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Prevision of Delay in Brazilian Residential Unit Construction Contracts

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Abstract: The aim of this paper is to verify the existence of a clause in contracts of promise of property sale which defines the consequences of delay in the delivery of property, and to discover whether owners demanded any compensation for delays occurred. The number of buildings delivered after the scheduled deadline in two cities between December 2009 and January 2011 was found (n = 542), and a sample of 82 residential units was taken. In order to obtain the data, a semi-structured questionnaire was given to the homeowners. It was observed that only 35% (n = 29) of the contracts included a penalty clause for delay. However, in 19 of the 29 contracts the clause regarding delay came with other clauses that allowed the company to delay the delivery of the building for up to six months. This clause is considered null in Brazilian legislation. As for compensation, only one (1.82%) owner demanded that the company provide a rental property during the period of delay. It could be concluded that contractors are not observing Brazilian legislation regarding the delay in the delivery of residential units. In addition, conformism is perceived in the attitude of the homeowners.

Key words: Delay, contracts, buildings.

1. Introduction

In the past, the delay in completion of the buildings was deemed acceptable by consumers. But nowadays, tight budgets mean that delays are more significant and costly. As a result of construction delays, many customers have been demanding compensation from construction companies [1]. Several studies were conducted in different countries to understand the factors that can cause delay in completion [1-4].

Delays in completion of construction can cause a lot of damage to civil construction companies, such as higher costs, cash flow problems [5] unavailability of staff, loss of credibility in the consumer market, loss of customers, plot returns and indemnities [1].

Delays can also cause loss of revenue when production facilities or rental units are not completed on time. As well, higher overhead costs may be incurred due to the longer work period and the inflation in the price of materials [6].

1.1 Contracts

In the construction industry, construction companies generally work in an environment of risk and uncertainty caused by economic factors such as fluctuations in the costs of materials, labor and equipment. Contractors and suppliers working in today's volatile materials market find that estimating, bidding on and financing construction projects are challenges [7].

A well-prepared contract reduces business risk. In countries under European jurisdiction, construction contracts are considered to be independent contracts regulated by the laws to which they are bound. Construction contracts also differ from other types in having great and long-term financial responsibilities. Contract conditions define the rights and responsibilities of the parties [8, 9].

Fong and Choi [10] have analyzed methods of contractors' selection and observed that some methods are not comprehensive and are generally tendentious.

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In accordance with this, it is sometimes difficult for owners to consider at once all variables such as price, time, quality and security.

The obligation of the contract is based on the concern that goes beyond private interests to serve the interests that are collective. Whoever, for free expression of will, promises to give or do creates an expectation in the social environment that the law should guarantee. Thus, the contract should not be viewed from the individual angle, but from the social angle, since these consequences could affect the balance of society [11].

One type of contract according to Brazilian law is the contract of promise of property sale. The Civil Code [12] cites in article 481 that: "According to the contracts of promise of property sale, a contractor undertakes to transfer to the domain a certain thing and the other, to pay a certain price in money".

1.2 Brazilian Law about Contracts during or before the Construction Phase

In a contract of promise of property sale, the seller undertakes to transfer the domain, and this effectively moves with the transcription of the title in the registry of property. The three basic elements that constitute a purchase and sale agreement are the price, the date of delivery and the object (e.g., homes, apartments) [11].

The Civil Code, Article 439, states that whoever promises to deliver a product to a consumer must offer compensation when said product is not delivered according to the agreement between the two parties [12].

If construction companies do not fulfill their obligations, or fail to comply by the way and in due time, homeowners can sue the builders for damages (Civil Code article 1056) [12]. These damages may include rental costs (or an equivalent value) incurred by homeowners during the delay and a reasonable value for the lost profit that the building could have generated for its owner (Civil Code article 1059) [12].

The purchase of an object is also regulated by the Consumer Protection Code (CDC) [12]. According to this law, contractors can delay for a maximum period of 180 days. However, in article 18, paragraph 2, the CDC states that both the owner and the contractors may agree to reduce or increase the period specified in the preceding paragraph, though not less than seven or more than one hundred and eighty days [13].

The contractor, however, must pay a price for this delay. The only exceptions that valid excuses for delays according to Brazilian Law are: (1) the existence of a fortuitous event or force majeure (e.g., natural phenomena, wars and revolution) or (b) the proof that the delay is the exclusive fault of the consumer. Proving these exceptions is the joint responsibility of the contractor and consumer, who respond objectively according to article 14 of the CDC [13].

The aim of this paper was to verify if there is a clause that defines the consequences of delay in the delivery of contracts of promise of property sale and assess whether the owners demanded any compensation for the delay occurred.

2. Methodology

To obtain the data for the building units delivered in the period between December 2009 and January 2011, a survey was conducted among the construction companies registered in the Construction Union in the municipalities of Balneário Camboriú and Itajai (Brazil). The participants owned buildings that were over 10 floors or had more than 20 apartments.

During this period 30 buildings were delivered. Of this total, 16 were delivered late. In relation to the number of buildings, 973 residential units were delivered, with 542 being late.

The number of observations required is defined by Eq. (1) [14]. With these values, the numbers needed for sampling were 82 residential units. For a better distribution of the number of interviews per building, these were listed according to the number of properties of each one (Table 1).

Table 1 Sample of properties per building delivered with delay.

Building delivered with delay	Quantity of residential units	Percent of the total residential units delivered with delay	Sample by building	Delay in each building (month)	Construction company
1	17	3.14	3	12	A
2	20	3.69	3	2	B
3	18	3.32	3	2	C
4	28	5.16	4	3	D
5	18	3.32	3	12	E
11	45	8.30	7	12	F
15	30	5.54	5	4	G
16	48	8.86	7	8	H
17	80	14.76	12	6	I
18	22	4.06	3	4	J
20	42	7.75	6	6	K
25	29	5.35	4	18	L
26	28	5.17	4	7	M
27	54	9.96	8	4	I
29	45	8.30	7	6	N
30	18	3.32	3	3	O
Total: 16 buildings	542	100%	82		

$$n = \frac{N \cdot \hat{p} \cdot \hat{q} \cdot (Z_{\alpha/2})^2}{\hat{p} \cdot \hat{q} \cdot (Z_{\alpha/2})^2 + (N-1) \cdot E^2} \quad (1)$$

where,

n is number of residential units delivered with delay in the sample (82);

N is total of residential units delivered with delay (542);

p is estimator of a proportion. How this value is unknown, it was adopted 50%;

q is defined by 1-p;

$Z_{\alpha/2}$ is critical value that corresponds to the desired degree of confidence (95%);

E is margin of error or maximum error of estimate. An error of 10% was adopted in this research.

Three municipal construction companies were consulted to verify the instrument used in the delivery of the residential units to homeowner when the building was finished. From this instrument, the questionnaire was elaborated which contained the questions regarding:

- the performance of the contract;
- the form of communicating the delay to the homeowner;
- the satisfaction of the homeowner with the residential unit and the company.

The interviews took place in person or by telephone.

3. Results and Analysis

Table 2 summarizes the results found with the interviews done with the homeowners.

Only 35% (n = 29) of the contracts had clauses that defined possible damages because of the delay in delivery. However, from the sample by building (n = 82) only in buildings 17, 18 and 26 (totaling 23% of the residential units, n = 19) clauses were added to the delay clauses that allowed the company to deliver the residential units within six months, for reasons of force majeure. The reason appointed for the delay in these 19 contracts was that the schedule was affected by the rain.

However, the normal amount of precipitation cannot be the excuse for delay. The contracts of promise of property sale should specify the circumstances in which the construction company might be exempt from meeting the agreed period of delivery of the unit and thus extend the contract term. However, none of the companies gave details explaining the force

Table 2 Interviews with homeowners.

Question	Total		Percent	
	Yes	No	Yes	No
Had the contracts clause that defines possible damages because of delivery?	29	53	35	65
Did the construction company informed the new date of delivery?	23	59	28	72
Did you demanded reward from the construction Company?	1	81	1	99
Was the residential unit delivered finished?	75	7	91	9
Was the common area completed?	62	20	76	24
Did the delay affect the construction company image?	25	57	30	70
Did you recommend the construction company to others?	66	16	80	20
Would you buy another residential unit from the same construction company?	63	19	77	23
Do you consider yourself a demand client?	63	19	77	23

Obs.: all the analyses is referred to a sample of 82 residential units.

majeure responsible for the delay. There is not in the Brazilian law a clear definition of how to determine the force majeure. For an example, rain is a natural phenomenon, however, it is expected that rain for some days during the year and it should not affect the schedule. Thus, the reason (normal amount of precipitation) concerning the extension of the delivery period is null and considered unfair in accordance with the Consumer Protection Code [13] and the Civil Code [12].

Only 28% of homeowners (n = 23) were informed about the new date of delivery of their residential units. For the 72% (n = 59) of homeowners who were not informed of the new date of delivery, the discovery occurred as follows: 56% (n = 33), through visits to construction sites, and 44% (n = 26) through telephone contact with the construction company. It is possible to observe that most construction companies violate Brazilian Federal Law No.4.591/64, complemented by Law 8.078/90 [15, 13]. These laws regulate the activity of real estate development and cite that homeowners must be informed at least every six months of the progress of the building.

Neglecting the client can create many problems for the construction company, such as customer dissatisfaction which may result in law suits and retaliation.

The residential units were delivered completely finished for 91% (n = 75) of the homeowners. For the other 9% (n = 7), there were still some outstanding issues in the building. In buildings 4, 11 and 29, the common area was not completed at the time of the delivery of the residential units and in building 16, two homeowners said the common area was not completed, totalizing 24% (n = 20).

This difference between the percentage of common area and residential units delivered complete can be explained because some companies deliver the residential units before having completed the whole building, due to pressure exerted by homeowners.

According to Pereira et al [16], in a research conducted with construction companies, the main causes for delay occurrences are: changes ordered by the client, lack of compatibility in design, lack of skilled labor and unskilled labor.

It can be noted that almost all the above mentioned causes are not valid excuses to delay according to Brazilian laws. Only the change ordered by the client can be an excusable delay. But, in this scenario, it is very difficult to determine which delays were caused by the owner sand which were caused by the construction companies.

3.1 Compensation Demanded by Consumers or Offered by Construction Companies Due to the Delay

Only one (1.82%) (n = 1) homeowner demanded that the company provide them with a rental unit during the period of delay. The others (98.18%) (n =

81) did not demand any compensation. None of the respondents received monetary compensation from the company because of the delay occurred.

For 30% (n = 25) of homeowners, delay affected the construction companies' image. However, if consider only those buildings that were delivered with more than six months delay (buildings 1, 4, 11, 16, 17, 20, 26, 29, n = 50), the delay would have affected the image of the construction company by 46% homeowners (n = 23). Thus, we can deduce that the greater the delay in delivery of residential units, the worse the image of the construction company held by homeowners.

Concerning the issue of homeowners would buy another property from the same company 77% (n = 63) said yes and 80% (n = 66) would recommend the company to others, while 20% (n = 16) would not recommend it. In buildings that were more than six months late in delivery (n = 50), 29% (n = 14) did not recommend the construction company to others. An increase of 9% (difference between 29% and 20%) of homeowners who do not recommend the company to others can be noted in buildings with six or more months delay. Only one company (building 1) was not recommended by 100% of the homeowners.

Through the analysis of answers collected, it appears that the delay in delivery of the residential units is not the only factor responsible for client satisfaction. Other factors, such as perceived quality and documentation, can interfere with the positive assessment of the construction company by homeowners. But for Silva, Brasileiro and Duarte [17], delays may generate higher recoveries of homeowners regarding the quality of the building units because the homeowners become more demanding.

In a research conducted by Medvedovski et al. [18] regarding a building located in Pelotas (Brazil), 13.13% (n = 120) of the homeowners were dissatisfied with the units received. The biggest complaints were about the numerous entries to the building and the size of the corridors. According to Cardoso [19], in a survey conducted with homeowners of a building in Belém do Pará (Brazil), the main items that generated dissatisfaction were the design and construction of the building's facade, the security relating to the building's entrances, the dimension of the garages, and the condominium costs. The reasons for customer dissatisfaction were numerous.

It can be concluded that delay is only one of several factors affecting customer satisfaction, however, companies should be concerned about unhappy customers since they can produce negative publicity for the construction company, reducing the reliability of the brand.

Approximately 77% (n = 63) of the homeowners considered themselves demanding clients.

3.2 Considerations Made by Homeowners

In interviews with homeowners, it was evidenced others factors that can contribute to the satisfaction. One of the owners said that he had been considering the possibility of litigation against the company because of the delay (seven months). However, when he received the completed unit, it exceeded his expectations which resulted in a change of heart. Another homeowner whose unit was delivered after a four-month delay was considering legal action against the construction company because it was below his expectations. He claimed that the tiles used were of poor quality, causing a depreciation of the property.

These interviews, confirm the research conducted by Oliveira and Heineck [20], where 62 homeowners pointed that factors as materials, structural safety, negotiation, deadline can affect the satisfaction. According to Chauvel [21], satisfaction is a psychological state resulting from the comparison of internal references to the reality of ones circumstances.

Another topic mentioned by the home owners was the cultural acceptance of delay. A homeowner whose residential unit delivery was delayed for four months, said: "This is common and happens to all construction

companies." Another homeowner, who is a lawyer, pointed out that despite being aware of his rights, he would not take any action against the construction company, because "they are nice people."

This attitude on the part of homeowners demonstrates conformity. The subject conformed not only accepts what is presented, but also puts into practice actions that demonstrate conservative actions by the homeowners [21].

There are also some inconsistencies on the part of construction companies. Sometimes they feel abused because of the tax burden imposed by the government [22] but in other circumstances, they abuse their clients by failing to respect the law of the country.

4. Conclusions

In contracts of promise of property sale that had clauses defining the delay, it was perceived that this was unfair according to Brazilian law, because it permitted the construction companies to delay the delivery of residential units without having to compensate owners for damages. Only one homeowner demanded compensation from the construction company, demonstrating that delay is culturally accepted in the study area. However, it was observed that the longer the delay, the more chance of dissatisfaction with the residential unit received.

Moreover, some properties were delivered without being fully completed. This may generate additional costs and subsequent disputes, since the occurrence of defects can be difficult to attribute the responsibility to the client and/or the construction company.

Regarding informing customers of the new delivery date, companies may have had difficulty in determining it because there may have been simultaneous delays during the building construction phase.

It is also important to state that Brazilian law should clarify the meaning of events of force majeure, especially relative with natural phenomenon, in order to avoid disputes between homeowners and construction companies.

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