

## 8. Appendices

Source: Own calculation and elaboration:

### 8.1. Appendix 1: English questionnaire

**QUESTIONNAIRE**  
Faculty of Economics and Management



This questionnaire is designed to know relevant information for the development of the Diploma Thesis: Comparison of management practices in the monitoring and control phase in construction companies: Colombia and the Czech Republic - A case study.  
The Instructions to answer this questionnaire are given at the beginning of each question.

In the following question, please write or select your answer by ticking (X) in the appropriate box:

1) Age: 20-30 years  31-40 years  41-50 years  Above 50 year .

2) Gender: Female  Male .

3) What is your highest educational degree?

4) Years of experience\_\_\_\_\_.

5) What is your position inside the current construction company?\_\_\_\_\_

6) How long -in months- is the total length of the project? \_\_\_\_\_

7) what is the percentage of its current status? \_\_\_\_\_

8) According to your opinion for the below phases, please give a sequence based on the degree of difficulty for the achievement of the project milestone.

Use the score from 1 to 4 (5 if you use "other"), where: 1 the least difficult, 2 slightly difficult, 3 moderately difficult, 5 the most difficult:

- a. Planning \_\_\_\_\_
- b. Start\_\_\_\_\_
- c. Execution\_\_\_\_\_
- d. Closing\_\_\_\_\_
- e. Other, which one? \_\_\_\_\_

9) What are the management techniques used in the project?

Please select by ticking (X) all necessary options, according to the project where you are currently working on:

Critical Path Method (CPM)	<input type="checkbox"/>
Gantt chart	<input type="checkbox"/>
Program Evaluation and Review Technique (PERT chart)	<input type="checkbox"/>
Quality checklist	<input type="checkbox"/>
Provisional Acceptance Certificate (PAC)	<input type="checkbox"/>
Lean Construction/Last Planner System	<input type="checkbox"/>
Project Review	<input type="checkbox"/>
Others:	<input type="checkbox"/>
Don't know/No opinion	<input type="checkbox"/>

In the following questions, in a score from 1 to 5 where 1 is the worst score and 5 is the best, evaluate the following processes and management techniques according to the purpose mentioned in each question. Please evaluate only those known to you:

10) Purpose A: Understanding of the status -progress and delay- of activities in the project schedule.

Critical Path Method (CPM)	1	2	3	4	5
Gantt chart	1	2	3	4	5
PERT chart	1	2	3	4	5
Quality checklist	1	2	3	4	5
Provisional Acceptance Certificate (PAC)	1	2	3	4	5
Lean Construction/Last Planner System	1	2	3	4	5
Project Review	1	2	3	4	5
Other:	1	2	3	4	5

11) Purpose B: Achievement of goal for successful finalization of the project.

Critical Path Method (CPM)	1	2	3	4	5
Gantt chart	1	2	3	4	5
PERT chart	1	2	3	4	5
Quality checklist	1	2	3	4	5
Provisional Acceptance Certificate (PAC)	1	2	3	4	5
Lean Construction/Last Planner System	1	2	3	4	5
Project Review	1	2	3	4	5
Other:	1	2	3	4	5

THANK YOU FOR YOUR PARTICIPATION!

## 8.2. Appendix 2: Spanish questionnaire



### CUESTIONARIO

Facultad de Economía y Administración

Este cuestionario está diseñado para conocer información relevante para el desarrollo de la Tesis de Grado: Comparación de prácticas administrativas en la fase de monitoreo y control de proyectos de construcción: entre Colombia y República Checa – Un estudio de caso.

Las instrucciones para responder este cuestionario se dan al principio de cada pregunta.

En las siguientes preguntas, por favor seleccione con una (X) la casilla correspondiente:

1) Edad: 20-30 años  31-40 años  41-50 años  Más de 51 años .

2) Género: Femenino  Masculino .

3) Cuál es su más alto nivel de educación?

4) Años de experiencia \_\_\_\_\_.

5) Cuál es su posición dentro de la actual compañía? \_\_\_\_\_.

6) Cuánto tiempo -en meses- es la duración total del proyecto? \_\_\_\_\_

7) En qué porcentaje de ejecución se encuentra el proyecto? \_\_\_\_\_

8) De acuerdo con su opinión para las siguientes fases, proporcione una secuencia basada en el grado de dificultad para el logro de las metas del proyecto.

Use el puntaje del 1 al 4 (5 si usa "otro"), donde: 1 el menos difícil, 2 ligeramente difícil, 3 moderadamente difícil, 5 el más difícil: por favor de una secuencia basada en el grado de dificultad para el cumplimiento de las metas del Proyecto.

- a. Planeación \_\_\_\_\_
- b. Inicio \_\_\_\_\_
- c. Ejecución \_\_\_\_\_
- d. Cierre \_\_\_\_\_
- e. Otra, cuál? \_\_\_\_\_

9) Cuáles son las técnicas administrativas usadas en el proyecto?

Por favor seleccione con una (X) todas las opciones necesarias, de acuerdo al Proyecto en donde actualmente se encuentra trabajando:

Método de la Ruta Crítica (CPM)	<input type="checkbox"/>
Diagrama de Gantt	<input type="checkbox"/>
Técnicas de Revisión y Evaluación de Programas (gráfica PERT)	<input type="checkbox"/>
Listas de Verificación de Calidad	<input type="checkbox"/>
Certificado de Aceptación Provisional (PAC)	<input type="checkbox"/>
Lean Construction/Last Planner	<input type="checkbox"/>
Revisión del Proyecto (Project Review)	<input type="checkbox"/>
Otras:	<input type="checkbox"/>
No sabe, no opina	<input type="checkbox"/>

En las siguientes preguntas, en un puntaje de 1 a 5 (donde 1 es el peor puntaje y 5 es el mejor), evalúe los siguientes procesos y técnicas de gestión que son conocidos por usted, de acuerdo con el propósito mencionado en cada pregunta.

10) Propósito A: Fácil entendimiento del cronograma del proyecto del estado de las actividades -avance y atraso-

Método de la Ruta Crítica (CPM)	1	2	3	4	5
Diagrama de Gantt	1	2	3	4	5
Técnicas de Revisión y Evaluación de Programas (gráfica PERT)	1	2	3	4	5
Listas de Verificación de Calidad	1	2	3	4	5
Certificado de Aceptación Provisional (PAC)	1	2	3	4	5
Lean Construction/Last Planner	1	2	3	4	5
Revisión del Proyecto (Project Review)	1	2	3	4	5
Otro:	1	2	3	4	5

11) Propósito B: Logro de las metas para la finalización exitosa del proyecto.

Método de la Ruta Crítica (CPM)	1	2	3	4	5
Diagrama de Gantt	1	2	3	4	5
Técnicas de Revisión y Evaluación de Programas (gráfica PERT)	1	2	3	4	5
Listas de Verificación de Calidad	1	2	3	4	5
Certificado de Aceptación Provisional (PAC)	1	2	3	4	5
Lean Construction/Last Planner	1	2	3	4	5
Revisión del Proyecto (Project Review)	1	2	3	4	5
Otro:	1	2	3	4	5

Gracias por su participación!

### 8.3. Appendix 3: List of selected Construction Companies

The construction companies have different numbers of respondents:

Country: COLOMBIA*
Acierto Inmobiliario
Arconsa, Arquitectura y Construcción S.A.
Arquitectura y Concreto S.A.
Conaltura Construcción y Vivienda S.A.
Coninsa y Ramón H. S.A.
Constructora Capital Medellín S.A.S.
Constructora Colpatría S.A.
Construcciones IGA
Intervé
Vértice Ingeniería
Construcciones Torre la Vega del Sur S.A.

Country: CZECH REPUBLIC*
Central Group Inc.
Karlin group
Metrostav Development a.s.
Penta Investments
PP 53, a.s.
YIT Stavov Ltd.

### 8.4. Appendix 4: Table with age range and gender of the respondents.

1.- 2. AGE RANGE AND GENDER				
COUNTRY:	Number of respondents COLOMBIA			
Age ranges	Female	Male	Total	Percentage
20-30	10	8	18	32%
31-40	11	9	20	35%
41-50	4	7	11	19%
>50-year	6	2	8	14%
COUNTRY:	Number of respondents CZECH REPUBLIC			
20-30	1	8	9	25%
31-40	1	4	5	14%
41-50	10	1	11	31%
>50-year	6	5	11	31%
<b>TOTAL</b>	<b>49</b>	<b>44</b>	<b>93</b>	<b>100%</b>

### 8.5. Appendix 5: Table of educational degree of the respondents

3. EDUCATIONAL DEGREE		
COUNTRY:	COLOMBIA	
ENGINEER (5 yrs.)	PROFESSIONAL SPECIALISATION (1 yr.)	MASTER'S DEGREE (2 yrs.)
27	23	7

COUNTRY:	CZECH REPUBLIC
ENGINEER (3 yrs. + Master's degree 2 yr.)	
Number of respondents	Percentage
36	100%

### 8.6. Appendix 6: Table according to years of experience of the respondents

4. YEARS OF EXPERIENCE						
Range of years:	1-5	>5-10	>10-15	>15-20	>20	TOTAL
Number of respondents: COLOMBIA	16	7	17	10	7	57
Number of respondents: CZECH REPUBLIC	6	7	5	8	10	36
TOTAL	22	14	22	18	17	93

### 8.7. Appendix 7: Table of respondents' positions in the construction company

5. POSITION INSIDE THE CURRENT CONSTRUCTION COMPANY				
	Resident Engineer	Project Manager	Project Coordinator	Technical Expert
Number of respondents: COLOMBIA	20	15	8	14
Number of respondents: CZECH REPUBLIC	0	16	0	20
TOTAL	20	31	8	34

## 8.8. Appendix 8: Table of project's lengths (months)

6. Project's length (months)					
#	COLOMBIA	#	COLOMBIA	#	CZECH REPUBLIC
1	34	49	40	1	18
2	18	50	36	2	36
3	34	51	12	3	18
4	18	52	24	4	24
5	24	53	12	5	36
6	24	54	24	6	18
7	12	55	24	7	18
8	18	56	12	8	36
9	24	57	24	9	30
10	18			10	18
11	24			11	36
12	12			12	30
13	24			13	18
14	12			14	36
15	12			15	18
16	18			16	18
17	30			17	36
18	30			18	24
19	18			19	18
20	18			20	38
21	18			21	18
22	18			22	30
23	30			23	36
24	30			24	18
25	24			25	18
26	24			26	36
27	24			27	18
28	24			28	16
29	32			29	36
30	24			30	18
31	18			31	28
32	36			32	36
33	36			33	28
34	24			34	18
35	12			35	38
36	12			36	18
37	12				
38	12				
39	18				
40	32				
41	24				
42	28				
43	26				
44	18				
45	24				
46	36				
47	40				
48	24				

## 8.9. Appendix 9: Table of percentage current status of the projects

7. CURRENT STATUS (%)				
Range:	0-30%	30-60%	60-90%	>90%: Closing
Number of respondents: COLOMBIA	13	27	16	1
Number of respondents: CZECH REPUBLIC	14	15	7	0
TOTAL	27	42	23	1

## 8.10. Appendix 10: Data Table Question 8

8. Degree of difficulty for the achievement of the project milestone.										
	COLOMBIA					CZECH REPUBLIC				
#	Planning	Start	Execution	Closing	Other	Planning	Start	Execution	Closing	Other
1	3	2	4	1		3	1	2	4	
2	4	3	1	2		2	1	4	3	
3	3	2	4	1		3	1	4	2	
4	2	1	4	3		2	1	3	4	
5	3	1	4	2		4	1	3	2	
6	4	2	3	1		3	2	4	1	
7	3	1	4	2		4	1	2	3	
8	3	1	4	2		2	1	3	4	
9	2	1	3	4		3	1	4	2	
10	1	2	4	3		3	1	4	2	
11	3	2	1	4		4	2	3	1	
12	4	1	2	3		3	1	4	2	
13	3	2	4	1		4	1	3	2	
14	4	1	3	2		3	1	4	2	
15	2	1	4	3		4	2	3	1	
16	3	1	4	2		3	1	4	3	
17	4	2	3	1		2	1	3	4	
18	3	1	2	4		2	1	3	4	
19	3	1	4	2		3	2	4	1	
20	3	1	4	2		3	1	4	2	
21	3	1	4	2		2	1	4	3	
22	2	1	4	3		4	2	3	1	
23	1	3	2	4		3	1	4	2	
24	2	1	3	4		3	1	2	4	
25	3	1	4	2		2	1	4	3	
26	4	1	3	2		3	2	4	1	
27	4	1	3	2		4	2	3	1	
28	3	2	4	1		4	1	3	2	
29	1	2	3	4		3	1	2	4	
30	2	1	3	4		4	2	3	1	
31	4	1	2	3		2	1	3	4	
32	4	1	2	3		4	2	3	1	
33	4	1	3	2		4	1	2	3	
34	4	1	2	3		4	2	3	1	



35	1	2	4	3	
36	3	1	4	2	
37	3	1	4	2	
38	4	1	3	2	
39	4	1	4	3	
40	2	3	1	4	
41	2	3	4	1	
42	3	2	4	1	
43	1	3	2	4	
44	1	2	4	3	
45	3	1	4	2	
46	3	1	4	2	
47	4	1	3	2	
48	2	3	1	4	
49	4	1	2	3	
50	4	1	2	3	
51	4	1	3	2	
52	2	1	4	3	
53	1	3	2	4	
54	3	2	4	1	
55	4	3	1	2	
56	3	2	4	1	
57	2	1	4	3	

3	1	2	4	
3	2	4	1	

## 8.11. Appendix 11: Data Table Question 9

9. WHAT ARE THE MANAGEMENT TECHNIQUES USED IN THE PROJECT?									
COLOMBIA									
#	Critical Path Method (CPM)	Gantt chart	PERT chart	Quality checklist	Provisional Acceptance Certificate (PAC)	Lean Construction/ Last Planner System	Project Review	Others:	Don't know/No opinion
1	x	x		x		x	x		
2	x	x		x		x			
3	x	x		x		x	x		
4	x	x		x		x			
5	x	x		x	x	x	x		
6	x	x		x		x			
7	x	x		x	x	x	x		
8	x	x		x		x	x		
9	x	x		x		x	x		
10	x	x		x	x	x	x		
11	x	x		x	x		x		
12	x	x		x		x			
13	x	x		x	x		x		
14	x	x		x		x			
15	x	x		x	x		x		
16		x		x	x	x	x		
17		x		x		x	x		
18	x	x		x		x	x		
19	x	x		x		x	x		
20	x	x		x		x	x		
21	x	x		x		x	x		
22	x	x		x		x	x		
23	x	x					x		
24	x	x					x		
25	x	x		x	x	x	x		
26		x		x		x	x		
27	x	x		x	x	x	x		
28		x		x		x	x		
29	x	x		x		x	x		
30		x		x	x		x		
31		x		x		x	x		
32	x	x		x		x			
33		x	x	x		x			
34	x	x		x		x	x		
35	x	x		x			x		
36	x	x	x	x	x	x	x		
37	x	x		x			x		
38	x	x	x	x	x	x	x		
39		x		x		x			
40		x		x	x	x	x		
41	x	x	x	x	x	x			
42	x	x		x		x	x		
43	x	x		x		x	x		
44	x	x		x		x	x		
45	x	x		x		x	x		
46	x	x		x		x			
47	x	x		x		x			
48	x	x		x		x	x		
49	x	x		x	x	x	x		
50	x	x		x		x			
51	x	x	x	x	x	x	x		
52	x	x		x	x	x	x		
53	x	x	x	x	x	x	x		
54	x	x		x	x	x	x		
55		x				x	x		

56	x	x		x	x	x	x		
57	x	x	x	x		x	x		
CZECH REPUBLIC									
58	x	x		x			x		
59				x			x		
60	x	x		x			x		
61	x			x			x		
62		x		x			x		
63	x						x		
64	x	x		x			x		
65		x		x			x		
66	x			x			x		
67	x	x					x		
68				x			x		
69	x	x		x			x		
70	x	x		x			x		
71				x			x		
72	x	x					x		
73		x		x			x		
74		x					x		
75	x			x			x		
76	x	x		x			x		
77				x			x		
78	x	x		x			x		
79	x	x		x			x		
80				x			x		
81	x			x			x		
82	x	x		x			x		
83				x			x		
84	x	x		x			x		
85	x	x		x			x		
86				x			x		
87	x	x					x		
88	x	x		x			x		
89				x			x		
90	x	x		x			x		
91	x	x		x			x		
92				x			x		
93	x	x		x			x		

## 8.12. Appendix 12: Data Table Question 10

10. UNDERSTANDING OF THE STATUS -PROGRESS AND DELAY- OF ACTIVITIES IN THE PROJECT SCHEDULE.									
COLOMBIA									
#	Critical Path Method (CPM)	Gantt chart	PERT chart	Quality checklist	Provisional Acceptance Certificate (PAC)	Lean Construction/Last Planner System	Project Review	Others:	Don't know/No opinion
1	5	5	4	5	3	5	5		
2	4	5		4		5			
3	5	5	4	5	3	5	5		
4	4	5		4		5			
5	4	2	3	4	5	5	4		
6	4	3		4		5			
7	4	4		2	5	5	4		
8	2	4		3		4	5		
9	2	1	2	3		3	5		
10	4	4		2	5	5	5		
11	5	5		4	5		5		
12	5	5		3		5			
13	5	5		4	5		5		
14	5	5		3		5			
15	5	5		4	4		3		
16		5		3	5	5	5		
17		5		3		5	5		
18	5	5		5		4	5		
19	4	4		2		3	4		
20	3	5		3		4	5		
21	4	4		2		3	4		
22	3	5		3		4	5		
23	3	3	3	4	3	5	2		
24	3	3	3	4	3	5	2		
25	4	5	2	5	5	5	5		
26		5		2		5	5		
27	4	5	2	5	5	5	5		
28		5		2		5	5		
29	4	5		2	4	4	4		
30	5	5		2	5	4	5		
31		5		4		5	5		
32	4	4	5	4	4	3	4		
33		4	4	4		5			
34		5	5		4	4	4		
35	3	3	2	5	4	5	4		
36	2	5	2	5	4	4	5		
37	3	3	2	5	4	5	4		
38	2	5	2	5	4	4	5		
39		5				5	3		
40	3	5		3	5	4	5		
41	3	3	3	4	5	5	4		
42	5	5	5	3	5	5	5		
43	5	5		2		4	5		

44	4	5		1	3	3	5		
45	3	5	5	3	5	5	5		
46	3	4		5		5			
47	3	4		5		5			
48	5	5		3		4	4		
49	4	4		3	5	5	5		
50	3	5				5			
51	3	3		1		4	2		
52	3	4	2	5	5	5	4		
53	3	3		1		4	2		
54	3	4	2	5	5	5	4		
55	5	4	2	2	4	5	5		
56	2	5		4	5	3	1		
57	5	5	5	5	3	5	5		
CZECH REPUBLIC									
58	5	5		1			1		
59		2		3			4		
60	5	5		3			1		
61	5	5		1			1		
62		2		3			4		
63	5	5		3			1		
64	5	5		1			1		
65		1		3			4		
66	5	5		3			2		
67	5	5		1			2		
68		1		3			4		
69	5	5		3			1		
70	5	5		1			3		
71		3		3			4		
72	5	3		3			1		
73	5	4		1			5		
74		3		3			4		
75	5	5		3			1		
76	5	5		1			1		
77				3			4		
78	5	5		3			1		
79	5	5		1			1		
80				3			4		
81	5	5		3			1		
82	5	5		1			1		
83				3			4		
84	5	5		3			1		
85	5	5		1			1		
86				3			4		
87	5	5		3			3		
88	5	5		1			1		
89				3			4		
90	5	5		3			2		
91	5	5		1			1		
92				3			4		
93	5	5		3			5		

### 8.13. Appendix 13: Table Question 10: Evaluation of the Gantt Chart and Project Review vs. years of experience.

Purpose A: Evaluation of the Gantt Chart and Project Review vs. Years of experience of the respondents who rated them with 5						
Technique	Number of respondents	Range of years of experience				
		1-5	>5-10	>10-15	>15-20	>20
Gantt Chart	56	29%	14%	14%	20%	23%
Project Review	30	27%	13%	20%	20%	20%

### 8.14. Appendix 14: Table Question 10: Evaluation of the Gantt Chart and Project Review vs. gender of the respondents.

Purpose A: Evaluation of the Gantt Chart and Project Review vs. gender of the respondents who rated them with 5			
Technique	Number of respondents	Gender	
		Female	Male
Gantt Chart	56	36%	64%
Project Review	30	57%	43%

### 8.15. Appendix 15: Data Table Question 11

11. Achievement of goal for successful finalization of the project.									
COLOMBIA									
	Critical Path Method (CPM)	Gantt chart	PERT chart	Quality checklist	Provisional Acceptance Certificate (PAC)	Lean Construction/Last Planner System	Project Review	Others:	Don't know/No opinion
1	5	5	3	3	3	5	5		
2	5	5		5		5			
3	5	5	3	3	3	5	5		
4	5	5		5		5			
5	4	5	3	4	5	5	5		
6	3	2		4			5		
7	5	5		3	5	4	5		
8	5	4		4		4	5		
9	5	3		5		5	4		
10	4	3		5	4	4	4		
11	4	5		5	5		4		
12	4	4		4		4			
13	4	5		5	5		4		
14	4	4		4		4			
15	5	5		3		3	4		
16	4	5		5	5	5	5		
17		3		5		5	4		
18	4	4		5		5	5		
19	5	5		4		4	5		
20	4	3		3		4	3		
21	5	5		4		4	5		
22	4	3		3		4	3		

23	3	3	3	4	3	5	1		
24	3	3	3	4	3	5	2		
25	4	5	2	3	4	5	5		
26		4		5		5	5		
27	4	5	2	3	4	5	5		
28		4		5		5	5		
29	3	4	4	5	4	4	5		
30	4	5	3	4	4	4	5		
31		5		3	3	3	4		
32	5	5	3	3	2	5	5		
33		4	4	4		5	5		
34	3	4		4		4	4		
35	3	5		4		4	4		
36	5	5	5	5	5	5	5		
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40	4	4		4	3	4	4		
41	5	4	4	5	5	5	4		
42	4	5		4	4	5	4		
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44	5	4		4	4	4	5		
45		5		5	4	5	5		
46	3	3	3			5	1		
47	3	3	3			5	3		
48		1		5		5	5		
49		5		2	5	5	5		
50		1			5	5	5		
51						5	5		
52	3	5	3	4	4	3	5		
53						5	5		
54	3	5	3	4	4	3	5		
55	5	5	3	3	4	5	5		
56	4	5		3	4	4	5		
57	5	5	4	4	4	5	5		
CZECH REPUBLIC									
58	4	3		5			4		
59				5			5		
60	5	4		4			4		
61	4	3		5			2		
62		5		5			3		
63	5	4		4			1		
64	4	3		5			4		
65		2		5			1		
66	5	4		4			4		
67	4	3		5			3		
68		2		5			5		
69	5	4		4			3		
70	4	3		5			4		
71		1		5			5		
72	5	4		4			4		
73	4	3		5			4		

74		1		5			5		
75	5	4		4			4		
76	4	3		5			4		
77		1		5			5		
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79	4	3		5			4		
80				5			5		
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83				5			5		
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85	4	3		5			4		
86				5			5		
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88	4	3		5			4		
89				5			5		
90	5	4		4			4		
91	4	3		5			4		
92				5			5		
93	5	4		4			4		

**8.16. Appendix 16: Table Question 11: Evaluation of the Gantt Chart and Project Review vs. years of experience**

Purpose B: Evaluation of the Gantt Chart and Project Review vs. Years of experience of the respondents who rated them with 5						
Technique	Number of respondents	Range of years of experience				
		1-5	>5-10	>10-15	>15-20	>20
Gantt Chart	31	32%	13%	29%	16%	10%
Project Review	44	25%	7%	32%	25%	11%

**8.17. Appendix 17: Table Question 11: Evaluation of the Gantt Chart and Project Review vs. gender of the respondents.**

Purpose B: Evaluation of the Gantt Chart and Project Review vs. gender of the respondents who rated them with 5			
Technique	Number of respondents	Gender	
		Female	Male
Gantt Chart	31	55%	45%
Project Review	44	61%	39%