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Šandrk Nukić, Ivana; Matotek, Josipa; Dolaček- Alduk, Zlata

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INVESTIGATION OF LEADERSHIP COMPETENCES OF PROJECT MANAGERS IN CONSTRUCTION INDUSTRY

Ivana Šandrk Nukić*, Josipa Matotek and Zlata Dolaček-Alduk

Josip Juraj Strossmayer University of Osijek, Faculty of Civil Engineering and Architecture Osijek, Croatia

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ABSTRACT

Leadership has been widely studied both in business schools and by scholars. However, little attention has been given to leadership specifics in project-based organizations, especially in the construction industry. Aiming to decrease the gap in aforementioned body of knowledge, this article intended to contribute by identifying competences that are crucial to the success of project management as well as by revealing their manifestation in future construction project engineers.

Therefore, theoretical framework of this article offers a literature review on variety of leadership theories. Building onto that, empirical part investigated importance of different leader competences, as perceived by future project managers, being graduate civil engineering students.

The use of the mixed method research has been chosen as the most appropriate for this study. It combined the use of qualitative methods with survey obtained data based on a Likert scale. In respect of that, theoretical framework was constructed relying on the research of secondary data sources, whilst empirical part data were processed using descriptive statistics and nonparametric tests.

Findings show that there are no significant differences in opinion among students in respect of their gender and almost none in respect of study course. The lowest rated competence concerns indecisiveness, suggesting high level of students' self-confidence and self-awareness. The highest rated competence indicates students' tendency to have things under control. Such reluctance toward risk taking has been found as potentially harmful for their personal and professional growth. Although their propensity to risk is expected to increase with experience, fostering emotional intelligence related competences has been advised as a tool of smarter risk perception.

KEY WORDS

leadership style, leader traits, leader competences, project management, civil engineering

CLASSIFICATION

JEL: D23, L74, M12

*Corresponding author, η: isandrknukic@gfos.hr; +385 91 2240 752;
Vladimira Preloga 3, HR – 31 000 Osijek, Croatia

INTRODUCTION

Leadership is usually defined as the ability to influence people so that they willingly and enthusiastically perform a task, i.e. act towards accomplishment of organizational/project goals [1]. Its importance can be indicated by the stand of many scholars, that it is the only real function of management [2]. However, leaders are not necessarily managers [1]. The essence of leadership is not in the formal position of the leader but in the willingness of people to follow him [3]. Because of that there has been an enormous amount of studies trying to identify the key characteristics of a leader as well as to detect can one become a leader or the leaders are born as such.

Although leadership is obviously highly valued in general management literature, and it has been extensively studied for almost a century now, only recently have researchers been trying to investigate leadership style and competences within the field of project management, especially in construction industry [4]. Surprisingly, literature on project success factors ignored the project manager, his/her leadership style and competence [5]. Today, this knowledge gap is one of the most dynamic research topics. Building on different leadership schools which derived different leadership style typologies, key project manager's competences are being detected and considered the key to the success of project management [6]. Aiming to contribute to this discourse, research presented in this article intended to identify perception of relevant competences by future project managers in the construction industry. Such an aim is especially important at this moment of time, when investments in national infrastructure and other projects in all sectors of Croatian economy are fully certain [7], so the needs and interest in the profession of project management, especially in construction industry, are particularly emphasized. Fulfilment of so defined aim would enable both scholars and professionals to better direct their future efforts in developing successful project leaders as well as successful projects.

Based on the aforementioned, ensuing research question can be formulated: What is the self-evaluation of final year graduate students at the Faculty of Civil Engineering and Architecture Osijek, based on project managers' leadership competences advocated by various leadership schools?

Due to such research question, following hypotheses are defined:

- **H_1**: *Future project managers in construction industry, being final year graduate students at the Faculty of Civil Engineering and Architecture Osijek, perceive themselves to be competent in respect of both innate traits and competences that need to be learned*.
- **H_2**: *Future project managers in construction industry, being final year graduate students at the Faculty of Civil Engineering and Architecture Osijek, perceive themselves to have intellectual, managerial and emotional inteligence competences*.
- **H_3**: *There are no statistically significant differences among respondents in respect of gender*.
- **H_4**: *There are no statistically significant differences among respondents in respect of study course*.

The structure of the article is as follows: section two reviews the main leadership schools, section three describes the chosen research methodology and applied methods. In section four the findings of the empirical part of the research are presented and commented. The article ends with concluding remarks and recommendations for future research.

LEADERSHIP STYLES AND COMPETENCES

As early as the beginning of the 20th century, Chester Barnard, an American business executive and the author of pioneering work in management theory, suggested that leaders should have

both managerial and emotional functions. Managerial functions he considered as cognitive functions, including directing, guiding and decision making, whilst he looked at emotional functions as at cathetic functions, comprised of motivational aspects of goal-setting, developing faith and commitment [8]. His book and opinion became a landmark at university courses in management and organization, so it is understandable that it more or less influenced all future schools of leadership theory. Due to the huge amount of leadership related research, specific approaches might be classified as presented in subsequent subsections.

THE TRAIT SCHOOL

The trait school has been one of the early theories of leadership, marked by the belief that leaders are born, not made. Consequently, representatives of this school advocated the idea that effective leaders have common traits. The traits encompass personal characteristics a leader should possess [9].

There has been even a psychological instrument developed aiming to explain individual's personality. It was created by Isabel Briggs Myers and her mother Katherine Cook Briggs, so it is called Myers Briggs Type Indicator (MBTI). It has been used around the world for 70 years to understand personality and interests. MBTI differentiates 16 personality types based on preferences being Extroversion/Introversion, Sensing/Intutive, Thinking/Feeling, Judging/Perceiving [9]. The idea is that leader needs to know himself as well as his subordinates, in order to be able to adapt his/her leadership style for getting the task done and keep the team motivated.

The trait school dominated up to the 1940s, although there are still authors supporting the idea, whose studies searched for such traits even much later [5]. For instance, Kirkpatrick and Locke [10] identified six key traits of effective leaders:

- drive (a broad term which includes achievements, motivation, ambition, energy, tenacity, and initiative),
- leadership motivation (the desire to lead but not to seek power as an end in itself),
- honesty and integrity,
- self-confidence (which is associated with emotional stability),
- cognitive ability (intelligence),
- and knowledge of the business (technical knowledge).

One of the most prominent representatives of the trait school, Levicki, commented such traits by claiming that they are all genetically determined [11].

Soon after that, Turner conducted a comprehensive study of project management aiming to improve the process of achiving strategic objectives. Among other things, he pointed out the leader traits important especially for project managers [12]:

- problem solving ability,
- results orientation,
- energy and initiative,
- self-confidence,
- perspective,
- communication,
- negotiation ability.

In comparison to previously listed general management traits, it seems the major difference is in emphasizing communication. Turner says: „One of the most important skills of a good leader is to be able to communicate the vision for the project, and the process of achieving that vision" [13; p.15]. Obviously, with project management being intensively people oriented, traits from the scope

of emotional intelligence become more important. This does not diminish the value of technical skills, but arguments the finding [14] that both task-oriented and relationship-oriented leadership behaviors are appropriate and needed in project management, they just take turns during the life cycle of a project, so successful leader should be able to demonstrate all of the above mentioned traits. Regarding that need for alternation of styles, IPMA Competence Baseline [15; p.86] states that "the project manager must know what leadership styles exist and decide which one is appropriate for the project, the team being managed and when dealing with senior management and interested parties, in all types of situations."

Critics regarding the trait theory are based mostly on the Great Men Theory, which would mean that experience and training have nothing to do with leaders development and success [16]. However, it seems that, although certain genetic predisposition for sure exists, innate traits for themselves are not sufficient for modern cognition of successful leadership in project management – some competences need to be learned to make the manager capable to apply all the necessary styles.

THE BEHAVIORAL OR STYLE SCHOOL

In the period from 1940s to the 1960s, leadership studies were influenced mostly by the behavioural or style school, which assumes that leadership can be learned, that effective leaders can be made and that they adopt behaviour they find adequate [5].

Representatives of this school equate leader behaviour with leadership styles. Goal of all the theories encompassed by the style school is to find patterns in the behaviour of successful leaders so that such behaviour could be learned by future leaders as well [17; p.234].

Within behavioural theories all researchers can be classified into two categories. The first category is consisted of those who focus their research on a leadership style that ranges from autocratic through democratic to laissez faire style. The second group of researchers are those who divide leadership styles based on whether they are people-oriented or task-oriented [2].

When narrowing the leadership studies from general management to specifics of project management, Turner [12] stated that leadership styles exhibited by project managers relate to the first mentioned category. He identified 3 key parameters founding those four leadership styles, as shown in Table 1.

Table 1. Leadership styles of project managers [12].

parameter	autocratic	democratic	laissez-faire	bureaucratic
Team decision-making	low	high	high	low
Team decision-taking	low	low	high	low
Flexibility	high	high	high	low

Such a differentiation literature recognizes as leadership styles based on authority. An autocratic style is one in which all authority is concentrated in one person, the leader, who has unlimited decision-making power and does not consult with associates. The leader expects to be obeyed and introduces penalties and rewards he finds appropriate. Therefore, autocratic style is characterized by mostly one-way communication [3; p.494]. The greatest advantage of this style is speed with which decisions can be made, due to which some authors believe that autocratic style increases labour productivity [18]. However, more recent studies point out that, in modern conditions, autocratic style can harm team's morale and lead to only minimum of work contribution put in by team members, so it is considered appropriate only in crisis situations [2].

As opposed to that, the basic characteristic of the democratic leadership style is involving subordinates in the decision-making process. Although a democratic leader will make the final decision, all team members are encouraged to take a more participative role in the

decision-making process. Therefore, democratic leadership is considered a shared leadership, with two-way communication process applied. This not only increases job satisfaction by involving employees or team members in what is going on, but it also helps to develop people's skills. Consequently, team members feel in control of their own professional development and so are motivated to work hard by more than just a financial reward. Somewhat negative side of democratic leadership is that participation takes time. Because of that, democratic leadership is considered appropriate where teamwork is essential, and quality is more important than speed to market productivity [19].

The laissez-faire leadership style is more than an extreme version of democratic style: it involves non-interference policy, allows complete freedom to all workers and has no particular way of attaining goals. The concept is best described as "abdicating responsibilities and avoiding decisions" [20; p.475]. Leaders avoid making decision and do not involve in working units but they encourage the team members to do the work in their own way and to take the responsibility for their decision [21]. In real life, it is difficult to defend this leadership style unless the leader's subordinates are expert and well-motivated specialists, such as scientists [22; p.347].

And finally, bureaucratic leadership style is characterized by leaders who create, and rely on, the policy to meet organizational goals. Policies drive execution, strategy, objectives and outcomes. Bureaucratic leaders are usually strongly committed to procedures and processes. The danger here is that leadership's greatest benefits, motivating and developing people, are ignored by bureaucratic leaders [23]. This may be adequate in strict professions like military or banking, but in project management rarely.

In Croatia, a recent study [24] identified that democratic style is the most present, but in some groups of enterprises (tested after the size, growth phase and international orientation of the enterprise) autocratic, bureaucratic and laissez-faire styles are also present.

Although all of the aforementioned styles are generally all present and therefore their characteristics should be learned, every leadership situation is new, unique and unrepeatable, so moulding behaviour is simply not possible. Furthermore, although democratic leadership is endorsed by both the psychological literature and mainstream media, more recent studies [25] show that correlation of employee satisfaction with leadership style is a very complex phenomenon. Especially if appreciating the changes taking place in organizations, including more female employees and managers, increased informal team leadership, and more cross-cultural interactions, it can only be concluded that different leadership styles may be appropriate in different situations. Appreciating that, it can be concluded that behavioural school has made an important contribution to finding answers to the question of effective leadership and has been the base of schools developed afterwards, which shall be presented hereinafter.

THE CONTINGECY SCHOOL

The contingency school was popular in the 1960s and 1970s. By that time, illusions regarding the "big man" theory and the trait approach were definitely abandoned, and attention was focused on situation studies as well as the belief that leaders are the product of a given situation [3; p.503]. Rather than seeking universal theories of leadership that would apply in every situation, contingency theories suggest that what makes an effective leader would depend on the situation [5; p.51].

The claim that only the situation generates certain leaders would not be credible, because only some people, certain people, and not some others, became leaders in a given situation. Therefore, contingency theory emphasizes the importance of a specific situation, with respect to the importance of a person's characteristics [2]. In fact, due to the importance of the situation, leadership style is not dependant only of the leader, his characteristics and behaviour, but of

other stakeholders to the situation, too. Therefore, this theory assumes interaction among the leader and his associates (team members). Usually, the leader becomes the person who understands the aspirations of his associates and provides them with means for their accomplishment in a given situation [3; p.503].

There have been several schools of contingency theory that share such understanding of leadership, and one of the most notable is Fielder's theory. The most significant contribution of Fidler's studies is that he identified 3 key factors that determine leadership style and influence: leader-member relations, task structure and power position [5; p.51]:

1.) leader-member relation – it implies the degree of trust that team members have in the leader and the loyalty they show. This relation shows whether the group accepts the leader and are the members willing to follow him. Fidler believes this factor is paramount to leadership success,
2.) task structure – refers to whether the tasks are highly structured, clear and well defined. Task structure is the responsibility of the leader. When the structure is good, the business is more successful. Good structure is harder to achieve with non-routine tasks, which is often the case in project management,
3.) power position – it differs depending on the position that the leader has in the organizational hierarchy. A leader who has a strong position of power will more easily gain followers.

Fidler's critics say that his theory is not universally acceptable [26], but he certainly initiated studies which do not believe in perfect characteristics or one and only acceptable style. However, project management authors have always appreciated his theory as well as his distinguishing between task-oriented and participative approaches to leadership. In order to maximize effectiveness, he used a least-preferred-coworker (LPC) score to assign team members to leaders depending on a situation [5].

Another contingency theory that has proven popular in both project management and general management is path-goal theory, by House [27]. The idea of this theory is that the manager should apply such leadership style and behaviour towards team members that would contribute to their satisfaction. In addition, the leader is expected to clarify goals to subordinates, to help them find the best path to the goal, and to help them remove obstacles that exist in the way of achieving the goal [3].

As such, this theory is a combination of contingency approach to leadership and motivational theories. It identifies four leadership behaviours [2]:

1.) directive leaders – the leader tells the members what they need to do and how they should work,
2.) supportive leaders – they act friendly toward subordinates, support them, and show interest in their needs and accomplishments,
3.) participative leaders – take into account the proposals of subordinates and thus include them in the decision-making process,
4.) achievement-oriented leaders – set ambitious goals and expect maximum engagement of subordinates to achieve them, because they believe that challenges and taking responsibility motivate people to achieve the goals.

In order to choose which of these 4 styles to apply in a given situation, the leader must take into account characteristics of the team members (knowledge, experience, self-confidence, ...) as well as environmental factors (task nature and structure, formal authority system, organizational factors...) [28].

THE VISIONARY OR CHARISMATIC SCHOOL

This school emerged in 1980s and dominated until late 1990s, although there are still many authors appreciating its thesis [5]. Charismatic leadership brings back the characteristics of the person to the centre of the theory and underlines the importance of charisma for effective leadership [28].

Yet Greek philosophers wrote about charisma, and more recently, in the context of modern management, Max Weber used the term charisma to explain influence that is not based on traditional or legitimate authority, but on the perception of followers that the leader is filled with the gift of divine inspiration [29].

People with charisma have something that cannot be learned or imitated, one has it or not. Charismatic leaders are people with a strong influence on their followers. And the followers not only follow them, but highly value and respect them and are willing to do anything for them. Respect and appreciation are in fact mutual, and as a result, charismatic leaders often achieve above-average success [2].

The theory of charismatic leadership was proposed by R. House in 1976, who pointed out that charismatic leaders rely on 4 personal characteristics: dominance, self-confidence, the need for influence, and the belief in moral correctness, in order to improve their effectiveness [28].

Later, in mid 1980s, transformational leadership theory emerged, and some authors equalize it with charismatic leadership because charisma is a key point of both theories. In general, it can be said that a charismatic leader is by nature a transformational leader, while not all transformational leaders are also charismatic leaders. The concept of transformational leadership was initially introduced by sociologist James V. Downton. It was subsequently expanded and popularized by scientist Bernard M. Bass, who developed what is today referred to as Bass' Transformational Leadership Theory [2].

Transformational Leadership Theory explains how the leader affects followers and in respect to that identifies two types of leadership [5; p.51]:

1.) Transactional leadership
- emphasizes contingent rewards, rewarding followers for meeting performance targets,
- manages by exception, taking action when tasks are not going as planned.

2.) Transformational leadership
- exhibits charisma, develops vision, engendering pride, respect and trust,
- provides inspiration, motivating by high expectations,
- gives consideration to the individual, paying personal attention to followers,
- provides intellectual stimulation.

One of the reasons for which Bass'es theory became popular has been his pragmatic approach. He developed the Multifactor Leadership Questionnaire (MLQ) as an assessment tool for differentiation among transformational, transactional and even non-transactional laissez-faire leaders [30]. The questionnaire is even today the most widely used leadership assessment tool, although in somewhat upgraded version by Dulewicz and Higgs [31]. They integrated contextual concepts into the original tool and named their version Leadership Dimensions Questionnaire (LDQ).

Studies regarding leadership in the area of project management reach consensus that project manager's style should be rather transformational than transactional in order to increase project performance [32-34]. Transformational leadership is all about empowerment, and empowerment climate has been proven to have a significant positive effect on concern for task, concern for people and customer service, being so a measure of effective project management [35].

THE COMPETENCY SCHOOL

This school has been popular since late 1990s, being founded on extensive range of research aiming to identify the competencies of effective leaders. Although it appears to be the same as the trait school, crucial difference is that competencies can be learned, so the leaders can be made, not born [5; p.53]. Competences encompass personal characteristics (traits, as understood by previous schools) but also knowledge (including intelligence) and skills [36]. Recent studies show that leadership is not only inborn but can be developed if one focuses on the inborn preferences [9].

Probably the most comprehensive overview of the research and authors belonging to the competency school has been acomplished by Dulewicz and Higgs [37]. They found out that majority of the comptence school authors differentiate up to four types of competence that determine leaders performance: cognitive, emotional, behavioral and motivational. Based on their own observations, they suggested to narrow these competence types into three categories:

- intellectual (IQ),
- managerial skills (MQ),
- emotional (EQ).

According to them, there are in total 15 competences reliable for leader's performance, among which IQ accounts for 27 % of leadership performance, MQ accounts for 16 % and EQ accounts for 36 %!

Finally, Dulewicz and Higgs [37] emphasize that different competence profiles determine different leadership styles. Both competences and styles are shown in Table 2.

It is not enough to possess one of these crucial traits. A combination is necessary to create balance and develop into a leader who can produce an efficient team and satisfactory end results [38].

Table 2. Competence profiles and on them dependent leadership styles [5; p.55]).

category	competency	goal-oriented	involving	engaging
Intellectual (IQ)	Critical analysis and judgement	High	Medium	Medium
	Vision and imagination	High	High	Medium
	Strategic perspective	High	Medium	Medium
Managerial (MQ)	Engaging communication	Medium	Medium	High
	Managing resources	High	Medium	Low
	Empowering	Low	Medium	High
	Developing	Medium	Medium	High
	Achieving	High	Medium	Medium
Emotional (EQ)	Self-awareness	Medium	High	High
	Emotional resilience	High	High	High
	Motivation	High	High	High
	Sensitivity	Medium	Medium	High
	Influence	Medium	High	High
	Intuitiveness	Medium	Medium	High
	Conscientiousness	High	High	High

Furthermore, different leadership styles perform differently in different circumstances and project stages. In order to profile leaders according to the above listed competences and styles, Dulewicz and Higgs [37] have developed already mentioned assessment instrument, called Leadership Dimensions Questionnaire (LDQ), which is still one of the most appreciated assessment instruments in leadership theory and practice.

Modern leadership theories are continuously defining additional leadership styles, like authentic leadership, attributional leadership, lean leadership, e-leadership, cross-cultural leadership, interactive leadership and others. All of them reflect current context in leading human resources and market conditions in general, but time will be the judge of their merit and influence.

In the end, it is impossible to take a position on which of the presented theories of leadership is the best. In the spirit of scientific objectivity, it must be said that each of them has more or less elements that affect the success of the leader. As such, successful leadership is a combination of both personal characteristics, behaviour and situational factors. In addition, modern leadership styles have in common that they are increasingly participatory, in the sense that they tend to develop the independence and responsibility of their subordinates. This is especially important in project management and following chapters shall present is such trend evident among future leaders being student population.

METHODOLOGY

METHODS USED

The study presented in this article consists of a theoretical framework and an empirical research continuing on to it. Therefore, chosen methodology included both qualitative and quantitative scientific methods. The reason for such choice of research design is the fact that methodology of mixed method research provides a stronger understanding of the problem [39].

In order to create a relevant theoretical framework, the research of secondary data sources was conducted. The research combined the scientific method of analysis of the relevant literature, i.e. the method of synthesis for the purpose of the systematization of the analyzed data. In addition to that, scientific methods of inductive and deductive reasoning were used, in particular for the interpretation and comprehension of the collected data. Classification method was also used beneficial to presenting important typologies.

The main method applied during the empirical part of the study was a survey. The survey was conducted via a questionnaire as the principal research instrument. The questionnaire comprised of close-ended demographic questions as well as of 21 close-ended leadership related items with 5-point Likert-type response ordinal scales. Respondents rated each item with values ranging from 1 (strongly disagree) to 5 (strongly agree).

The responses obtained were processed using IBM SPSS 25 for Windows (Statistical Package for Social Sciences). Methods of descriptive statistics and non-parametric Kruskal-Wallis test were used in statistical data processing to identify statistical differences in the observed categories.

SAMPLING AND DATA COLLECTION

Empirical part of the research presented by this article aimed to investigate competences of a specific part of future project managers – chosen population have been final year graduate students of the Faculty of Civil Engineering and Architecture Osijek. During their education, these students acquire knowledge which is related to project management and is in accordance with Ordinance on the necessary knowledge in the field of project management [40]. Therefore, they are considered relevant respondents for this study and targeted as the study population.

The survey was conducted during January and February 2020. The survey questionnaire was created using Google Forms and as such was distributed using e-mails to all final year graduate students. Participation in the survey was anonymous and voluntary so the survey relied on random sampling. Students were allowed two weeks for the response.

Out of 101 students currently finishing their studies, 84 valid responds were collected. Renspose rate was 83,17 %. The sample has been consisted of 46,4 % female students and 56,3 % male students, which is consistent with overall gender structure of students at the Faculty. Respondents are among 21 and 26 years of age. Sample formation regarding course at which tested student are studying is shown in Figure 1. Detected portions reflect usual arrangement at the graduate university study.

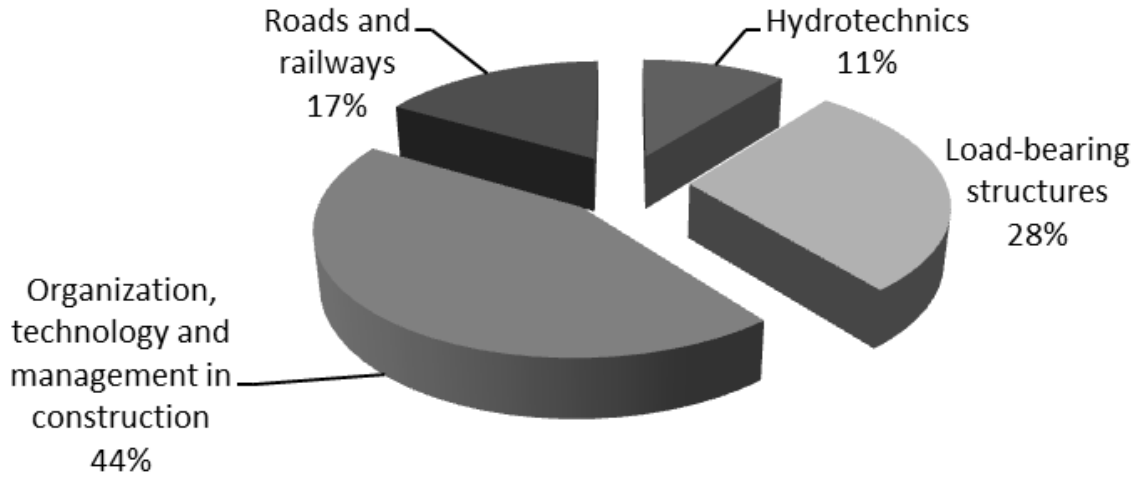

Figure 1. Study course of the sample.

Questionnaire used is unique as it was formed by combining leadership competences suggested by different leadership schools. However, reliability of the research has been approved by calculating Cronbach's Alpha coefficient. Its value is 0,770 so authors conclude that created questionnaire as the survey instrument is appropriate and obtained results are reliable.

RESULTS AND DISCUSSION ON LEADERSHIP COMPETENCES AMONG CIVIL ENGINEERING STUDENTS

In order to describe the basic features of the data in the research, descriptive statistics for all Likert scale items are presented in Table 3.

Identified means suggest the lowest valued (2,48) competence by all questioned students is described by the statement People think you are indecisive. This can be interpreted as in compliance with relatively highly valued traits regarding self-confidence, and as such is a positive outcome. In relation to that, findings from the study identifying Croatian managers' perceptions of qualities and skills that make a good leader pinpointed self-confidence as the most valued quality of a leader, followed by excellence in technical skills and task orientation [41, 42]. It may be concluded that civil engineering graduates perceive themselves as incorporating all those qualities, which is promising considering these are young people on the threshold of their professional life.

The highest valued (4,26) competence is described by the statement You like to keep things under control. This is further verified by relatively lowly rated traits described as You are prone to risk and You always play it safe.

Table 3. Descriptive statistics for all Likert scale items (N = 84).

Competences related questions	Min	Max	Mean	Std. Deviation
You enjoyed being a leader as a child.	1	5	3,56	1,196
You like to keep things under control.	1	5	4,26	0,852
People think you are indecisive.	1	5	2,48	1,024
You know how to deal with difficulties and defeats.	1	5	3,87	0,915
You consider yourself a motivator.	1	5	3,62	0,968
You feel like you have confidence.	1	5	3,76	1,001
When you are sure you are right you urge on those who do not trust you.	1	5	3,86	0,984
You prefer to work alone than in a team.	1	5	3,08	1,204
You consider yourself an optimistic person.	1	5	3,99	0,912
You find yourself more practical than creative.	2	5	3,76	0,952
You always play it safe.	1	5	3,27	0,998
You consider yourself a passionate person.	1	5	3,74	0,880
You are prone to risk.	1	5	3,20	0,979
You consider yourself a good persuader.	1	5	3,61	0,850
You feel confident in yourself	1	5	3,74	0,907
You have a vision for the future (you know what you want to achieve in the long run).	1	5	4,11	0,850
You consider yourself a self-aware person (in the sense that you set ambitious goals but also accept objective limitations)	1	5	4,08	0,881
You consider yourself an authoritative person.	1	5	3,31	0,850
You consider yourself a cunning person.	1	5	3,18	1,043
You feel you are encouraging others on the team to be more productive.	1	5	3,71	0,858
You find yourself inspiring.	1	5	3,56	0,923

Additionally, as part of the quantitative data analysis, an analysis of all items was performed regarding to some demographic characteristics of the respondents – gender and graduate study course using the non-parametric Kruskal-Wallis rank test. The test was chosen for this part of analysis because it compares two or more independent samples of the same or different sample size. Since it is a nonparametric method, the Kruskal–Wallis test does not assume a normal distribution. Purpose of Kruskal–Wallis test is to decided whether the rank sums are so different that it is unlikely that they belong to samples selected from the same population [43]. The chosen level of significance was $\alpha = 0,05$, which means that in the case when the p-value is less than 0,05, the null hypothesis of equality in attitudes regarding gender or graduate study course was rejected.

The results of conducted analysis showed that the p values were larger than 0,05 for all items regarding gender, and therefore the null hypothesis was not rejected here. It was concluded that there is no statistically significant difference in the respondents' attitudes regarding gender.

Additionally, item "You are prone to risk" is the only trait expressing statistically significant differences among respondents regarding graduate study course. Mean ranks related to risk tendency of respondents, shown in Table 4, suggested that students studying hydraulic engineering could be the only among civil engineering graduates moderately prone to risk.

Table 4. Mean ranks regarding tendency to risk.

Competence	Graduate study course	N	Mean Rank
You are prone to risk	Hydraulic engineering	9	63,22
	Transportation Infrastructure	14	43,57
	Load Bearing Structures	24	46,02
	Construction, Management and Technology	37	34,77
	Total	84	

Such finding was further tested by Kruskal-Wallis test. Its results, shown in Table 5, confirmed that there is a statistically significant difference ($p < 0,01$) among tested graduate study courses regarding tendency to risk taking. Therefore, the null hypothesis of equality is rejected and it can be concluded that all students but those studying hydraulic engineering are not prone to risk.

Table 5. Kruskal-Wallis test regarding tendency to risk.

Kruskal-Wallis H	11,747
df	3
Asymp. Sig.	,008

Such risk reluctance is not in compliance with results of the study conducted among Rochester Institute of Technology Croatia's undergraduate students, which detected those students are willing to take risks [44]. Such a difference in the attitude could be explained by the fact that risk itself is a broad category, which might also be perceived in different ways due to character and/or profession differences. Generally, risk is the exposure to the possibility of loss, related to doing something when things cannot be held under control and the outcome is not certain [45]. However, students' lack of tendency towards risk taking is somewhat concerning since, although there will be some anxiety involved with the uncertainty of success, risk-taking has been found to be helpful in solving differences in ideas, reaching consensus, and making informed decisions [46], which makes it very important for one's personal growth and elevating his/her potential for high achievement and strong leadership [45]. Authors find this a very good argument for which the rational risk appetite of future project managers should be encouraged during their education, in terms of highlighting differences and appropriate treatment of intellectual risk (engaging in adaptive learning behaviours), financial risk, technical risk and many other risk types.

An interesting recent research [47], conducted among project managers in construction industry, revealed that several factors influence on risk propensity and risk management: individual factors (experience, qualification, other leadership qualities, multitasking ability and risk management practices) and project factors (budget, scope, schedule, uniqueness, complexities). Out of those, experience and other leadership qualities are the most influential.

Based on experience remark and the fact that above presented results concern students, a rising trend of their risk propensity could be expected as they gain experience. And regarding other leadership qualities, such finding coincides with already mentioned statement by DuBois and coauthors [38] that balance among different competences is needed. Due to the also previously emphasized evidence that emotional category of leaders' competences (self-awareness, emotional resilience, motivation, sensitivity, intuitiveness, conscientiousness, influence)

account for more than a third of the success of a leader [37], authors advise to understand these other competences primarily as emotional intelligence competences and foster them in project management study programmes. Unfortunately, not just that current study programmes lack these skills, but findings show that Croatian professionals give preference only to technical skills and do not rate emotions and interpersonal skills highly, i.e. they have not even become aware of emotional intelligence importance [41, 42]. Elsewhere, beside enhancing risk propensity and accounting for leader's success, emotional intelligence of leaders in project management has been proven to significantly determines collaboration satisfaction outcomes perceived by other participants in a project team: performance contribution satisfaction, efficiency satisfaction, relationship satisfaction, and interests satisfaction [48].

CONCLUSION

The first part of this article offers an overview of leadership theories, including emphasis on their specifics in project management where applicable. As leadership has been widely studied for a long time, this theoretical framework turned to be an extensive guide from the early trait theories, over behavioural, contingency and charismatic schools to modern competency view. At the same time, it offered a fresh insight into characteristics of leadership in the field of project management, highlighting the fact that this overview has been created because being aware of different leadership styles is crucial for project managers, who should be able to adapt their style not only according to their personality but also according to the project type and phase as well as the project team attributes.

Empirical part of the research tested hypothesis. Results confirmed the first three hypothesis while the last one was partially confirmed:

- Future project managers in construction industry, being final year graduate students at the Faculty of Civil Engineering and Architecture Osijek, perceive themselves to be competent in respect of both innate traits and competences that need to be learned.
- Future project managers in construction industry, being final year graduate students at the Faculty of Civil Engineering and Architecture Osijek, perceive themselves to have intellectual, managerial and emotional intelligence competences.
- There are no statistically significant differences among respondents in respect of gender.
- There is statistically significant difference among respondents in respect of study course only concerning one tested item – propensity to risk.

Findings demonstrated that future project managers involved in civil engineering definitely have the needed self-confidence to become true leaders. However, they should improve their emotional intelligence and especially change their perception of risk. From their perspective, the image of risk is always negative and their comfort zone is where they have everything under control, whereas they should embrace undertaking intellectual risk as a way of professional growth. The research results are somewhat encouraging as they indicate this could change as they gain experience. Nevertheless, taking an active role regarding risk and emotional intelligence training is advised.

The main limitation of this research is its focus on a particular population as well as choosing an appropriate sample, which do not allow generalization of conclusions. However, findings are reliable and considered indicative. As such, they could represent a valuable contribution to future larger scale research.

Authors find it useful to expand the research over different university studies within project management study programmes as well as among project management professionals, in order to enable comparison.

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