

# **CHOOSING BY ADVANTAGES FOR THE SELECTION OF A NEW MEMBER OF THE PROJECT TEAM**

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# AGENDA

- **INTRODUCTION**
- **RESEARCH METHOD**
- **THEORETICAL OVERVIEW**
  - The Lean Construction Professional Profile (LCPP)
  - Choosing By Advantages (CBA)
- **CASE STUDY BACKGROUND**
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# BULLET POINTS

- The construction industry works through projects (Campero & Alarcon, 2003); each project needs people to make it possible, and these people interact with each other forming **work teams** (Fong and Lung, 2007).
- There is an important relationship between the organization and the human resource. Therefore, it is necessary to have a more prepared staff, who adapt more quickly to modern technology, proactive, and know-how to interpret what changes are generating (García and Tantalean, 2012). That is why the **selection of project team participants is an important decision.**
- Thus, the following research aims to develop the **CBA application to select a project control team member.**



# RESEARCH METHOD

- A **literary review** of the recruitment and selection process of team members, roles of the Project Control area, and the competencies required for a lean professional to perform construction projects are initiated.
- With the factors already defined, **the project team is trained** in the CBA system, the CBA Tabular method, and the steps of its application.
- Finally, the **Tabular CBA method's application** is illustrated in the selection of a new member of the Project Control area team in a hospital building project in Perú.



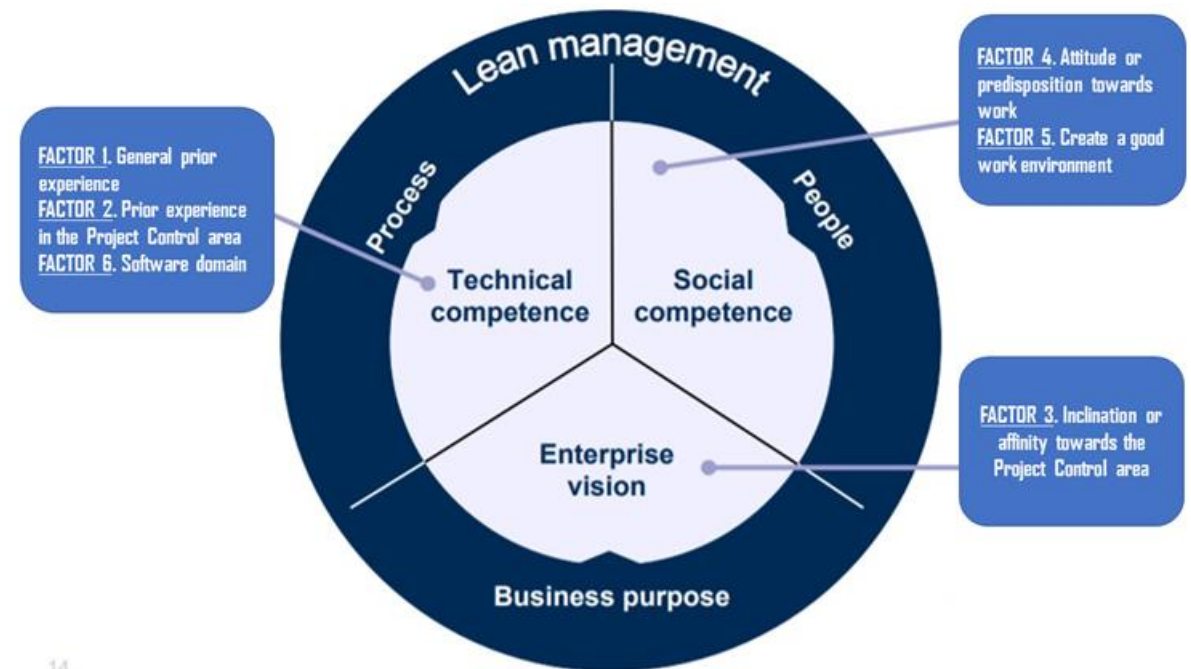
**Figure 1:** Stages of research

# THEORETICAL OVERVIEW

## THE LEAN CONSTRUCTION PROFESSIONAL PROFILE (LCPP)

The pioneering research by Pavez and Alarcón (2012) defines a Lean Construction Professional Profile (LCPP), which identifies three areas of competence that must be developed simultaneously in terms of what construction companies expect from their project staff: Business vision, technical competence, and social competence.

For the case study of the present investigation, factors related to the LCPP are identified to select the new member for the Project Control area, as will be seen later in the application.



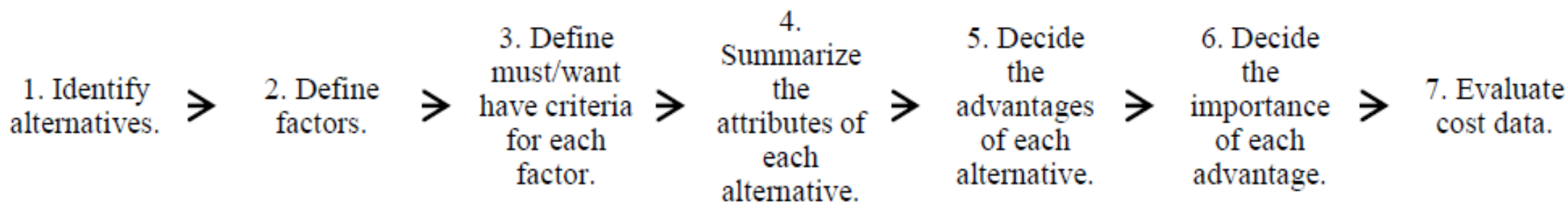
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**Figure 4:** Factors used related to LCPP. Adapted from Pavez & Alarcon (2012)

# THEORETICAL OVERVIEW

## CHOOSING BY ADVANTAGES (CBA)

CBA is a complete system for consistent decision-making, including principles and definitions, models and methods, tools, and techniques. The methods it includes can be used for practically all types of decisions, both monetary and non-monetary, from simple to complex decisions (Bettler, 2010). For the present research, we used the Tabular CBA method, ideal for decisions with moderate complexity. This method can be summarized in the following seven steps:



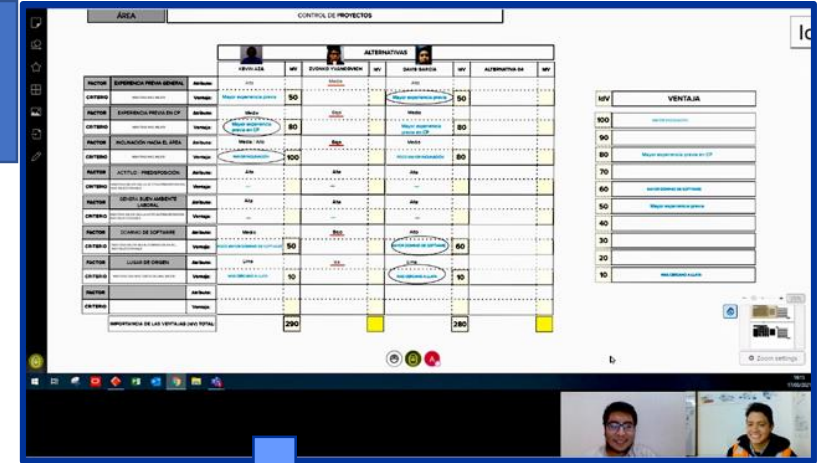
**Figure 5:** Steps of the CBA Tabular Method (Schöttle et al., 2015)

# CASE STUDY BACKGROUND



CBA training to the project team

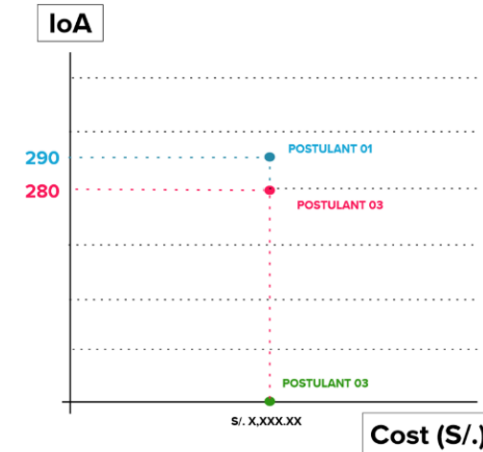
CBA application using virtual tool



Alternative selected using CBA Tabular Method

THEME		SELECTION OF THE NEW MEMBER FOR PROJECT CONTROL AREA							
PARTICIPANTS		ANTHONY PAUCAR / SEIKO YONG							
		ALTERNATIVES							
		POSTULANT 01	IoA	POSTULANT 02	IoA	POSTULANT 03	IoA	POSTULANT 04	IoA
FACTOR	GENERAL PRIOR EXPERIENCE	Attribute: HIGH		MEDIUM		HIGH			
CRITERION	THE MORE, THE BETTER	Advantage: more previous experience	50			more previous experience	50		
FACTOR	PRIOR EXPERIENCE IN PROJECT CONTROL (PC)	Attribute: MEDIUM		LOW		MEDIUM			
CRITERION	THE MORE, THE BETTER	Advantage: more previous experience in PC	80			more previous experience in PC	80		
FACTOR	AFFINITY FOR PROJECT CONTROL	Attribute: MEDIUM / HIGH		LOW		MEDIUM			
CRITERION	THE MORE, THE BETTER	Advantage: greater affinity	100			little greater affinity	80		
FACTOR	ATTITUDE / PREDISPOSITION	Attribute: HIGH		HIGH		HIGH			
CRITERION	THE BETTER THE ATTITUDE / PREDISPOSITION, MORE SELECTABLE	Advantage: ---							
FACTOR	CREATE A GOOD WORK ENVIRONMENT	Attribute: HIGH		HIGH		HIGH			
CRITERION	THE BETTER THE ATTITUDE / PREDISPOSITION, MORE SELECTABLE	Advantage: ---							
FACTOR	SOFTWARE DOMAIN	Attribute: MEDIUM		LOW		HIGH			
CRITERION	THE BETTER THE EXCEL, DOMAIN IS, MORE SELECTABLE	Advantage: little greater software mastery	50			greater software mastery	60		
FACTOR	HOME LOCATION	Attribute: LIMA		ICA		LIMA			
CRITERION	THE CLOSER TO LIMA, THE BETTER	Advantage: closest to Lima	10			closest to Lima	10		
FACTOR		Attribute: ---							
CRITERION		Advantage: ---							
TOTAL IMPORTANCE OF ADVANTAGES (IoA):			290			280			




IoA	ADVANTAGE
100	greater affinity
90	
80	more previous experience in PC
70	
60	greater software mastery
50	more previous experience
40	
30	
20	
10	closest to Lima



# DISCUSSION

5. Decide the advantages for each alternative

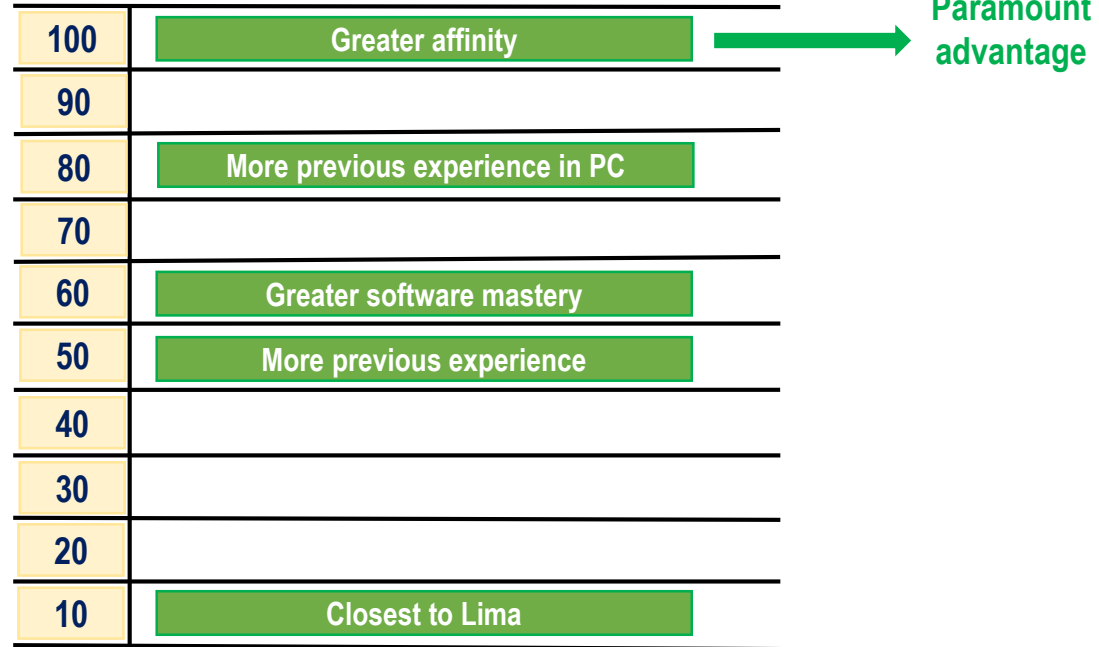


	POSTULANT 01 	POSTULANT 02 	POSTULANT 03 
<b>A</b> GENERAL PRIOR EXPERIENCE <i>(The more general prior experience, the better)</i>	High More previous experience	Medium	High More previous experience
<b>A</b> PRIOR EXPERIENCE IN PROJECT CONTROL (PC) <i>(The more general prior experience in PC, the better)</i>	Medium More previous experience in PC	Low	Medium More previous experience in PC
<b>A</b> SOFTWARE DOMAIN <i>(The better software domain, more selectable)</i>	Medium Little greater software mastery	Low	High Greater software mastery
<b>B</b> AFFINITY FOR PROJECT CONTROL <i>(The more affinity for PC, the better)</i>	Medium/high Greater affinity	Low	Medium Little greater affinity
<b>C</b> ATTITUDE / PREDISPOSITION TOWARD WORK <i>(The better attitude/predisposition, more selectable)</i>	High	High	High
<b>C</b> CREATE A GOOD WORK ENVIRONMENT <i>(The better potential for create a good work environment, more selectable)</i>	High	High	High
HOME LOCATION <i>(The closer to Lima, the better)</i>	Lima Closest to Lima	Ica	Lima Closest to Lima



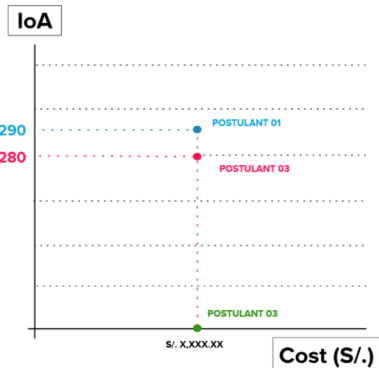
# DISCUSSION




6. Decide the importance of each advantage



# DISCUSSION

## 7. Evaluate cost data



	POSTULANT 01 		POSTULANT 02 		POSTULANT 03 	
<b>A</b> GENERAL PRIOR EXPERIENCE <i>(The more general prior experience, the better)</i>	High		Medium		High	
	More previous experience	50			More previous experience	50
<b>A</b> PRIOR EXPERIENCE IN PROJECT CONTROL (PC) <i>(The more general prior experience in PC, the better)</i>	Medium		Low		Medium	
	More previous experience in PC	80			More previous experience in PC	80
<b>A</b> SOFTWARE DOMAIN <i>(The better software domain, more selectable)</i>	Medium		Low		High	
	Little greater software mastery	50			Greater software mastery	60
<b>B</b> AFFINITY FOR PROJECT CONTROL <i>(The more affinity for PC, the better)</i>	Medium/high		Low		Medium	
	Greater affinity	100			Little greater affinity	80
<b>C</b> ATTITUDE / PREDISPOSITION TOWARD WORK <i>(The better attitude/predisposition, more selectable)</i>	High		High		High	
<b>C</b> CREATE A GOOD WORK ENVIRONMENT <i>(The better potential for create a good work environment, more selectable)</i>	High		High		High	
<b>HOME LOCATION</b> <i>(The closer to Lima, the better)</i>	Lima	10	Ica		Lima	10
	Closest to Lima				Closest to Lima	
		<b>290</b>		<b>0</b>		<b>280</b>

# DISCUSSION

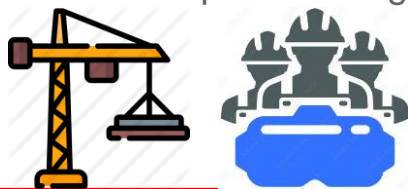
	Factor (Criterion)		Alternative 1: Postulant 01			Alternative 2: Postulant 02			Alternative 3: Postulant 03		
Process Technical competence	General Prior Experience (The more general prior experience, the better.)	Att.:	High			Medium			High		
		Adv.:	More previous experience	Imp.:	50		Imp.:		More previous experience	Imp.:	50
	Prior experience in Project Control (PC) (The more general prior experience in PC, the better.)	Att.:	Medium			Low			Medium		
		Adv.:	More previous experience in PC	Imp.:	80		Imp.:		More previous experience in PC	Imp.:	80
	Software domain (The better software domain, more selectable.)	Att.:	Medium			Low			High		
		Adv.:	Little greater software mastery	Imp.:	50		Imp.:		Greater software mastery	Imp.:	60
Business Purpose Enterprise vision	Affinity for Project Control (The more affinity for PC, the better.)	Att.:	Medium / high			Low			Medium		
		Adv.:	Greater affinity	Imp.:	100		Imp.:		Little greater affinity	Imp.:	80
People Social competence	Attitude / predisposition towards work (The better attitude/predisposition, more selectable.)	Att.:	High			High			High		
		Adv.:	-	Imp.:		-	Imp.:		-	Imp.:	
	Create a good work environment (The better potential for create a good work environment, more selectable.)	Att.:	High			High			High		
		Adv.:	-	Imp.:		-	Imp.:		-	Imp.:	
	Home location (The closer to Lima, the better.)	Att.:	Lima			lca			Lima		
		Adv.:	Closest to Lima	Imp.:	10		Imp.:		Closest to Lima	Imp.:	10
	<b>Total of IoA</b>				<b>290</b>			<b>0</b>			<b>280</b>

**Table 1: Constructed Case - Evaluation using CBA Tabular method**

# CONCLUSIONS

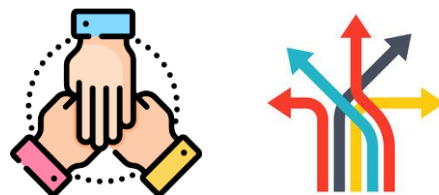
Construction is a project-based industry. **Each project needs work teams made up of people who will contribute with their professionalism, knowledge, and experience** to guide it to its successful completion, meeting the established objectives.

This research was carried out in **the context of incorporating a new member of the project team, supported by factors related to the profile of a lean professional**, to perform functions in the Project Control area of a hospital building project.



**We recommend designing and carrying out the previous training of the CBA system**, and that it includes both developed and application examples, ranging from simple to complex decisions.

Create a predisposition to participate in **collaborative decisions**, and **document decision-making** as a knowledge asset that can be consulted later in the face of future similar selection problems in the organization.



In this case of study, we indicate the **support provided by technology by using a virtual collaborative platform plus a video call platform**, which allowed the development of personalized interviews with each of the applicants.

**Future research may delve into the use of digital platforms** to efficiently develop a CBA method's training and application with the team.



# THANK YOU!

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