that the support of senior management is a key to project SF for project success. Interactions and efficient communications between project team members impacts the success of firms, claim Müller & Judgev (2012). On the other hand, Zuo et al. (2018) confirm the previous findings and suggest that the soft skills of project managers are one of the key project SF. On the other hand, Gunasekera & Chong (2018) reveal that the capabilities of a project manager, such as transformational leadership, are significantly and positively related to project success. The results of Bjelica et al. (2023) indicate that client involvement on projects oriented in fulfilment of client expectations is a key project SF. The study of Wang et al. (2023) confirms similar indications and suggests adequate resource availability, partnering/relationships with key stakeholders and adequate communication as key project SF.

As discussed in recent studies, there are many different project SF that vary by project type, industries and the life cycles of firms (Müller & Judgev 2012). Project success must be measured from different perspectives. Project SF analysis should consider perspectives such as project manager, project team, customer and their interests, as well as project managers' human skills, capability for adopting changes, authority of the project manager and the commitment of the project team (Murphy et al., 2007; Kerzner 2009; Müller & Judgev 2012).

2.2 Project success criteria

Succes criteria (SC) measure success and are used to judge the success or failure of a project after project closure (Murphy et al., 2007; Müller & Judgev 2012). Cost and project performance has been frequently identified as key project SC (Kerzner 2009; Almarri & Boussabaine 2017). Furthermore, Bayiley & Teklu (2016) recommend that project success be measured by SC such as fulfilment of a firm's strategic organisational objectives and goals, fulfilment of project user satisfaction, and the level of key project stakeholder satisfaction. Also, Wuni et al. (2021) suggest client and owner satisfaction, adherence to project schedules, meeting project quality specification and profitability as key project SC. A recent study by Bjelica et al. (2023) suggests that fulfilment of project goals is a key project SC for project success, especially in SMEs. Different project types, a firm's industrial sector and other variables make each project unique. So, it is not easy to define general project SC for all types of firms and projects and to consider all of them.

Therefore, the authors in this study have focused on the study of key project SC and project management practices and related them to MSFs. Key project SC based on a literature review have been included in our research. The study focuses on project SC related to project success specifically in MSFs as this has been identified as a less researched area. It was also identified as a research gap and is examined further on in this study.

3 Methodology

This research was carried out in the following steps: literature review and research gap definition, theory background research, research question development, quantitative data gathering, data analysis and discussion.

Our research answers the following research questions (RQ):

RQ (1): Which are the key project success factors (SF) in MSFs?

RQ (2): Which are the key project success criteria (SC) in MSFs?

RQ (3): Which are the most influential decision makers on projects in MSFs?

RQ (4): Which project management tools are used in MSFs?

RQ (5): To what extent do MSFs employ full-time project managers?

RQ (6): Based on RQ1-5, what are the differences between micro and small firms?

Based on a literature review and the identified research gap, our target population was micro and small firms in Slovenia. The criteria for micro and small firms are in this research defined based on criteria such as number of employees. The number of employees in firms is one of the key differences between micro, small, middle and large firms. Availability of resources in firms is related to how projects are managed, i.e. planned and executed. Kirmizi & Kocaoglu (2021) define availability of resources in firms as one of the key project success factors. For the purpose of our research, for the definition of micro and small firms we considered the definition of ZGD-1 (2006), in which micro firms are defined as firms that employ up to 10 employees and small firms as firms that employ up to 49 employees.

A quantitative method of data gathering with a questionnaire as a measuring instrument was used in an approach that is similar to that of Murphy & Ledwith (2007) and of Bjelica et al. (2023). The use of a similar measuring instrument to that used in previous research enables us to

compare results with similar previous research in the field of study and for similar future comparison studies in this field. The online questionnaire contained closed type of questions. Questions used in the survey included selected aspects of project management practices in MSFs such as firm industry, project types, most influential decision makers with special emphasis on project SF and SC, measurements of project success and general data about MSFs and survey participants. A Likert scale of 1-4 was used to evaluate each factor included in the research questions. Participation in the research was voluntarily and anonymous. The data for small firms were obtained from AJPES. A link to the online questionnaire was sent to the public e-mail addresses of the firms. For micro firms a snowball sampling was used. A total sample of 92 MSFs was gathered (Tables 1-4). The sample includes 51 micro firms and 41 small firms and is well balanced. From the industry point of view, the sample includes 35% of MSFs from the non-economy sector, 31% of MSFs from the economy-production sector, and 34% of MSFs from the economy-service sector. For the purpose of this study, from our gathered database we extracted only properly completed questionnaires for micro and small firms. The criteria for the extraction of micro and small firms (MSFs) was the number of employees, such as 1-9 employees for micro firms and 10-49 employees for small firms. Data about the number of employees in firms was requested in our questionnaire.

Data was analysed with the descriptive statistics method, analysing average values and standard deviations, similarities and differences between micro firms, small firms and MSFs in total (Tables 1-9 and Figures 1-3).

4 Results

The sample of firms in this study includes 51 micro firms and 41 small firms, as can be seen in Table 1. Table 1 and all subsequent tables show separate data for micro firms and separate data for small firms as well as the data in total (MSFs together). The sample of MSFs in total is well balanced and contains the non-economy sector (35%), such as public and non-governmental organisations (NGO), societies and institutes, the economy sector with production firms (31%), and service firms (34%).

For a better understanding of the overall study results, data about the most common project types in MSFs were gathered, as shown in Table 2. The most common project in the sample of MSFs was identified as technical projects (27% of MSFs), followed by organisational projects such as organised education (18% of MSFs) and other technical projects (14% of MSFs). On the other hand, only 9% of the MSFs deal with service projects for other firms and only 7% of the MSFs perform ICT projects. Analysis shows some differences between most common project types in micro and small firms. In micro firms was identified as being the most common type of projects organisational projects (27% of micro firms) but in small firms technical projects prevail (37% of small firms). Table 2.

Table 3 shows more detailed data about the sample of MSFs included in our research. Data shows that 47% of MSFs practice no special project management organisational structure on projects and only 12% of MSFs practice a project matrix structure. Similar is the separate data analysis for micro firms (57%) and small firms (34%), which is expected based on further data about the number of project team members included on projects. The results in Table 3 also show that the typical project duration in MSFs is under 3 months (28% of MSFs). Analysis shows the differences between micro firms, as 35% of them practice project duration of more than 12 months, while 39% of small firms practice 3-6 months project duration.

Analysis shows that 96% of micro firms and 93% of small firms employ 1-10 project team members per project. MSFs are characterised by a smaller number of employees (in comparison to middle size or large firms), so this result can be explained from this perspective. Table 4 shows additional data about the respondent profile.

Table 1: Sample of firms

Firm industry	Micro firms (n=51) No. of firms / (%)	Small firms (n=41) No. of firms / (%)	Micro and Small firms (n=92) No. of firms / (%)
Non-economy sector	24 (47%)	8 (20%)	32 (35%)
Economy sector-production firms	9 (18%)	20 (49%)	29 (31%)
Economy sector-service firms	18 (35%)	13 (31%)	33 (34%)

Note. n - sample, % - percentage of firms in the sample

Table 2: Sample of firms and project types

Project type	Micro firms (n=51) No. of firms / (%)	Small firms (n=41) No. of firms / (%)	Micro and Small firms (n=92) No. of firms / (%)
Technical, Technological projects (i.e. New Product Development)	10 (20%)	15 (37%)	25 (27%)
Organised education (seminars, workshops)	14 (27%)	3 (7%)	17 (18%)
Other technical projects (i.e. construction)	5 (10%)	8 (20%)	13 (14%)
Public sector projects (public tenders, public orders)	9 (18%)	2 (5%)	11 (12%)
Event projects (i.e. tourism)	6 (12%)	3 (7%)	9 (10%)
Service projects for other firms (i.e. logistics, promotion)	3 (6%)	5 (12%)	8 (9%)
ICT projects (i.e. SW development)	2 (4%)	4 (10%)	6 (7%)
Other projects	2 (4%)	1 (2%)	3 (3%)

Note. n - sample, % - percentage of firms in the sample

Table 3: Sample of firms and project characteristics

Project characteristic	Micro firms (n=51) No. of firms / (%)	Small firms (n=41) No. of firms / (%)	Micro and Small firms (n=92) No. of firms / (%)
Project organisational structure			
Function (no special structure for projects)	29 (57%)	14 (34%)	43 (47%)
PMO-Project Management Office	9 (18%)	11 (27%)	20 (22%)
Projectized (full project)	10 (20%)	8 (19%)	18 (20%)
Project matrix	3 (6%)	8 (19%)	11 (12%)
Project duration			
Under 3 months	15 (29%)	11 (27%)	26 (28%)
3-6 months	7 (14%)	16 (39%)	23 (25%)
6-12 months	11 (22%)	6 (15%)	17 (18%)
More than 12 months	18 (35%)	8 (20%)	26 (28%)
Number of project team members			
1-10 team members	49 (96%)	38 (93%)	87 (95%)
11-30 team members	2 (4%)	3 (7%)	5 (5%)
More than 30 team members	0 (0%)	0 (0%)	0 (0%)

Note. n - sample, % - percentage of firms in the sample

Table 4: Data on respondents

	Micro firms (n=51) No. of firms / (%)	Small firms (n=41) No. of firms / (%)	Micro and Small firms (n=92) No. of firms / (%)
Education of respondent			
Graduate (B1)	10 (20%)	7 (17%)	17 (18%)
Postgraduate (B2)	29 (57%)	19 (46%)	48 (52%)
M.Sc. (Scientific)	10 (20%)	14 (34%)	24 (26%)
PhD.	2 (4%)	1 (2%)	3 (3%)
Position of respondent in the firm			
Firm owner / general director	12 (24%)	8 (20%)	20 (22%)
Technical director	0 (0%)	1 (2%)	1 (1%)
Business unit/department manager	5 (10%)	9 (22%)	14 (15%)
Process owner/manager	1 (2%)	3 (7%)	4 (4%)
Project manager	17 (33%)	8 (20%)	25 (27%)
Project team member	12 (24%)	7 (17%)	19 (21%)
Other	4 (8%)	5 (12%)	9 (10%)

Note. n - sample, % - percentage of firms in the sample

Table 5: Project success factors (SF)

Project SF	Micro firms (n=51)		Small firms (n=41)		Micro and Small firms (n=92)	
	Avg.	St.Dev.	Avg.	St.Dev.	Avg.	St.Dev.
Clearly defined project objectives	3.37	0.85	3.56	0.63	3.46	0.76
Availability of resources/team members	3.20	0.83	3.39	0.70	3.28	0.77
Top management support	3.22	0.83	3.32	0.61	3.26	0.74
Customer involvement/consultations	3.02	0.81	3.34	0.66	3.26	0.76
Proper project planning & control	3.22	0.78	3.24	0.77	3.23	0.77
Employing project risk management	2.78	0.86	3.07	0.72	2.91	0.81

Note. n - sample, Likert scale (1-4): 1-rarely used, 2…,3…, 4-very frequently used criteria, Avg.-Average Value, St.Dev.-Standard Deviation

The respondents in our survey were project managers (27%), followed by firm's directors (22%) and project team members (21%). 52% of respondents have a postgraduate level of education (Bologna B2), 26% are MSc, and 18% of respondents have graduated at the B1-Bologna level. Our main research question about the most important project SF and SC in MSFs results are presented in Tables 5 and 6 and Figures 1 and 2. Respondents were asked to rank each project success factor (SF) and project success criteria (SC) on a Likert scale of 1-4, where score 4 shows the highest importance of each factor. Average values and Standard deviation values are shown separately for micro and small firms and total scores for MSFs in total are presented. Table 5 presents an analysis of the most important project SF in MSFs. Analysis of the results show that clearly defined project objectives (scored 3.46 out of 4), availability of resources for project (score 3.28 out of 4) and top management support (score 3.26 out of 4) are identified as the most important project SF in MSFs. Table 5.

As shown in Figure 1, a comparison study between micro and small firms also shows the same top project SF, such as; 'Clearly defined project objectives' in both micro and small firms. Employment of risk management on projects has been identified as a relatively less important project SF, scoring 2.78 out of 4 in micro firms, scoring 2.92 out of 4 in small firms and scoring 2.91 out of 4 on the

sample of 92 MSFs in total. Figure 1.

Table 6 presents an analysis of the most important project SC in MSFs. Analysis of the results show that customer satisfaction (scored 3.51 out of 4), project completion within planned time (scored 3.18 out of 4) and meeting project specifications (scored 3.15 out of 4) are identified as the most important project SF in MSFs. Table 6.

As shown in Figure 2, a comparison study between micro and small firms also shows the same top project SC such as 'Customer satisfaction' in both micro and small firms. The main difference between micro and small firms can be seen in SC such as 'Customer satisfaction'. The average score for micro firms shows the result 3.45 out of 4 and the average score for small firms shows the result 3.59 out of 4. Figure 2.

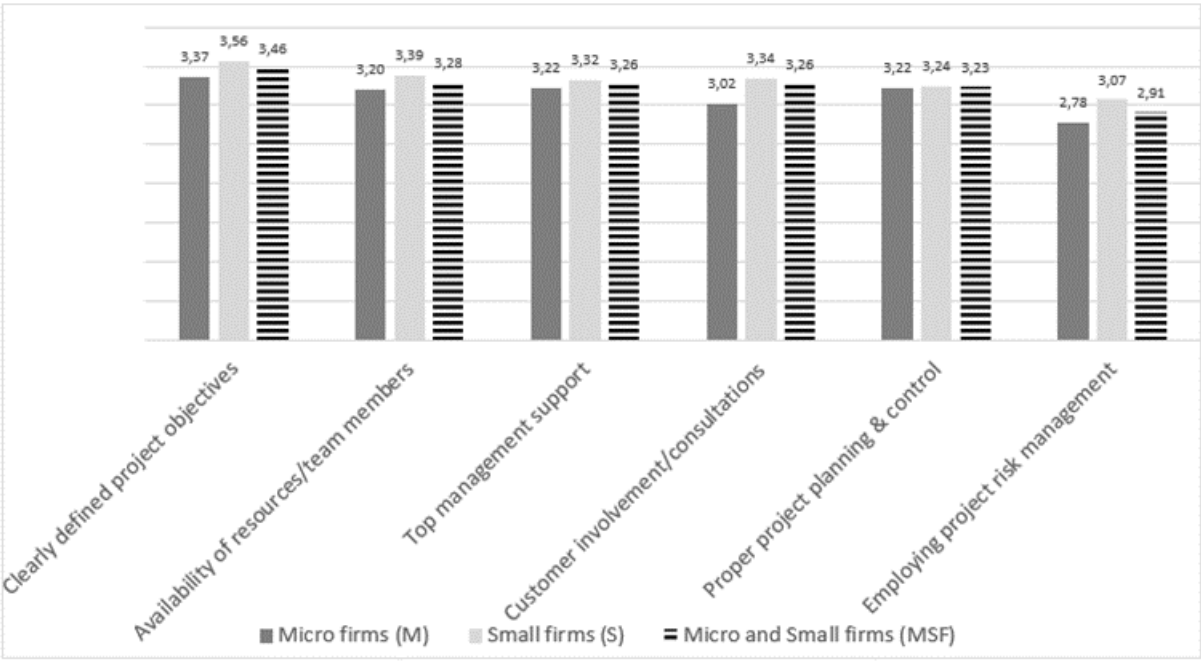

Figure 1: Comparison of project SF in micro and small firms

Table 6: Project success criteria (SC)

Project SC	Micro firms (n=51)		Small firms (n=41)		Micro and Small firms (n=92)	
	Avg.	St.Dev.	Avg.	St.Dev.	Avg.	St.Dev.
Customer satisfaction	3.45	0.73	3.59	0.55	3.51	0.65
Project completed within planned time	3.24	0.81	3.12	0.71	3.18	0.77
Meets required project specifications	3.22	0.83	3.29	0.64	3.15	0.75
Project team member satisfaction	3.20	0.83	3.10	0.66	3.15	0.75
Project completed within planned budget	3.14	0.85	3.10	0.66	3.12	0.77

Note. n - sample, Likert scale (1-4): 1-rarely used, 2…,3…, 4-very frequently used criteria, Avg.-Average Value, St.Dev.-Standard Deviation

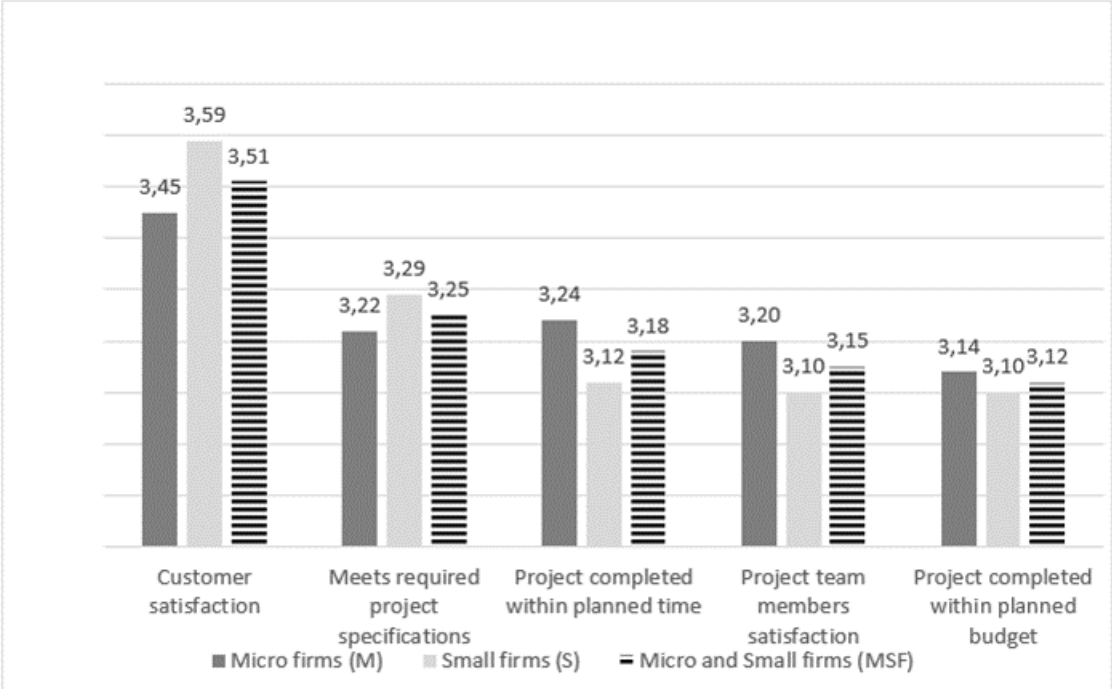

Figure 2: Comparison of project SC in micro and small firms

Table 7: Decision makers on the projects

Decision maker	Micro firms (n=51)		Small firms (n=41)		Micro and Small firms (n=92)	
	Avg.	St.Dev.	Avg.	St.Dev.	Avg.	St.Dev.
Firm owner / director	3.41	0.83	3.46	0.67	3.43	0.76
Project manager	3.29	0.78	3.54	0.60	3.40	0.71
Department manager	2.53	0.76	2.80	0.78	2.65	0.78
Project council	2.25	0.87	2.40	0.93	2.36	0.90
Board of directors	2.16	1.08	2.39	1.07	2.26	1.08

Note. n - sample, 1-is not influential at all, 2…, 3…, 4-is very influential decision maker, Avg.-Average Value, St.Dev.-Standard Deviation

Our research question results about the most influential decision makers on project in MSFs are shown in Table 7. The firm owner/director has been identified as the most influential decision maker on projects (3.43 out of 4), followed by the project manager (3.40 out of 4) in MSFs in total. The results also show differences between micro and small firms. In small firms it has been determined that the project manager is the most important decision maker (3.54 out of 4). On the other hand, in small firms the firm owner/director is identified as the most important decision maker (3.41 out of 4). Table 7.

Table 8 presents participant responses about what impacts project success in firms the most. Statements (factors) were developed based on a literature review including Murphy & Ledwith (2007) and Bjelica et al. (2023). Each statement was evaluated on a Likert scale of 1-4, where score 4 shows the highest importance of each factor. Average values and Standard deviation values are shown separately for micro and small firms and total scores for MSFs are presented. The results show that 'Clearly defined project objectives' are identified as the most important for project success in MSFs, scoring 3.39 out of 4, fol-

lowed by 'Intense cooperation with project client', scoring 3.24 out of 4 and 'Skills of project manager', scoring 3.23 on a scale of 1-4. A detailed view also shows very small differences between micro and small firms. Both prioritise the same mentioned top 3 statements (factors) as the most important for project success. Table 8.

Furthermore, Table 8 shows the less important factors that impact project success in MSFs. 'Impact of external factors on project success' scoring 2.80 out of 4, 'Carrying out detailed analysis before project start' scoring 2.59 out of 4, and 'Senior management mistakes' scoring 2.58 out of 4 are identified as the least important factors for project success in MSFs. No significant differences between micro and small firms have been identified.

As shown in Table 9, employment of a full-time project manager in MSFs has been analysed. Detailed data show that 51% of micro firms and 46% of small firms in our sample employ at least one full-time project manager. Of all MSFs included in our sample, results show that 49% of MSFs have at least 1 full-time project manager. Further analysis shows that 33% of micro firms and 49% of small firms have project guidelines. Table 9.

Table 8: Participants perception about project success in micro and small firms

Statement	Micro firms (n=51)		Small firms (n=41)		Micro and Small firms (n=92)	
	Avg.	St.Dev.	Avg.	St.Dev.	Avg.	St.Dev.
Clearly defined project plan is crucial for successful completion of the project.	3.31	0.81	3.49	0.51	3.39	0.69
Projects in our organisation require intense cooperation with the project client.	3.14	0.80	3.37	0.62	3.24	0.73
Project success depends on the skills of project manager.	3.22	0.76	3.24	0.58	3.23	0.68
Past experiences are crucial for project success.	3.06	0.81	3.20	0.68	3.12	0.75
Project organisational structure affects successful completion of the project.	3.10	0.73	3.12	0.60	3.11	0.67
Project SC in our organisation support project success.	2.90	0.73	2.83	0.59	2.87	0.67
Projects we carry out are very complex.	2.63	0.80	3.07	0.47	2.83	0.70
Project success in our firm depends on external factors (market, legislation, changes & requirements from the client).	2.78	0.83	2.83	0.63	2.80	0.74
Before starting a project, we carry out detailed analyses and research.	2.55	0.81	2.63	0.73	2.59	0.77
Projects in our firm are successful despite mistakes made by our senior management.	2.49	0.78	2.68	0.57	2.58	0.70

Note. n – sample, Likert scale (1-4): 1-strongly disagree, 2…, 3…, 4 -very strongly agree, Avg.-Average Value, St.Dev.-Standard Deviation

Table 9: Employment of full-time project manager on the projects

Statement	Micro firms (n=51) Yes		Small firms (n=41) Yes		Micro and Small firms (n=92) Yes	
	No. of firms	(%)	No. of firms	(%)	No. of firms	(%)
We have at least one full-time project manager in the organisation.	26	51%	19	46%	45	49%
In the organisation, we have clearly defined process guidelines & rules for projects.	17	33%	20	49%	37	40%

Note. n – sample, % - percentage of the firms in the sample

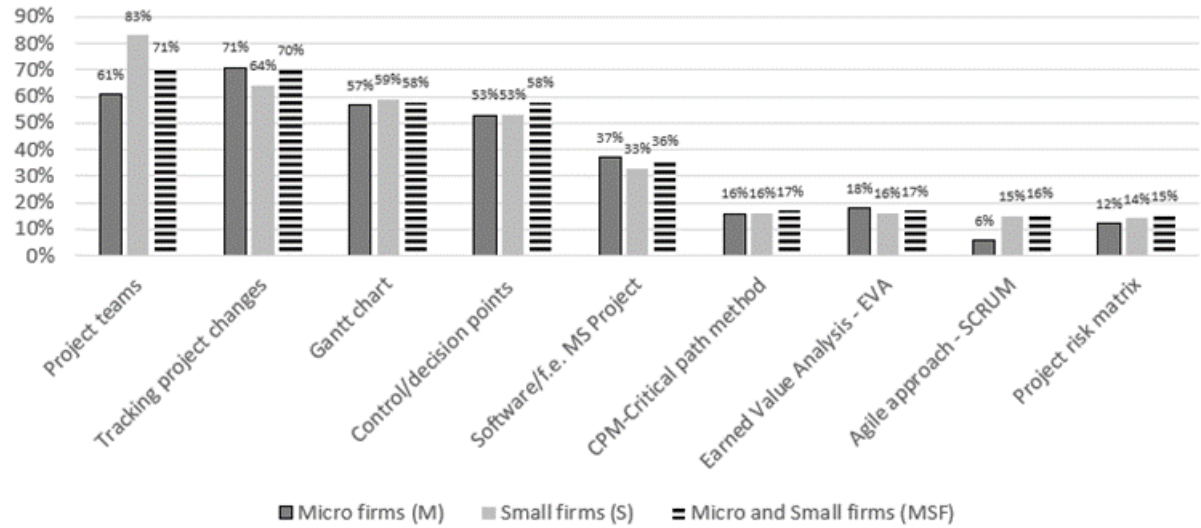

Figure 3: The use of project management tools in micro and small firms

Figure 3 shows the results of our research question about which project management tools are most frequently used in MSFs. The use of project teams has been identified as the most frequently used approach in MSFs (71% of MSFs), followed by managing project changes (70% of MSFs) and Gantt chart (58% of MSFs). Less frequently used project management tools in MSFs have been identified as the use of EVA (17% of MSFs), SCRUM (16% of MSFs) and Risk matrix (15% of MSFs). Figure 3.

A comparison of results between micro and small firms shows very small differences. The biggest difference is in the use of project teams, as micro firms use them only in 61% and small firms use them in 83%. Also, SCRUM is identified as being employed on projects in only 6% of micro firms and 15% of small firms.

5 Discussion

The study relates earlier understandings of project SF and SC to project success and resonate with some previous findings on this field such as those of Bjelica et al. 2023; Kudyba & Cruz 2023; Aramali et al. 2024, Tabassum et al. 2024; Tabassum et al. 2024; Kiani Mavi et al. 2024; Sońta-Drączkowska & Krogulec 2024; Giorgino & Barnabè 2024. However, the results of our study highlight some differences between MSFs and large firms as well as some differences between micro and small firms, too.

The results of the key project SF analysis for MSFs show that 'Clearly defined project objectives' is the most important project SF (Table 5). This is supported by the findings of Aramali et al. (2024), which report similar results. Analysis also reveals that 'Customer satisfaction' is the most important project SF in MSFs. Our results show the same priorities in this field in micro and small firms as well as for MSFs in total, where this factor was identified as a key factor in both type of firms (Table 5 and Figure 1). The second top key project SF was identified as availability of resources/team members. The results of this study support some findings of Bjelica et al. (2023) that 'Setting clear project goals and objectives' is the most important project SF. This finding is in line with the basic characteristic and problem of MSFs, such as a lack of human resources for project work. Poor availability of project team members for project work affects project success and limits the performance of MSFs.

Analysis of the results show that customer satisfaction is identified as the most important project SC in MSFs (Table 6 and Figure 2). The results show the same key project SC for micro and small firms (Figure 2). Some difference has been detected between micro and small firms. It was noticed that small firms prioritise the importance of customer satisfaction more in comparison to micro firms (Figure 2). This can be seen in SC such as project SC. This is supported by the results of similar research by Bjelica et al. (2023) that 'Appreciation by users' is the most important project SC.

Our research question about the most influential decision makers on project in MSFs results reveals that the firm owner/director has been identified as the most influential decision maker on projects (Table 7). The firm owner/director has been identified as the most influential decision maker on projects (3.43 out of 4), followed by the project manager (3.40 out of 4) in MSFs in total. The results also show differences between micro and small firms. In small firms, it has been identified that the project manager is the

most important decision maker (3.54 out of 4). On the other hand, in small firms, the firm owner/director is identified as the most important decision maker (3.41 out of 4). This resonates with data from Table 9, in which only 51% of micro firms and only 46% of small firms employ at least one full-time project manager. From this perspective it is expected that a firm's owners make the majority of decisions on projects as well as in MSFs in general.

As shown on Figure 3, the results of our research question about the use of a project management tool on projects in MSFs show that the use of project teams has been identified as the most frequently used approach in MSFs (71% of MSFs), followed by managing project changes (70% of MSFs) and Gantt chart (58% of MSFs). Less frequently used project management tools in MSFs have been identified as the use of EVA (17% of MSFs), SCRUM (16% of MSFs) and Risk matrix (15% of MSFs). This can be explained by the fact that MSFs have limited human resources, so it is expected that the majority of all employees will be involved in projects.

It can be concluded that project SF and SC for MSFs differ from project SF and SC as revealed in studies for large firms (Murphy & Ledwith 2007; Mathar et al. 2020; Kiani Mavi et al. 2024; Sońta-Drączkowska & Krogulec 2024; Giorgino & Barnabè 2024). According to the basic characteristics of MSFs, in comparison to large firms, MSFs operate on a smaller scale of the market, have limited financial and manpower resources, limited capabilities to adopt changes, and limited capacity for executing many projects at the same time. Project SFs in larger firms are, according to Murphy & Ledwith (2007), more oriented towards meeting quality standards, while MSFs are identified as being more focused on customer satisfaction key project SF. On the other hand, key project SC in large firms has been identified as clear project goals/objectives (Murphy & Ledwith (2007), but customer satisfaction was identified as the key project SC for MSFs.

The results of this study strongly depend on the sample of MSFs and basic characteristics of MSFs and projects performed in MSFs (Tables 1-4) such as: the majority of the projects in MSFs are performed in under 3 months, no special organisation project structure is used in 47% of MSFs, and 95% of MSFs perform projects with fewer than 10 project team members (Table 3).

This study contributes to an understanding of the role of project SF and SC for project success, creates a background for improvement of decision making in MSFs and can help managers, project managers, practitioners and researchers in the field of project management. Some practical and theoretical implications of this study can be discussed, such as follows.

Practical and theoretical implications

The results of this study provide us with some practical and theoretical applications. A practical application is the empirical study of project SF and SC in MSFs that helps managers in MSFs to better understand how to achieve project success. Our findings suggest project management practitioners, managers and decision makers in MSFs that are based on project SC and SF set the right priorities and improve decision making to achieve better project success. Managers in MSFs should prioritise project SF and SC that can improve project success such as: defining clear project objectives and ensuring the availability of resources as these were identified as the most important project SF in MSFs. The results also direct decision makers in MSFs to focus more on customer satisfaction and completing projects within the planned time as these were identified as the most important project SC in MSFs.

From a theoretical perspective, a key contribution of this research is the latest literature review in the field of selected project management researches, such as the study of project SF and SC in MSFs, the use of a scientific approach that studies project SF and SC in MSFs, the application of the research in the field of project management in MSFs, providing better understanding of relations between project SC and SF and project success and establishing a basis for similar future research in this field.

However, it is important to consider the limitations of this study.

Limitations

This study is, from the content point of view, limited to selected aspects of project management practices such as project SF and SC and project success in MSFs. Project success is impacted by many factors, all of which cannot be included in one research project. We have studied only a limited number of selected factors based on the literature review. This research is limited to MSFs in, and includes 92 MSFs from, Slovenia. The authors believe that a larger sample may impact the results of this study. However, the sample used in our research into micro and small firms is well balanced and includes 51 micro and 41 small firms from Slovenia. Also, from the industry point of view, the sample of MSFs in total is well balanced and includes 35% MSFs from the non-economy sector, 31% MSFs from the economy-production sector and 34% MSFs from the economy-service sector. A methodological limitation is the use of a survey as a measuring instrument. The quantitative method of data collection was used and an online questionnaire with closed questions was employed. Data was analysed using the descriptive statistics method, analysing average values and standard deviations, similarities and differences between micro firms, small firms and MSFs in total for each factor included in the research.

Further research

Our study provides us an overview of selected aspects of project management practices in MSFs. However, there are numerous possibilities for further studies, such as including a larger sample of MSFs, studies specific to a particular industry, and conducting comparison studies in Slovenia in time. Also, comparison studies between MSFs,

SMEs and large firms, studies of project management practices in similar economies in the region such as Croatia, Serbia, and Hungary, which have a similar political and economic background and can be considered as transitional economies, can be carried out. Further research into what project SF and SC contribute to project success in MSFs can also include the use of a more varied research methodology.

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Analiza dejavnikov uspeha projekta in merila uspešnosti projekta v mikro in malih podjetjih: Dokazi iz Slovenije

Ozadje in namen: Namen raziskave je preučiti uporabo praks managementa projektov v slovenskih mikro in malih podjetjih (angl. micro, small firms - MSF) ter opredeliti dejavnike uspešnosti projekta (angl. project success factors - SF) in merila uspešnosti projekta (angl. project success criteria - SC).
Metodologija: Raziskava je bila izvedena na vzorcu 51 mikro in 41 malih podjetij v Sloveniji. Zbrani so bili podatki o dejavnikih uspešnosti (SF) in merilih uspešnosti na projektih (SC), najvplivnejših odločevalcih na projektih, v kolikšni meri se uporabljajo izbrana orodja managementa projektov in o praksi zaposlovanja vodij projektov s polnim delovnim časom v slovenskih mikro in malih podjetjih (MSF). Za analizo podatkov zbranih z vprašalnikom je bila uporabljena deskriptivna statistika. Proučili in prikazali smo podobnosti in razlike med praksami managementa projektov v mikro in malih podjetjih.
Rezultati: Rezultati kažejo, da je »jasno opredeljen cilj projekta« najpomembnejši dejavnik uspešnosti projektov (SF), »zadovoljstvo uporabnika rezultatov projekta« pa je najpomembnejši kriterij uspešnosti projektov (SC) v mikro in malih podjetjih. Lastnik/direktor podjetja je bil zaznan kot najvplivnejši odločevalec na projektih v mikro in malih podjetjih.
Zaključek: Razumevanje ključnih dejavnikov uspešnosti projektov (SF) in meril uspešnosti projektov (SC) ter vključevanje teh spoznanj v odločanje lahko izboljša prakse managementa projektov v mikro in malih podjetjih. Na podlagi rezultatov te študije in drugih podobnih študij lahko managerji in odločevalci v podjetjih izboljšajo uspešnost projekta z osredotočanjem na ozko področje dejavnikov uspeha projektov (SF). Osredotočenost na jasno opredeljene cilje projekta v fazi načrtovanja projekta je bil zaznan kot najpomembnejši dejavnik uspešnosti projektov v mikro in malih podjetjih. Rezultati tudi kažejo, da je zadovoljstvo uporabnika rezultatov projekta najpomembnejši kriterij uspešnosti projektov v mikro in malih podjetjih.

Ključne besede: *Projekt, Uspeh, Faktor, Mikro, Malo, Podjetje, Slovenija*