



Dyna

ISSN: 0012-7353

[dyna@unalmed.edu.co](mailto:dyna@unalmed.edu.co)

Universidad Nacional de Colombia  
Colombia

NARANJO, GIOVANNA; PELLICER, EUGENIO; YEPES, VÍCTOR  
MARKETING IN THE CONSTRUCTION INDUSTRY: STATE OF KNOWLEDGE AND CURRENT  
TRENDS

Dyna, vol. 78, núm. 170, diciembre, 2011, pp. 245-253

Universidad Nacional de Colombia  
Medellín, Colombia

Available in: <http://www.redalyc.org/articulo.oa?id=49621159030>

- How to cite
- Complete issue
- More information about this article
- Journal's homepage in [redalyc.org](http://redalyc.org)

[redalyc.org](http://redalyc.org)

Scientific Information System

Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal

Non-profit academic project, developed under the open access initiative

# Editor's Page DYNA 170

## December 2011

### MARKETING IN THE CONSTRUCTION INDUSTRY: STATE OF KNOWLEDGE AND CURRENT TRENDS

### COMERCIALIZACIÓN EN EL SECTOR DE LA CONSTRUCCIÓN: ESTADO DEL CONOCIMIENTO Y TENDENCIAS ACTUALES

GIOVANNA NARANJO

*Ingeniero Civil, M.Sc., Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos, Universidad Politécnica de Valencia, España, giovannang\_6@yahoo.com*

EUGENIO PELLICER

*Dr. Ingeniero de Caminos, Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos, Universidad Politécnica de Valencia - España, pellicer@upv.es*

VÍCTOR YEPES

*Dr. Ingeniero de Caminos, ICITECH, Departamento de Ingeniería de la Construcción, Universidad Politécnica de Valencia – España, vyepesp@upv.es*

Received for review August 4<sup>th</sup>, 2010, accepted May 4<sup>th</sup>, 2011, final version May, 11<sup>th</sup>, 2011

**ABSTRACT:** Construction enterprises are aware of the importance of involving marketing in their management functions as a way to adapt themselves not only to the continuous changes in the industry, but also to satisfy their clients' demands, while being competitive and improving their business strategy. This paper shows the results of a quantitative and qualitative analysis of the state of the art of marketing in the construction industry. The study was conducted through a literature search, with subsequent processing and analysis of the papers found. Despite the efforts made in the last decade, it is difficult to generalize how to apply marketing in construction companies, due to the special features of this sector. Nevertheless, there is a range of possible strategies that could be used by construction companies, and once they know their clients' needs they will be able to choose what strategies to apply. Research gaps such as marketing implementation, marketing differentiation according to the type of clients, and application of information technologies are proposed.

**KEYWORDS:** Construction industry, company, bibliometrics, strategy, marketing

**RESUMEN:** Las empresas del sector de la construcción son conscientes de la importancia de vincular la comercialización (o *marketing*) a las funciones primordiales de la empresa, como respuesta ante la necesidad de adaptarse a los continuos cambios del sector, satisfacer las demandas de sus clientes, ser competitivos y mejorar su estrategia de negocio. El presente artículo presenta los resultados obtenidos del análisis cuantitativo y cualitativo del estado actual de conocimiento del marketing en el sector de la construcción. El estudio se realizó mediante una búsqueda bibliométrica y el posterior procesamiento y análisis de los artículos encontrados. A pesar de los esfuerzos realizados en la última década, es difícil generalizar cómo aplicar el marketing en las empresas del sector de la construcción debido a las particularidades del sector. Sin embargo, existe un abanico de posibles estrategias que pueden ser usadas; una vez las empresas conozcan las necesidades de los clientes serán capaces de escoger las estrategias que deben aplicar. Se proponen futuras líneas de investigación como la implementación del marketing, diferenciación del marketing de acuerdo con el tipo de cliente, y aplicación de las tecnologías y sistemas de información.

**PALABRAS CLAVES:** Sector de la construcción, empresa, bibliometría, estrategia, comercialización

## 1. INTRODUCTION

Marketing is a management function that seeks to increase a target market, to build long-term

relationships, to satisfy clients, to ensure the desired profitability [1], and to strengthen competitive advantage [2]. Although marketing in the industrial and service sector is a well-known discipline, in the

construction industry it is still misunderstood. This is reflected by the little scientific research and literature produced on this topic [3]. It is difficult to define the “product” in the construction industry; it is even more difficult to define its marketing [4]. This study was developed in order to establish the current state of the art of marketing in the construction industry and to determine whether there are guidelines to implement this function inside construction companies.

It is necessary to take into account that the construction industry is a sector characterized by several particularities that make it different from the industrial and service industries. Some of them are: construction enterprises sell a hybrid between a product and a service [5-7]; its production is based on projects [8]; the product changes in size, location, and complexity [4]; and the company promotes its abilities to fulfill and exceed the criteria of cost, schedule, and quality [6]. Moreover, there are important differences between the demand of public and private clients, and also, professional training is based on scientific and technological knowledge, instead of managerial education [9]. Marketing should also consider cultural differences when it is seen from an international perspective [10]. For all these features, construction marketing is a new phenomenon that is seen with skepticism and considered synonymous with *sale*, because clients buy something that does not exist yet [11].

Thus, marketing applied to the construction industry combines existing theories of the industrial and service sectors [12,13]; for example, marketing mix (MM), a strategy used by the industrial sector that combines five issues (product, price, promotion, place, and people) has been applied to the construction industry and analyzed by several authors [2,4,13-17]. Other authors have studied the application of service sector strategies such as relational marketing (RM) [12,17-21], business to business (B2B) [22], co-development [23,24], partnering [25-27], customization and differentiation [8,12,28-32]. Specific strategies for the construction sector have been proposed: public private partnership (PPP) [33]; design and construction [34]; pricing strategy [27,35-37]; and social marketing [18,38,39].

Thus, the main objective of this study is to analyze the state of the art of marketing in construction. This analysis allows us to know which aspects were examined more, who conducted these studies, and what the gaps are for

launching future studies. All this information can provide a general framework of construction marketing and tell us whether it is possible to apply specific rules to implement marketing in construction enterprises.

## 2. RESEARCH METHOD

The study was conducted through a literature research and a subsequent process and analysis of the papers found. The research design was divided into five phases:

1. Previous approach and initial tests
2. Literature search
3. Quantitative and qualitative analysis
4. Exploitation and analysis of results
5. Summary of main contributions and in-depth study of the most relevant papers

Phase 1 allows familiarization with the main concepts related to marketing, identifying keywords, and designing search strategies. Familiarization with the main concepts consists of looking for and reading general and specific marketing books. Since there are not many books regarding marketing in the construction industry, it was necessary to make initial searches of papers in various databases. Several papers were chosen according to the title and abstract; some of the best fitting references were also explored. This initial rapprochement made it possible to identify a list of keywords, which were combined into different search strategies used to conduct the literature search.



Figure 1. Keywords used in search strategies

Figure 1 shows some of the main keywords used in phase 2. The central circle contains the words utilized in all search strategies such as “construction marketing,” “construction industry,” “marketing,” “construction services,” and “contractor.” The lower right circle contains keywords related with strategies, whereas the lower left circle has keywords related with the client.

The search strategies mix all the keywords as depicted in Fig. 1. The five search strategies are specified in Table 1.

The objective of these combinations was to find the greatest amount of papers possible. These search strategies were used to look for the papers in five databases. The databases consulted were Web of Science (ISI), Business Source Premier (EBSCO), and Engineering Village (EV), which includes Compendex, Inspec, and Referex. These data bases were chosen because they are scientific, international, and related with engineering and business topics.

**Table 1.** Keyword combinations per search strategy

|   |   |
|---|---|
| 1 | (“construction marketing” or “marketing”) and (“construction industry” or “construction firm” or “contractor” or “construction services”)   |
| 2 | (“marketing mix” or “relationship marketing” or “project marketing” or “strategy marketing” or “marketing activities” or “service marketing” or “business to business marketing”) and (“construction industry” or “construction firm” or “construction services”) |
| 3 | (“construction industry” or “construction firm” or “construction services” or “contractor”) and (“client satisfaction” or “customer satisfaction”)  |
| 4 | (“construction industry” or “construction firm” or “construction services” or “contractor”) and (“price”) and (“marketing”)   |
| 5 | (“construction industry” or “construction firm” or “construction services” or “contractor”) and (“selling”)   |

The papers found were filtered by means of choosing the technical papers and reviews, removing duplicate articles, and eliminating papers which were not strongly related with the topic of the study.

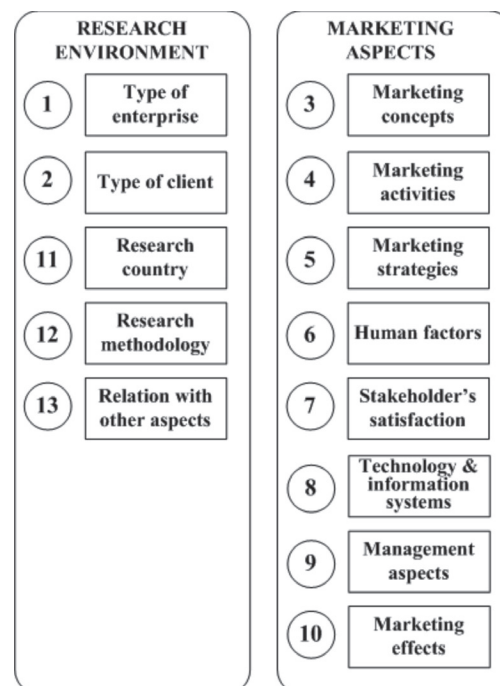
Phase 3 included quantitative and qualitative analysis of the resulting papers. All of them were read, analyzed, and several descriptive words were identified. So, each paper was defined by a list of descriptive words.

Subsequently, these descriptive words were gathered, taking into account the focus each referred to. It was

possible to identify two types of approaches: one related to the research environment and the other related to different facets of marketing. The main difference between these two approaches was that the first one described the environment of the research as the type of enterprise, type of client which the study was focused on, the country, and the method used by their authors. Meanwhile, the other approach mentioned specific issues of marketing such as concepts, activities, strategies, effects, and others.

It was possible to identify 90 descriptive words, which were gathered in 13 categories. Five of them are related to the research environment affecting every paper; and the other 8 are related with different facets of marketing.

Figure 2 depicts these two approaches. The research environment approach deals with: types of company, types of clients, countries from which the research originates, method used, and the relationship of the papers with other aspects. The marketing aspect approaches included topics related in a direct way with marketing: basic concepts, activities, strategies, the human factor, stakeholder satisfaction, technology and information systems, management aspects, and marketing effects.



**Figure 2.** Approaches defined from descriptive words

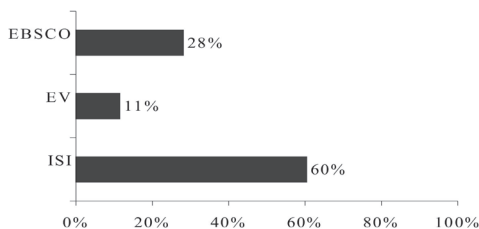
In phase 4, the numbers of papers related with each descriptive word and therefore with each approach were presented in charts. The charts were analyzed and compared, allowing the identification of the most important topics.

The last phase of the research design was a summary of main contributions and an in-depth study of the most relevant articles. The previous reading and identification of descriptive words enabled the identification of the main contribution of each paper. In addition, the papers were classified by importance, taking into account the number of times the paper was quoted, the journal in which it was published, and the judgment of the research team.

### 3. RESULTS

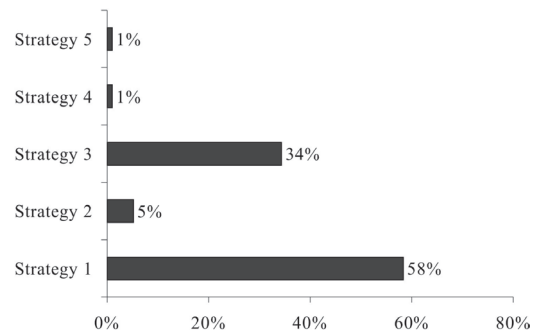
A total of 190 documents were found in five databases. They were filtered choosing scientific papers and reviews only; the other documents were not considered. After this first filtering process there were 167 papers remaining. Later, 48 duplicated papers were eliminated. Finally, the papers were classified according to their relevance to the topic, so 23 papers with a very low relevance were also removed. The resulting amount of papers after this was 96.

Figure 3 shows the percentage of articles found using each database. The most useful database was ISI because the great majority of articles were found on it. Meanwhile, almost a third and a tenth part of the total number of papers were found in EBSCO and EV, respectively.



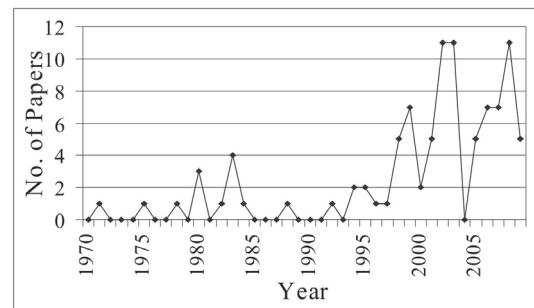
**Figure 3.** References found per database

Figure 4 shows the percentage of papers found using each search strategy. The first strategy (Table 1) allowed us to be able to detect more than half of the papers.



**Figure 4.** References found per search strategy

Figure 5 shows the development of marketing research in construction from 1970 until 2009. Before 1995, the number of papers was very few and intermittent. After this year, an increased interest is evident: 50 % of the papers were published in the last decade.



**Figure 5.** Papers published per year

Table 2 shows the journals with the highest amount of papers published on construction marketing and their journal impact factor (JIF), according to Journal Citation Reports (2009).

**Table 2.** Journals with the highest scientific production

| Journal   | JIF 2009 | # Papers | % Papers |
|---|----------|----------|----------|
| Journal of Construction Engineering and Mngmt.  | 0.583    | 10       | 10.4 %   |
| Construction Management & Economics             | No index | 10       | 10.4 %   |
| Journal of Management in Engineering            | 0.596    | 7        | 7.3 %    |
| Building and Environment                        | 1.797    | 4        | 4.2 %    |
| Engineering Construction & Architectural Mngmt. | No index | 3        | 3.1 %    |
| Other   | ---      | 62       | 64.6 %   |



## 4. DISCUSSION

### 4.1 Research approaches

Contractors and construction firms are the most analyzed companies (55 %), probably due to the fact that these types of enterprises are more widespread and complex than other construction companies.

Ninety percent of the articles do not mention the type of client. Although the differences between contracting methods and expectations by public and private clients are recognized, it is not clear how to implement marketing according to the type of client. This aspect is a research gap that needs to be studied in-depth.

The countries with the highest number of publications are the United States with 16 % and the United Kingdom with 14 %. This could be attributed to the fact that the two journals with the highest scientific production about construction marketing (the Journal of Construction Engineering and Management, and Construction Management and Economics) are from the United States and the United Kingdom respectively. Moreover, the first and the third one (the Journal of Management in Engineering) with the highest number of articles about the study topic are journals published by the American Society of Civil Engineers (ASCE).

The favourite technique used as a research method was the survey (32 %), followed by case studies (16 %), interviews (13 %), and literature research (13 %). The rest of the papers did not mention the method applied. It seems that the best way to know how construction companies implement marketing is to have direct contact with them.

Forty percent of the papers were linked with other relevant topics in construction industry such as quality, decision-making, or innovation. Quality management is directly linked with client satisfaction; and client satisfaction is one of the priorities of marketing, therefore quality management has a link to marketing. The decision-making process in a construction firm takes business strategy variables into account, and marketing is one of these variables [40].

### 4.2. Marketing aspects approach

As for the approaches directly related with marketing, the aspects with the highest number of articles were

marketing strategies, stakeholder satisfaction, and marketing effects. The papers presented an intermediate scientific contribution in management aspects and marketing concepts. The aspects with fewest papers were marketing activities, technology and information systems, and human factors. Figure 6 shows the percentage of papers related with each marketing aspect.

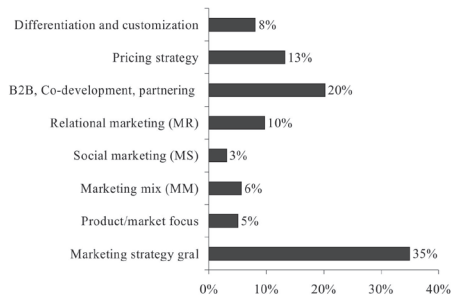


Figure 6. Papers related with each marketing aspect

Perhaps the main reason that researchers study strategies is to materialize construction marketing. Some ways of doing this are: to establish how to implement marketing, to know what construction companies should do, to determine real and tangible advantages and their effects for stakeholders. Since client satisfaction is one of the main objectives of marketing, this is an aspect that deserves attention.

Most of the papers linked with marketing strategies mentioned it in a general way. Nevertheless, several specific strategies were studied: market/product focus, marketing mix, social marketing, relational marketing, customization, pricing strategy, and marketing in alliance with others, such as B2B, co-development, and partnering (Fig. 7). The most mentioned strategies are alliances, relational marketing, and pricing strategy.

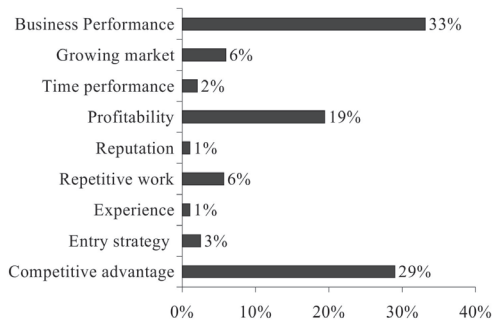
The data shows that several papers offered a variety of strategies that could be used by construction companies. It is important to know that the particularities of the construction industry could offer advantages. Construction enterprises should know the range of possibilities, and once they know their clients' needs they should be able to choose what strategies to apply.



**Figure 7.** Marketing strategies

The most important stakeholder is the client: 89 % of the papers related with stakeholders' satisfaction focused on this. This result was expected because the client is considered to be the most important stakeholder implied in marketing. If the enterprise satisfies and fulfils client requirements, all the others stakeholders will benefit.

The three main marketing effects mentioned in the papers were business development, competitive advantage, and profitability (Fig. 8). It is clear that the main motivation to implement marketing inside construction companies is to receive economic benefits.



**Figure 8.** Marketing effects

One tenth of the papers linked management aspects with marketing. This shows the importance of the executives, project managers, and other stakeholders who are implied in the marketing process. Technology and information systems is a relatively new topic in construction enterprises; maybe this is the reason that such a small number of papers were related to it.

### 4.3 In-depth analysis of the most relevant papers

All the papers were analyzed and classified by their importance, taking into account the number of times the

paper was quoted, the impact factor of the journal which published it, and a classification of papers per importance according to the judgment of the research team.

**Table 3.** Classification of papers per importance

| Level | Description              | # Papers | % of Papers |
|-------|--------------------------|----------|-------------|
| 1     | significant contribution | 28       | 33 %        |
| 2     | medium contribution      | 49       | 57 %        |
| 3     | low contribution         | 9        | 10 %        |

Table 3 presents the number of papers classified in each level. Most of the papers offer a medium contribution. One third of the researchers have made an important contribution to the state of the art of marketing in construction. Table 4 shows the most quoted papers and their journal impact factor; they are briefly discussed in the following paragraphs.

Maloney [5] concluded in his study that it is not possible to establish a list of the client's requirements for each type of project. This is why he recommended that contractors should understand and be able to satisfy each one of their client's needs. He used a criteria list that could be used by contractors in order to understand the needs of their client in each project.

Yates [41] proposed forming consortiums and partnering, and using information technologies in order to adapt to the global market. One of these alternatives was that construction enterprises could offer a service that included design and building in the construction industry, resulting from close cooperation between architects and engineers.

**Table 4.** Papers most quoted

| Authors                    | Title  | # Cited | JIF 2009 |
|----------------------------|--|---------|----------|
| Maloney (2002)             | Construction Product/Service and Customer Satisfaction   | 12      | 0.583    |
| Yates (1995)               | Use of Design/Build in E/C Industry  | 11      | 0.596    |
| Ahmed and Kangari (1995)   | Analysis of Client-Satisfaction Factors in Construction Industry   | 9       | 0.596    |
| Stehn and Bergstrom (2002) | Integrated Design and Production of Multi-Storey Timber Frame Houses - Production Effects Caused by Customer-Oriented Design | 7       | 2.068    |

|                                       |  |   |       |
|---------------------------------------|--|---|-------|
| Dikmen, Birgonul, and Kiziltas (2005) | Strategic use of Quality Function Deployment (QFD) in the Construction Industry                            | 6 | 1.797 |
| Shin, An, Cho, Kim, and Kang (2008)   | Application of Information Technology for Mass Customization in the Housing Construction Industry in Korea | 2 | 1.372 |
| Dikmen, Birgonul, and Ozcenk (2005)   | Marketing Orientation in Construction Firms: Evidence from Turkish Contractors                             | 2 | 1.797 |

Ahmed [42] identified six important factors to satisfy clients: time, cost, quality, market orientation, communication abilities, and answers to complaints. These authors did not find any correlation between these factors and groups of clients.

Stehn [43] showed a case study in which the contractor made market segmentation and the design and production were oriented to clients. The client's requests were converted into functional requirements.

A methodology suggested by Dikmen and his colleagues [44,45] to know the marketing strategy suitable for each client was the Quality Function Deployment (QFD), based on clients' needs and improvement of quality.

Finally, Shin [32] presented an information system that allowed the customization of the product and minimized its costs. The system was validated in a case study.

## 5. CONCLUSIONS

The amount of papers found through the literature search shows that marketing in the construction industry is quite a new topic and that it needs to be studied thoroughly.

From a quantitative and qualitative analysis of the state of the art of marketing in the construction industry, it can be concluded that there are no guidelines to implement this function inside construction enterprises. It is difficult to make generalizations because it depends on the type of company, type of client, and client needs.

The analysis of papers published from 1970 until now enabled the identification of the type of companies

and type of clients that have been studied, in which countries, the methodologies used, and the main aspects that have been of interest to researchers.

Therefore, contractors were the type of company most thoroughly studied, probably owing to the fact that these types of enterprises are the most widespread and complex compared to other companies that operate through the facility life-cycle. For that reason, the other types of firms present opportunities to develop future studies.

The great majority of papers were not involved with a specific type of client. It is necessary to conduct researches to establish differences within this aspect.

The United States and United Kingdom were the countries that conducted most research related to this topic; this may be due to the fact that the journals with highest production about this topic are from these countries.

Three topics are of most interest to researchers: marketing strategies, stakeholder satisfaction, and marketing effects. This could be because researchers want to materialize construction marketing and one way is to establish how to implement it, to know what construction enterprises should do, to determine real and tangible advantages, and their effects for stakeholders. Since client satisfaction is one of the main objectives of marketing, this is therefore an aspect that deserves attention.

It is interesting to note that construction enterprises can jointly use several marketing strategies, such as market/product focus, marketing mix, social marketing, relationship marketing, customization, pricing strategy, and marketing in alliance with others (B2B, co-development, and partnering). Construction enterprises should know their clients in order to define which marketing strategy to use.

Although marketing mix is the most commonly used marketing strategy in the industrial sector, it is not applied enough in the construction industry.

The most mentioned marketing effects, all directly linked with economic growth of enterprises, are business development, competitive advantage, and profitability. The importance of involving executives,



project managers, and the others stakeholders in the marketing process was evident.

The three main research gaps proposed for future studies are: (a) to apply marketing to PPP, small and medium companies, and consulting firms; (b) to establish differences and recommendations about marketing to each type of client; and (c) to determine how to take advantage of the current technologies and information systems in order to improve the marketing function inside the company.

Marketing is not only a function; it is a tool that can be used to improve the development of construction companies. For that reason, all of them should include it in their systematic process as an improvement tool.

## REFERENCES

- [1] McKenna, R., *Marketing de relaciones*. Barcelona: Paidós, 1994.
- [2] Arditi, D., Polat, G. and Makinde, S., Marketing practices of U.S. contractors. *Journal of Management in Engineering*, 24(4), pp. 255-264, 2008.
- [3] Yisa, S., Ndekugri, I.E. and Ambrose, B., Marketing function in UK construction contracting and professional firms. *Journal of Management in Engineering*, 11(4), pp. 27-33, 1995.
- [4] Preece, C., Moodley, K., Smith, P. and Collar, P., *Construction business development: meeting new challenges, seeking opportunity*. Oxford: Elsevier, 2003.
- [5] Maloney, W., Construction product/service and customer satisfaction. *Journal of Construction Engineering and Management*, 128(6), pp. 522-529, 2002.
- [6] Schaufelberger, J.E. and Holm, L. *Management of construction projects: A constructor's perspective*. Upper Saddle River: Prentice Hall, 2001.
- [7] Garzón, P. and Pellicer, E., Organizational efficiency of consulting engineering firms: proposal of a performance indicator. *DYNA-Colombia*, 76(160), pp. 17-26, 2009.
- [8] Winch, G.M., Towards a theory of construction as production by projects. *Building Research & Information*, 34(2), pp. 164-174, 2006.
- [9] Yepes, V., Pellicer, E. and Ortega, A.J., Designing a benchmark indicator for managerial competences in construction at the graduate level. *Journal of Professional Issues in Engineering Education and Practice*, 138(1), in print, 2012.
- [10] Hall, M., The cultural dimension as a variable in international construction marketing: a competitive advantage perspective. *International Journal for Construction Marketing*, 3(2), pp. 1-17, 2002.
- [11] Morgan, R.E. and Morgan, N.A., An appraisal of the marketing development in engineering consultancy firms. *Construction Management and Economics*, 9, pp. 355-368, 1991.
- [12] Smyth, H., *Marketing and selling construction services*. Oxford: Blackwell, 2000.
- [13] Winter, C. and Preece, C.N., Relationship marketing between specialist subcontractors and main contractors- Comparing UK and German practice. *International Journal for Construction Marketing*, 2(1), pp. 1-11, 2000.
- [14] Pettinger, R., *Construction marketing: strategies for success*. Basingstoke: Macmillan Press, 1998.
- [15] Katavic, M. and Ceric, A., Why Croatian construction companies do not implement a marketing concept? 10th International Symposium on Construction Innovation and Global Competitiveness. Cincinnati, pp. 973-981, 2003.
- [16] Mochtar, K., Marketing expenditures in the Indonesian construction industry. *Dimensi Teknik Sipil*, 6(2), pp. 64-71, 2004.
- [17] Skitmore, M., Smyth, H. Pricing construction work: a marketing viewpoint. *Construction Management and Economics*, 25(6), pp. 619-630, 2007.
- [18] Muñoz, S., *Manual de marketing inmobiliario*. Madrid: CIE DOSSAT, 2006.
- [19] Stephen, A.T. and Coote, L.V., Interfirm behaviour and goal alignment in relational exchanges. *Journal of Business Research*, 60(4), pp. 285-295, 2007.
- [20] Davis, P.R., A relationship approach to construction supply chains. *Industrial Management & Data Systems*, 108(3-4), pp. 310-327, 2008.
- [21] Smyth, H. and Fitch, T., Application of relationship marketing and management: a large contractor case study. *Construction Management and Economics*, 27(4), pp. 399-410, 2009.
- [22] Ryals, L.J., Humphries, A.S. Managing key business-to-business relationships - what marketing can learn from supply chain management? *Journal of Service Research*, 9(4), pp. 312-326, 2007.

- [23] Walker, D., An investigation into construction time performance. *Construction Management and Economics*, 13, pp. 263-274, 1995.
- [24] Crespin-Mazet, F. and Ghauri, P., Co-development as a marketing strategy in the construction industry. *Industrial Marketing Management*, 36(2), pp. 158-172, 2007.
- [25] Jaselskis, E.J., Kurtenbach, J.M. and Forrest, J., Enhancing financial success among electrical contractors. *Journal of Construction Engineering and Management*, 128(1), pp. 65-75, 2002.
- [26] Hughes, W., Hillebrandt, P. and Greenwood, D., Developing a system for assessing the costs associated with different procurement routes in the construction industry. In: *Construction Innovation and Global Competitiveness* (Eds. B.O. Uwakweh and I.A. Minkarah), Taylor & Francis, pp. 826-840, 2003.
- [27] Cheah, C.Y.J., Chew, D.A.S. and Huang, J., Marketing foreign interior design services in China. *Building Research & Information*, 34(6), pp. 584-595, 2006.
- [28] Canabal, J., *El sector inmobiliario y el marketing*. Madrid: Asesores de Servicios Inmobiliarios, 1994.
- [29] Harris, N., *Winning new business in engineering consultancy: the critical success factors*. Bedford: University of Luton, 2000.
- [30] Frutos, J.D., Borenstein, D. Object-oriented model for customer-building company interaction in mass customization environment. *Journal of Construction Engineering and Management*, 129(3), pp. 302-313, 2003.
- [31] Tang, Y., Wang, P. and Zhang, Y., Marketing and business performance of construction SMEs in China. *Journal of Business & Industrial Marketing*, 22(2), pp. 118-125, 2007.
- [32] Shin, Y., An, S.H., Cho, H.H., Kim, G.H. and Kang, K.I., Application of information technology for mass customization in the housing construction industry in Korea. *Automation in Construction*, 17(7), pp. 831-838, 2008.
- [33] Sobotka, A. and Czarnigowska, A., Target costing in public construction projects. *Proceedings of the 9th International Conference Modern Building Materials, Structures and Techniques*, Vilnius, Lithuania, May 2007.
- [34] Xu, T. and Greenwood, D., Using design-and-build as an entry strategy to the Chinese construction market. *International Journal of Project Management*, 24(5), pp. 438-445, 2006.
- [35] Gerwick, B.C. and Woolery, J.C., *Construction and engineering marketing for major project services*, New York: Wiley, 1982.
- [36] Mochtar, K. and Arditi, D., Pricing strategy in the US construction industry. *Construction Management and Economics*, 19(4), pp. 405-415, 2001.
- [37] Sullivan, K.T. and Guo, Y., Contractor cash flow and profitability analysis between best value and low bid. *Cost Engineering*, 51(9), pp. 16-20, 2009.
- [38] Barthorpe, S., Considerate contracting - Altruism or competitive advantage? In: *Profitable Partnering in Construction Procurement* (Ed. S. Ogunlana), Taylor & Francis, 2004.
- [39] Gambrill, B., Channel tunnel rail link: community relations during implementation. *Proceedings of the Institution of Civil Engineers*, 156, pp. 24-27, 2003.
- [40] Seaden, G., Guolla, M., Doutriaux, J. and Nash, J., Strategic decisions and innovation in construction firms. *Construction Management & Economics*, 21(6), pp.603-612, 2003.
- [41] Yates, J. K., Use of design/build in E/C industry. *Journal of Management in Engineering*, 11(6), 33, P. 1995.
- [42] Ahmed, S. and Kangari, R., Analysis of client-satisfaction factors in construction industry. *Journal of Management in Engineering*, 11(2), 36, P. 1995.
- [43] Stehn, L. and Bergstrom, M., Integrated design and production of multi-storey timber frame houses: production effects caused by customer-oriented design. *International Journal of Production Economics*, 77(3), pp. 259-269, 2002.
- [44] Dikmen, I., Birgonul, M.T. and Kiziltas, S., Strategic use of quality function deployment (QFD) in the construction industry. *Building and Environment*, 40(2), pp. 245-255, 2005.
- [45] Dikmen, I., Birgonul, M.T. and Ozcenk, I., Marketing orientation in construction firms: evidence from Turkish contractors. *Building and Environment*, 40(2), pp. 257-265, 2005.