

PROFILE OF THE SUBCONTRACTOR AND PERFORMANCE OF THE EXCHANGE RELATIONSHIP IN THE AUTOMOTIVE INDUSTRY IN MOROCCO

AHMED MAGHNI*
HAMZA AANAOU**

ABSTRACT

Morocco is now considered to be an important producer and exporter in the automotive sector, with a share in the African market of 45% in 2016 compared to 6% in 2000. Subcontracting played a major role in this dynamic of the sector. Our study aims to better understand the performance of car subcontracting relations in Morocco. We are doing that by focusing more on the performance of the exchange relationship between subcontractors. This study has both an academic and practical aspect. For this manner, we conducted a qualitative study (sixteen interviews), with competent stakeholders, including buyers and suppliers of subcontracting companies located at different levels of the automotive value chain. The data analysis has highlighted performance perceptions ranging from cost reduction for Original Equipment Manufacturer (OEMs), to the search of institutional support for 3rd tier subcontractors, also learning the logic and research for second-tier subcontractors.

Keywords: Profile of automotive subcontractors, Subcontracting Relationship Performance, Morocco.

INTRODUCTION

The increased competition at the global level creates more pressure on the contractors as they require more involvement from their subcontractors. Thus, the traditional forms of subcontracting are gradually disappearing in favour of more efficient, lasting and satisfactory partnerships. However, the performance of the subcontracting relationship is related to the subcontractor's position and profil in the value chain, as well as its learning capacity, and many other factors. In this context, our research aims to understand the relationship between performance of subcontracting and the

* Professor, Research Laboratory: Strategy, Management and Governance, Department "Strategy and Governance of Organizations", National school of management, My Rachid Avenue B.P 1255. 90000 Tangier, Morocco, e-mail:maghn.med@gmail.com

** PhD student, Research Laboratory: Strategy, Management and Governance, Department "Strategy and Governance of Organizations", National school of management, My Rachid Avenue B.P 1255. 90000 Tangier, Morocco, e-mail:hamza.aanaou@gmail.com

relationship of subcontract of the automotive subcontractors in Morocco, by answering the following questions: how do automotive subcontractors perceive the performance of the subcontracting relationship? Is this perception related to the profile of the subcontractor? Does it evolve in time? For what reasons?

For this purpose, we conducted sixteen interviews, respecting the principle of theoretical saturation (Glaser & Strauss, 1967). These interviews were conducted mainly with buyers and suppliers employed by subcontractors, which is one of the original features of our work. After the coding of the corpus, and the grouping of the codes, we carried out an analysis of the frequencies of the themes to understand their weights, and an analysis of the co-occurrences, to understand the nature of the links between the themes.

Here are the theoretical and conceptual benchmarks of the study, before presenting the methodology adopted and the results obtained.

Theoretical and Conceptual Benchmarks

The notion of subcontracting

An examination of the definitions of subcontracting shows that, there are several realities that are different from a country to another, behind the same concept. Moreover, these conceptualizations are not aligned with the evolution of current subcontracting practices. Thus, the concept of outsourcing is defined according to several approaches and different institutions.

Indeed, in the current context marked by an evolution of the production processes, which is more complex, the rules of the game between the client and the subcontractor have evolved. As a result, the subcontractor is no longer simply a performer of the work entrusted but can intervene throughout the production process: from conception to the production of the finished product. Therefore, the product is co-determined between the two parties concerned. To better understand the phenomenon of outsourcing, it is necessary to highlight its different types.

The profiles of automotive subcontractors: the Vennin grid:

Vennin (1975) distinguishes three types of automotive subcontractor: large, medium and small. The author based the grid on six criteria (the technical size, the technical mastery, the time horizon, the level of the discussion with the client, the product, and the strategy deployed). The grid is as follows:

Table 1 The Vennin Grid (translated by us)

Indicator of Company Size	Technical size	Technical mastery	Temporary horizon	Level of discussion with the client	Product	Strategy
Large	Factory	Design	A few years	General Manager	Function	Diversification
medium	Workshop	Expertise	A year	Head of Purchasing Manager	auto part	Specialization
small	Machine	Execution	Month	Buyer	Hour	Survival

The big subcontractors (the equipment suppliers): The field of these subcontractors is generally multi-sectoral; its policy is autonomous compared to the one of the manufacturers. The manufacturer subcontracts to these subcontractors a function of the vehicle, either through a technique (foundry of large parts, cold extrusion, electronics ...) or through a component (ball bearings ...) manufactured according to their standards. We noticed that the grid of Vennin (1976) does not take into account the case of the equipment manufacturers and be able to choose the manufacturer that they want to profit from the technological advance, as it is the case of Bosch with Mercedes for power supply. This technology is the subject of a subcontractor's own research and development policy. For the manufacturer, the decision is whether to do it by yourself or having one made for you. The response engages the medium and the long term.

Medium subcontractors (second-rate subcontractors): The subcontracting resources of the automotive sector are aimed to car manufacturers or their major suppliers (equipment manufacturers). These subcontractors supply the chains of manufacturers of mass-produced parts are oriented towards a growing specialization and a greater dependence on the principals of the automobile sector. The constraints are the core of the negotiation with the client and the organization of production, in order to meet the requirements: quality standards, deadlines and regularity, gain of productivity to control the "price drift". " We outsource a part, a component and the discussion with the client is at the level of know-how, it relates to the processes and ranges: on the manufacturing process itself", says Vennin (1976, p: 295). It functions as an extension of the principal, his workshop or his factory. It is "the typical subcontractor of the automotive sector", to paraphrase the author.

Small subcontractors (third-rate subcontractors): For this type, it is necessary to distinguish the manufacturers of tools and the others. The formers are part of a very specific type of industrial organization, a kind of super-craftsmanship whose production conditions are not very changeable, located in a type of production that is not very progressive and cannot be generalized. Other small subcontractors work mainly for builders, second-rate subcontractors or suppliers to car manufacturers.

The performance of subcontracting relationships

The performance management of an inter-firm relationship, especially in the context of outsourcing, is crucially important. Most studies have pointed out to the multi-dimensionality of performance. Thus, two approaches of performance are to be

distinguished. The first approach, described as objective, advocates so-called "objective" performance indicators of financial profitability, duration and survival. The second approach, described as subjective, combines performance with stakeholder's satisfaction and harmony of the relationship (Arino, 2003).

We look at the subjective approach, as our study aims to capture the perception of the exchange relationship performance by subcontractors. We consider that these perceptions depend, among others, on the expectations of each partner in the relationship (Cheriet & Guillaumin, 2013)

Research methodology selected

Automotive subcontracting in Morocco

In the absence of primary data on the composition of the automotive industrial fabric, we refer to secondary analyses (AMICA, 2003), (MICIEN, 2014), (Benabdejlil, 2016), (Lung & Piveteau, 2016). These studies distinguish three profiles of subcontractors operating in this sector:

- The first group consists mainly of equipment manufacturers mostly for export and are primarily foreign companies located in Morocco. Most of these equipment suppliers, taking full advantage of the free trade agreement between the European Union and Morocco, import almost all parts and components using of their own global supply chain, assemble and export their products to car manufacturers located in the Europe.
- The second group consists of medium-sized, technically developed companies. These companies are mainly aimed at the local market. Some of them deliver first-class equipment manufacturers located in the European market.
- Finally, the last group consists of small companies with a production tool sometimes out-of-date. They often intervene at the 2nd and 3rd ranks. These are companies that fail to break through and do not consistently meet international standards in terms of competitiveness. Their relationship with the upstream chains remains partial, if not very weak.

Data collection and analysis

Data gathering

At the beginning of our study, we went through a "desert crossing". For three months, and despite serious attempts to make direct contact with professionals in the automotive sector, none of the people contacted has agreed to confess to us! The interviewees often asked three types of questions: why this research? Why this person specially and not someone else? And what is the purpose of this study?

Every time, we had to specify that it is a free and open interview, about the interviewee, his point of view, his professional situation which interests us, and that there are no good or bad answers. We have indicated the axes and the duration of the interview and in some cases, discuss the choice of the place (workplace, café, home, etc.) which doesn't affect the quality of the interviews. Some of our interviewees felt uncomfortable at the time of the recording, and we explained to them that the interest of the recording, and all the information gathered from the interviews are confidential. By "knocking on doors" and mobilizing our social network, we were able to start 16 interviews with buyers and suppliers employed by automotive subcontractors. The size

of the sample remains very satisfactory considering the principle of theoretical saturation (Glasser & Strauss, 1967). Indeed, the last two interviews did not bring new information to enrich our research questions.

For each interviewee we made a fact sheet on the biography of the interviewee and the rank of the subcontractor, the interview guide includes axes related to the nature of the subcontractor, the evaluation of the relationship of outsourcing, the determinants of trust, the determinants of control and the sustainability of the relationship. We left the questions open, based on the technique of the life story telling, and this to leave freedom to the respondents so that they can communicate to us a maximum of information.

Table 2: Characteristics of the sample

Number of interview	Interviewee	Company's activity	Rank of subcontractor	Job title
1	Amine	Metal stamping	Automotive Equipment Manufacturer	purchasing manager
2	Mohammed	Metal stamping	Automotive Equipment Manufacturer	Supply manager
3	Othman	Plastic injection	Automotive Equipment Manufacturer	Supply manager
4	Ahmed	The automotive seat	Automotive Equipment Manufacturer	purchasing manager
5	Gentit	injection machine	Automotive Equipment Manufacturer	Client Portfolio Manager
6	Hicham	electrical wiring	Automotive Equipment Manufacturer	Logistics manager
7	Yassine	The automotive seat	Automotive Equipment Manufacturer	Purchasing Director
8	Hamza	The automotive seat	Automotive Equipment Manufacturer	Logistics manager
9	Nasser-Eddine	The automotive seat	Automotive Equipment Manufacturer	Logistics manager
10	Hassan	Steering wheel	Subcontractor Rank 2	purchasing manager
11	Youssef	electrical wiring	Subcontractor Rank 2	Supply manager
12	Oussama	electrical wiring	Subcontractor Rank 2	Coordinator of subcontracting
13	Hanane	electrical wiring	Subcontractor Rank 2	Supply manager
14	Sara	injection connectors	Subcontractor Rank 3	Client Portfolio Manager
15	Driss	plastic injection	Subcontractor Rank 3	Supply manager
16	Ismail	replacement part	Subcontractor Rank 3	Client Portfolio Manager

Data analysis

We have a sample of 16 managers interviewed divided to three categories of subcontractors: 9 equipment manufacturers, 3 second-tier subcontractors and 4 third-tier subcontractors. We first compared the results obtained in the interviews of the interviewees belonging to the same category of subcontractors (inter-case and intra-category analysis), then we merged it have an overall analysis of all three categories that were the subject of the study (inter-case and inter-category analysis).

Intra-case analysis:

The content analysis of a corpus is characterized by a progressive approach. The first steps are used to organize the collected data iteratively, by coding, grouping and categorizing. In addition to manual coding, we used automated coding with NVivo Pro 11 software. The hierarchy of codes and themes in the nodes created in the software allowed us to clearly visualize the passages coded in the source texts. The automated encoding allows an estimation of the centrality, distinguishing the most encoded nodes and the least encoded ones. Finally, we shared and refined our reflections in the context of regular and intermediate meetings with members of our research laboratory. These exchanges allowed us to regulate the evolution of codification until their stabilization.

Intra and inter-category analysis:

The creation and exploitation of matrices allows the scheduling of data for intra-category analyses, which facilitates categorization, cross-checking or grouping (Miles & Huberman, 2003). In our case, we mobilized the thematic matrix, which made it possible to group all the proposals related to a given theme. This facilitated comparisons vertically (intra-category) and horizontally (inter-categories). Moreover, it is useful for the construction of the empirical definitions of the themes because it allows to easily refer to the comments of the actors interviewed.

In what follows, we present the analysis of occurrences and co-occurrences.

Occurrence Analysis:

By studying the occurrences, we are interested in the frequency of the themes identified in the interviewees' speech, by profiles of subcontractors

This procedure allowed us to distinguish a total of 11 themes and 31 sub-themes. We noticed that the ranking of central themes changes from subcontractor category to another. Table N ° 3 show, in ascending order, the 11 most frequent themes in terms of relative frequency with respect to each rank of subcontractor:

Table 3 Occurrence Frequencies of Themes by Subcontractor Category

Central themes	Frequency of occurrences of the equipment supplier	Frequency of occurrences of subcontractors Rank 2	Frequency of occurrences at subcontractors Rank 3
The performance of the relationship	39,02	14,1	12,07
Nature of subcontracting	38,22	13,12	9,8
Cooperation	35,06	10,92	5,69
Communication	26,68	7,08	6,56
Power	20,9	7,4	5,3
Staff profiles of outsourcing	20,5	4,78	5,83
Contractual incentive mechanisms	20,39	11,4	8,34
dependence	16,65	5,07	2,55
Support of suppliers	15,88	0,28	8,96
Culture	13,18	7,3	4,73
Opportunism	13,13	9,73	4,04

Analysis of co-occurrences:

Co-occurrence refers to the number of relationships of the theme with other topics within a category of interviewees. It can help to understand the strength of the theme in the analysed corpora (Osgood, 1959). We proceeded first by manually identifying the "co-occurrence" relationships that the themes have in relation with the theme of performance of the relationship either directly or indirectly, and on each of the categories of subcontractors.

We then conducted a further review by the NVivo Pro 11 software to better understand the nature of the relationships. The use of the software has been very useful for the selection of the verbatim to illustrate our results. The table N ° 4 presents the most important themes based on the most significant weightings in relationship with the central theme "The performance of the relationship", with an overall co-occurrence weighting of 51.69.

Table 4 Weighting of the co-occurrences of the themes in relation with the performance by category of subcontractor

themes	weighting of co-occurrences of equipment manufacturers	Weighting of co-occurrences of subcontractors Rank 2	Weighting of co-occurrences of subcontractors Rank 3
The performance of the relationship	32,95	19,42	9,32
Contractual incentive mechanisms	31,88	7,5	4,63
Cooperation	22,98	8,44	7,32
Communication	21,75	12	9
Support of suppliers	11,81	3,95	9,21

We took into consideration two criteria in order to capture the centrality of a theme: (a) the number of co-occurrences between the theme in question and other themes, (b) the number of respondents who addressed this theme.

The table of co-occurrences first shows the number of relationships (co-occurrences) that every element develops within the speech, for every subcontractor profile.

For example, the performance theme of the relationship is the theme that has the most relationship with other themes through its properties that are survival, longevity (sustainability of the relationship), and satisfaction of partners.

Discussions

The performance perceptions of equipment suppliers, second-tiers subcontractors; and finally, third-tiers subcontractors, will be discussed in this section.

Perceptions of performance by equipment suppliers

For buyers and suppliers of equipment manufacturers, the performance of the exchange relationship with the donor (s) of orders refers mainly to the survival of the latter (16.41), to its longevity (9.54), and finally to perceived satisfaction (7.96).

The survival of the relationship depends on the ability of some equipment manufacturers of to pass the test of cost reduction imposed permanently by the client:

"To survive in our relationship with Renault, we have to make a lot of sacrifices. We are forced to review parts costs down 5% a year to continue to deliver cars." Interview

For others, this requirement of cost optimization is initiated in advance, from the designing of models. It is a proactive approach to analyse and improve the value of the product, appealing to more of a creative potential of the equipment manufacturer than to a logic of rationalization before:

"We are involved in the design of the model with the manufacturer; we develop our products because we have a research and development center installed in Portugal, a second one in Tunisia and a third one in the United States. So we do research and development and then create our products, after they are validated at the manufacturer, at PSA at Renault or Volkswagen. It is an approach in automobile, it is a sought-after approach to reduce costs, it is the low-cost, and it allows us to survive as well as our customers." Interview 6

Moreover, in order to extend the exchange relationship with the customer, OEMs mention in this aspect their ability to cooperate (22.98), accompany the customer from the launch of the project until its effective realization:

"To succeed in a sustainable relationship with the manufacturer, it means looking for excellence, a good product delivered on time with a very good price, so cost optimization is very important, and as I said it is the follow-up during the realization of the project and the anticipation of the needs of the customer at the launching of the project. We are really the only ones that have gone very far in the cooperative approach; there are no more relationships with barriers." Interview 6

Finally, the interviewed equipment suppliers who have emphasized the perceived satisfaction insist on the key role of the quality of interpersonal relations of the actors at the interface (21.75), and in the management of the disagreements or the difficulties that can arise on the side of the OEM as on the side of the client:

"The client has fluctuations, or his forecasts are unreliable. So, we can even reject an order, but if there is good communication the client turns a blind eye and we try to do the most to deliver the order. Communication is very important as well as the good relationship, it is the key to success in a relationship between us and the manufacturer, there is an understanding and we are satisfied with this relationship." Interview 9

Perceptions of performance by second-tier subcontractors:

For buyers and suppliers of second-tier subcontractors, the performance is related to the degree of satisfaction perceived by the partners (7.21), to the longevity of the relationship (6.57), and finally to its survival (3.96).

The degree of satisfaction perceived by second-rate subcontractors is associated with a good level of communication with their client (12.00). Thus, the system-based information exchange makes it possible to monitor in real time the production of the subcontractor in relation to the needs of the client. In the event of discrepancies or anomalies, the exchange by mail makes it possible to anticipate the problems. Finally, the direct exchange between the actors at the interface makes it possible to analyse the causes of the problems and to predict solutions:

"Thanks to the system communication, the objectives are monitored daily with our client: was the plan realized or not? If it is not realized, we anticipate via an exchange by email, and then we enter into a direct exchange with the customer, we search the root cause, and we find solutions." Interview 10

For other 2nd tier subcontractors, the performance of the trading relationship is related to its longevity. This long-awaited durability requires the cooperation of the subcontractor (8.44), especially in the case of subcontracting capacity:

"At my level, it is done in the same way; there is no difference between a customer to whom you are imposed that or a normal customer. The nature of the subcontracting of capacity that I do, states that the client to whom I am taxed today, may not be for another project. If I win this client when I am forced on him (he sees how I cooperate, how flexible I am), the day I will not be taxed, he will call Me." Interview 12

For other specialty subcontractors imposed by the end customer due to the holding of specific assets (patents for example), the durability of the relationship with the client seems to have been achieved.

"We do not need to build good relationships to keep a lasting relationship with our first rank customer, the end customer taxes us so we have our own patents, we do not care." Interview 13

Survival for second-tier subcontractors requires the respect of the quality standards of the products delivered, deadlines and quantities, especially when the subcontractor is very dependent on the client:

"We respect the clauses of the contract; we respect the terms of quality, quantity and timeline. We must be very rigorous with these details, it's dangerous if we do not deliver our customer on time, or if there is a defect on a part, we risk stopping the production of our only customer, and it will directly impact the production chain of the end customer, otherwise we risk losing our contract and the company may stop its activity and close the plant." Interview 10

Perceptions of performance by third-tier subcontractors

For third-tier subcontractors, the performance of the relationship with principals is mainly related to its longevity (9.18), then to the satisfaction of the partners (5.99), and finally to his survival (5.47).

Due to their vulnerability in the automobile production chain, these subcontractors require institutional support, particularly in the framework of the approach deployed by the Moroccan Association of the Automobile Industry (AMICA):

"There was support at the national level because it is in the framework of AMICA. It is the Moroccan association of the automotive industry that aims to strengthen the Moroccan industrial fabric. The goal is to achieve a local supplier integration rate of around 60% or 70%. We have the opportunity to deliver the steel coils, the requirements are not adapted to our capabilities, but thanks to this approach we continue to deliver the car." Interview 16

Some third-tier contractors put a lot of effort into their customer's satisfaction. This sustainable effort can be explained by the lack of approvals and their strong dependence on their customers:

"We do not have approvals; it is the communication and the permanent contact, which makes our client satisfied with the relation with us, because for the automobile industry we are a subcontractor "wild"." Interview 14

The survival of third-tier subcontractors is essentially through the sharing of information, which must be reliable, in order to avoid situations of information asymmetry that can generate customer distrust:

"To survive in the market, we have to win the trust of the customer through transparency, that is to say, if we give information to customers we must ensure that

this information is safe, it is not necessary to give information that is not 100% sure, even a 99% percentage is not valid, and therefore we must be very careful about the communication of manufacturing processes and the nomenclature of our products.”
Interview 14

Conclusion

From our experimental study, we can conclude the performance perception of the relationship differs according to the position of the subcontractor in the automobile industry value chain.

OEMs see the performance in survival, driven by the ongoing downward price adjustment by automakers and the need for innovation. In addition to extend the relationship, OEMs deploy cooperative mechanisms by supporting the customer from upstream to downstream of their supply chain.

Second-tier subcontractors perceive performance through the degree of satisfaction of the partner. Communication is an effective tool for anticipating customer needs and reducing the risk of litigation. In addition, for some second-tier subcontractors imposed by the end customer, the relationship with the prime contractor is not as important as they have approvals and patents. Other subcontractors, even if they are imposed, try to develop a partnership relationship based on cooperation and trust, in order to extend the relationship with the client. The survival for these subcontractors is linked to the respect of the contractual standards, which are a prerequisite in order to continue to deliver the automobile industry.

Third-party subcontractors perceive the performance of the relationship in its ad hoc sustainability. As they remain the weak link in the automotive industry's production chain, these subcontractors continue to demand institutional support from public authorities and dedicated professional associations. In addition to using direct communication channels to stay in touch with their customers, these subcontractors agree to share as much information as possible with their customers in order to gain their confidence and avoid asymmetric information situations.

Despite its comprehensive focus and theoretical scope, our study has some limitations due to the nature of our study. Indeed, our results come from interviews conducted with 16 actors at the interface, and these of course do not necessarily reflect the general reality of automobile subcontracting in Morocco. For that, we expect to carry out an extensive confirmatory research to test our empirical proposals on a larger scale.

REFERENCES

- Arino, A. (2003), 'Measures of Strategic Alliance Performance: An Analysis of Construct Validity', *Journal of International Business Studies*, volume 34, 2003 66: 79
- Benabdejlil N., Lung Y. & Piveteau A. (2016) 'The emergence of an automotive center in Tangiers (Morocco)', *Journal of GREThA*, 2016 12: 14
- Cheriet, F. & Guillaumin, P. (2013), 'Determinants of the satisfaction of partners engaged in inter-company cooperation: Case of fruits and vegetables in the Mediterranean', *Management international*, 2013 210: 224
- Glaser, B.G. et Strauss, A.L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine.
- Miles, M. Huberman A. M. (2003). *Analyse des données qualitatives*, Brussels: de Boeck.
- Ministry of Industry, Trade, Investment and Digital Economy of Morocco (MICIEM), (2014), 'Study for Private Sector Development in the Kingdom of Morocco (Information Collection and Analysis)', Final Report, 2014 134: 137
- Moroccan Association for the Automotive Industry (AMICA) (2003), 'Vehicle Equipment Industries: What Export Potential? Which target markets? ', Report, 2003 13: 24
- Osgood, C.E. (1957), *The measurement of meaning*, University of Illinois: Press
- Vennin, B. (1975), 'Practice and significance of outsourcing in the automotive industry in France', *Economic Review*, volume 26, n°2, 1975 280: 306