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A Quantitative Analysis of Factors Affecting the Adoption of Micro-management in Engineering Projects

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Article Info	ABSTRACT
<p>Received: 06 March 2026 Revised: 28 March 2026 Accepted: 28 March 2026 Available online: 31 March 2026</p> <p>Keywords: Project; project management; Construction management; Micro-management; Micromanager; Engineering companies.</p>	<p>Micro-management is a type of management in which the manager accurately monitors and intervenes or regulates the work of his subordinates or his employees in detail, and it is the attempt of managers to interfere, influence and control anything in the team, situation or place, Everything in this world carries two different directions, one negative and the other positive, and we aim in this research to exploit the advantages of the method of micromanagement and prove that it can be a successful tool if used correctly and at specific times and within certain limits, in this research the factors affecting Applying this method in construction contracting companies in Iraq to take advantage of this method in identifying the most important problems leading to financial corruption in order to eliminate or reduce them in order to advance the current reality of projects, so the researcher reached the most important factors, including (administrative style, organizational culture) and other factors that have been clarified in a way. In detail in this research, the characteristics of the micromanager were also studied, which represent the cornerstone of the success and failure of this technique, as the effect of each characteristic and the possibility of its availability in the vicinity of engineering companies was addressed.</p>

1. Introduction

In response to the micromanagement negativity, we want to study and prove that micromanagement is not a unilateral bad, as is shown in contemporary literature [1]. Goldsmith concluded that Micromanagement is not a dirty word if you do it right. Micro-management is not always an option, but an industry standard, for example during audits, investigations, problem solving, document editing and policy review. So, the question is not whether or not you are doing micromanagement. It's how to do it right. Moreover, Micro-management can be justified if the task is new, complex, of great value and requires great care and quality control. In the event that there are time constraints in fulfilling

customer requests or legal requirements, micromanagement may become an exit vehicle. As a supervisor, if you are stuck with an underperforming staff, then you have no choice but to micromanage [2]. I believe micromanaging is a skill (if done right) that not everyone can master. Not everyone has the ability to monitor and control every step of the process. Bosses who stick their noses to every detail because they have nothing smarter to do are the representatives of the detail management that made a mistake. But heads who watch closely, providing detailed guidance and corrective feedback when needed, are completely opposite [3].

Micromanagement means carefully managing things and assessing or regulating the procedures [4]. Compulsive, equivalent mental



dysfunction may be micromanagement for addicts and alcoholics. They all appear to lack the ability to understand and have a degree of cynicism and uncertainty about their own actions. Micromanagers are control freaks with an obsession with meaningless data. Without excuse, they may set deadlines, refuse to give loans to subordinates, count the amount of paper used for prints and other actions that indicate a major need for supervision and control [5]. Micromanagement now generally refers to the supervision of an enterprise in every detail, with the effect of obstructing change and neglecting larger, higher-level policy problems. Micromanagement was practiced and understood long before we labeled it as an organizational pathology. Despite all the negative aspects that are said about it, it is not devoid of positives that can be used to eliminate some problems or reduce them, as careful monitoring of all details will help in controlling financial matters greatly through knowing the things in which these funds are exploited, as well as continuous monitoring. It can help in diagnosing weak sites at work and thus solutions will be developed in order to address this, and other matters that can be exploited to get the most out of the features of this method,

An important contributing factor to low employee morale is micromanagement. Employees do not want to be micromanaged and most employers don't want to treat them as micromanagers. Micromanagement leaves disempowered, demotivated and disengaged workers. This causes a rift between management and staff, causing employees to resist any administrative changes they want to make, leading to discontent and stagnation as well. Staff has regularly reported that the three most important reasons for leaving the correctional service are conflicts with co-workers, poor leadership and the feeling that management does not value them, both of which are significantly influenced by micromanagement [6].

1.1. Purpose

The purpose of micromanagement:

- Allows greater organizational power
- Makes reliable metrics and minutia awareness
- Can help workers on board (reach speed)

- Improves the efficiency of complex and tailored operations

To avoid the negative effects of micromanagement, Wright proposes four suggestions: being flexible, setting smarter goals, being outcome-oriented, and behaving like a player/coach. As a boss, the use of these four variables has a direct and beneficial effect on productivity and job satisfaction, resulting in lower turnover and higher benefit [7].

1.2. When is micro-management useful for the work?

1. Hire new individuals
2. The start of new operations or initiatives
3. Confrontation with financial or legal issues
4. Staff have a proven record of problems
5. Engaging in high-risk operations
6. Shift Policy Change Strategy
7. Changing top leadership [8]

1.3. We can identify research objectives as follows:

1. Provide an overview of the characteristics and advantages of the micro-management methodology and identify deficiencies, strengths and weaknesses and compare them with other methodologies in order to find a common bridge and promote a better understanding of best practices and uses of project management and construction companies.
2. Study, analysis and evaluation the factors and criteria affecting the application and success of the micro-management methodology.
3. Study the possibility of adopting the micro-management methodology for the engineering companies in its various operations.

Developing a framework for a micro-management methodology that is easy to use in managing engineering companies or in some management functions in Iraq.

1.4. Some Previous studies

No.	Author	Result
1	Jie Li & Umer Khalid (china,Pakistan,Sweden) (2015) (9)	<p>In this report, the researchers researched micro-management in the engineering context, where a quantitative and statistical survey was carried out to assess the effects of micro-management in the engineering environment. Where a study was applied to a group of professional workers, and the findings were that some executives were opposed to using this administrative approach and some of them were supporters as well as staff, some of them opposed this technique and some of them accepted it.</p> <p>The weakness of managerial skills for engineers is the reason researchers resort to studying the application of this system. The main goal of researchers is to understand the administrative requirements in the engineering world, and the following signs of micro-management have ultimately been established:</p> <ol style="list-style-type: none"> 1-Control over methodology 2-Excessive reporting and updates 3-Control and manipulation of time 4-Failure to subordinate self 5-excessive approval requirement <p>The researchers defined the most important micro-management characteristics:</p> <ol style="list-style-type: none"> (1) Rigorous attention to Detail & physical appearance (2) Meticulous training, implementation & follow-up (3) Tight regulation of finance & logistics (4) Testing & surveillance (5) Rigorous preparation and never-ending learning
2	Petter Bergström, Lars Peter Raknes, 2016 (Oslo, Norway) (1)	<p>Supporting it with (6) social modeling and caregiving, and that these categories are completed ,It will have the best effects and turn the concept of (micro-management) into a positive one, away from the known negativity about it. And the researchers said that (micro-management) should be used as a tool in the manager's hands that he uses at particular times and not as a permanent behavior. Thus the manager maintains a certain balance between (micromanager's) actions and achieving a cohesive working atmosphere characterized by intimacy and affection, such that a family relationship is identical to the relationship between the manager and employees. It will be very successful in doing so and the researchers pointed out that this technique's success in places of study does not mean its success everywhere.</p> <p>The researchers concluded that the excessive use of micromanaging actions on the part of the employees contributed to general aversion and great dissatisfaction. During the talk with them, The workers asked to dispense with micromanagement behaviour because it caused them considerable stress and stress during work and its consequences were also bad in organizational management, and they wanted to be the manager A style that provides them with positive input instead of managing them.</p> <p>The researchers explored the Employers' Viewpoint analysis of micromanagement. For them for their smooth and effective work, leadership is a key element in every organization, And they suggested that micromanagement leads to raising the level of employee skills and capabilities and allows them to perform better, and that micromanagers are very coordinated and ideal leaders in their opinion.</p>

Regarding the previous studies, the researcher has benefited from them in determining what causes the most aversion to the employees regarding the behavior of the micromanager.

Accordingly, the most important characteristics that could lead to the progress of work without alienating the employees were determined. The researcher also concluded that the success of this

method in one aspect does not mean its success in every places.

The large number of financial corruption and the use of traditional management led to the delay of projects. The main problem was that managers are far from the details of the project. Therefore it is assumed that if (micro-management) is used in project management and the manager becomes

close to the details, he will get rid of his problems and obstacles.

2. The Research Methodology:

Figure 1 illustrates the methodology of the current research.

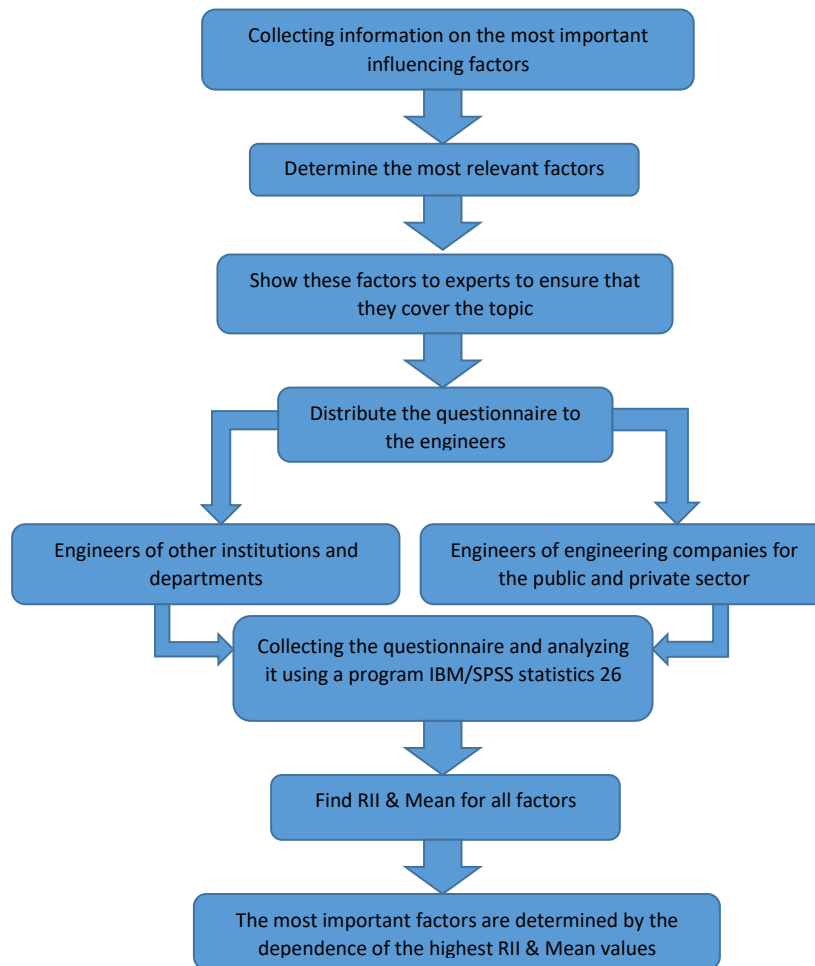


Figure 1. Research methodology.

2.1 Data collection and analysis:

1. The researcher initially collected information from previous studies about the most important factors that could affect the success or failure of applying this administrative method, then these factors and information were presented to specialists in this field with a number of not less than 15 experts in order to discuss the question form and the extent of understanding The question and the

importance and impact of each question, and are these questions sufficient to cover the topic or not. After that, a final version of the questionnaire was reached.

2. After discussing the questionnaire with the experts, and specifying the type of construction projects that will be worked on, which are building projects. the researcher prepared a questionnaire form that includes three axes, the first axis, personal information about the sample to

- know the size of its impact on the results, the second axis includes the evaluation of the explanatory information and the third axis, questionnaire information to determine the factors by the sample
3. The questionnaire was distributed to samples of engineers in the engineering companies of the public sector, engineers in the Baghdad governorate building, school buildings engineers of the Ministry of Education in Baghdad and Kut, as well as engineers in the Ministry of Higher Education in Najaf and Karbala, and engineers in other departments.
 4. Due to the current circumstances, most of the private sector engineering companies stopped working, so it was difficult to reach these companies, so an electronic questionnaire was created and distributed online to public sector engineers in particular.
 5. The questionnaire sample contained bachelors, masters and doctoral degrees, and both male and female genders.
 6. More than 125 questionnaire samples were sent in, and only 98 samples were received.
 7. The central end theory was relied upon by statistics, which indicates that the sample's arrival of more than 30 gives an accuracy of more than 99, so the sample size consisting of 98 questionnaires was considered sufficient to reach the required accuracy
 8. After receiving the samples, they were analyzed using the IBM/ SPSS program, and the results were obtained in the following tables.
 9. The significance of each element was determined based on the (relative importance index (RII)) When two factors are similar with this value, we take the value that is (Mean) higher.

$$RII = \frac{\sum_{k=0}^N (X1 \times S1 + X2 \times S2 + X3 \times S3 + \dots + Xn \times Sn)}{A \times N} \quad (1)$$

Where:

RII= the Relative Importance Index.

S = Weight gives to any factors by responders and will rang (1 to 5) where '1' is less important and '5' is high important. OR range (1 to 3)

X=for each factor or choice, frequency of each rating

N= Total number of responses for that factor or option

A=the highest weights (i.e. in this case 5, or 3)

In case of 5-point Likert scale

RII values	Importance level (RII-Level)	
$0.8 \leq RII \leq 1$	High	H
$0.6 \leq RII \leq 0.8$	High - Medium	H-M
$0.4 \leq RII \leq 0.6$	Medium	M
$0.2 \leq RII \leq 0.4$	Medium-Low	M-L
$0.0 \leq RII \leq 0.2$	Low	L

In case of 3-point Likert scale

RII values	Importance level (RII-Level)	
$0.66 \leq RII \leq 1$	High	H
$0.33 \leq RII \leq 0.66$	Medium	M
$0.0 \leq RII \leq 0.33$	Low	L

10-After the analysis of the sample's experiences, it was found that the sample's experience rate is 16 years, and this means that the sample has good experience and at the same time it has youth energy, and thus an indication of the possibility of community knowledge or acquaintance with this technique as it is a modern technology that has not been applied for a long time.

3. Results and Discussion

Since micromanagement was previously described, it depends heavily on the process, the manager would follow in implementing this technology, so micromanager must be identified by a collection of descriptions to be able to implement this technique. The most important aspect is the micromanager's characteristics, so in this table (1) the sample's opinion on the value of each trait will be studied, while in Table (2) the probability of each feature being met by the current managers is studied.

Table 1. Sample opinion on the importance of micromanager characteristics

No.	Specifications	very important	important	Average importance	Acceptable	not important	Mean	RII	RII Level
1	Proficient in task delegation	47	40	9	1	1	4.34	0.87	H
2	Possesses the ability to plan successfully	68	22	4	2	2	4.55	0.91	H
3	Has the capacity to understand and support the team's progress	64	24	10			4.55	0.91	H
4	Able to provide necessary management training to employees	30	45	18	5		4.02	0.8	M-H
5	provides the necessary technical training to the staff to support his management approach	38	40	15	5		4.13	0.83	H
6	Focus on a directive rather than a supervisory approach.	47	25	16	5	5	4.06	0.81	H
7	Proficient in managing project time and budget.	50	25	15	4	4	4.15	0.83	H
8	Capable of project quality control	45	36	10	5	2	4.19	0.84	H
9	Knowledge of risks affecting time, cost, or scope of work.	46	37	9	3	3	4.21	0.84	H
10	Excellent at delegating and assigning tasks.	44	35	14	5		4.20	0.84	H
11	Ability to monitor performance and motivate employees.	40	42	13	3		4.21	0.84	H

Regarding this Table 1, all the traits in it got high ratings of H with respect to RII except for the trait 4 that got the estimate of H-M and the sequence of traits was as follows:

No.	Adjective	RII	RII-Level	Mean
1	2-Capable of successful planning	0.91	H	4.55
2	3- Knowing the team's ability and progress	0.91	H	4.55
3	1-He Is able to segment the work	0.87	H	4.34
4	9-Knowing all the risks that may affect time, cost, or scope	0.84	H	4.21
5	11-he is Skilled at performance monitoring and motivation	0.84	H	4.21
6	10-He is skilled in delegating work	0.84	H	4.20
7	8-Capable of project quality control	0.84	H	4.19
8	7-Capable of controlling project time and budget	0.83	H	4.15
9	5-provides the technical training necessary to the staff to support its management approach	0.83	H	4.13
10	6-He uses the manner of guidance, not monitoring	0.81	H	4.06

Table 2. The possibility of availability of Micromanager Characteristics in the sample population

No.	Specifications	Available	Sometimes available	Not available	Mean	RII	RII Level
1	He Is able to segment the work	34	55	9	2.26	0.75	H
2	Capable of successful planning	30	50	18	2.12	0.7	H
3	Knowing the team's ability and progress	33	50	15	2.18	0.72	H
4	Provides the necessary training for employees in the management approach	28	45	25	2.03	0.67	M
5	provides the technical training necessary to the staff to support its management approach	28	48	22	2.06	0.68	H
6	He uses the manner of guidance, not monitoring	38	45	15	2.23	0.74	H
7	Capable of controlling project time and budget	28	50	20	2.08	0.69	H
8	Capable of project quality control	33	45	20	2.13	0.7	H
9	Knowing all the risks that may affect time, cost, or scope	28	52	18	2.10	0.69	H
10	He is skilled in delegating work	35	48	15	2.20	0.73	H
11	he is Skilled at performance monitoring and motivation	35	47	16	2.19	0.72	H

Table 2 is the possibility of the availability of each attribute, all the traits obtained RII-LEVEL = H except for the trait (4) obtained the estimate of RII-LEVEL=M, so the sequence of traits became as follows:

No.	Adjective	RII	RII-Level	Mean
1	1- He Is able to segment the work	0.75	H	2.26
2	6- He uses the manner of guidance, not monitoring	0.74	H	2.23
3	10- He is skilled in delegating work	0.73	H	2.20
4	11- he is skilled at performance monitoring and motivation	0.72	H	2.19
5	3- Knowing the team's ability and progress	0.72	H	2.18
6	8- Capable of controlling project time and budget	0.7	H	2.13
7	2- Capable of successful planning	0.7	H	2.12
8	9- Knowing all the risks that may affect time, cost, or scope	0.69	H	2.10
9	7- Capable of controlling project time and budget	0.69	H	2.08
10	5- provides the technical training necessary to the staff to support its management approach	0.68	H	2.06

Table 3. The main factors of Micromanagement and influencing its application.

No.	Factors	possible	impossible	Sometimes possible	Mean	RII	RII-LEVEL
1	Administrative style	66	7	25	2.60	0.86	H
2	Organizational culture	49	20	29	2.30	0.76	H
3	good and sober micromanagement behavior	36	20	42	2.16	0.71	H
4	Micromanager and its aforementioned attributes	43	22	33	2.21	0.73	H
5	The employer's acceptance of the effects that occur in the following:						
A	The benefit derived from the project, which is affected by business decisions and its results	41	18	39	2.21	0.73	H
B	the legal and moral rights of the employer	40	19	39	2.31	0.76	H
C	Specialized and organizational knowledge	45	15	38	2.20	0.73	H
D	The time for providing resources, allocating and providing funding	40	20	38	2.27	0.75	H
E	His ownership of a specific property	43	17	38	2.19	0.72	H
6	micromanagement aligns with the company's projects methodology	39	20	39	2.21	0.73	H
7	Employees accept the micro-management methodology	40	19	39	2.60	0.86	H

The researcher studied the possibility of their availability in the sample community. The highest to the lowest is as follows:

No.	Factor	RII	RII-Level	Mean
1	1-Administrative style	0.86	H	2.60
2	7-Employees accept the micro-management methodology	0.86	H	2.60
3	(5-B)- the legal and moral rights of the employer	0.76	H	2.31
4	2-Organizational culture	0.76	H	2.30
5	(5-D)- The time for providing resources, allocating and providing funding	0.75	H	2.27
6	(5-A)- The benefit derived from the project, which is affected by business decisions and its results	0.73	H	2.21
7	4-Micromanager and its aforementioned attributes	0.73	H	2.21
8	6- micromanagement aligns with the company's projects methodology	0.73	H	2.21
9	(5-C)- Specialized and organizational knowledge	0.73	H	2.20
10	(5-E)- His ownership of a specific property	0.72	H	2.19
11	3-good and sober micromanagement behavior	0.71	H	2.16

4. Conclusions

The researcher's findings in this research of factors differ from what the rest of the researchers have found, since the aspects dealt with by the rest of the researchers differ from what was dealt with in this research if all previous research did not go to the effect of micro-management in the management of construction contracting companies, where work was previously done on companies Administrative but not constructional

From the research on the factors affecting the application of micro-management, it was found that:

Note that the RII range is very close, meaning the researcher relied on factors used in previous studies and research, all of which were discussed with experts and have a high impact. It is possible that most of the sample was influenced by previous readings due to the novelty of the methodology.

The researcher found that the most important characteristic of a micromanager is the ability to plan successfully and understand the team's capabilities and progress..

1. The most needed and common micromanager trait in construction companies is the ability to delegate work.
2. The success of a detail-oriented manager is more crucial in financial management than in technical management.
3. The absence of a manager during the design phase, while their importance increases during the implementation and project financing phases.

Abbreviations

RII	Relative Importance Index
H	High
M	Medium
L	Low

Conflict of interest

The authors declare no conflicts of interest concerning this research.

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Author Contribution

T.A. Obaid proposed the research problem and developed the theoretical framework. H.K. Breesam verified the analytical methods. T.A. Obaid and H.K. Breesam authors participated in the discussion of the results and contributed to writing the manuscript.

AI Declaration Statement

The authors confirm that the manuscript has been written without the assistance of generative AI or AI-based writing tools.

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