

**STAKEHOLDER MANAGEMENT STUDIES IN MEGAPROJECTS CONTEXT: THE  
ROLE OF TRUST, FORMAL CONTRACT AND RELATIONAL CAPITAL**

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**ÉTUDES DU MANAGEMENT DES PARTIES PRENANTES DANS LE  
CONTEXTE DES GRANDS PROJETS : LE RÔLE DE LA CONFIANCE, DU  
CONTRAT FORMEL ET DU CAPITAL RELATIONNEL**

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### ABSTRACT

In megaprojects context, it is vital to build good relationships with the stakeholders who are identified as being the most crucial for the end results, for example the subcontractors. The purpose of this paper is to address the impact of specific investment, which are argued to rely on different mediating paths for building good project-stakeholder relationships, specifically: trust, formal contract and relational capital. In this paper, trust is presented first as a mediating variable, often mobilized to create, develop and maintain lasting relationships, and then as a moderating variable that can enhance the effect of other variables. This paper presents an empirical study that is based on a survey using a questionnaire with a sample of Masen's subcontractors. Masen (Moroccan Agency for Solar Energy) is the contracting authority for the megaproject Noor of Ouarzazate. The results highlight the antagonistic nature of stakeholder management in the context of megaprojects. Indeed, the complementarity between transactional and relational mechanisms could serve as a springboard for a better understanding of how Masen (main contractor) involves its stakeholders. In the context of the Moroccan megaproject Noor of Ouarzazate, we must pay particular attention to trust cultivated by the investment in specific assets. If it is presented as a complement to formal contract, it appears to have a negative effect on the relation between relational capital and the sustainability of the exchange.

**KEY WORDS:** stakeholders, megaprojects, trust, specific investments, relational capital

### RESUME

Dans le contexte des mégaprojets, il est essentiel d'établir de bonnes relations avec les parties prenantes qui sont identifiées comme étant les plus cruciales pour les résultats finaux, par exemple les sous-traitants. L'objectif de ce document est d'aborder l'impact d'investissements spécifiques, dont on soutient qu'ils s'appuient sur différentes voies de médiation pour construire de bonnes relations entre le projet et les parties prenantes, en particulier : la confiance, le contrat formel et le capital relationnel. Dans ce document, la confiance est présentée d'abord comme une variable médiatrice, souvent mobilisée pour créer, développer et maintenir des relations durables, puis comme une variable modératrice qui peut renforcer l'effet d'autres variables. Ce document présente une étude empirique qui est basée sur une enquête utilisant un questionnaire auprès d'un échantillon de sous-traitants de Masen. Masen (Agence marocaine pour l'énergie solaire) est le maître d'ouvrage du mégaprojet Noor de Ouarzazate. Les résultats mettent en évidence le caractère antagoniste de la gestion des parties prenantes dans le cadre des mégaprojets. En effet, la complémentarité entre les mécanismes transactionnels et relationnels pourrait servir de tremplin pour une meilleure compréhension de la manière dont Masen (maître d'œuvre) implique ses parties prenantes. Dans le contexte du mégaprojet marocain Noor de Ouarzazate, il faut accorder une attention particulière à la confiance cultivée par l'investissement dans des actifs spécifiques. Si elle est présentée comme un complément au contrat formel, elle semble avoir un effet négatif sur la relation entre le capital relationnel et la durabilité de l'échange.

**MOTS CLES :** parties prenantes, grands projets, confiance, investissements spécifiques, capital relationnel

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### INTRODUCTION

For years, the notion of a megaproject has been gaining importance and attracting the attention of researchers. Several characteristics distinguish "large projects" from "simple projects". They are generally more complex, risky and involve a large number of stakeholders with very different expectations ( Qiu et al., 2019; Mok et al., 2015; Zakharova and Jäger, 2013; Terje Karlsen et al., 2008).

In the context of megaprojects, there is a certain consensus within the research and practitioner community that managing stakeholder relations, including subcontractors, is a key factor in the success of megaprojects. For example, Olander and Landin (2008) found that societal acceptance of megaprojects is high when project managers aim to create a climate of trust and commitment between themselves and their stakeholders. Dalahmeh et al. (2009) discussed the importance of building trust between the project owner and stakeholders. Feige et al. (2011), on the other hand, studied the obstacles to the dynamics of stakeholder involvement in the management of megaprojects. Their lessons can help project managers to formulate practical approaches to stakeholder engagement in megaprojects.

It is in this context that sustainable exchange is of great interest. For example, Zakharova and Jäger (2013) identified the management of the relationship with subcontractors, as an external stakeholder, as a key factor in the performance of megaprojects. Their success seems to depend on the ability of the contracting authority and its subcontractors to create, develop and maintain lasting relationships. While sustainable exchange has been widely studied and in different contexts, little research has been done on it in the context of megaprojects, and more specifically that of the mega Moroccan project of solar energy Noor.

In the literature, several studies have focused on the role that investment in specific assets can play in creating, developing and maintaining sustainable relationships. In this field, transaction cost theory (TCT) and relational exchange theory (TER) are often cited as theoretical foundations.

The TCT tries to focus on the cost that can be generated by such investments. The resulting dependence will make the company undertaking these investments vulnerable to any opportunistic behaviour by its partner (Lin, Wu, & Chiou, 2017). In this case, it is necessary to

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have solid guarantees to achieve it. To reduce this risk of opportunism, companies in exchange always opt for contractual and formal governance (Espino-Rodríguez, Chun-Lai, & Gil-Padilla, 2017). It consists of drafting an explicit contract that will determine the terms of trade, obligations and role of each party. The problem is that in a contract, you cannot foresee everything. This is a context of limited rationality in which companies use relational governance mechanisms such as trust to fill contract incompleteness (Grafton & Mundy, 2017; Ning, 2017).

In this article, a distinction will be made between investments in specific tangible and intangible assets. While the TST focuses mainly on the first category, the TER seems adequate to us to understand the importance of the second. With reference to the latter, the vast majority of investments leading to the creation of intangible assets, particularly relational capital, reflect the ability to generate and maintain lasting relationships. Various authors suggest that a large part of firms' profits is generated through their relational capital (Steinmo & Rasmussen, 2018). The notion of relational capital should be of great interest in the managerial literature. This concept refers to the part of a company's value that is attributable to the value of its relationships with all its partners (Steinmo & Rasmussen, 2018). Several studies propose a number of links between indicators of relational capital and the sustainability of the exchange relationship. Investment in intangible assets also leads to an intensive formal and informal exchange of information with its partner, which must be understood both in terms of content and in terms of timing. The frequency and quality of the information exchanged are important factors in developing mutual trust and determining the degree to which the parties understand each other's objectives and coordinate their efforts to achieve them (Connelly, et al., 2018).

Thus, in this article, we will try to examine, on the one hand, the role that specific tangible and intangible investments play in the sustainability of the exchange between the megaproject owner and its subcontractors. On the other hand, we will focus on the place that trust can play in this relationship. In this area, the uncertainty associated with the drafting of complete contracts and the nature of the project to be carried out justify the use of trust to reduce the risk of opportunism, strengthen ties with its partner and make the exchange relationship last.

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In this context, the question is that in a relationship where subcontractors undertake specific investments (tangible and/or intangible), what role can trust play in it? Our research has three contributions. First, it provides a more comprehensive assessment of trust by studying both its advantages and disadvantages in the context of megaprojects. The results suggest that trust is a double-edged sword that can have perverse effects on relational performance. Second, it examines two conditions under which the advantages and disadvantages of trust become more important. The results show that the functional effects of trust on commitment are more pronounced when the relationship between the principal and the supplier is governed by repetitive and short-term contracts. The results also show that the principal must maintain moderate levels of trust, otherwise they may suffer trust dysfunctions. Third, previous studies on trust at the inter-organizational level have often focused on the effects of trust on engagement (Morgan and Hunt, 1994). In line with these studies, our effort is consistent with recent studies (Zahir-ul-Hassan et al. 2016) that call for treating contract and trust as mediating instruments in building a sustainable relationship. To answer our questioning, a survey is conducted using a questionnaire among 52 subcontracting companies involved in the solar energy megaproject Noor of Ouarzazate.

### 1. THEORETICAL FOUNDATIONS

With reference to the work of Williamson (1985), it is impossible for agents to draw up complete contracts ex-ante. Transaction cost theory proposes to consider that trade structuring is the product of a transaction cost calculation (Ghertman, 2010). The structuring, in this case, results in a business-to-business space either of competition, in this case it is the market that coordinates business-to-business activities, or hierarchical. Thus, costs relating to the conditions under which the contractual relationship is conducted are becoming more important. The limited capacities of individuals can also be considered as a source of transaction costs. The hypothesis of limited rationality of individuals makes it impossible to know all the possible "states of nature" (Debruyne, 2011). Therefore, contracts governing relations between individuals or organisations are by nature incomplete (Ning, 2017; Graftona, & Mundy, 2017).

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This incompleteness is a source of opportunistic behaviour (Huo et al. 2015). As a result, limited rationality and opportunism expose transactions to multiple risks, uncertainty and ambiguity (Merkert et al. 2018; Debruyne, 2011). In an international context, Coriat and Weinstein (2010) discuss the uncertainty of the transaction (where culture and language are involved). It should be added that the importance of these two behavioural assumptions (limited rationality and opportunistic behaviour) depends on the nature of the transactions (Debruyne, 2011) also depends on the specificity of the assets. According to Williamson (1985), the economics of transaction costs maintains that the main factor responsible for the difference in transaction costs results from a variation in the degree of asset specificity. The latter are investments undertaken for a particular transaction and cannot be redeployed to another transaction without loss of productive value (Beutler & Grobéty, 2019; Ghertman, 2010).

Williamson (1985) refers to tangible and intangible investments that are specialized to a relationship. Once the investment is made, the result is a lock-in situation. It is because there is non-redeployability of assets (Beutler & Grobéty, 2019) that there is a risk of a "hostage situation" (hold-up) towards the party controlling the asset. Under these conditions, the contract is seen as an institutional mechanism for regulating trade (Beutler & Grobéty, 2019). It is not just about simply determining the price. The parties must agree on the duration, reciprocal contractual obligations and means of resolving disputes (Lin et al., 2017). This shows the complexity of the transactions. Today, more and more contributions are beginning to analyse in depth the relationships of exchange, adopting a sociological and psychological approach. Several studies have been conducted using concepts and models that focus on close (or strong) and interactive relationships between customer and supplier (Wang et al. 2019; Czernek et al. 2017; Graftona & Mundy, 2017). For this reason, trust appears as a governance mechanism that mitigates opportunism in exchange contexts characterized by uncertainty and dependence. Trust arises only through an arbitration between the gains offered by cheating behavior and the sanctions incurred (Connelly et al., 2018; Liu, et al., 2018; Ning, 2017; Czernek, et al., 2017; Grafton & Mundy, 2017). In this context, taking into account the trust between the parties leads to an understanding of the existence of several alterative

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governance systems in the market / hierarchy. Interaction theory, on the other hand, states that repetitive interactions between organizations lead to the development of common values between their individuals, which in turn leads to the development of trust. Trust also appears to be an essential variable in relational exchange (Liu, et al. 2018), making it possible to better understand the determinants of the sustainability of exchanges (Connelly, et al. 2018). In this case, the focus is on the economic but also social motivations that encourage stakeholders to exchange. In such a system, members control themselves based on their common values and concerns for long-term benefit (Heide, 1994). The use of trust has been strengthened and legitimized by the development of the theory of embedding (Connelly, et al. 2018). This theory has encouraged, for example, the recognition of the customer-supplier relationship as an object of analysis in its own right in the field of "business to business". In fact, it has focused researchers' attention on the forms, advantages and disadvantages of business-to-business cooperation and the role of trust in this form of exchange (Wang, et al. 2019; Connelly, et al. 2018; Liu, et al. 2018; Czernek, et al. 2017).

### 2. CONCEPTUAL MODEL AND THE RESEARCH HYPOTHESES

In this article, we propose a relationship between the specificity of the assets undertaken in a relationship and the sustainability of the exchange. These specific investments create substantial switching costs (Lin et al., 2017), and consequently increase the interdependence between the exchange parties and their mutual trust (Yvrande-Billon 2007). They are antecedent to the supplier's commitment in the relationship (Morgan & Hant, 1994). In the literature, commitment in a relationship is synonymous with a continuous desire to maintain it. According to Lin et al. (2017), the perception that the partner makes specific investments increases his credibility but also his benevolence (interest in the relationship, for the partner), makes him more committed to and intends to stay in the relationship. According to Goleca and Gupta (2014), assets can be tangible (relating to physical equipment) or intangible (relating to human skills).

Hoetker and Mellewight (2009) argue that a mismatch between relationship governance mechanisms and asset types can affect relationship performance and sustainability. Exchange relationships last when both parties are satisfied with the effectiveness and efficiency of the

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relationship (Selnes & Sallis 2003). Referring to Moberly (2014) and to Goleca & Gupta (2014), specific investments appear as an antecedent of long-term relationship between a supplier and his customer. This increases the interdependence between the two exchange partners and their mutual trust.

### 2.1. THE ROLE OF FORMAL CONTRACT MEDIATOR

In the case of exchange relationships, transaction cost theory is usually used to justify the establishment of formal governance mechanisms. According to this theory, the formal contract is considered the main tool that can protect against opportunistic behavior (Brulhart (2006). The contract will constitute the first incentive procedure in that it represents a guarantee against the problems of information asymmetry that characterize exchange relationships. It stipulates the rights and obligations of both parties by explicitly specifying the formal rules, modalities and procedures in the event of a problem (e.g. place of transfer of ownership, penalties for non-compliance) (Poppo & Zenger, 2002). A contract is a source of motivation for the parties to fulfil their responsibilities because violations can result in penalties (Graftona & Mundy, 2017). Consequently, each party will use the formal contract to preserve its specific assets invested in the relationship. For example, a supplier who invests in his factory will try to negotiate the content of the contract several times with his principal in order to protect the millions he invests in it. Honouring the contract can be a guarantee to maintain the exchange relationship.

In addition, and in comparison, with relational governance mechanisms, the formal contract is more appropriate in cases where the specific asset is tangible. In their study, Hoetker & Mellewigt (2009) found that companies use more relational governance mechanisms in the presence of specific intangible assets and more formal mechanisms in the presence of specific tangible assets. The functioning of the formal governance mechanism is largely independent of the specific people involved. A contract can specify the value, quality and expected result of the tangible investment (Wang, 2019). However, it can hardly specify in advance which ones are related to intangible assets. For example, a formal contract cannot specify the number of meetings required to transfer the required knowledge. To this end, it can be said that formal

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governance mechanisms are a good means of governance for transactions involving specific tangible assets.

*Hypothesis 1a* : Tangible investment in specific assets has a positive effect on formal contract

*Hypothesis 1b*: The formal contract has a mediating role between investments in tangible specific assets and commitment

### 2.2. THE MEDIATING EFFECT OF RELATIONAL CAPITAL

Relational capital indicates the strength and quality of the relationship with family members and shared experiences (Nahapiet & Ghoshal, 1998), measuring the ability to exchange different information, the frequency of interactions between different actors and trust in each other. In this sense, investment in specific intangible assets will allow both partners to develop useful relational capital to support their willingness to maintain their exchange relationship. Although relational capital remains an intangible asset and therefore difficult to diagnose, its presence between partners has positive effects on the sustainability of the exchange (Lopes-Costa & Munoz-Canavate, 2015). For these authors, it has a strategic value for managers in obtaining sustainable competitive advantages and, consequently, in improving organizational performance.

The presence of relational capital is an important ingredient in distinguishing between a partnership that is sustainable and focused on the exchange of tacit knowledge and a more opportunistic and time-limited partnership (Vézina & Messier, 2009). According to Kale et al. (2000), when organizations build relational capital, they create a foundation for the transfer of learning and knowledge. Frequent interactions are developing between individuals at various levels within partner organizations. Relationships that are more transparent and some forms of reciprocity in exchanges make it possible to increase the exchange of information, but above all, the transfer of tacit knowledge between partners (Kale et al, 2000). This is why it is at the heart of inter-company learning. Relational capital consists of the benefits specific to partner relationships: complementarity of resources and skills, relationship-specific assets and knowledge-sharing routines between partners (Dyer & Singh, 1998).

The company's relational capital is based on its relational skills. These relational skills reflect the firm's ability to acquire and exploit external knowledge into new business opportunities

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or new knowledge through interaction learning (Yli-Renko, et al., 2001). Consequently, relational advantages are not permanent. To maintain and renew these benefits, the company must invest in the relationship to strengthen information exchange and knowledge transfer between the parties (Yli-Renko, et al., 2001). They develop skills that are difficult to imitate.

*Hypothesis 2a:* Investment in specific intangible assets has a positive effect on relational capital

*Hypothesis 2b:* Relational capital has a mediating role between investment in specific intangible assets and engagement in the relationship

### 2.3. THE MEDIATING ROLE OF TRUST

Several empirical studies have shown that specific investments contribute to increased trust in so far as they demonstrate the partner's willingness to invest in the relationship (Graftona & Mundy, 2017; Zhao & Wang, 2011) and to see it last over time. In the literature, trust is equated with a psychological state that is similar to a feeling and belief in the integrity of the exchange partner, and this in a risky situation. In this case, there may be a virtuous circle between the specific investments undertaken by one trading party and the confidence of the other. The supplier's investment in specific assets can generate the confidence of the principal, which in turn will encourage the supplier to invest more in the relationship (Jiang, et al. 2013; Lui et al., 2009).

According to Shena et al. (2019), a supplier's specific investment in durable goods and procedures increases the retailer's perception of the supplier's reliability. It has also shown that buyers have confidence in their supplier when they perceive that they are undertaking idiosyncratic (specific) tangible investments on their behalf. These investments provide evidence that the supplier can be believed, pays attention to the relationship and makes sacrifices. These are investments in equipment or adaptation of the production process to the buyer's needs. Companies making such investments are less likely to engage in opportunistic behaviour that threatens the continuity of the relationship. In this context, specific investments are both a prerequisite for confidence building. In this case and in an interest calculation, suppliers will undertake specific investments to gain the trust of their client and subsequently see the duration of their relationship over time (Villena et al. 2019).

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Compared to investment in tangible assets, investment in intangible assets involves more people. Liu et al, (2010) proposes that in a sustainable relationship, investment in specific assets, especially intangible assets, is gradually embedded in social relationships. These socially embedded relationships provide a platform for sharing richer and more reliable information (Shena, et al. 2019; Jiang, et al. 2013) and for building trust between partners (Morgan & Hunt, 1994). In this case, this trust can emerge and develop through teamwork, frequent contacts, shared decision-making, and joint problem solving (Gulati, 1998). In practice, the parties to an exchange relationship always form teams dedicated to the day-to-day management of their relationship. These teams allow for more personalized communication, immediate feedback and rapid problem resolution. In this case and following intense communication and coordination, trust is more likely to emerge and develop.

In the literature, the main consequence of trust seems to be associated with a long-term orientation, a sign of the performance of exchange relationships (Connelly, et al. 2018; Graftona & Mundy, 2017; Jiang, et al. 2013; Morgan & Hunt, 1994). If there is no consensus on the effects of trust, researchers agree on its importance for building and maintaining long-term relationships.

*Hypothesis 3a:* Investments in tangible specific assets have a positive effect on trust.

*Hypothesis 3b:* investments in specific intangible assets have a positive effect on trust.

*Hypothesis 3c:* Trust has a positive effect on commitment in the relationship.

### 2.4. THE MODERATING EFFECT OF TRUST 1

The governance of business-to-business exchange relationships involves two mechanisms: transactional and relational. These two mechanisms are sometimes presented as substitutable and sometimes complementary. In the first case, the formal contract is a transactional mechanism. In the second, trust is presented as a relational mechanism for managing exchange relationships. Wuyts and Geyskens (2005) argue that formal and informal mechanisms may be less effective when used together than when used separately.

However, Pinnington and Ayoub (2019) emphasizes the complementary aspect between the formal contract and trust. For this researcher, the sustainability of trust-enhanced exchange relationships can generate contractual improvements that will strengthen cooperation

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between partners. In this case, trust appears to be an excellent means of protecting against risks not provided for in the contract (Poppo & Zenger, 2002). Therefore, we can say that the formal contract will be more effective when a high level of trust exists in the exchange relationship. This is true when the supplier comes from a developing country and the principal comes from a developed country. In this context, the formal contract can be a means of ensuring the expected result, but trust becomes a necessary complement to fill contract weaknesses.

*Hypothesis 4:* Trust has a moderating effect on the relationship between the formal contract and engagement in the relationship, and this effect is positive.

### 2.5. THE MODERATING EFFECT OF TRUST 2

Several studies have shown that high trust promotes flexibility, solidarity and the exchange of confidential information between partners (Doney & Cannon 1997). The existence of similarity between trading partners reduces uncertainty surrounding negotiations (Doney & Cannon 1997) and makes it easier to predict possible partner decisions (Nicholson, et al., 2001). This will improve the effectiveness of learning in exchange relationships.

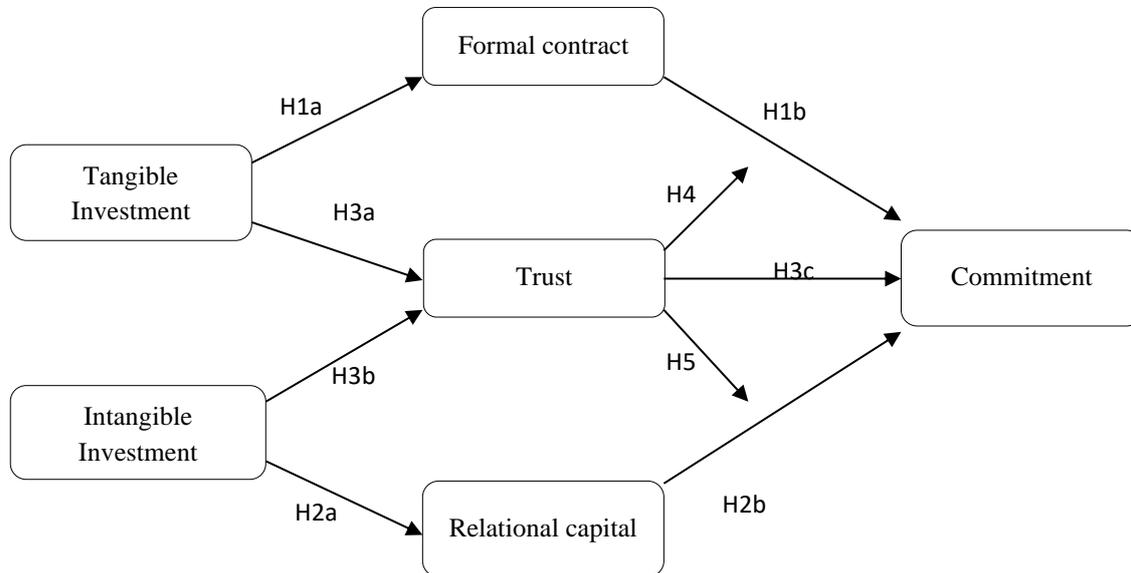
On the contrary, Selnes & Sallis (2003) focus on the hidden costs of trust development. For them, creativity is lost when trust is high, due to the high convergence between partners. In this case, the parts of the exchange fall into a state of inertia. If trust in the relationship is too high and value systems are convergent, the potential benefit of difference and constructive conflict can no longer exist.

This hinders the creative processes found in heterogeneous groups (Selnes & Sallis, 2003). Therefore, we propose that if investment in specific assets generates a high level of trust in a relationship, the effectiveness of relational capital in the relationship may decrease.

*Hypothesis 5:* Trust has a moderating effect on the relationship between relational capital and engagement in the relationship, and this effect is negative.

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**Fig. 1. The theoretical model**



**3. METHODOLOGY**

This section deals with the choice and description of our sample studied and the construction of the questionnaire.

**3.1. SELECTION OF THE SAMPLE**

With regard to the study sample, for reasons of reliability and research validity, we chose to limit our study to the sole point of view of local subcontractors. It is a very coveted stakeholder by local authorities. Their economic and even social impacts are a major objective of the Noor project. Indeed, the Kingdom has not simply given priority to its solar ambition due to concerns about climate change. The complex solar Nooro also aims to provide expertise and technological know-how, and contribute to local and regional socio-economic development. The measures implemented by MASEN to address the socio-economic aspects of Nooro I include, among other things, the industrial integration of the solar complex through a 35% local content target in order to develop a national industrial base for the Moroccan Solar Plan (MoSP). In terms of industrial integration, companies are involved in the development of Nooro, as first-class subcontractors in civil engineering, infrastructure, assembly, construction of part of the trackers, mirror supports, logistics.... To confirm this, we first contacted two Masen managers (1 in Casablanca and 1 in Ouarzazate) in direct contact with the Nooro

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project. During our discussion with them, these managers identified us as subcontractors as important stakeholders whose nature of the relationship with them could have an effect on the success of the project. For this reason, our objective is to justify the positive influence of investments in specific assets, through mediating variables, on the sustainability of the exchange relationship between the subcontractor and its principal, Masen in our case, and to understand the moderating role that trust can play in it. The data collection unit is the company. The survey was conducted between September 2018 and March 2019.

The choice of companies was made on the basis of a list provided to us by the regional investment council of Ouarzazate. It was difficult for us to identify all the subcontracting companies, but with the help of the CRI people, 52 subcontractors were identified to whom we sent the questionnaire. The questionnaires were sent in two parts. The respondents were mainly general managers/managers (32.7), directors/heads of departments (43.37%), workshop managers (21.16%) and others (5.77%). On average, respondents had been in their current position for 6 years and had been working for the same company for 8 years. The average age of the respondents was 43 years. Of the 52 subcontractors, 23.1% work in civil engineering, 35.8% in assembly and construction (of mirrors and trackers), 13.2% in infrastructure and 27.9% in logistics (mainly in transport). With regard to size, measured by the number of employees, all the companies surveyed are SMEs.

### 3.2. MEASUREMENT SCALES

Our survey was conducted on the basis of a questionnaire. The items used were developed from the literature on specific investments, relational capital, trust and commitment. These items were scattered throughout the questionnaire. The final questionnaire was divided into seven sections. The first six sections correspond to the different variables of our theoretical model, the seventh section concerns the respondents' personal data. The latter is not important but should not directly affect engagement in the relationship, it could be very useful in identifying their effects on the perception of other independent variables.

For the specific tangible investments variable, this is a dummy variable that takes 1 if the respondent states that the company has made specific tangible investments for its customer such as the provision of specific products or facilities in production and 0 otherwise.

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For the specific intangible investments variable, it is also a dummy variable that takes 1 if the respondent states that the company has made specific intangible investments for its customer such as training its production or sales staff and 0 if not.

The formal contract is a dummy variable that takes 1 if the respondent states that his or her relationship with clients is governed by formal contracts and 0 if not.

For relational capital, Nahapiet and Ghoshal's (1998) conceptualization is similar to the notion of "strong bonds" used by Granovetter to describe reciprocity and emotional intensity in interpersonal relationships. It testifies to the intensity and quality of the collaboration between subcontractors and their principals, which has a positive effect on the exchange of experience between them. For this variable, we used five items adapted from the work of Tsai and Ghoshal, (1998), and commonly used in the literature (Rao & Gebremichael, 2017; Sanchez-Famoso et al. 2014). For each statement, they were asked to rate themselves on a scale of 1 to 5, ranging from "Strongly Disagree" to "Strongly Agree".

To define trust, Connelly, et al (2018) use integrity and reliability. Reliability is the belief that the other party has the necessary skills to perform its task reliably and efficiently (Ganeson, 1994). Integrity is mainly illustrated by honesty (Morgan & Hunt 1994), i.e. the other party adheres to a set of moral principles that it considers sufficient and acceptable and that it is able to keep its promises. As a result, we used a scale of four items to assess the level of trust between the heads of all the company's functional departments, which are often used in research on business relationships (Morgan and Hunt, 1994). In this case, respondents were asked to specify their opinion on the integrity, reliability of their collaborators, even if the opportunity to be opportunistic arose. For each statement, they were asked to rate themselves on a scale of 1 to 5, ranging from "Strongly Disagree" to "Strongly Agree".

For commitment, and based on what we have found in the literature, this notion is widely approached by researchers as synonymous with the sustainability of the exchange (Morgan & Hunt, 1994). Thus, it seemed relevant to us to measure this variable to develop a scale based on the work on commitment measuring all its facets. Thus, 4 items, adapted from the work of Mayer & Allen (1991), were developed measuring respectively affective engagement (1 item), normative engagement (1 item) and 2 items measuring engagement by sacrifice and

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engagement by lack of alternative. Thus, subcontractors who have a feeling of support from their exchange partner will be more emotionally attached to the latter. In addition, subcontractors who feel supported by their client will have a greater sense of duty towards him. Finally, those with a sense of support from their client will feel that leaving their relationship will require a high level of sacrifice. This relationship may reflect the fact that the subcontractor fears that it will not have the same support if it changes principals. In addition, we asked interviewees to indicate how much they believe their principals want to maintain their relationships over the long term. All items for these variables were measured on scales from 1 to 5, ranging from "Strongly Disagree" to "Strongly Agree"

### 4. RESULTS

Following the methodological recommendations of Anderson & Gerbing (1988), the analysis of the results was carried out in two stages. The aim is to validate the measurement model a priori by means of confirmatory analyses (first-order analysis), before testing the structure model by examining the causal links between its various latent variables (second-order analysis). To remedy this problem of normality, we launched a Bootstrap test of 300 iterations to check the stability of the results.

#### 4.1. ESTIMATION AND VALIDATION OF SCALES

Under AMOS 21, we performed a confirmatory factor analysis to measure the factor contribution weight of each item in the formation of the measurement scale. In this case, no item should display a  $\lambda$  (lambda) value less than 0.50. This analysis is completed by the analysis of squared multiple correlations (SMC). The latter parameter corresponds to the individual reliability of the item (Fornell & Larcker 1981). This measurement is acceptable if it is greater than 0.3. These thresholds are recommended by Evrard et al. (2009). The verification of reliability at the confirmatory level is ensured by the calculation of the Jöreskog Rhô ( $\rho$ ). According to Roussel et al. (2002), this coefficient is more accurate than Cronbach's Alpha coefficient, since it includes error terms. A Jöreskog  $\rho$  greater than 0.7 indicates a good reliability of the scale.

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**Table 1 Results of confirmatory factor analysis**

Constructs	Items	Factor contribution	SMC	Cronbach's alpha	Rh $\hat{o}$ Jöreskog
Tangible Investment	InvespT1	0.720	0.556	0.753	0.806
	InvespT2	0.735	0.625		
	InvespT3	0.771	0.513		
Intangible Investment	InvespIT1	0.679	0.501	0.827	0.863
	InvespIT2	0.759	0.621		
	InvespIT3	0.708	0.640		
Formal contract	Cform1	0.603	0.571	0.731	0.815
	Cform2	0.647	0.633		
	Cform3	0.681	0.669		
Relational capital	Caprel1	0.592	0.582	0.762	0.783
	Caprel2	0.571	0.621		
	Caprel3	0.738	0.608		
	Caprel4	0.561	0.541		
Trust	Trust1	0.682	0.597	0.761	0.805
	Trust2	0.752	0.636		
	Trust3	0.661	0.595		
Commitment	Commit1	0.603	0.608	0.712	0.892
	Commit2	0.706	0.562		
	Commit3	0.727	0.608		
	Commit4	0.546	0.615		

From Table 1, we see that each construct in our model has a Cronbach's alpha greater than 0.7. In addition, being higher than 0.82, the Jöreskog  $\hat{r}\hat{o}$  also indicates a good reliability of the scale. Thus, the reliability of the scales is satisfactory. In this case, you are not required to delete any measurement items. Reliability is a necessary but not sufficient condition to establish validity. The validity study will be the subject of the following point.

According to Fornell and Larcker (1981), convergent validity is verified when the SMC (Squared Multiple Correlations) is greater than 0.3, the  $\hat{r}\hat{o}$  of convergent validity ( $\rho_{vc}$ ) is greater than 0.5 and the coefficient greater than 5 (>7 is preferred).

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Table 2 Converging validity

Constructs	Number of $\lambda$ not significant at 5%	Number of SMC less than 0,3	$\rho_{vc}$
Tangibles Investment	0.94	0	0.663
Intangibles Investment	0.92	0	0.605
Formal contract	0.97	0	0.701
Relational capital	0.92	0	0.617
Trust	0.92	0	0.548
Commitment	0.95	0	0.714

Concerning the discriminating validity, it must be ensured that the square root of  $\rho_{vc}$  of each construct (diagonal element of the correlation matrix in Table 2) is greater than the correlations it shares with the other constructs (Fornell & Larcker, 1981), so that it is satisfactory.

Table 3 Descriptive analysis and correlation matrix

Variables	Mean	SD	1	2	3	4	5	6
Tangibles Investment	3.85	0.74	<b>0.838</b>					
Intangibles Investment	3.02	0.81	0.373	<b>0.848</b>				
Formal contract	3.54	0.64	0.446	0.352	<b>0.875</b>			
Relational capital	3.35	0.80	0.456	0.541	0.573	<b>0.825</b>		
Trust	3.52	0.91	0.304	0.400	0.431	0.378	<b>0.849</b>	
Commitment	3.69	0.84	0.345	0.393	0.406	0.331	0.431	<b>0.854</b>

\*= $p < 0.05$

\*\*= $p < 0.01$

\*\*\*= $p < 0.0001$

The above tables summarize the validity tests, which are satisfactory. The results, including correlations between constructs, show that they are empirically distinct. Each item contributes significantly to the construction. In addition, the square roots of the  $\rho_{vc}$  of each construct are indeed superior to the correlations shared with the other constructs. Consequently, the convergent and discriminating validity of the constructs in our research is confirmed.

We have also launched a confirmatory factor analysis to assess the fit quality of each construction. The following table (4) presents the adjustment indices for each construct.

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**Table 4 AFC analysis of each construct**

	GFI	LI	CFI	RMSEA	SRMR
Tangibles Investment	0.97	0.96	0.94	0.06	0.04
Intangibles Investment	0.97	0.96	0.95	0.06	0.02
Formal contract	0.96	0.96	0.95	0.06	0.02
Relational capital	0.98	0.96	0.96	0.06	0.03
Trust	0.96	0.96	0.94	0.06	0.03
Commitment	0.98	0.96	0.94	0.06	0.02

As shown in Table 5, the adjustment indices of this model are acceptable, so we can conclude that the model is acceptable.

Since the data were collected in a single measurement time from the same persons, it is desirable to take into consideration the effects of a possible common method bias. In order to counter this potential bias, we followed the statistical and non-statistical recommendations of Podsakoff et al. (2003). In developing the questionnaire, care was taken to limit the bias of the common method (ensuring anonymity, confidentiality and distribution of variables in the questionnaire). We also emphasized the anonymity and confidentiality of the data collected from respondents. Statistically, following the approach suggested by Podsakoff et al (2003), a factor was introduced and linked to all items of our other variables. The comparison of the Chi2 between our two models revealed some improvement in the model's adjustment indices with the common method factor ( $\chi^2$  (39) = 69.23; GFI= 0.950; TLI= 0.974; CFI= 0.976; RMSEA=0.062) relative to the model without the common method factor ( $\chi^2$  (36) = 51.21; GFI= 0.951; TLI= 0.937; CFI= 0.977; RMSEA= 0.062). However, the factor explains only an additional 4% of the total variance; this is far below the 18% threshold recommended by Williams et al. (1989), which eliminates the risk of a common method variance bias.

### 4.2. PRESENTATION OF RESULTS: SECOND ORDER ANALYSIS

In this paper, we conducted a structural equation modeling (SEM) to test the hypotheses. From the results obtained (Table 2), it appears that the specified model is in adequacy with the data collected and that the standardized residues follow a normal distribution. Indeed, the GFI, TLI and CFI indicators exceed the recommended threshold of 0.9 and the RMSEA (<0.05) and SRMR (close to 0) indices are very suitable. The estimated model presents an acceptable adjustment (Table 5). Such results lead to not rejecting the model.

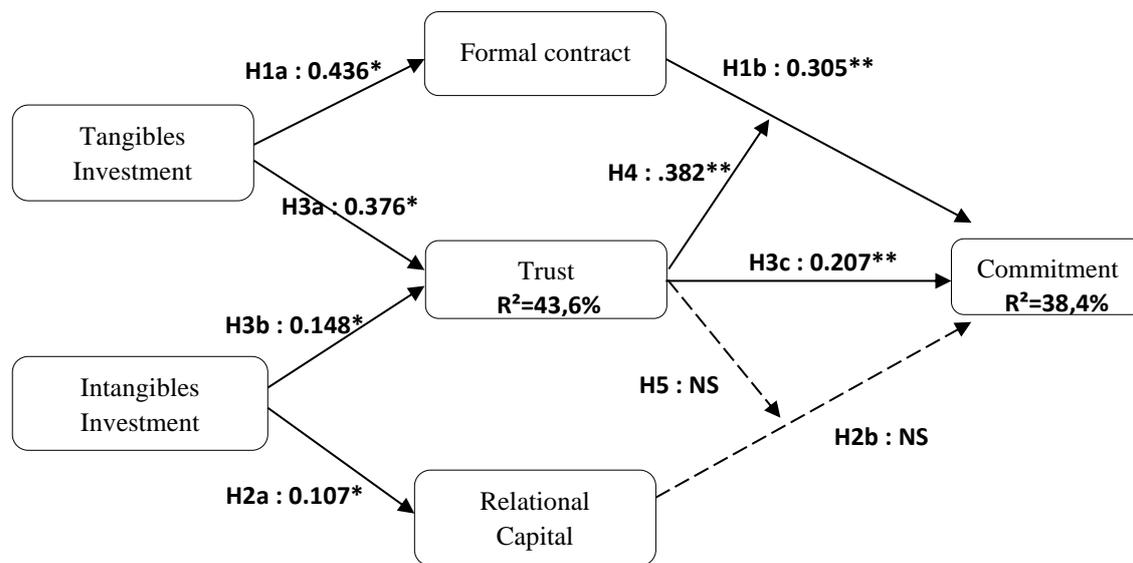
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**Table 5 CFA results for the four variables in the model**

Chi-deux ( $\chi^2/df$ )	RMSEA	GFI	TLI	CFI	SRMR
1.56	0.062	0.952	0.937	0.977	0.023

Figure 2 shows the causal model and the values of the standardized coefficients estimated by the Maximum Likelihood (ML) method.

**Fig. 2. Results of the structural model test**



In addition, the results of the table (see Table 6) make it possible to verify the significance and importance of the causal links between the latent variables in order to validate the research hypotheses.

**Table 6 Results of causal relationships and validation of research hypotheses**

Causal link	T-Student	Sig.	Validation of hypotheses
H1a : Tangibles Inv → Formal contr	3.582	0.000.*	Validate
H1b : Formal contr → Commitment	8.004	0.000**	Validate
H2a : Intangibles Inv → Relational Cap	3.742	0.015*	Validate
H2b : Relational Cap → Commitment	5.812	0.004**	Validate
H3a : Tangibles Inv → Trust	5.879	0.011*	Validate
H3b : IS Intangibles → Trust	2.103	0.023*	Validate
H3c : Trust → Commitment	3.184	0.006**	Validate

\* : P < 0.01

\*\* : P < 0.05

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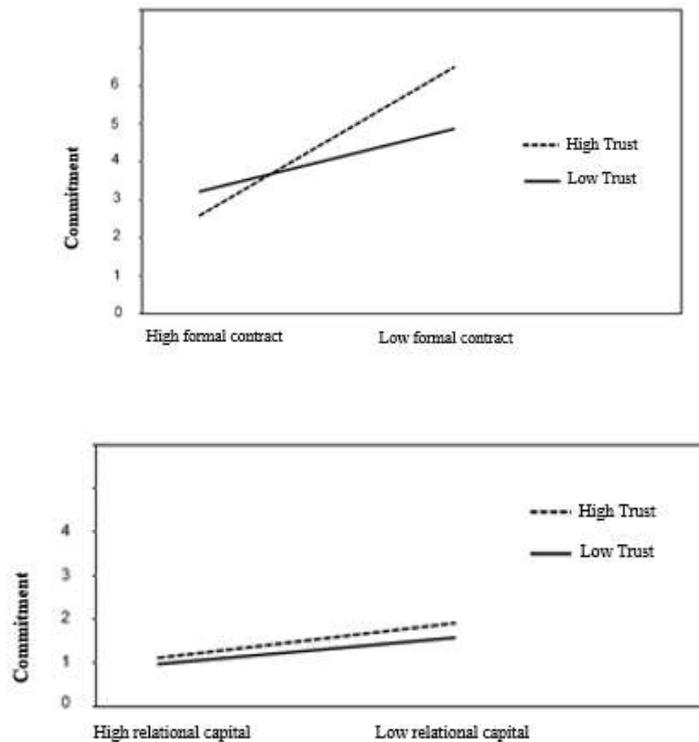
The results presented in the table above show that hypothesis 1 is confirmed ( $H1a = 0.436$ ,  $p < 0.001$ ;  $H1b = 0.305$ ,  $p < 0.001$ ). This reveals that investment in tangible specific assets positively affects the mediating variable "formal contract" and which in turn positively influences the commitment that represents in our study the sustainability of the exchange. The mediating role of the "formal contract" is verified. Hypothesis 2 is partially validated ( $H2a = 0.107$ ,  $p < 0.001$ ;  $H2b = 0.076$ ,  $p < 0.001$ ), indicating that the positive effect of "investments in specific intangible assets" on "relational capital" is not very significant and that the latter has a positive but not significant effect on the sustainability of the expressed exchange. Consequently, the mediating role of specific "relational capital" is verified but not supported. Hypothesis 3 is confirmed ( $H3a = 0.376$ ,  $p < 0.001$ ;  $H3b = 0.148$ ,  $p < 0.01$ ;  $H3c = 0.207$ ,  $p < 0.001$ ). This result shows us that the two independent variables "investments in tangible specific assets" and "investments in intangible specific assets" have a positive influence on trust, with an advantage in the first and that trust in turn has a positive effect on the sustainability of the exchange. Therefore, the mediating role of trust is verified and confirmed.

The hypothesis found strong support ( $H4: 0.382$ ,  $p < 0.05$ ). Trust reinforces the positive effect of the "formal contract" on engagement (see Fig. 3). Hypothesis 5 found no support suggesting that trust moderates the relationship between "relational capital" and engagement ( $H5: 0.057$ ,  $P < 0.005$ ). Following the recommendations of Aiken and West (1991), we analyzed the non-linear effect of interaction between the "formal contract" on the one hand and the "relational capital" as the main independent variables on the other hand, and the "trust" as the moderator variable. We examined the relationship between the "formal contract" and the "commitment", and between the "relational capital" and the "commitment", when "trust" is high and when it is low. From the graph below, we have found that even if the "formal contract" has a strong effect on engagement, this effect can develop if their confidence increases. It seems to us that this is in line with a complementarity between the independent variable and the moderator variable. Thus, the moderating effect of trust on the relationship between the "formal contract" and the sustainability of the exchange is therefore verified and hypothesis 4 is validated. For the insignificant and low effect of relational capital, we find that engagement in the relationship almost does not increase as trust increases. For this reason,

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we rejected hypothesis 5. Overall, these results confirm our hypothesis that the effect of the formal contract on engagement is strengthened when trust between partners is high, while it does not moderate the relationship between "relational capital" and engagement.

**Fig. 3. The effect of the interaction between perceived desirability and perceived feasibility**



**5. DISCUSSION**

The analysis of the results shows that the specific investments, tangible and intangible, undertaken by the subcontractors of the megaproject Noor of Ouarzazate constitute a strong antecedent to the sustainability of their relationship with Masen (main contractor), which is their main client. This confirms what has been said in much previous research (Wang, et al., 2019; Moberly, 2014; Goleca & Gupta, 2014). However, because they are non-transferable to other relationships. This results in a dependence on the impossibility of finding other alternatives or the high cost of redeployment to other alternatives. It is in this sense that Ganesan (1994) argued that investments in specific assets are perceived as a temptation not to behave in an opportunistic manner. In this case, the result will help to explain the sustainability of the relationship between Masen and his subcontractors. From Masen's point

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of view, two contradictory logics could serve as frameworks to explain the investments undertaken by subcontractors. On the one hand, these investments reflect an interest in maintaining and deepening the relationship. It is a strategic choice for suppliers to adapt to the needs of their clients and show his strong involvement in the relationship. On the other hand, and in a logic of interest calculation, it is a way to gain the trust of their client and therefore make their relationship last. Consequently, the establishment of a climate of trust will be a key factor in the success of the project. This trust is essential to guarantee the social acceptance of the project. a concept that has been widely discussed recently by researchers. According to Olander and Landin (2008), social acceptance is high when stakeholder management aims to create a climate of trust and commitment between stakeholders and their principals, and between stakeholders. As a result, this will increase the complexity of the project and influence the success of its execution.

The analysis of our results also showed that investments in specific tangible assets are always accompanied by the use of formal contracts to guarantee the long-term commitment of the partner in the exchange relationship. In this case, the partners will draft contracts as complete as possible to guarantee their rights and protect themselves against any unforeseen risks. However, the place given to the drafting of formal contracts is conditioned by the existing context (as defined by Lopes-Costa & Munoz-Canavate, 2015), generally by the country's legal and legal system. The partners' calculations when drafting the formal contracts are supposed to be part of a framework of limited rationality reinforced by the weaknesses of the Moroccan business climate, precisely that linked to the execution of contracts (2019 "Doing Business" report on Morocco, from the World Bank). This is referred to as incomplete contracts.

Our results showed us that subcontractors rely on trust to overcome contextual uncertainties and the difficulty of setting specific objectives and measuring results. Therefore, it is not necessary for the contract to be complete and detailed; it will be sufficient to agree on the main objectives of the relationship, on the working methods and on the resources that will be mobilized to carry out the actions. In this case, our research reinforces previous research (Wang, et al., 2019; Ning, 2017; Graftona & Mundy, 2017; Huo, et al., 2015; Coriat, & Weinstein, 2010) in which the completeness between the formal contract and trust was

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discussed and trust is presented as a determining variable of engagement in a relationship because it reduces perceived risk and vulnerability. This was confirmed by the positive sign of the product "formal contract" / "trust".

The analysis of our results also showed that when a subcontractor undertakes investments in specific intangible assets, such as investing in new communication and information technologies or when staff develop relationship-specific skills, it can generate the confidence of the principal but be an important source to strengthen their relationship capital. This type of investment should normally serve as a strategic tool to strengthen interaction between partners and thus improve communication and coordination between them. This could encourage them to set up teams dedicated to the relationship and make joint decisions. What was not revealed by our results. Investing in specific intangible assets could bring Masen and its suppliers closer together through information exchange and knowledge sharing, but without guaranteeing the sustainability of their exchange. Something that probably does not exist in the context of the megaproject Noor of Ouarzazate. In this context, relational mechanisms, such as trust or relational capital, will not be able to provide the trading partners with the necessary guarantee to conduct trading relationships. In this case, it would be difficult for them to resist the uncertainties associated with the context of the exchange. Through this result, we were able to highlight the insignificant role of social interactions in economic activities (Liu et al, 2010) and in the particular context of megaprojects.

Also, the results of our work suggest that Masen should pay particular attention to the confidence generated by investing in specific assets. Through trust, partners can jointly build a harmonious environment, reduce transaction costs and, as a result, make their relationship last. However, if it is not generated by investment in intangible assets, its usefulness is considerable in a very professional business environment, which is that of the megaproject Noor of Ouarzazate, where the sustainability of relationships depends more on the supplier's ability to fulfil its contract. In this case, we are talking about a calculated confidence, conditioned by the achievement of the objectives. Hence the complementarity between the contract and trust. On the other hand, referring to Villena, et al (2019), the trust that results from relational capital could harm the relationship because of the lack of creativity caused by

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the homogeneity that can develop between the partners and the state of inertia in which the relationship can enter. The advantages of relational capital can be lost in a relationship where there is a high level of trust. As a result, Masen's managers are invited to monitor the growing trust in its suppliers as closely as possible.

### CONCLUSION

This article focused on the role that trust plays in the relationship between the project owner of a megaproject and its stakeholders, more specifically its subcontractors. Previous research has shown that trust is the most important variable in building effective relationships. This paper presents an empirical study that extends previous research by examining the factors that contribute to building trust between a project owner and its stakeholders (Qiu, et al. 2019 ; Mok, et al. 2015; Zakharova & Jäger, 2013; Karlsen et al. 2008).

This research is one of the few studies that highlight the value of the relational approach in the subcontracting sector as a complement to the transactional approach and to stakeholder management. It draws attention to the governance mechanisms that ensure stakeholder engagement in the context of megaprojects. We were able to demonstrate the relevance, first, of undertaking investments in specific assets and, second, the relevance of trust in the exchange relationship between subcontractors and their principal (Masen in the case of the megaproject Nooro).

By comparing the paths that the two types of specific asset investment can take, this study concludes that subcontractors should give priority to investments in tangible assets. This type of investment is more likely to generate the confidence of the principal and make the exchange relationship last. Trust conditioned by the achievement of contractual objectives, rather than the transfer of learning and knowledge between partners.

### *Theoretical implications*

According to previous studies, trust between principals and subcontractors reduces conflict, promotes cooperation and improves performance. However, as this trust deepens and reaches high levels, the objectivity of the principal can be eroded. This erosion may manifest itself in the fact that he reduces supplier oversight, becomes overly involved in the relationship and prefers to quickly accept the supplier's ideas and information without questioning them.

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In turn, opportunities for supplier misconduct arise. There is a point at which these dysfunctional behaviours negate the benefits of trust; after that point, the supplier's effectiveness diminishes.

If trust seems to be an obvious thing to make exchange relationships last, managers will be careful to remain vigilant and to control its development. It is a dynamic variable that changes over time (Karlsen, et al. 2008). If initially it is beneficial to fill the incompleteness of contracts, it can, afterwards, bring the relationship into a state of inertia and perhaps one of the causes of the breakdown of exchange relationships. As they say: "too much trust kills trust". Trust can be a source of competitive advantage in business-to-business relationships; however, increased trust can compromise rational and objective decision making, as well as encourage complacency and overconfidence. Our study therefore responds to repeated calls for further research on the inconveniences of trust (McEvily & Zaheer, 2006; Poppo et al., 2008).

Our study is also consistent with empirical work suggesting the "dark side of relational capital" (Villena et al., 2011) and relational ties (Zhou et al., 2014). Our study extends these earlier studies by showing both greater advantages and disadvantages to highly dependent partners. It helps them to cope with the risks associated with specific investments and disclosure of key knowledge, as suggested by R. Krishnan et al. (2006) and Poppo et al. (2016). By extending their work, we show that the adverse effects of trust are greater for highly dependent partners. As trust reaches high levels and its drawbacks increase, principals are forced to tolerate supplier opportunism and are exposed to additional risks.

### *Managerial implications*

How can Masen's managers deal with the potentially dysfunctional effects of trust? First, objectivity must be sought regardless of the level of trust within the relationship. Control and monitoring mechanisms must be maintained regardless the maturity of the relationship with subcontractors. In addition, incentive mechanisms should be considered continuously. In the context of the megaproject Noor of Ouarzazate, Masen must strive to minimize the loss of objectivity and the likelihood of a strong attachment to suppliers that it might consider trustworthy.

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Thus, Masen's managers must be attentive to the negative effects of trust, often neglected. One solution could be to make suppliers compete with each other, but in a vigilant and calculated manner. After all, a trusting relationship with a supplier means that they have integrity, honesty and do their job well. Managers must therefore learn to accept and manage this paradoxical tension between low and high trust. The focus should be placed on the benefits of trust while keeping an eye on its drawbacks.

The results of our study also show that trust is more beneficial under conditions of stability. Thus, Masen should avoid combining high trust with a long-term contract with the same supplier. Masen could either move towards repeated (moderate-term) contracts requiring high trust for each renewal, or establish moderate trust when the contract with the subcontractor is spread over several years.

This research is not an end in itself. We see it more as a step towards many future research projects. Our study was limited to the subcontracting sector. Our conceptual model can be adapted and verified in other sectors where investments in specific assets are also important. Our empirical investigation was conducted in the specific context of large projects (strategic, high financial resource-intensive, risky, complex and involving a large and diverse number of stakeholders). Therefore, our results should be considered with advocacy and not rush to generalize them. In this research, transaction cost theory and relational exchange theory were also used. Further research can expand this theoretical foundation to explore the role of specific investment relationships in trade relationships. A longitudinal study is also necessary to take into account the dynamics of trust and the degree of maturity of the exchange relationship.

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