

DESIGN THINKING FOR PUBLIC PRIVATE PARTNERSHIPS, PPP's

Fco. Javier Sastre Segovia, PhD.

Ricardo Altimira Vega, PhD.

ABSTRACT

Design Thinking (DT) is considered today a novel methodology very powerful for problem solving and innovation, very well accepted by the business community for the simplicity of the procedure and the excellence of the results in several business sectors. Due to its success with scholars and practitioners, DT has generated a growing number of publications, yet, it has not received attention as a vehicle to help negotiations, in particular complex negotiations of Public Private Partnerships (PPP), which require significant creativity to foster these long term alliances among partners, generally from institutions with different corporate cultures. This paper proposes the application of DT to prepare the initial PPP negotiations by exercising a role-play case -simulating a PPP negotiation- among participants of post-grad business education of 5 countries. Our contrafactual analysis showed that negotiations where one or both counterparts have used DT to prepare the encounter, achieve better results and create a better negotiation table climate. These findings confirm that DT is also a very helpful tool to add creativity to the process of forging the PPP alliances and invite to explore the development of best practices for PPP practitioners, as well as further research on the use of DT for other type of complex negotiations.

RESUMEN

El Design Thinking (DT) se considera hoy en día una metodología novedosa muy potente para la resolución de problemas y para innovar, muy bien aceptada por la comunidad empresarial por la sencillez de su procedimiento y la excelencia de los resultados ya logrados en varios sectores empresariales. Debido a su éxito con académicos y profesionales, DT ha generado un número creciente de publicaciones, sin embargo, no ha recibido mucha atención como vehículo para ayudar en las negociaciones, en particular las negociaciones complejas de Partenariados Público Privados (PPP), los cuales requieren una creatividad significativa para fomentar las necesarias alianzas de largo plazo entre socios, generalmente pertenecientes a instituciones con diferentes culturas corporativas. Este artículo propone la aplicación del DT para preparar las negociaciones iniciales de PPP's mediante el ejercicio de un juego de roles, que simula una negociación de un PPP del sector salud, ejercitado entre participantes de instituciones de educación empresarial de posgrado de 5 países. Nuestro análisis contrafactual, demostró que las negociaciones donde una o ambas contrapartes han utilizado DT para preparar el encuentro, logran mejores resultados y crean un mejor clima en la mesa de negociación. Estos hallazgos confirman que DT también es una herramienta muy útil para agregar creatividad al proceso de forjar alianzas PPP, e invitan a explorar el desarrollo de mejores prácticas para consultores y entidades vinculadas a PPP's, así como sugiere avanzar con otras investigaciones sobre el uso de DT para otro tipo de negociaciones complejas.

1. INTRODUCTION

Design Thinking (DT) is a creative methodology from Social Sciences (Sánchez-Bayón, 2010 & 2014), which has emerged this decade as a powerful tool-kit in Economic and Business Studies

(Sánchez-Bayón, 2021a-b & 2022) to innovate in products, services and processes to stimulate creativity and become more competitive (Andreu et al, 2019; González et al, 2019).

On the other hand, Public Private Partnerships (PPP's) also peaked in this decade, mainly to create infrastructures like roads, schools and hospitals and to provide public services like education, garbage management, and health (Iossa, Saussure 2018) through collaboration among institutions who may achieve synergies, share risks (Engel, Fisher, Galetovic 2014) increase VFM (value for money) in a long term agreement after complex negotiations (O'Shea, Reeves, Palcic 2018).

Recent studies on PPP's in Latin America and US "greenfield" projects applied mainly to transportation services, highlight the challenges for the private companies to manage the risks, mainly for toll roads, originated from expected traffic decreases or top-prices management, which requires complex negotiations during the life of the PPP's, The use of DT during this negotiations proposed by our research could be a facilitator to foster those agreements. (Gomez Pomar et al, 2019)

The present paper aims to explore the relationship between DT and the management process for PPP's in relation to the negotiations to create the agreement for the execution of the PPP's, as well as the negotiations which take place during the life of the PPP's when context changes require adjustments of the terms and conditions initially agreed.

The main research question that this paper addresses is: *Can Design Thinking improve/facilitate the negotiations for PPP's?*

To address this question, we have reviewed the literature related to the three topics (DT / Negotiation / PPP'S) as well as to interview 11 specialists on those three topics to get their opinion about the use of DT to prepare the initial negotiations for the PPP agreement.

Since our literature review disclosed that although some DT application to negotiations was researched, there is no application of DT to PPP's negotiations and our interviews confirmed that no examples were known -although the proposal to enrich the negotiation process with DT made sense -, we planned a research based on a case which explores how DT could make the PPP negotiation process more efficient, at the moment of PPP creation.

To illustrate our approach, this paper first presents the results of our literature review over the three topics, which highlights the gap in the literature related to our research question.

Subsequently, in the methodology section, we describe the case developed to simulate a negotiation between the two executives of a PPP partnership, which was executed as a roleplay in five institutions of post-grad education in Africa, Bangladesh, Colombia, India and Spain where half of the negotiation tables were instructed with DT versus the other half (the control group) who did not prepare the negotiation using DT.

The exercise use a DT process which consolidates the experiences at the main "temples" of the DT:

- Stanford University D-School
- Berlin Postdam University HPI (Hasso Platner Institute)
- University of Technology Sydney, UTS U-Lab

This methodology section is followed by a results section, which confirms the efficiency achieved when DT was present in the negotiation table either by one or by the two parties.

Finally, the paper concludes with a discussion of the results, proposing best practices for consultants and institutions dedicated to PPP's as well as insights for practitioners and academics related to future research activities.

2. LITERATURE SYNTHESIS

This section highlights the theoretical framework regarding the application of DT to the PPP negotiations. The three topics are analyzed separately, followed by an explanation of the research gap which invites to the research objective of this paper.

ANATOMY OF DESIGN THINKING (DT)

This methodology was transferred to the business universe from the universe of designers and architects who had been using the following three basic pillars for decades:

- CUSTOMER FOCUS: an exercise of empathy using several tools to understand “Who am I doing this for” /what are their thoughts / needs / desires of the customers / users / beneficiaries of the activity that we are going to create / innovate / re-engineer” (Wiley et al., 2013) to respond to all those elements discovered during our interviews, surveys, Internet consultations, etc which allows us to define the “insights” which in turn will allow us to define the “challenge” of the DT exercise.

- IDEATION: this is the “heart” of the design thinking exercise, where a group of talented people -selected to add value to the challenge to resolve-, get together for a co-working exercise including users, designers and value adding experts.

This co-working aims to explore several solutions to the challenge in a “thinking out of the box” environment, where everybody propose, share, combine ideas in particular looking for “disruptive” ideas which initially may look “crazy” (Cross, 2023)

The advantages of using different teams during the ideation is to allow the possibility to create a mosaic of solutions, composed by the different opinions of the participants, therefore, one of the key success factors of design thinking is to invite talents from colleagues academics consultants, together with customers, partners, vendors and if possible competitors. Another advantage of this combination of co-workers is that at the end of the exercise, the participants feel more ownership of the solution achieved, which is an important factor at the time of managing changes, resulting from the DT innovation proposals.

This ideation has two phases called “divergent” and “convergent”, where lots of ideas in the first phase are stimulated to be later grouped and selected -during the convergent phase- to come out with some potential solutions to the challenge.

- PROTOTYPE: when those potential solutions to the challenge emerge from the ideation team, a low-cost and fast prototyping process takes place, to validate those potential solutions with the future users and some of the experts invited to the ideation, to make adjustments if needed, to ensure their satisfaction on the ideation outcome.

At the end of this prototyping/testing process we should expect to have the product / service / process / start-up ready to be implemented with real users who will also provide some extra feedback to help us to complete the adjustments to the solution ..., an intense iterative process (Serrat, 2017).

The main goal of DT is to create innovative proposals, oriented to the resolution of problems in a fast and, if possible, disruptive way, using key elements like empathy and experimentation until to

reach the innovations solutions, which are not only what the customer wants but, more important, what the customer needs.

Another use of the DT, is to stimulate our capacity and creativity, and as David Kelly said “*To believe in your creative capacity, lies at the heart of innovation*” which express the way that DT corrects the tendency to take decisions based on the heart instead of decide based on your mind.

Another advantage of the DT, is that one person who does not belong to the world of design or creativity, can obtain excellent results just by using the appropriate methodology, by leveraging on visual impact, because sometimes our vision of the problems are too “contaminated” to allow us the resolution, and just the simple fact of changing the framework can open a world of possibilities at the moment of looking for the solutions.

This is why the use of post-it’s, whiteboards and simple prototypes, are key elements to have available in DT sessions. (Plattner et.al. 2016).

DT do not involve complex analysis or a lot of theories, instead, is more focused on the action to identify the problem, and to co-work, categorizing different ideas, and putting them in a visual format to recognize, and improve them during the different rounds of the ideations.

Although DT is a process with several steps, it does not have the rigor of a “recipe” with exact ingredients: Design Thinking is more a “philosophy” using several optional tools to arrive to the solution of those “insights” discovered along the process of customer focus empathy, which the facilitators during the ideation will finally create the “final dish” using their own experience with different “recipes”, always looking for the final result (Chan et.Al, 2016) According to the article of “Design thinking revisited” by Tammy McCausland, “In the “Design Thinking” column mentioned at the outset, MaryAnne Gobble writes, “In the end, design thinking is more culture than methodology, and building such a culture may require a fundamental transformation” (McCausland, 2020)

This is why the selection of the “facilitators” in the DT is the key ingredient for success, like the chef to get a memorable dinner.

HISTORY:

Nobel Prize laureate Herbert A. Simon was the first to mention design as a way of thinking in his 1969 book “The Sciences of the Artificial”. He then went on to contribute many ideas throughout the 1970s which are now regarded as principles of design thinking, (Serrat, O. 2017)

“To understand the systems, they had to be constructed, and their behaviour observed through simulations or objects to use as prototypes”– Herbert Simon

The work of Herbert Simon, together with Prof. Allen Newell in developing AI (Artificial Intelligence) through the analysis of chess games, contribute to create the concept of “thinking as a designer” which today most companies using DT have accepted that designers methodology is key to open to innovative ideas.

Stanford University Design Professor Robert H. McKim, advocate of “Visual Thinkin” (Razzouk, R. & Shute, V. 2012) referred to the notion of design thinking in his 1973 essay called “Experiences in Visual Thinking”, where he supported Dr Herbert Simon, whom he described as an artist and engineer— McKim focused his energies more on the impact visual thinking had on our ability to understand things and solve problems with the UX (user experience), which combines our left and right brain modes of thinking, to stimulate a more holistic form of problem-solving.

The ideas discussed in Mc Kim essay gave birth in the 70's and 80's -at Stanford University- to most of the DT methodology we use today. and today, the most famous and active institution for the teaching, researching and consulting DT is IDEO founded in the early 90's by Professor David Kelley together with CEO Tim Brown and CCO (Chief Creative Officer) Paul Bennet (Kimbell, 2011)

IDEO is active in Europe / Asia / Africa and America with collaboration agreements in the following disciplines:

- Brand Communications
- Circular Economy
- Digital Transformation
- Learning & Education
- Environment
- Fintech
- Toys, Games & Play

From IDEO several scholars have developed their respective competence centers for DT, from which we can distinguish in Berlin (Hasso Platner Institute at Postdam University) where scholars from different sectors converge and develop specific solutions based on tools developed by HPI scholars.

Furthermore, and based on the excellence of Stanford D school and HPI, Sydney University of Technology UTS kicked off in 2011 their U-Lab, serving the majority of public companies in Australia, as well as large enterprises from the private sector. In addition, UTS hired architect Frank I. Ghery - a Design Thinking icon- to design a building for the UTS B-School based on the concept of DT. The building, called UTS Treehouse, resembles a tree, where the branches represent the different groups like faculty, researchers, students and administrators, converging into an area, called "Agora" (Plaza in the ancient Greek), illustrating the way that a solution is created during the ideation, with the input from different teams.

Today in 2023, we can observe several companies highly concerned with DT which have created their own DT departments (Plattner et.al, 2016), responsible to facilitate innovations, start-ups, and new business development co-working with selected and trained employees as well as with selected experts from outside, selected partners to ensure synergies and ideas fostering. Also, primary schools in several countries have developed workshops aimed to exercise DT with students from 8 to 12 years of age, to make them aware of the SDG objectives from UN 2030 agenda.

HOW (step-by-step)

To exercise the three key steps described above (empathize, ideate, prototype) the founders of the current wave of DT in Stanford and Berlin, as well as several consulting firms, have developed more detailed procedures with specific tools and good practices to ensure a successful application of DT as follows:

- *Identification* (of the different customers, users, potential beneficiaries of the DT exercise called "persona" using using several tools to survey and collect results to identify "insights" and zero in the objective of the exercise called "challenge! (Cross 2013)

- *Invitation* (to stakeholders, which involve customers, partners, vendors, experts from consulting and academic institutions), who can add value to the exercise and provide different points of view, always looking for a disruptive proposals to resolve the challenge. Very often, the facilitators of the exercise invite representatives of the competition of the company performing the DT, to get additional input, always preserving confidentiality(Cross, 2023)

- *Ideation* ("for profit" rather than "for post-it") is a sophisticated brainstorming where the participants/Stakeholders (members of the participating companies / customers / vendors / academic

experts / consultants... Even competitors) engage in a co-working with two distinct phases: divergent ideations ideation (where ideas flow freely on post-its grouped in white boards from teams who collaborate to challenge and enrich other teams proposals) and convergent ideations (with different criteria, the ideas are prioritized to arrive to the final solution to the challenge) (Cross, 2023),

- *Iteration*: using agile pre-totypes and fast prototypes the final solution to the challenge are confronted to some of the ideation participants and to focus groups to ensure that those solutions respond to the initial challenge as well as to allow for improvements, adjustments to optimize the solution,

- *Implementation*: of the achieved results, with the inclusion of indicators which allows to verify that the initial objectives are met... the economic and social value of the proposed solution is acceptable. Efficiency and effectiveness are also acceptable, etc according to the author.

WHERE (Applications):

Since DT initially was used by designers, their first applications were related to product design, but soon other applications for problem solving appear until the business community adopted DT for innovation and business modeling for entrepreneurship and re-engineering,

According to the article by Martin Gisdoerfer, Nancy Bocken and Erik Jan Hultink of “Design thinking to enhance the sustainable business modelling process - A workshop based on a value mapping process”: “Design thinking has already been applied to such fields as product innovation and business strategy formulation (Holloway, 2009; Lindberg et al., 2011; Skogstad et al., 2011), the present study was the first attempt to integrate elements of design thinking into sustainable business model innovation.” (Geisdoerfer et al., 2016)

The first sector to adopt DT as a standard co/working tool was international organizations (UN / WB) followed by technology companies (i.e. IBM created their own DT division with adapted methodologies for their R&D activities).

Today DT is a must on any entrepreneurship center, most of IT companies, almost all B-School programs and even kids are trained in creativity using DT (DT4Kids applications in China and Europe).

As stated by Mary. K Foster on her article “Design Thinking: A Creative Approach to Problem Solving”, Design thinking provides an alternative solution to the potential shortcomings of business schools globally, “In today’s economy, employers want people who can learn over time and solve complex problems (Belkin, 2015). Business schools have been criticized for not adequately preparing students for the complex, rapidly changing businesses environment they will face m(Glen et al., 2014). Recently, Dunne and Martin (2006), Glen et al. (2014), and others (Kurtmollaiev, Pedersen, Fjuk, & Kvale, 2018; Razzouk & Shute, 2012) have argued that design thinking offers business schools a means of addressing their perceived deficits (e.g., too lecture and case focused, inadequate opportunities to learn by doing, over reliance on rational analysis; Foster, 2021).

After 20 years of intense activities from Stanford, Harvard and Postdam Universities scholars, Design, Thinking (DT) is positioned among the most used management tools to help companies and institutions to resolve complex problems, innovate and reshape business model (Plattner et.al, 2016).

2. RESULTS OF DT IN NEGOTIATION

Negotiation is any process where two or more parties with different interests meet at a “negotiation table” (physical / on-line or just face-to-face) to exchange information towards create an agreement, (Zhang et.al 2016)

When we analyze the “anatomy” of the process of any negotiation, be it family, business, political or labor, we can identify three-stages where each stage -in turn- comprises 3 sub-stages, which we call the 3×3 model.

This 3x3 model starts with the “preparation stage”, which in turn is divided into the preliminary, strategic and tactical sub-stages. Then the “meeting stage” where parties converge at the “negotiation table” in turn divided into introduction, bargaining and closing. And finally, the “implementation stage”, which is divided into review, compliance and renegotiation.

For the purpose of this paper we will focus on the preparation stage which includes all the activities to be carried out from the moment in which the negotiator or the negotiation team begins to work in search of the agreement, and the moment in which they sit down with their counterparts at the negotiation table or in the terminal for a tele-negotiation.

Preparation is the most important success factor of the process, and the time invested in preparation is generally more than recovered during the negotiation, by saving time from misunderstandings and achieving greater efficiency in seeking agreement with the counterparties.

This stage can be divided into the following three sub-stages;

PRELIMINARY PREPARATION

This stage includes the necessary steps to obtain key information and to determine the limits to be established in each topic of the negotiation by getting key information to persuade our parties, including not only the information on the topic of the company's sector, but also all information about the parties to be found at the table at the time of the negotiation. (Plattner et al, 2016)

This search includes sources of information available on Internet, previous meetings and our own knowledge of the environment and people, as well as that of our teams, regarding not only information about the direct parties sitting at the table, but also with the indirect parties that may influence the negotiation and have an interest in its result (functions within the company, customers, suppliers, banks, competitors, government officials, etc.).

There is a popular tool to be used throughout the preparation process called “Stakeholders Canvas” where we can record information of each of the direct or indirect parties that may be useful to us like personal profile, cultural profile, position in the company, local culture, business culture, etc.

STRATEGIC PREPARATION

This is the “heart” of the preparation stage where the objectives, proposals, concessions and arguments for the different scenarios that may arise throughout the negotiation, are defined. (“A review of the challenges and application of PPP in Chinese Garbage Disposal Industry” Elsevier, Wang LDongyi, Y. Xiong, Y Zhou, L. 2019)

Within this stage can distinguish three elements: range / argument / concessions:

- *The Range*

At the beginning of the strategic planning, we will continue using the tool that we used in the preliminary planning: the Stakeholders Canvas, which we will gradually complete by analyzing the interests of each of the parties that we have identified, and that can have any type of impact on the results, or the topics that are negotiated.

Once we have analyzed the interests of each of the parties at the table, we can subdivide them into "main" and "secondary" and then prioritize them. Next, for each of the issues that must be discussed at the table, the different parameters to be negotiated will be identified, creating a guide to analyze options that serve to advance the negotiation (prices, terms, discounts, technology transfers, resources to share etc. etc.).

When the negotiation is complex, the creation of scenarios can generate a tree where for each of them we will decide a range and for this we quantify based on our objectives which is the "ideal proposal" (the most favorable one for us that is justifiable) and the "desirable proposal" (an objective figure with which we would be satisfied with the negotiation). (The core of design thinking and its application", Design studies, Dorst K. 2011)

- *The argument*

It is the set of explanations that allow us to "sell" our proposals and "defend" our interests, which constitute the justification for our proposal to be based on objective criteria or previous experiences, for example:

- Comparison "buy vs do"
- Comparison of a product or service and ours against its substitute cost to argue *"Our price is 20% less than what you would pay to do this on your own"*
- Benchmark comparisons to argue *"This table summarizes the unit price of our products in five specialized stores."*
- Consultation with experts to argue *"This study carried out by an important consultant in the sector, estimates the growth of this business at X percent, which coincides with our proposal"*
- Quantification: *"We have reviewed your cost structure and we propose that you only pay for those costs incurred in the first month."*

- *The Concessions*

With the help of our Stakeholders Canvas, we can analyze the different interests, as well as to create a list of proposals that add value to our counterparts by identifying "concessions" that will serve to approach the final agreement through the exchange using a "Give-n-Get Matrix" which contains each of the possible concessions that we can make, as well as each of the concessions that we could request at the table. Once we have identified all the concessions from both parties, we have to analyze the cost of each of them for the grantor and the value for the recipient. This will allow us to choose concessions that have a relative weight in terms of value of what they mean to match those of the other party in that process of "give and take". (Transaction Costs and Prospects for PPP in the Russian mineral resource sector" International Journal of Economics and Financial Issues, Glazyrina.I, Lavlinskii S., 2017)

Likewise, when we analyze the value that a concession can mean for the other party, we are generating arguments to defend them at the table.

Once we have all the proposals and all the concessions that may arise, an additional review can be done, with two teams that we have formed with colleagues from our company, by requiring to each of the teams their objective opinion to validate our proposals and thus improve our argumentation (Dong et al, 2016).

TACTICAL PREPARATION:

During this stage, we will analyze the necessary processes to define the place, the participants and the agenda for a successful negotiation, answering the questions who, where, when and what,

The "staging" of the negotiation is defined by the characteristics of the place and the participants, responding to where / when / who.

Regarding the "where", it is important to define the venue where the different negotiation tables will take place; the means that are needed in those facilities to be able to adequately present and communicate and, in turn, resolve the logistical details regarding access to the documentation; the parking lot etc.

Regarding the "when", it is necessary to verify that the day and time that we want to negotiate does not have any holiday situation in the place where we negotiate, as well as strikes and situations that may affect access to premises.

Regarding the "who", we should decide the composition of the negotiation teams, its leaders and experts (to be participating at the table / on call and frequently on-line) as well as the level of approval for the respective team-leaders in case of complex negotiations.

For the Roleplay used as a methodology resource of this research, the preparation process was reduced to the strategic sub-stage where all participants have already draw the Stakeholder Canvas with the two roles and their respective interests identified to be complemented with the different options analyzed and arguments during their respective preparation process in their respective spaces described in the methodology section

4. DISCUSSION IN PPP APPLICATION

The research was focused on the opportunities to use DT to help Public Private Partnerships (PPP's) by facilitating the partners negotiations to agree on the PPP terms and conditions.

PPP's emerged and peak in the 2000 decade mainly to create infrastructures like roads / schools and hospitals and to provide public services like education / garbage management and health (Iossa, Saussure 2018) through the collaboration and agreement among institutions who may achieve synergies, share risks (Engel, Fisher, Galetovic 2014) increase VFM (value for money) in a long term agreement after complex negotiations (O'Shea, Reeves, Palcic 2018).

Due to the nature of the two, or more, institutions involved in the generation of a PPP, there is a significant gap between the cultures of the companies since the public partner has a social purpose and a government/state culture versus the private institution, mainly oriented to profit.

Several comparisons of results between PPP and traditional procurement (TP) suggest that PPP's achieve better value for money, risks transfer, encouragement for innovation, use of private finance, faster delivery times and primarily to improve public infrastructures than the conventional TP

(Reeves 2017 / Blanc-Brude, Goldsmith 2006) ("A review of emerging trends in global PPP research: analysis and visualization" H.Dong, Song, J.Zhang, 2016)

Recent analysis of the PPP's in Latin America showed a significant activity of Spanish construction firms participating as the private partner in toll roads in Mexico and Chile, as well as train transportation, airports and ports in Colombia, (Gomez Pomar, J., Segovia, A., Sanchez, C. Barrios, J., 2019)

which suggests that in addition to the operational challenges to be negotiated, there will be cross-cultural challenges to address during the negotiations along the life of the long-term alliances among the PPP partners, representing an opportunity for future research on the topic of this article,

Methodology:

The research was focused on the opportunities to use DT to help Public Private Partnerships (PPP's) by facilitating the partners negotiations to agree on the PPP terms and conditions.

In order to research the possibilities of DT applied to negotiations and since we could not find examples in the literature, nor with the specialists contacted, we decided to create a PPP negotiation case to be simulated with professionals who can assume the role of the counterparts of a PPP negotiation table to perform a counter fact analysis, with the following steps:

Step 1: creation of a case and roles to be exercised

Step 2: selection of the sampled participants.

Step 3: tables assignments.

Step 4: preparation step

Step 5: roleplay

Step 6: survey completion

Step 7: feedback session with participants

Step 8: survey analysis and results summary

Step 1: creation of a case and roles to be exercised

A roleplay case was created based on an existing PPP among the government of an Asian province and a chain of hospitals, altering the name of the institutions and simplifying the terms and conditions to be negotiated, to facilitate the roleplay (Attachment 1)

In addition the two roles for the Directors of the two institutions were created, emphasizing the challenge over the total amount to be paid as initial fee, as well as the opportunities to generate options of mutual gain (Attachments 2 and 3)

Finally a Lickert based survey (0 to 7) to be executed on-line was created to store personal and professional data for the participants, as well as their opinions over the climate at the table, their opinion about their counterpart and the quality of the agreement (Attachment 4)

Step 2: selection of the sampled participants

The authors proposed the roleplay to various B-Schools and Universities as a one-day workshop, which includes a Negotiation workshop and a brief DT workshop for all participants, to encourage them to use several negotiation tools, followed by a preparation section and then the roleplay and feedback sections. Finally five groups were invited to roleplay representing Africa, Bangladesh, Colombia, India and Spain

Step 3: tables assignments.

The participants were divided into several negotiation tables of two persons each, with one participant acting as Director of the public institution and the other as Director of the private hospital chain.

In turn, the tables were divided into those which will use only conventional tools to prepare versus those tables where one or two of their negotiators will use DT.

Step 4: preparation step

During the preparation step, one facilitator was training and performing an "ideation" with the participants selected to use DT, helping the identification of "options of mutual gain" (Fisher et al, 2011), while the other facilitator supported the participants using only conventional negotiation tools.

Step 5: roleplay

After the preparation step, the negotiation tables were assigned, emphasizing the agenda for the roleplay stated in the case context (Attachment 1) and the importance to conclude the roleplay documenting the partial or total agreement achieved in line with the importance of roleplay for learning (Cherif & Sommervill, 1995)

Step 6: survey completion

To ensure the compliance with the survey, all participants converge to the main classroom to complete the on-line survey, since survey is not the only way to get research data, but the key element for the method of analysis (De Vaus, 2013).

Step 7: feedback session with participants

At the end of the workshop, an open discussion with the participants is conducted, enhancing the learning of the participants (Ahea & Rahman, 2016), which showed that those tables with DT trained participants, achieved much better results and have a better climate than the others, which should be further confirmed by the survey analysis.

Step 8: survey analysis and results summary

Once all surveys are collected a conversion to Excell documents take place conversion figures into percentages to extract conclusions. (Attachment 5).

Results:

This section presents the results of the 5 roleplays performed to explore the benefits of DT for the preparation of a PPP negotiation.

A comparison of the survey answers related to the climate of the negotiation showed that those tables with one or two counterparts trained with DT showed significant better initial and specially final climate, as well as better time management,

Regarding the quality of the agreement and agreement feasibility the comparison showed that tables with counterparts trained with DT achieved better agreements as well as more feasible deals.

In addition, the consulted specialists, who suggested that negotiations better structured will definitely generate better agreements, confirm that DT could be a useful tool to help PPP management.

We conclude that this research should contribute to the development of good practices and tools to help PPP's efficiency by reducing the time for their negotiation of terms and conditions.

Furthermore this research invites a future research, focused on the benefit of using DT to manage the changes, risks, innovations along the life of the PPP's (Flyvberg, Bruzelius, 2003) as well as to apply DT for conflict resolution of issues which may appear along the life of the PPP's.

5. CONCLUSIONS

We conclude that this research should contribute to the development of good practices and tools to help PPP's efficiency by reducing the time for their negotiation of terms and conditions.

Furthermore this research invites a future research, focused on the benefit of using DT to manage the changes, risks, innovations along the life of the PPP's (Flyvberg, Bruzelius, 2003) as well as to apply DT for conflict resolution of issues which may appear along the life

A detailed analysis of the answers related to the “negotiation climate” disclosed the following situations:

- Negotiation tables where both counterparts were trained with DT, showed a higher grade for the “climate at the end of negotiation”, which suggests that when both members have exercised DT before arriving to the table, they are mentally prepared for a more efficient and collaborative work during the negotiation.

- In addition, since our research asked the opinion about the “initial climate” and “climate at the end of the negotiation”, those tables where one or both members have been trained with DT showed also a higher degree of “initial climate”, which suggests that when counterparts experienced DT they bring in an atmosphere of collaboration and a positive attitude to the table.

Another detailed analysis of the survey answers related to the “agreement feasibility” showed that those tables where both partners were trained with DT showed better results than those where only one counterpart was trained with DT, which suggests that the “trust” about the terms and conditions could be also a variable to measure in future research projects, confirmed as a key element of PPP's as per our dialog with the specialists of both: negotiations and PPP's.

6. REFERENCES

- Andreu, A., Sánchez-Bayón, A. (2019). *Claves de Administración y Dirección de Empresas en la posglobalización*. Madrid: Delta Publicaciones.
- Cross, N. (2023). *Design thinking: Understanding how designers think and work*. Bloomsbury Publishing.
- Dorst, K. (2011). The core of ‘design thinking’ and its application. *Design studies*, 32(6), 521-532.
- Engel, E., Fisher, R., Galetovic, A. (2014, March) Fund and PPP. In money related Flows and Infrastructure Financing Conference (pp. 20-21)
- Geissdoerfer, M., Bocken, N. M., & Hultink, E. J. (2016). Design thinking to enhance the sustainable business modelling process—A workshop based on a value mapping process. *Journal of Cleaner Production*, 135, 1218-1232.
- Glazyrina, I., & Lavlinskii, S. (2017). Transaction costs and prospects for public-private partnership in the Russian mineral resource sector. *International Journal of Economics and Financial Issues*, 7(1), 403-413.
- Glen, R., Suci, C., & Baughn, C. (2014). The need for design thinking in business schools. *Academy of management learning & education*, 13(4), 653-667.
- González, E., Sánchez-Bayón, A. (2019). *Nuevas tendencias en RR.HH. y desarrollo del talent profesional*. Porto: Ed. Síndesis.
- Foster, M. K. (2021). Design thinking: A creative approach to problem solving. *Management Teaching Review*, 6(2), 123-140.
- Gomez Pomar, J., Segovia, A., Sanchez, C. Barrios, J. (2019). El modelo concesional en España, Beneficios y cuestiones a resolver, *ie University*, 61-70
- Habicher, D., Erschbamer, G., Pechlaner, H. & Walder, M. (2021). Transformation and Design Thinking: perspectives on sustainable change, company resilience and democratic leadership in SMEs. *Leadership, Education, Personality: An Interdisciplinary Journal*, 3(2), 145-156.
- Johansson-Sköldberg, U., Woodilla, J., & Çetinkaya, M. (2013). Design thinking: Past, present and possible futures. *Creativity and innovation management*, 22(2), 121-146.
- Kimbell, L. (2011). Rethinking design thinking: Part I. *Design and culture*, 3(3), 285-306.

- Kurtmollaiev, S., Pedersen, P. E., Fjuk, A., & Kvale, K. (2018). Developing managerial dynamic capabilities: A quasi-experimental field study of the effects of design thinking training. *Academy of Management Learning & Education*, 17(2), 184-202.
- McCausland, T. (2020). Design thinking revisited. *Research-Technology Management*, 63(4), 59-63.
- Plattner, H., Meinel, C., & Leifer, L. (Eds.). (2015). *Design thinking research: Making design thinking foundational*. Springer.
- Razzouk, R., & Shute, V. (2012). What is design thinking and why is it important?. *Review of educational research*, 82(3), 330-348.
- Serrat, O., & Serrat, O. (2017). Design thinking. *Knowledge solutions: Tools, methods, and approaches to drive organizational performance*, 129-134.
- Sánchez-Bayón, A. (2010). *Estudios de cultura politico-jurídica*. Madrid: Delta Publicaciones.
- Sánchez-Bayón, A. (2014). *Innovación docente en los nuevos estudios universitarios*, Valencia: Tirant Lo Blanch.
- Sánchez-Bayón, A. (2021a). Giro hermenéutico y revolución copernicana en Ciencias Económicas: Regreso a las raíces y disciplinas duales. *Encuentros multidisciplinares*, 23(68): 1-26
- Sánchez-Bayón, A. (2021b). Urgencia de una filosofía económica para la transición digital : Auge y declive del pensamiento anglosajón dominante y una alternativa de bienestar personal, *Miscelánea Comillas. Rev. Ciencias Humanas y Sociales*, 79(155): 521-551. DOI: <https://doi.org/10.14422/mis.v79.i155.y2021.004>
- Sánchez-Bayón, A. (2022). De la síntesis neoclásica a la síntesis heterodoxa en la economía digital. *Procesos de Mercado*, 19(2): 277-306. <https://doi.org/10.52195/pm.v19i2.818>
- Shea, C., Palcic, D., Reeves, E. (2019) Comparing PPP with traditional procurement: The case of schools procurement in Ireland. *Annals of public and cooperative economics*, 90(2), 245-267
- Song, J., Zhang, H., & Dong, W. (2016). A review of emerging trends in global PPP research: Analysis and visualization. *Scientometrics*, 107, 1111-1147.
- Wang, L., Yan, D., Xiong, Y., & Zhou, L. (2019). A review of the challenges and application of public-private partnership model in Chinese garbage disposal industry. *Journal of Cleaner Production*, 230, 219-229.
- Zhang, S., Chan, A. P., Feng, Y., Duan, H., & Ke, Y. (2016). Critical review on PPP Research—A search from the Chinese and International Journals. *International journal of project management*, 34(4), 597-612.