



PRICING POLICIES AS A MARKETING STRATEGY IN THE CONSTRUCTION INDUSTRY: CASE STUDY OF TURKISH COMPANIES

Hilmi COSKUN, Ercan ERDIS, Mustafa DEMIRCI

*Civil Engineering Department, Engineering Faculty, Mustafa Kemal University,
31200 Hatay, Turkey*

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Abstract. The firms in the construction industry have to determine pricing and promotion policies, then these policies must be carefully and systematically integrated with the marketing strategies. Not only the demand and cost are important in pricing decisions but competition is also a significant variable to be considered. To determine the difficulties and the affecting factors in applying pricing decisions within the marketing concepts in construction sector, a survey was carried out among the Turkish companies as a sample group. In total 49 companies, mostly medium-size firms have been surveyed. The responses of firms are considered based on their actively engaged subsectors, namely, residential, commercial/public buildings, and infrastructure construction. The answers of firms are also evaluated based on their stated organizational structure, namely, simple, hierarchical, project, and network. The views about the various aspects of pricing policy development in phases, for example before and during bid, differ in the construction companies depending on their actively involved fields and their organizational structures.

Keywords: marketing, promotion, organizational structure, bid, civil engineering.

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Introduction

Pricing decisions are fundamental in developing a marketing strategy. Companies who work under a contract, such as the firms in the construction industry, first determine pricing and promotion policies in defining their marketing strategies. Pricing and promotion are the marketing variables that have to be considered by construction companies. In construction industry, since every project is unique there is no list price that is ready to be offered for every project. Hence, time and effort must be spent in determining the price for every new project. In this process, knowledge about the factors that affect the decision to bid and bid pricing strategies are the most important ones. For construction industry, many factors, such as the firm's proposal preparation capacity, external factors (noises), and the extent of opportunities to be generated during the project, affect the pricing policies of companies. In Fig. 1, as an example, the factors affecting the pricing policy are shown.

The pricing policies must be carefully and systematically integrated into the marketing strategies. As a strategic decision, the pricing policy is important not only for the status of existing business but also for the future interests of the company. A well constructed pricing

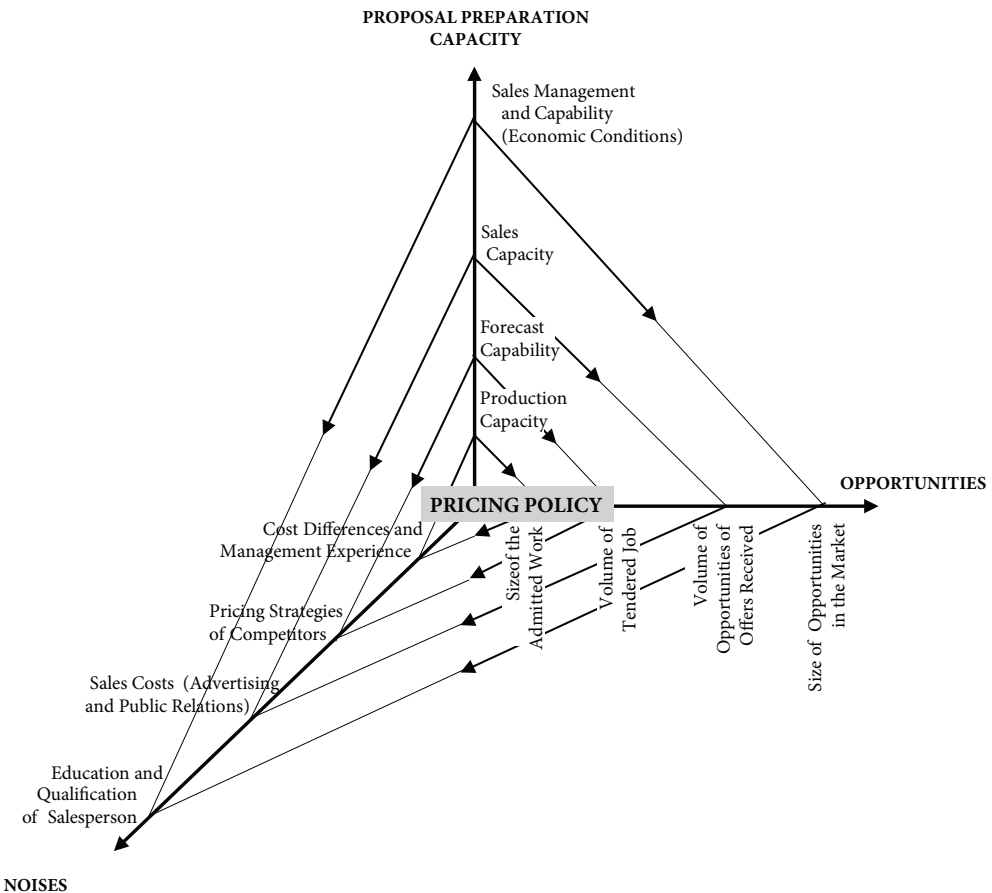


Fig. 1. Factors affecting the offer price policy of construction firms

policy helps to determine the marketing strategies also. According to economic theory, market factors, demand and cost play important roles in pricing decisions. In many organizations, the decisions are profit oriented. In governmental pricing, regulations are important. Meanwhile, in certain situations, competition is a major consideration, such as construction. In construction industry, prices are usually set by bidding, if not at all. Pricing has received considerable scholarly attention including the construction sector. In bidding, it is essential to pay attention the behaviour of possible bidders or competitors. Considerable mathematical development taken place at this area beginning with the game theory. Since then, there has been substantial research done on pricing as an aspect of marketing.

Pheng and Ming (1997) examined the seven elements (product, price, location, advertising and promotion, human, physical proof and process) in the marketing mix applied in quantity surveying firms. They concluded that the marketing orientation should be developed well in any organization including the surveyed firms.

Yisa *et al.* (1996) discussed the various changes, such as a levelling of the trade cycle, methods of placing contracts, an increasing emphasis on quality, experience and innovations, and increasing competition among firms on the marketing strategies of UK construction companies. They said that well developed marketing programs would provide a considerable advantage over rivals and will be far more likely to win potential clients.

Pricing as of the marketing practices was not inclusive in the 1980s US construction sector (Huff 1984; Arditi, Davis 1988). Later, Mochtar and Arditi (2001) found out that the pricing strategy among US contractors was predominantly cost-based. They also explored the significance of several pricing variables including but not limited to marketing intelligence capability, annual contract value, and the type of client in most projects. The markup is an important factor in setting up the bid price. According to the study results, most contractors rely on their intuition to set the markup after considering their competitors.

Skitmore and Smyth (2007) examined the challenges involved in terms of the marketing paradigms, marketing mix and relationship marketing to pricing construction work generally. In particular, the marketing challenges in the traditional contracting (TC), design and construction (D&C) and speculative building (SB) procurement systems were investigated. Similar studies about the marketing mix have been conducted by Ojo (2011) among Nigerian contractors, by Polat and Donmez (2010) among Turkish contractors and by Xu *et al.* (2012) for public-private partnership highway projects. Their analyses have indicated that pricing from a marketing perspective may help inform price setters in industry about the issues to take into account in specific contexts. In design and construction projects in France, pricing was found to be one important consideration during the project development phase (Crespin-Mazet, Ghauri 2007).

Many researchers have studied the bidding problem in construction sector. Some research included the perspectives not only from the contractor side but also from the client side (Ioannou, Awwad 2010). Some studies, such as by Tan *et al.* (2008), Oo *et al.* (2008), Laryea and Hughes (2011), and Adnan *et al.* (2012) examined the factors affecting the bid decisions. Many formal evaluation models to be used in bid decisions were proposed by researchers like Cagno *et al.* (2001), Wanous *et al.* (2003), Yiu and Tam (2006), Lo *et al.* (2007), Cheng *et al.* (2011), El-Mashaleh (2010), Oo *et al.* (2010), Ballesteroz-Perez *et al.* (2012), and Aziz

(2013) to name few. Such studies as Wright and Williams (2001) and Williams (2002), helps to predict the performance of bid price made by clients based on the characteristics of the submitted bids and completed costs of the projects. Usley *et al.* (2006) also proposed a managerial decision making framework to pricing.

Many studies like these in literature have usually been carried out for determining the offer price process. This short review shows that the pricing policies as an important aspect of marketing in construction sector of several countries were investigated. Especially determination of bid price occupies a large segment of this research. Therefore, a quick review about the offer price determination process of contractors is included in the next section.

1. Offer price determination process

Offer price determination process in construction sector usually begins with examining the contract prepared by the employer or by contractor. Offer price is, of course, an estimation of costs (direct plus overhead) with an expected profit ratio. The expected profit is generally based on the probability of winning the contract award and the amount of profit which can be made if the contract is won. While estimating the project cost, companies confront many risks and uncertainties due to sector characteristics and very competitive environment. The success of any construction company in the market at the long term may only be possible by establishing a correct bidding strategy before entering the offer. Before bidding, the current status of competitors should be evaluated properly. Of course, experience is also an important factor at this stage. However, interpreting information for new bids based on previous jobs should be provided with documentation of data and feedback. Thereby, companies should be aware of activities related to before, during, and after the bidding process. The flow chart in Fig. 2 summarizes these activities.

1.1. Upcoming activities prior to determination of bid price

The companies, to begin with, should have dedicated personnel for preparing bid price. These personnel should firstly identify decision factors which do/will affect the bid entering. Some of these factors are as follows:

- Job site, duration, cost and technical specifications;
- Contractual issues (such as, project type, administrative and technical specifications);
- Suitability of company capacity according to bid size;
- The company's current work load;
- Suitability of the company's organizational structure according to work;
- Suitability of required workforce for preparing bid price.

After determining the factors which affect bid entering decisions, if the company decides to bid, at the second stage, factors playing a role at determining the offer price should be analysed. These second set of factors should be assessed in accordance with the threats and opportunities. Factors that play a role in determining the price of the offer can be categorized as follows:

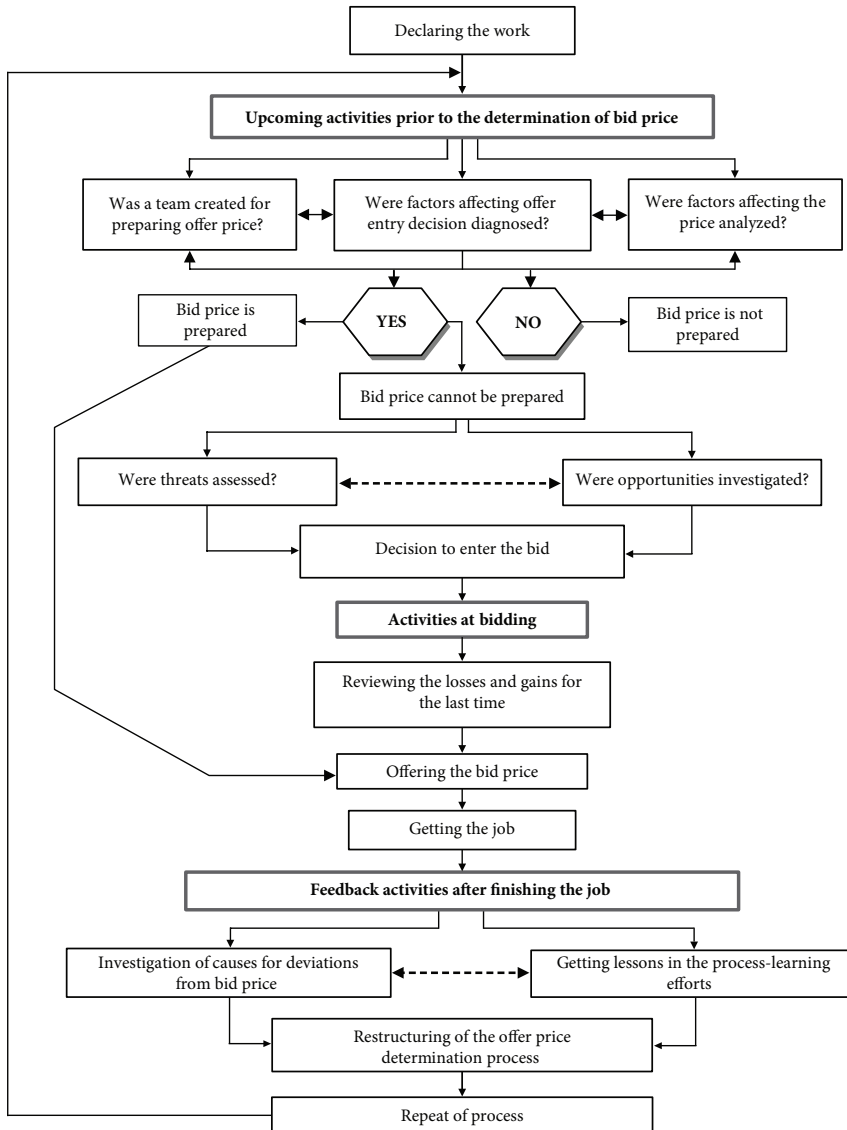


Fig. 2. The flow chart of bid price process regarding management in construction companies

1. Directly effective factors:

- Uncertainties and risks while determining the material quantities and its costs;
- Uncertainties and risks during determining the labor and sub-contractor costs;
- Soil conditions at project site;
- Administrative issues;
- Climate and seasonal conditions;
- Possibility of disasters like earthquake, flood, hurricane and so on.

2. Factors affecting the bid price indirectly:

- Competitors' strengths;
- Desire to sustain the current work load;
- Fixed costs of equipment;
- Need to have the job to make it a reference for similar jobs.

Finally, companies should evaluate their gains and losses in accordance with the above factors if they choose to give a different bid. At this stage, the possibility of winning the contract award along with the expected profit should have been predicted.

1.2. Activities during bidding – last minute review of wins and losses

At this stage, a company should determine the rate of profit in prices and the possibility of winning the contract with these prices. The factors which affect the prices should be taken into consideration. At last, the final decision about what offer price will be needs to be set.

1.3. Activities for the feed back after completion of work

After the company finishing the work and observing deviations from the offer price, the factors causing these deviations should be analysed. There must be lessons learned from the whole process. Every procedure in this cycle should be done in writing and should also be carefully examined when determining the price for the next bid. In the literature, the frequently encountered factors causing deviations are summarized below:

- Deviations by the result of changes in the project;
- Price changes caused by soil conditions;
- The price increase as a result the improper jobs done by subcontractors;
- Increasing costs as a result of inadequate supervision;
- Increasing costs as a result of an unexpected declines in worker productivity; and
- The effect of inflation.

Activities toward to continuous learning should be increased at final stage of the process of price determination. This process should contain future strategies of the company's bid price strategies. The various aspects that preclude forming a strategy, of the organization should be examined. During the process, strategies for the future should be re-organized and improved with the realistic analyses of the past mistakes.

Many factors are considered for activities performed in offer price determination process as seen in this section. When this process is regarded along with the studies mentioned in the literature review section, the importance given to pricing as of marketing aspect is unquestionably very high. In past researches, pricing problem have generally been regarded the same for all construction companies of the sector. In this study, however, the bid price setting strategies of companies with different organizational structures and from subsectors of construction have been analysed with a survey analysis. This study aims to provide the bid price setting strategies of companies with different organizational structures and from subsectors of construction.

2. Methodology

In construction industry, contractors generally tend to specialize in a submarket of construction and concentrate their work in particular geographic locations. The level of demand in a submarket at a particular time can influence the number of bidders and their bid prices. It is quite plausible that the major categories of construction such as residential housing, commercial buildings, industrial complexes and infrastructure have very different environments with regard to price settings.

According to literature review, there has been no research done considering simultaneously the subsectors of construction and the organizational types of companies. Therefore, this study is addressed to answer the pricing factors considered by contractors from different subsectors of construction. The companies, on the other hand, adopt different types of organizational schemes. How the pricing decisions are affected according to organization type is also studied.

In order to determine application level of pricing decisions within the marketing concepts in construction sector, a questionnaire was carried out among the Turkish companies as a sample group. The questions can be grouped into three phases of a bid price decision as follows:

Before Bidding:

- Whether person/s employed solely to prepare a bid;
- Important factors to enter a bid.

During Bidding:

- Efforts in pricing process;
- Collecting information about competitors;
- Obtained data during bid preparation;
- Whether the bid preparation cost the same for every tender;
- Factors affecting the cost of bid preparation;
- Factors affecting tender discount.

After the Job Completion:

- Causes of the deviations from the offer during the execution of the job.

In total 49 companies, including large and medium-size firms have been surveyed. 65% of survey results have been obtained by interviewing and 35% of results acquired by mail, fax and e-mail. 82% of survey respondents were senior officers of the companies. In general, statistical mean values were calculated to analyse the data. Some questions are asked to be graded by respondents using “Likert Scale”.

3. Evaluation of questionnaire results

Firstly, the organizational structures of companies are determined: Majority of companies adopt simple organizational structure: 25 (51.0%) followed by functional/hierarchical structure: 11 (22.5%), both product and function based partitioning (project type): 7 (14.3%), and a network consisted of experts in and around headquarter: 6 (12.2%) out of forty nine (100%) companies. This finding indicates that most of the surveyed companies have simple and functional/hierarchical organizational structures.

The other grouping is made according to the subsector of construction. 16 (32.7%) firms act mainly in residential construction; 12 (24.5%) firms in infrastructure; 9 (18.3%) firms

in commercial/public building (com/pub) construction; and 12 (24.5%) firms in others. However during the interview, the companies stated that their interest areas include other construction types as well. In the following analyses, only the three types of activity areas, namely, residential, infrastructure, and commercial/public building (com/pub) constructions are considered for the sake of clarity.

In another question, the firms are asked if there are personnel responsible solely for preparing the bids (Question 24). In general, 62% of 49 companies responded positively to this question. The responses of groups are presented in Table 1.

Table 1. Whether person/s employed solely to prepare a bid

Activity area	No	Yes	If yes, how many
Residential	10/14 = 72%	4/14 = 28%	12/4 = 3.0
Infrastructure	6/12 = 50%	6/12 = 50%	22/6 = 3.7
Commercial/Public Building	4/10 = 40%	6/10 = 60%	14/6 = 2.3

It can be said that number of personnel employed for the determination of offer price change according to characteristic features of the work and the interests of the companies. So, we can conclude that number of employee is not important for the determination of offer price, the nature and level of complexity of the work is more important. Conversely, the ratio of bid office personnel number to the total number of personnel may prove to be an important aspect. For example, 3 people working in residential companies could be very big number for this type of firms if for example infrastructure firms were hiring 20% of its total workforce. Hence, in the future this viewpoint will be examined in upcoming studies. What we can deduce from Table 1 is that residential companies are reluctant to hire more personnel for only bid preparation purposes. Commercial/public building (com/pub) and infrastructure companies are more likely to have personnel for bid preparation.

In another question, the firms are asked about their most bidden project (Question 18). The choices are: I: Housing; II: Commercial/Public Building (Com/Pub); III: Infrastructure; and IV: others.

Actually this question gives us no explanatory information about the companies' pricing efforts. It only provides us the confirmation of the correctness of the data. We surely expect residential companies to bid for housing projects, infrastructure companies bid for infrastructure projects and com/pub companies bid for such projects generally as shown in Fig. 3. But for construction companies in Turkey, it can be said that the concept of specialization has not been settled yet. Since construction companies are usually family-owned, decisions are made by the senior officials who also own the company. The strategic decisions are usually oriented according to these top managers' perceptions and supposed needs of the company. Consequently, the companies can be involved in various construction projects such as the housing, infrastructure and commercial/public building. Fig. 4 provides us some information about the organizational structure of residential, com/pub building, and infrastructure companies. If one considers Fig. 3 and 4 together, it is seen that com/pub companies have usually project (matrix) type of organization. The residential and infrastructure companies have mostly hierarchical organization.

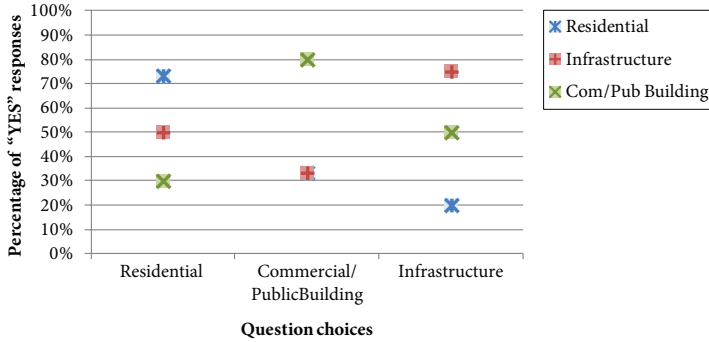


Fig. 3. The most bidden project of construction firms according to activity areas

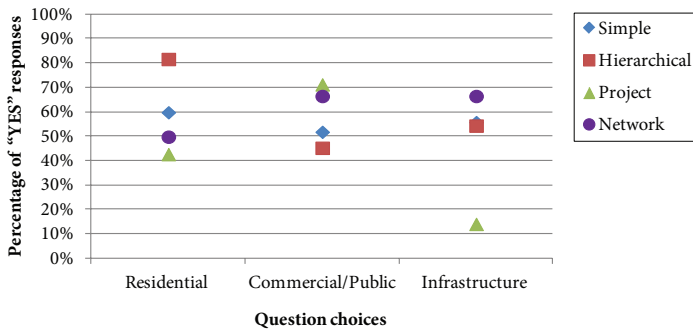


Fig. 4. Most bidden project of construction firms according to organizational structures

The opinions of the firms about the important factors to enter a bid are also sought (Question 21). The Likert scale (1: not important; 5: very important) is used to characterize the significance of factors. The choices are presented as follows: I: the current workload; II: company policy; III: type and form of tender; IV: type of work subject to the tender; V: suitability of the capacity of company to the size of contract; VI: the labour required to prepare the proposal; VII: the costs of bidding; VIII: type of contract; IX: duration of the job; X: location of job; XI: technical characteristics of the job; XII: status of competitors; XIII: the idea of that the current proposal preparation may impede the evaluation of bid opportunities for more profitable jobs in the future.

Many factors affecting the decision to enter a bid are considered in this survey. The least significant factor is VII (the costs of bidding) and the most significant factor is IV (type of work subject to the tender) (Fig. 5). The all types of companies agree on the significance of some of the factors, such as IV, VIII, VI and VII from the most important to the least important, respectively (Fig. 5). These factors are type of work subject to the tender, type of contract, the labour required to prepare the proposal, and the costs of bidding as explained above. Some points related to construction sub-sectors can be inferred from Fig. 5, such as:

- In general, residential companies undervalue the significance of the factors except factor XIII (The idea of that the current proposal preparation may impede the evaluation of

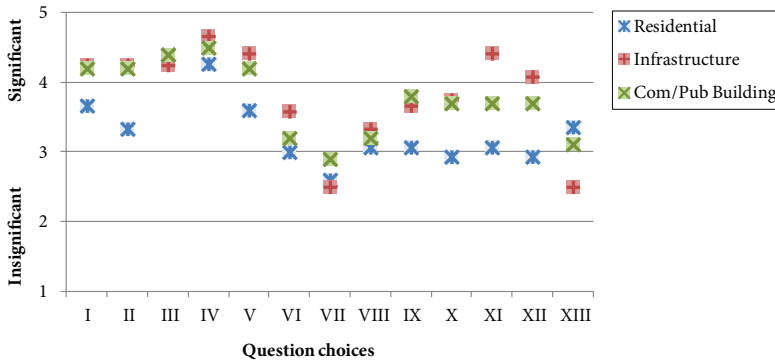


Fig. 5. The opinions of the firms about the important factors to enter a bid according to activity areas

bid opportunities for more profitable jobs in the future). This implies that the residential companies prefer to be assured that they do not miss any opportunity in the business. This may be attributed to the fact that the residential projects are comparatively smaller in size and budget and usually are family-owned businesses;

- Although the costs of bidding is seen to be the least significant factor, commercial/public building companies take into account this factor more than the companies in residential and infrastructure areas do;
- Companies in infrastructure consider “the idea of that the current proposal preparation may impede the evaluation of bid opportunities for more profitable jobs in the future” as another insignificant factor. The reason could be the less number of occurrences of infrastructure projects that in turn provide larger opportunity-time-frame;
- A big divergence is observed in the responses to factor XI (technical characteristics of the job). Since residential projects are similar, the technical characteristic of the job may not be so important for residential companies. On the other hand, com/pub and infrastructure projects vary from job to job, so the technical characteristic of the job becomes to be crucial for these companies.

Regardless the organizational structure of companies, the costs of bidding process likely to be the least significant factor (Fig. 6). When we look at the importance of the factors based on the type of organizations, the network type of organizations place more importance on almost all factors than other types of organizations do. This can be interpreted as the network organizations are more eager to get the job. On factors I (the current workload) and IX (duration of the job), the organizations agree on (Fig. 6). There are wide differences on responses to factors VI (the labour required to prepare the proposal), XII (status of competitors), and XIII (the idea of that the current proposal preparation may impede the evaluation of bid opportunities for more profitable jobs in the future).

The firms are asked about the efforts in their pricing processes (Question 15). The following choices are presented to them: I – was the work that would take place towards the estimated level of demand calculated; II – was the possible impact on the company’s image because of the determination of a low price analysed; III – was the expected cost to

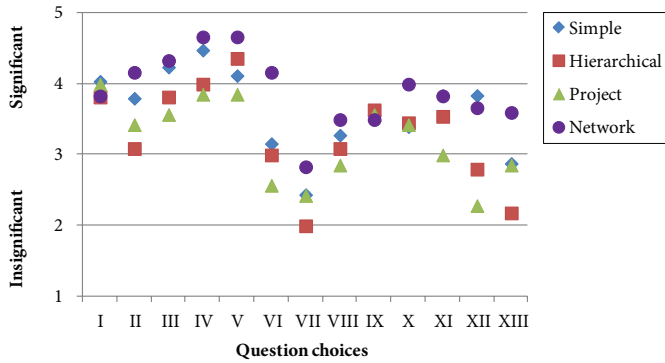


Fig. 6. The opinions of the firms about the important factors to enter a bid according to organizational structures

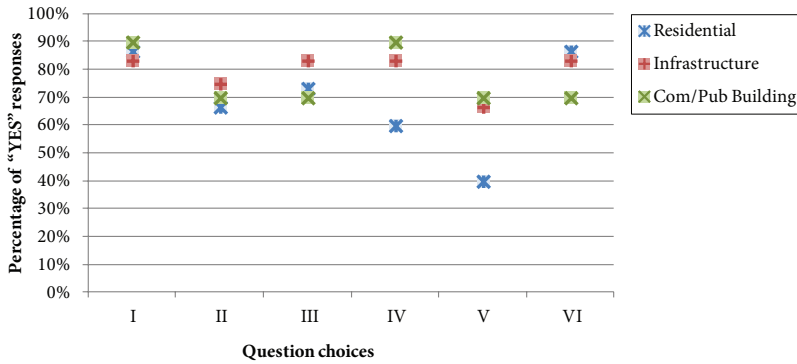


Fig. 7. The opinions of the firms about the efforts in pricing processes according to activity areas

the company because of the determination of a low price analysed; IV – was the effects of the determination of a low price on the competitors analysed; V – was the possibility of making the highest bid analysed; VI – was the suitability of pricing methods for the tender to be entered analysed?

When Fig. 7 is considered, it can be said that the residential firms have been doing fewer analyses on Items IV (the effects of the determination of a low price on the competitors) and V (the possibility of making the highest bid) than other companies do. The Item V has the lowest response rate overall around 60%. It is interesting though that the firms actually analyse the possibility of being the highest bidder. That is understandable since there is nothing gained by offering the highest price. The highest bidder would win nothing and the lowest bidder shall win the job.

From Fig. 8, we can see that network type of organizations usually have high responses to this question except Item I (an analysis about the work that would take place towards the estimated level of demand). The network organizations can hire subcontractors more easily, so the amount of work may not be as important for network organizations as to the other

organizations. The hierarchical type of organizations has lower responses to almost all items that mean they have been doing fewer analyses during the pricing process.

When the firms are asked about the types of bids they enter (Question 20), the following choices are presented: I: Sealed Bids; II: Discount; III: Negotiation; and IV: Invitation.

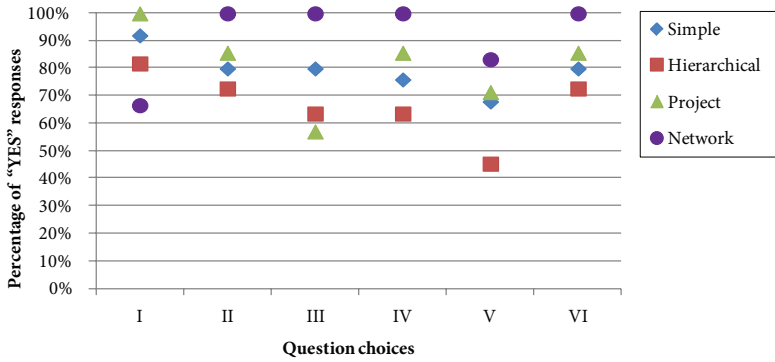


Fig. 8. The opinions of the firms about the efforts in pricing processes according to organizational structures

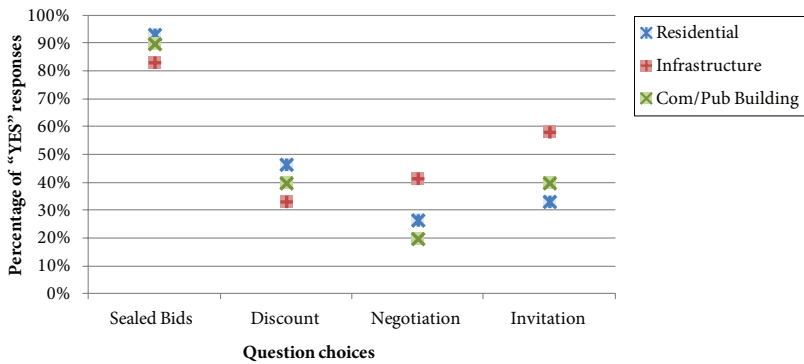


Fig. 9. Types of entered bids according to activity areas

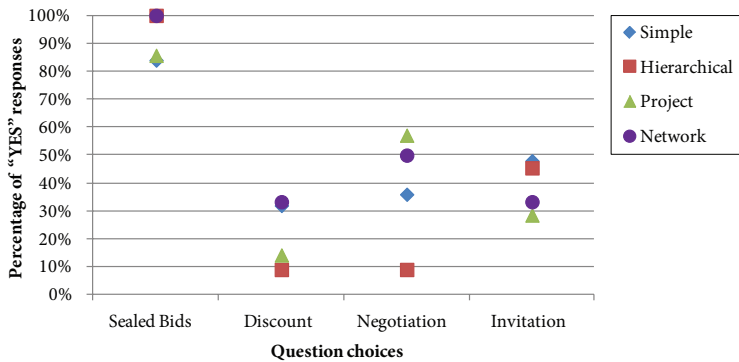


Fig. 10. Types of entered bids according to organizational structures.

Most of the contracts in all types of activity areas are awarded through sealed bid process (Fig. 9). Only in big projects where the competitors are few such as infrastructure projects negotiation and invitation types of tenders are applied (Fig. 9). A company can enter different types of bids, therefore the percentages sums up to more than 100%. According to Fig. 10, for example, the companies with simple type of organizational structure are mostly entering sealed bids at the same time enter invitation less frequently. The project type of organizations enters mostly on sealed bids followed by negotiation type of bids.

When the firms are asked if they collect information about the competitors to decide whether to enter the tender or not (Question 22); 67% of residential companies (st. dev.: 49%), 92% of infrastructure companies (st. dev.: 29%), and 100% of com/pub building companies (st. dev.: 0%) answered “yes”.

The companies are asked about how they collect information about their competitors (Question 23). They selected from three choices, namely, I: verbal intelligence reports; II: communication with people who have knowledge about the competitors; and III: news in media.

Com/pub building and infrastructure companies have been collecting information about the competitors while this ratio is very low for residential companies (Fig. 11). One reason could be that the residential companies are doing mostly land developer (build and sell) type of companies. When we look at the ways of collecting information about competitors, we see that verbal reports and communication are the primary ways to do that. Collecting information through news/press is very low (Fig. 11). There is very similar behaviour seen when we analyse data according to the organization type (Fig. 12). Press/news is the seldom applied way of collecting information for every type of organization. For network type of organizations collecting information seem to be very important in every way possible.

In another question, firms are asked about the types of data collected during bid preparation (Question 25) using Likert Scale (1: not important; 5: very important). The choices are: I: Quantity takeoff; II: Market prices; III: Unit prices (published by Ministry of Public Works); IV: Prices received from suppliers; V: Risks such as flood and earthquake; VI: Form and type of contract; VII: Differences in material price changes; VIII: Changes in workers’ fees; IX: Inflation; and X: Political balances.

In addition to collecting information about the competitors, some more data are collected during the bid preparation. Bid preparation is a tedious process which should include about

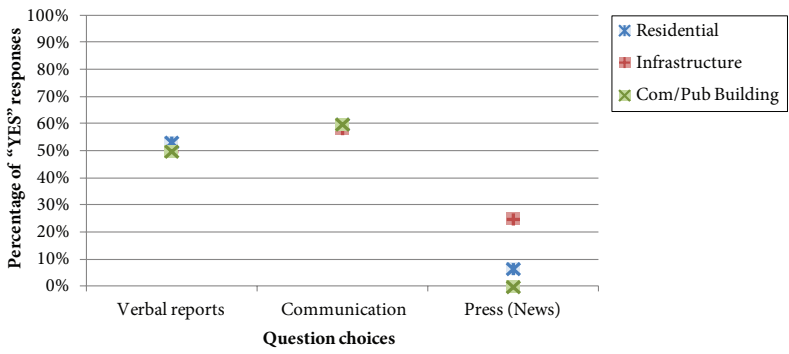


Fig. 11. Collect information about the competitors according to activity areas

all the possible variables. From Fig. 13, it can be said that the residential companies place less emphasis on almost every factor than the other companies do. In general, firms see little significance on factor V (Risks such as flood and earthquake) followed by factor X (Political balances) (Figs 13 and 14).

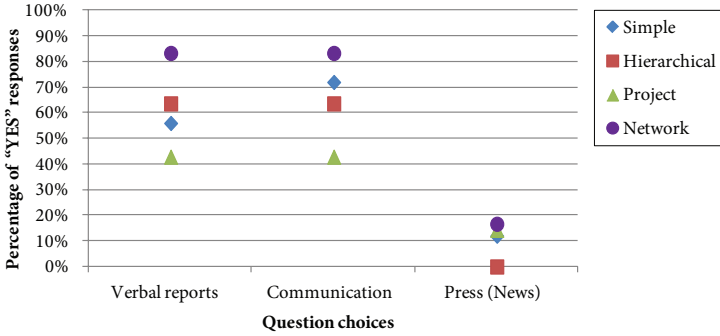


Fig. 12. Collecting information about the competitors according to organizational structures

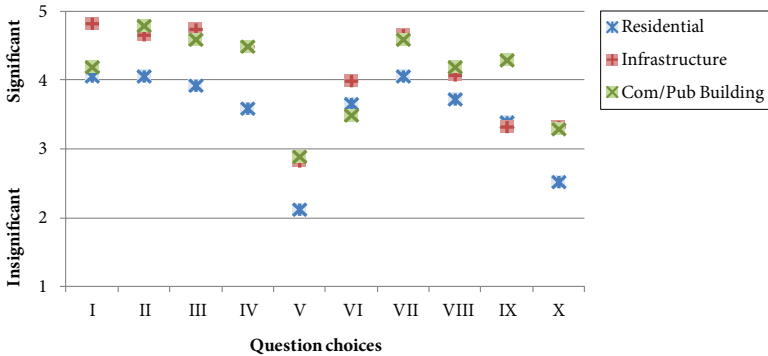


Fig. 13. Types of data collected during bid preparation of the firms according to activity areas

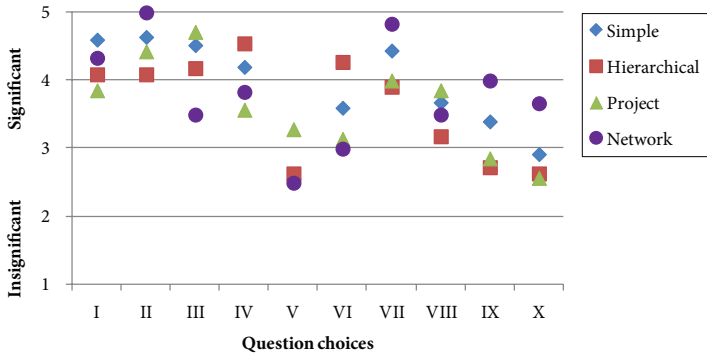


Fig. 14. Types of data collected during bid preparation of the firms according to organizational structures

The bid preparation costs are also asked to firms (Question 26) as if their bid preparation costs the same for every tender. They answered “yes” or “vary”.

The results in Table 2 seem to be interesting. The bid preparation costs cannot be the same in reality, since the process involves inspecting market prices and quantity takeoff, etc. Many infrastructure companies (67%) say the costs do not differ from bid to bid (Table 2). On the other hand, few residential companies say the costs are the same from bid to bid. The responses of com/pub building companies are divided in half.

The factors affecting bid discounts are asked (Question 29) using Likert Scale (1: not important; 5: very important). The choices are: I: Power of competitors; II: Maintaining the workload; III: Meeting the fixed costs of equipment; IV: Avoiding the status of non-work contractor; V: Providing prestige; and VI: Establishing a reference for similar jobs.

Figs 15 and 16 show the factors taken into account while deciding the discount in their offer price of the companies. The residential companies usually placed less significance on all factors. In general the factor IV (Avoiding the status of non-work contractor) has the lowest significance value overall. The factor VI (Establishing a reference for similar jobs) is the most significant one followed by factor V (Providing prestige). These mean that getting the job is not sought after solely for economical reasons but for this job to be an incentive to get more jobs. The last

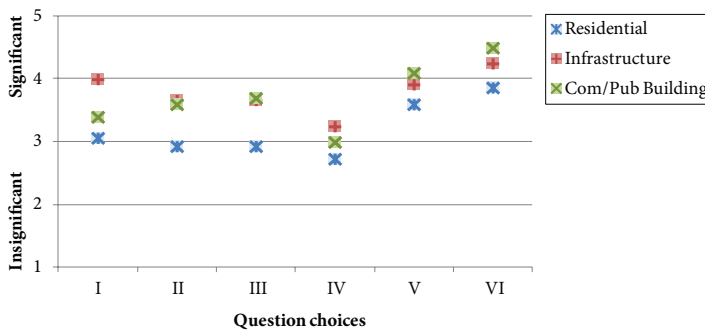


Fig. 15. The factors affecting bid discounts of the firms according to activity areas

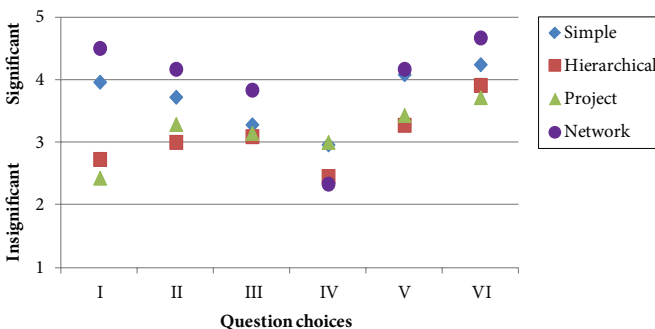


Fig. 16. The factors affecting bid discounts of the firms according to organizational structures

statement seems to be especially true for com/pub building companies. We can safely say that infrastructure and com/pub building companies are bigger than residential types thus hiring more personnel and having more equipment. Therefore, factor III (Meeting the fixed costs of equipment) is more important for the infrastructure and com/pub building companies (Fig. 15).

When we look at the organizations, we see more diversity in placing significance values. For example, in factor I (Power of competitors) there is a wide dispersion in attitudes. In general, network types of organizations say the factors are more significant than others do. Hierarchical and project type of organizations seem to place less significance values on all factors. For network organizations, every factor is important to get the job except factor IV (Avoiding the status of non-work contractor). This may be explained as the network organizations are so aggressive in getting the job that they do not even consider the possibility of non-work period for themselves (Fig. 16).

In another question, firms are asked about how the costs in bid vary (Question 27). The choices are: I: Estimated cost (Bid price); II: Required technology to carry out the job; III: Bid technology; IV: Bidding for the first job with the intended client; and V: Others.

The bid preparation costs are not the same for the types of companies. Residential companies said that the bid prices vary from bid to bid. According to Fig. 17, the residential companies consider mainly bid price (the total cost of the job). Since these companies have generally smaller capital, they are much more affected by the things such as required bond (which also depends on the bid price), etc. Also, since the projects bidden by the residential companies are usually similar, they simply do not consider bidding for unlike jobs. 67% of infrastructure companies said that bid offers are the same. From Fig. 17, it is also understood that they consider factors affecting the bid preparation more critically than others do.

From Fig. 18, it can be said that network type of organizations consider especially factor III (bid technology) while the project organizations place the least importance on this factor. This arrangement is reversed for the network and project organizations on factor I (bid price) though. In general, the hierarchical organizations have the lowest “yes” responses to all factors.

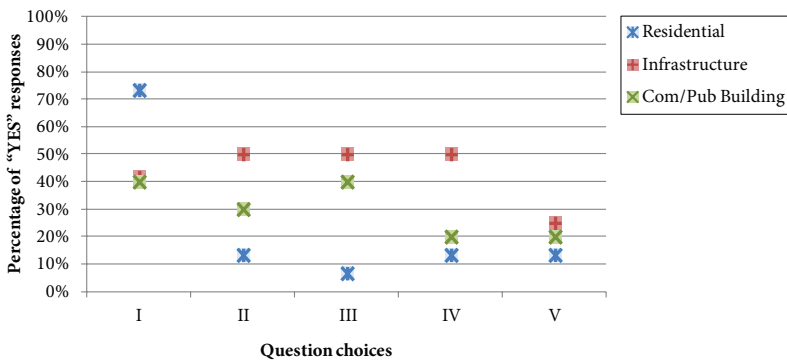


Fig. 17. The factors affecting bid preparation costs of the firms according to activity areas

The firms are asked to rate their responses to question of “causes of the deviations from the offer during the execution of the job” (Question 28) on Likert scale (1: not important; 5: very important). The presented choices are I: The deficiency in material quantity takeoff; II: Inflation; III: Unexpected variation in workforce productivity; IV: differences in material prices; V: climate conditions; VI: Natural disasters; VII: Ground (soil) conditions; VIII: Inadequate supervising (site manager, etc.); IX: project changes; X: poor quality works done by subcontractors; XI: late deliveries of suppliers. Among 49 companies, the most significant item was the differences in material prices (choice-IV: Mean = 4.32).

No big divergences observed between the opinions of companies related to the question of what cause the cost deviations from the offer price (Fig. 19). In general, residential companies placed for almost all factors lower significance than other companies did. The most significant factor is factor IV (differences in material prices) which impact the total costs in especially turnkey jobs. The factors VI (natural disasters) and VII (ground/soil conditions) have the lowest significance values overall. It is, however, interesting to see that ground conditions have the low impact factor on the variation from the offer price. This implies either the companies have thorough understanding of soil conditions before the bidding or the jobs bidden by

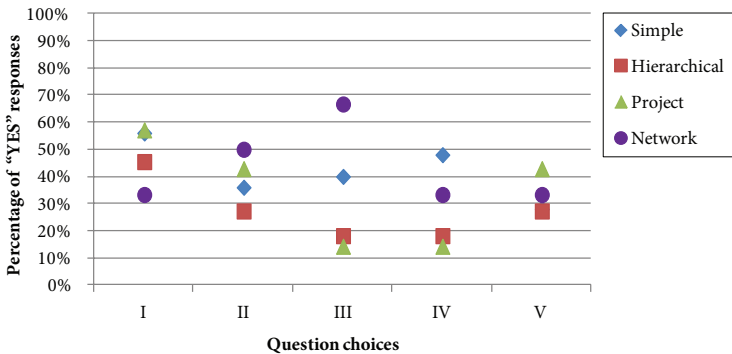


Fig. 18. The factors affecting bid preparation costs of the firms according to organizational structures

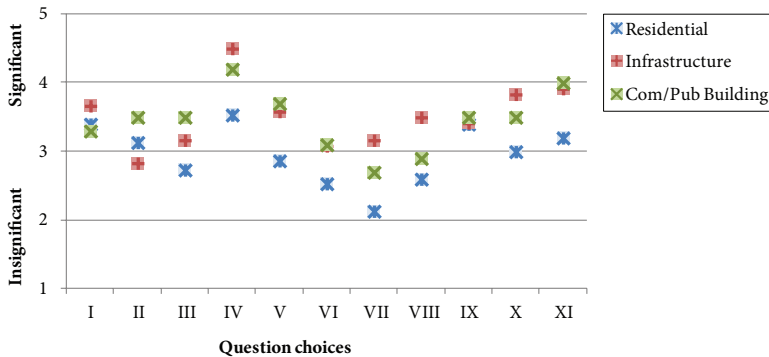


Fig. 19. The causes of the deviations from the offer during the execution of the job according to activity areas

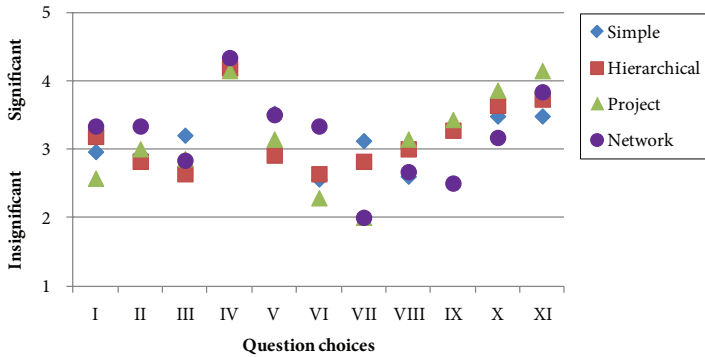


Fig. 20. The causes of the deviations from the offer during the execution of the job according to organizational structures

the companies do not necessarily affected by the soil conditions a lot. The latter seems to be valid from the responses of infrastructure companies which usually operate under ground.

From Fig. 20, factor IV (differences in material prices) is again to be the most important factor considered by all types of organizations. To the factors VII, VIII, IX, and X, the network organizations responded with lower significance values than other organizations do. This can be because the network organization can more easily adapt to changing environment by working with different subcontractors.

Conclusions

The construction companies tend to specialize in subsectors, such as, residential, commercial/public building and infrastructure. These companies also assume different types of organizational structures. In this study, the interaction, if any, between the main activity area, organization type, and development of pricing policies are investigated. The survey questions are arranged to get the overall description of the process from the time companies prepare for bidding to the completion of project. The survey results are analysed according to the main key operating areas and mainly adopted organization types.

According to results, in general the residential companies responded more conservatively than other companies did. For example, their responses to “yes/no” questions yielded less percentage of “yes” answers than of others. Likewise, network types of organizations are likely more assertive in their responses. For example, their answers to importance of factors tend to be more on the significant side in Likert scale. The opinions about the different aspects of pricing policy development phases vary on the construction companies depending on their actively involved fields and their organizational structures. As an example from the findings, the responses to the question of what cause the cost deviations from the offer price during the execution of the project can be given. The occurred differences in material prices is said to be the most important factor considered by all types of subsector and organizational type of companies.

Although construction firms have different types of organizational structures and different activity areas, they determine pricing policies before bidding, during bidding and after the job completion phases. This study investigated the difficulties and the affecting factors in applying pricing policies within the marketing concepts through a survey study. The data collected in this study indicates that construction firms tend to prefer a pricing-bidding strategy that is typically market and competitor oriented. However, construction firms have to understand their specific resources that generate competitive advantage and accordingly develop bidding strategies to win tenders.

The results from this study should be of value to construction companies by giving insights in their respective fields about the pricing-bidding-process overall. This study also draws attention to similarities and differences in pricing policies of construction companies depending on actively involved subsector and organization type. In future studies, decisions about entering into the tenders of construction companies can be predicted with data mining techniques (neural networks, support vector machines, etc.) taking into consideration all these factors that affect the pricing policies of companies.

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Hilmi COSKUN is an Assistant Professor of Civil Engineering in the Faculty of Engineering at Mustafa Kemal University. He is a member of Chamber of Civil Engineers of Turkey and is actively involved in construction management and engineering education research areas. He received his MSc and PhD degrees in Civil Engineering at the Old Dominion University in 1998 and North Carolina State University in 2002, respectively.

Ercan ERDIS is an Assistant Professor of Civil Engineering in the Faculty of Engineering at Mustafa Kemal University. He is a member of Chamber of Civil Engineers of Turkey and is actively involved in construction management areas. He received his MSc and PhD degrees in Civil Engineering at the Mustafa Kemal University in 2001 and Cukurova University in 2004, respectively.

Mustafa DEMIRCI is an Assistant Professor of Civil Engineering in the Faculty of Engineering at Mustafa Kemal University. He is a member of Chamber of Civil Engineers of Turkey and is actively involved in hydraulic, construction management areas. He received his MSc and PhD degrees in Civil Engineering at the Mustafa Kemal University in 2001 and Cukurova University in 2006, respectively.