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# WHO ARE THE BRAZILIANS TOBACCO GROWERS THAT BREACH THEIR CONTRACTS WITH THE INDUSTRY?

Quem são os produtores de tabaco que quebram seus contratos com a agroindústria integradora?

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#### Abstract

Based on the Transaction Costs and inter-organizational relations literature, this study analyzes the socioeconomic characteristics of the growers who may be related to opportunistic behavior and contract breach in the tobacco chain in South Brazil. In terms of its contractual relations, tobacco production chain is very little explored, although the contractual terms are determinants in Integrated Production Systems (IPS). The nature of this research is quantitative and the data were collected through a survey with tobacco growers from the three states of South Brazil. The analysis showed the main characteristics of the tobacco growers who are more likely to breach their contracts with integrative companies.

Keywords: Contract Breach. Integrated Production System (IPS). Opportunism. Tobacco.

# Quem são os produtores de tabaco que quebram seus contratos com a agroindústria integradora?

#### Resumo

A Nova Economia Institucional (NEI), em especial a Economia dos Custos de Transação (ECT) a qual permite uma abordagem sobre os contratos, e a literatura sobre as relações interorganizacionais constituem a base teórica para este artigo que tem como objetivo analisar as características sócio-econômicas dos produtores que podem estar relacionadas ao comportamento oportunista e a quebra de contratos na cadeia produtiva do tabaco no Sul do Brasil. Esta pesquisa assume um caráter predominantemente quantitativo e os dados foram coletados através de uma survey envolvendo os produtores de tabaco dos três estados do sul do Brasil. A análise apontou as principais características distintivas dos produtores de tabaco mais propensos a quebrar seus contratos com as empresas integradoras.

Palavras-chave: Quebra contratual. Sistema Integrado de Produção (SIP). Oportunismo. Tabaco.

### 1 INTRODUCTION

Tobacco growing in Brazil is based on a governance structure that configures the Integrated Production System (IPS), whose basic mechanism is the integration contract. This contract sets the key-element for the contractual relations between tobacco grower and tobacco company: the commitment of exclusive commercialization to the company of the tobacco grown by the farmer; in return the commitment of the tobacco company in buying all the agreed production (BEGNIS; ESTIVALETE; PEDROZO, 2007). In tobacco growing the IPS is responsible for coordinating the productive chain, through the best growing practices, taking the Brazilian tobacco in

a high competitive level. Nevertheless, the successive contract breaches put in danger the integrated system, so that the Brazilian tobacco farming could no longer be the world's largest exporter of leaf tobacco and the investments would migrate to other regions of the globe searching for tobacco with the characteristics required by the market (BEGNIS; ESTIVALETE; PEDROZO, 2007).

Concerning this issue, research results might help organizations involved in coordinating the tobacco chain to adopt measures to strengthen the IPS, whose importance is recognized by farmers' representative entities (Brazilian Tobacco Growers' Association – AFUBRA) and the processing companies (Tobacco Industry Trade Union – SINDITABACO). Identifying the existing relation between the profile of the growers and their behavior concerning the contracts would be an important starting point, because the opportunist behavior can lead to a less satisfactory collective result, or even undesirable, and may cause the disruption of the IPS, threatening the sustainability of tobacco farming in Brazil.

It is also important to highlight that the tobacco production in Brazil occurs almost exclusively in small farms, by using family work force. In the 2013/14 crop, according to the Brazilian Tobacco Yearbook (2014), tobacco growing involved approximately 162 thousand integrated growers in the three Southern states of Brazil, generating a total income of more than US\$ 1.6 billion (CARVALHO, 2014).

#### 2 CONTRACTUAL RELATIONS AND OPPORTUNISM

### 2.1 BOUNDED RATIONALITY AND OPPORTUNISM

Economic agents are characterized, among other factors, by their adaptive and learning capacity so that the social influence modifies the way these agents make rational decisions. The study of governance structures should not ignore the perception of bounded rationality (SIMON, 2000) and by the influence of the environment on the rational choices (SIMON, 1956). This way, all contracts would be inevitably incomplete (WILLIAMSON, 2002), whereas adaptations and adjustments are necessary when facing possible problems. On the other hand, the agents are not only subject to the requirements of contractual adjustments because of unforeseen situations (due to bounded rationality itself), but also the strategic behavior (opportunistic) that results in breach of contract. In these cases, efforts to provide a private ordering work to promote governance structures that reduce the possibilities of impasses and contract breaches.

Every contract involves bilateral dependence so that problems emerge when investments in specific assets are made (WILLIAMSON, 1998). For this reason,

agents must be prepared to make cooperative adjustments in their contracts. This makes emerge the concepts of credible commitment and discriminatory arrangements that indicate different kinds of governance structures. It is precisely in this way that the contribution from the Transaction Cost Economics (TCE) happens. This perspective distinguishes different levels of rationality (WILLIAMSON, 1985). Although the economic agents act in a maximizing way, their cognitive capacity is limited. Confronting with the reality of rationality, cost of planning, adjustment and motivation of the transactions need to be explicitly considered. These different levels of rationality are associated to different kinds of behavior based on their own interests, of which the strongest kind is opportunism. Opportunism means that behavior is based on smartness (WILLIAMSON, 1985). These characteristics of human nature suggest that opportunism is indispensable to transaction cost analysis (HODGSON, 2004) and governance structures concerning issues like trust and asset specificity (CHILES; MCMACKIN, 1996; LUI; WONG; LIU, 2009).

Applying this logic to the economic decisions ruled by both implicit and formal contracts, evidence shows that at different times in which transactions occur, individuals have diffuse and incomplete information about their own interests. This means that any economic agent may be subject to act or suffer an opportunistic action, because supervening facts may encourage the breach of established contracts.

Often the agents behave opportunistically, destroying trust, basic element of a contractual relationship that would exempt the members from formalization and reduce transaction costs. In addition, contracts provide the security (GAGLIARDI, 2008) that agents need to make more specialized investments. However, it is not a perfect world. Frequently some problems arise from the power differences between farmers and industry. This unbalance of power derives mostly from the asymmetric information (AKERLOF, 1970; STIGLER, 1961).

The need for trust among agents in a transaction and the commitment of both parties is essential to make a transaction possible. The trust would act on partnerships, allowing them to happen upon the bases that exempt or reduce the necessity of control mechanisms and implementation of contracts (BEGNIS; ESTIVALETE; PEDROZO, 2007). Contracts are a form of transaction governance that could bring benefits for smallholders, including access to new technologies and markets, and overall increase in farm incomes (BAUMANN, 2000; WEATHERSPOON; CACHO; CHRISTY, 2001).

If a transaction showed some degree of risk or doubt for one of the agents, this one would have the perception of that the information about the partner or the transaction would be incomplete. From this results the necessity of some degree of

trust so that the transaction can be accomplished. Moreover, the risk of trusting would be related to the perspective of return that the trusting agent would obtain. If the perspective of returns were not clear, this agent would not invest in trust. In this case, trust means the conviction that the partner would perform actions to bring a positive outcome for both agents.

### 2.2 TRANSACTION CHARACTERISTICS AND OPPORTUNISM

According whit Transaction Costs Economics (TCE) there are three dimensions for the transactions: frequency, uncertainty and specificity of the assets (WILLIAMSON, 1985). The frequency refers to the number of times a transaction is made. The frequency of the transactions could influence the costs linked to a transaction by the possibility of reputation building by the agents who are engaged in the transaction. The higher the frequency of transactions, the greater the motivation of the agents to not impose losses to their partners, because contract breaches would cause losses in future profits. The development of reputation limits the desire of the agents to act opportunistically in order to obtain earnings in a short term. The higher the frequency at which the transactions occur, the lower the costs coming from gathering information for the fulfillment of the contracts and complex contractual clauses that limit the opportunistic behavior.

Another dimension would be uncertainty, seen as the impossibility of predicting conflicts or changes that could modify the characteristics of the transaction results (WILLIAMSON, 1985). The result is that agents, limited when predicting future events, would not be able to draw contractual clauses able to allocate the results according to the external impacts. Therewith, they would be subjected to an increasing number of gaps that a contract could not cover, culminating in opportunities for opportunistic behavior.

The third dimension is the specificity of assets. The specificity of assets refers to the degree in which an asset could be reintegrated for an alternative use without losing productive value (WILLIAMSON, 1985). Thus, a specific asset would be that one which cannot be reused in another activity without losing value. The higher the specificity of assets, the greater the risk and need of the agents to protect themselves regarding the non-effectiveness of the transactions, because they would not find an alternative use that would keep the value of the asset.

The characteristics of the transactions and the asset specificity define the efficiency of governance forms. Therefor market and the hierarchic governance would be considered opposing ways, having as difference the influence caused by the incentive and control on the form of governance. Market and hierarchy have different levels that complete each other. First, concerning the technological aspects, the market would be more efficient by being able to take better advantage of economies of scale and scope. This process would happen because companies pursue a larger consuming market than the domestic market to the hierarchical way of organization (governance). Second, in the market the information would be private and acquired in a decentralized way, what would allow the use of the information immediately (WILLIAMSON, 1985). In the hierarchic way the information would be common to the agents and acquired in a central way, what would make difficult the prompt use of knowledge of particular circumstances in time and space (HAYEK, 1945). Third, transactions are the unit of analysis and that those that occur internally in a hierarchic way would differ from market transactions (WILLIAMSON, 1985). To make the distinction between market and hierarchy it is necessary to analyze how incentives and controls happen on transactions that occur in these ways.

In hierarchical form could occur little encouragement to changes in desired actions (transactions), because changes in spent effort would have little or no immediate effect on remuneration (WILLIAMSON, 1985). Nevertheless, this weak encouragement would be responsible for promoting cooperative behavior. The negative effects of the lack of strong incentives would be softened by the existence of internal controls in the hierarchical way. The control mechanisms are seen as ways to ensure certain behaviors of the agents in the absence of trust (DAS; TENG, 1998).

#### 2.3 TRUST AS A BASIS FOR CONTRACTUAL RELATIONS

Contracts and trust both contribute to predictable behavior (GULATI, 1998). Transaction Costs (TC) theorists usually overlook the markets' automatic adjustment mechanisms when considering the risk of opportunistic behaviors (HILL, 1990). However, the opportunists thrive when the market selection mechanism fails, but in this situation, come into the scene the institutions and organizations that play the role of eliminating the opportunistic agents. As the transactions are inserted in a wider economic context, the cooperative behaviors overlap the opportunism.

Some market structures, and even the environment where the transactions happen, are more inclined to fraud, to have unpredictable behaviors and poor stability. The potential opportunistic behavior affects both: the relations structure and its performance (PARKHE, 1993). Therefore, the partners see themselves forced to build governance structures and control which negatively influence the goal of the partnership. The choice of form of governance depends on the trust between partners

and their repeating linkages (GULATI, 1995). As long as trust increases, the necessity of complex structures of governance decreases, as well as the transaction costs (NOOTEBOOM; BERGER; NOORDERHAVEN, 1997). There is a positive relation between the asset specificity of the value chain created by the relationship network and the overall performance of the partners involved (DYER, 1996, 1997). The factors that influence the generation of competitive advantage for a network strategy are related to the institutional environment (contract costs, trust), the uncertainty and volatility of the industry (external clashes), and the product/task interdependence.

Trust has been studied in several aspects bringing a better understanding about cooperative arrangements (GALL; SCHRODER, 2006). Trust is also a key-element who present it as a guiding force for the partnership relations (HAGEN; CHOE, 1998). It stands out, then, that the success of the partnerships requires a high level of trust in the cooperation among the partners. The confidence in a partner cooperation is defined as how the firm can perceive certainty about satisfactory partner cooperation (DAS; TENG, 1998). In this sense, cooperation is characterized by honesty and commitment. In other words a fair play.

The relational capital grounded in mutual trust and interaction, in an individual level among an alliance partners, creates a basis for learning and know-how transference through exchange interfaces (KALE; SINGH; PERLMUTTER, 2000). At the same time, the relational capital limits the opportunistic behavior of the partners in the alliance and prevents decisive knowledge from leaking. In summary, it is possible to say that trust and opportunism in the business partnerships may not be considered opposite mechanisms, but they coexist. Trust allows partnerships to occur on bases that exempt or reduce the necessity of control mechanisms and performance of contracts. Therefore, it is a strong way to overcome transaction costs and it contributes to the partnerships' success.

### 3 METHODOLOGY

The survey had a descriptive-explanatory character and obtained information about the participant's behavior, intentions, attitudes, perception, motivation, demographic characteristics and life style. The study delimitation was related to the 2007/08 crop. The survey covered tobacco growers from the three states of South Brazil: Rio Grande do Sul, Santa Catarina and Paraná. A sample of 1,437 growers were chosen for convenience, which did not have incidence of hail or windstorm (factors that when characterized as an external event could negatively influence the answers of the surveyed farmers).

The distribution by state of the surveyed farmers was the following: 629 farmers in Rio Grande do Sul, 498 in Santa Catarina and 310 in Paraná, totalizing 1,437 farmers. Although the sample represents a small percentage of the population, the recognized homogeneity of the population in relation to their socio-economic characteristics makes this a representative sample.

The data collection was carried out through personal interviews at the residence of the interviewee, having as instrument a questionnaire with closed answers applied in a way that ensured the anonymity of the respondent. In order to make the survey possible, interviewers from AFUBRA applied the questionnaires. They performed this job at the same time they conducted the annual crop survey, which is already done by this entity. Besides the advantage of reducing significantly the costs of the research, there is the easiness from AFUBRA image front to farmers and the experience of the interviewers in data collection. The interviewer read the questions always obeying the same order, and collected every answer after each question.

The collected data were tabulated in electronic worksheets for posterior analysis of consistency and relations established between the variables. The data analysis was carried out using the SPSS software (Statistical Package for the Social Sciences) that generated descriptive statistics about the data collection as well as the correlation, factorial and clusters analysis.

Once the central issue of the research involves the difference in the characteristics among farmers who breached their contracts with the integrator company, it was used as a criterion to distinguish between a breach of contract or not, the answer of the question #18. Thus, it was considered that there was breach of contract when the respondent answered that sold all or part of the tobacco production to another company, different from the one that had hired for the production.

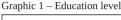
# 4 CHARACTERISTICS OF THE GROWERS AND OPPORTUNISTIC BEHAVIOR

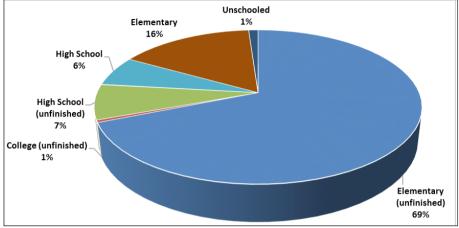
From the survey's data, it was possible to set the main social and economic characteristics of the tobacco growers in south Brazil, as well as their perceptions and behaviors within their relations with the tobacco companies.

### 4.1 SOCIOECONOMIC CHARACTERISTICS

Concerning the social and economic conditions of tobacco growers, it is possible to highlight some features shown by the survey. The educational level is very low: almost 70% of the growers have not completed basic education. The growers

from Paraná have the best education level: 22% have concluded the elementary school. In contrast, growers from Rio Grande do Sul are the ones who show the lowest education level: 82% have not completed the basic education (Graphic 1).





Source: the authors.

The surveyed farms show an average size of 37.6 acres and the tobacco tillage uses an average space of 6.9 acres. Paraná has both, the smallest number of tobacco growers as well as the size of the tobacco farms, which is slightly smaller than the region average, 31.88 acres. Most of the rural properties that grow tobacco in the south region (43%) have a maximum area of 24.71 acres, whereas the properties with an area larger than 74.13 acres are only 9%. Regarding the condition of ownership of the cultivated area, 78% are owners of the land where they have the tillage. In Santa Catarina this percentage is higher, 87%. Tobacco farming in rented land is more common in Paraná. In the three states, tobacco growers, on average, develop this activity for over 17 years, and only 30% have less than 10 years of experience, highlighting that 33% do this activity for more than 20 years. This shows that most of the growers can be considered experts in tobacco farming.

From the production units surveyed, 84% do not show another significant source of income instead from tobacco. This information is reinforced by the observation that in 48% of the production units there is not another significant agricultural income source. In Rio Grande do Sul, only 40% of the surveyed farmers expressed to have another agricultural activity, besides tobacco farming, that is relevant to the family income. There is, therefore, a strong dependence of the growers on the income

derived from tobacco growing. The research reinforced that the tobacco production activity is mainly performed by family work force. In 51% of the cases, the landowner and his wife work with tobacco, and in 37% all family is involved. When there is hiring of external work force, this happens mainly during the harvest time.

### 4.2 RELATIONS BETWEEN GROWER AND TOBACCO COMPANIES

The tobacco growing normally happens inside an integrated system in which the tobacco company commits itself, through a contract, buying the production of the farmer, who, in return, takes the commitment of producing the quantity of tobacco agreed, and according to the technical specifications of the buying company. As regards to the perception of the farmers about the IPS, the research showed that 77% of them believe the system generates benefits for both, farmers and company.

The integration agreement sets up an obligation to produce. In this way, the practice of producing more than what was agreed is common among farmers, because 35% of them said that they act this way. In Paraná this practice is even more common, because 58% of the farmers informed that they produce more then what was set in contract.

From the theoretical point of view, the relationship time between agents, in a market, is crucial for creating a reputation (WILLIAMSON, 1985). The surveyed farmers showed, on average, a 10-year relationship with the contracting company and 42% of the farmers have a relationship of over 10 years with the company. Furthermore, 39% of the farmers informed to have, throughout all time they have dedicated to the tobacco farming, kept contract with only one company. In general, it is possible to see a growing occurrence of contractual breaches on part of the farmers. The survey identified that 36% of the surveyed farmers had already sold tobacco to companies other than the one that had hired their production. This proportion is smaller among farmers of Paraná, reaching 24% of the surveyed farmers. During the crop that was taken as reference for the survey, 57% of the farmers affirmed that they had received many buying proposals for their production by individual agents or representatives from other companies. The farmers who are most harassed by these agents are those of Santa Catarina, where 80% informed to have received two or more buying proposals for their production. The research also showed that 50% of the buying proposals coming from an intermediary offer a higher price than what was agreed with the integrative company.

In terms of prices, 60% of respondents said they consider themselves satisfied with the prices paid by the contracting company. Despite this satisfaction, 33% of the farmers informed to have breached their contract with the integrating company by

selling part or all contracted production of the crop used as reference for the survey. About this procedure, 60% of the surveyed farmers believe it is wrong but justifiable, and 8% think that this is a normal and advantageous practice.

Nevertheless, the farmers believe that the contracting company is concerned about them making a good crop and that the harvested tobacco will give them good profit. Only 6% think the industry does not have this kind of preoccupation with the farmers. About the fidelity with the hiring company for the crop, 86% of the farmers understand that this brings benefits for all parties involved in the transaction, in other words, farmer and company.

The contract established between farmer and company is a legal and formal arrangement that establishes rights and obligations between the parties. However, only 55% of the surveyed farmers consider that the contract represents a commitment that must be totally fulfilled, whereas 5% evaluate it as a mere formality with no effect, and 40% believe that it is just an intention of buying and selling. Nevertheless, 75% of the surveyed farmers indicate that for them to breach the contract the difference between the agreed price and the price offered by the intermediary should be very big. On the other hand, only 18% of the farmers said they would not breach the contract, regardless the offer they would receive from an intermediary or other companies. This percentage is higher among farmers of Paraná, reaching 32% of the surveyed farmers and indicating a higher inclination to fidelity.

In market transactions, another key element is information (AKERLOF, 1970; STIGLER, 1961). About this issue, the research showed that 95% of the farmers expressed having little or no knowledge about the tobacco international market, which is the indicator for the prices in the domestic market, directly affecting the profit of the farmers.

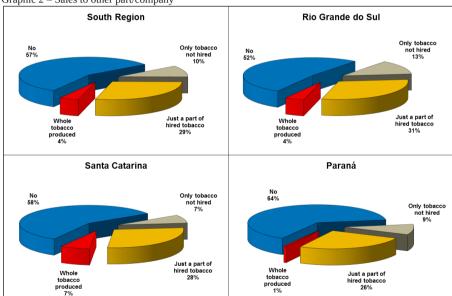
All the surveyed farmers have debts. The most mentioned by the farmers are with Brazilian National Program for Strengthening Family Farming – PRONAF, (46% of surveyed farmers) and tobacco companies (41% of surveyed farmers). It is important to highlight that the indebtedness in more than one source of credit is very common. Finally, about 90% of the surveyed farmers understand that their specific investments for tobacco growing have already been recovered. Among these specific assets, it is possible to mention the tobacco curing barns as the main ones, because of their importance in relation to the investments needed for the production and because of their strict specificity of use (asset specificity).

Despite the current uncertainties present in the market brought by the United Nations Framework Convention on Tobacco Control and negotiations to set prices,

among other issues, 74% of the farmers showed no intention to stop growing tobacco. Farmers from Santa Catarina are the least satisfied because, among them, 37% intend to stop growing tobacco.

## 4.3 SOCIOECONOMIC CHARACTERISTICS OF THE FARMERS GROUP WHO HAD BREACHED THE CONTRACTS

Among surveyed farmers, one in every three had contractual breach, partially or fully selling their production to another agent or company. It is noticed that in Paraná there is less incidence of contractual breach (25% of the farmers), while in Rio Grande do Sul and Santa Catarina 35% of the surveyed farmers assumed they had totally or partially breached the contract established with the company (Graphic 2).



Graphic 2 – Sales to other part/company

Source: the authors.

Among the farmers who had breached the contracts, the education level is extremely low, with 70% of them having no education or only have unfinished basic education, what does not differ from the group of surveyed farmers. The average size of properties of this group is also not very different, 36.1 acres, as well as the size of their tobacco farm, an average of 7.2 acres. Likewise, most of the rural properties (45%) in which the breach of contract happened, have up to 2.7 acres. There is also no

difference in relation to the condition of possession of cultivated area, because 76% of the farmers from this group are owners of the land.

As for the time dedicated to the activity of tobacco growing, this group shows similar characteristics to the entire sample. Farmers, on average, already develop this activity for over 17 years, and 36% are in this activity for more than 20 years. In the production units where the contractual breach happened, 86% have no other significant income source other than agricultural activity and in 51% of these units there is no other agricultural income source with economic importance. Again, these last two characteristics do not show significant difference compared to the group of farmers, in the same way relating to the use of family work force. In 48% of the cases where there was contractual breach it is possible to notice that the farmer and his wife work in the tobacco farming and in 39% the whole family is involved.

Relating to hiring external work force to help the family core, there is a significant difference among those who had contractual breach with the integrator company and the other farmers who did not adopt this practice. Hiring external work force is more frequent (71% of the cases) among farmers who breached their contract with the company, while in the group that did not breach the contract the percentage of farmers who hire external work force is 63%.

# 4.4 CHARACTERISTICS OF RELATIONSHIPS BETWEEN THE FARMER AND THE TOBACCO COMPANY IN THE CASE OF CONTRACT BREACHES

The farmers who showed breach of contract have, on average, a relationship of nine years with the company, which had hired their production. It is noteworthy that 42% of these farmers have a relationship of less than five years with this company, while in this same range, the farmers who did not breach their contracts are only 35%. About the relationship time with the companies, the farmers who breached their contracts have a lesser relationship with the same company, different from what happens in the group of farmers who did not breach the contract in the surveyed crop, which show longer relationships with the companies.

Among farmers who breached their contracts, 61% said they have, during all the time they dedicated to the tobacco production, kept contract with only one or two companies, while in the group which did not have contractual breach this percentage goes to 75%. As regards to the perception of the farmers about the IPS, 31% of the farmers who breached their contract consider that this system brings benefits only to the tobacco company. On the other hand, only 18% of the farmers who did not break

their commitment with the company believe that the tobacco company exclusively receives all the system benefits.

The practice of producing more than what was hired is also a common characteristic: 33% of the farmers who breached their contracts did it and 36% of the farmers who did not breach their contracts also produced more than what had been hired.

The history of contract breach is a common element among farmers who breached their contract during the survey reference crop: 63% of them said they acted this way in previous crops. Among farmers who did not breach their contracts, only 22% reported having used this device in the past. In the reference crop (2007/2008), about 80% of the farmers who breached their contracts said they received two or more buying proposals for their crop by intermediaries of other companies. In most cases (76%) these proposals offered a better price than the one offered by the integrator company.

Among the farmers who did not breach their contract, the percentage of the farmers who received two or more buying proposals falls to 61%, and in only 40% of the cases the price offered was higher than the one agreed with the company that hired the production. Again, it is important to highlight the farmers from Santa Catarina, because among those who breached the contract, 94% had received two or more buying proposals for their production.

In the group of farmers who reported have breached the contract, 64% said they are dissatisfied or very dissatisfied with the price paid for the crop by the contracting company. This proportion represents only 30% of the farmers who honored their contractual commitment of the studied crop. Among those farmers who breached the contractual relationship, 87% did it by selling part of their contracted production to other company or agent and in 13% of the cases by selling the entire production. 80% of the farmers consider this a wrong practice, but justifiable, 12% believe that this is a normal and advantageous practice and only 8% say they know this is a dishonest attitude. On the other hand, 43% of the farmers who did not break the contract in the crop that served as reference for the survey consider the sale of tobacco hired as something dishonest.

In general, the farmers believe that the integrator company is engaged in the sense that they make a good crop and that the harvested tobacco gives them a good economic result. Just 10% of those who breached the contract during the surveyed crop think the tobacco company does not have this concern, while 5% of those who did not breach the contract have this same negative perception about the integrator company. For those who breached the contract, 19% understand that the fidelity with the company that is contracting the crop brings benefits only to itself, while among those who did not breach the contract, this percentage falls to 11%.

The contract established between farmer and company is seen, by only 35% of the farmers who practice contractual breach, as a commitment that must be totally attended and for 59% as an intention of buying and selling which can be modified or partially fulfilled. On the other hand, for 65% of the farmers who did not have contractual breach, the contract established is a commitment that must be fully complied with.

In the group of farmers where there was contractual breach, 85% link the contractual breach with the company to the big difference between the agreed price and the price offered by the intermediary agent. Among farmers who did not breach the contract, regardless the offer they receive by intermediaries or other companies, 25% say they would not breach the contract with the company.

As to the information level each party has about the tobacco international market, it is possible to conclude that there is no difference among farmers, because all of them expressed having little or no knowledge about the main product market.

In the same way that all the surveyed farmers have some degree of indebtedness, this is also observed among the farmers who breached the contract in the observed crop. However, these farmers differ from those who did not breach the contract when looking to their debts with input suppliers and local marketers, whereas this kind of credit is more frequent among farmers who breached the contract.

Regarding to the specific investments for cultivation, among farmers who practiced contractual breach, 14% said they still have not recovered their capital. Among farmers who did not breach the contract, this percentage is lower, 10%. Lastly, in the same way as the other farmers, the ones who had contractual breach in the surveyed crop do not have the intention of stopping the growing of tobacco.

# 4.5 DIFFERENCES AMONG FARMERS WHO BREACHED CONTRACTS AND THE ONES WHO DID NOT

Using hypothesis tests for differences on averages between the group who practiced contractual breach in the reference crop (2007/2008) and the group who has not practiced it. Based on the t statistical test it was possible to establish in which characteristics and behaviors these two groups of farmers differ one from the other. Based on the related questions in Board 1, it is possible to affirm that there are significant differences between farmers who breached the contract with the tobacco company and the ones who did not. The differences on average of the answers are statistically significant in more than half of the questions considered. In summary, both groups of farmers show similar socioeconomic characteristics and differ one from the other mainly in the questions related to the relationship with the tobacco company.

Board 1 – Questions with differences between the farmers who breached contracts and the ones who did not

Question
08 – Hiring external manpower
09 – Relationship time with the company that hired the current crop
10 – Number of companies that the farmers already had contracts with
12 – Perception about the advantages of the IPS
14 – Contractual breach in the previous crop
15 – Proposal for purchase of the production by another agent
16 – Price offered by the agent to buy the crop hired by another company
17 – Satisfaction level with the prices paid for the crop by the contracting company

- buttofuction level with the prices pand for the crop by the contracting company
- 19 Perception about selling all or part of the crop to an agent other than the contracting company
- 20 The contracting company's perception about the farmer's performance
- 21 Perception about the benefits of fidelity
- 22 Awareness of the farmer about contractual commitment
- 24 Encouragement needed for the contractual breach
- 25 Indebtedness of the farmer with input suppliers and local market
- 26 Investments recovery in the specialized assets

Source: the authors.

### 4.6 CORRELATION ANALYSIS

The correlation analysis allows to evaluate the occurrence or not of joint variations in the variables. In other words, it allows measuring the "strength" or "degree" of linear relationships between a variable and a set of other variables (FIELD, 2009). In terms of survey goals, what matters more specifically is to know if the contractual breach in the reference crop (question 18) shows any relation with the other observed variables.

Based on the results of the correlation analysis (Table 1), it is possible to conclude that there is not a strong correlation between the contractual breach and the other observed questions. The contractual breach in the reference crop shows only weak correlations with the history of contractual breach in previous crops (correlation coefficient of 0.45) and with ethic perception about the contractual breach (correlation coefficient of -0.38). In this case, the negative coefficient leads to the understanding that the higher the incidence of contractual breach is, the lower the moral commitment to which the farmer feels linked to. These results are consistent with Williamson's (1985) theories about opportunist behavior in absence of a good reputation.

In general, the coefficients do not show significant correlations among observed variables. Besides the ones already mentioned, only other two correlation coeffi-

cients show some relevance for the analysis, both linked to the contractual relationship between farmer and tobacco processing company. Among questions 3 and 10, there is a correlation coefficient of 0.43, allowing the understanding that the number of companies with whom the farmer has maintained a contractual relationship is positively related to the time that has been dedicated to tobacco growing. Among questions 19 and 24 it is possible to see a correlation coefficient of 0.39, allowing the understanding that there is a certain link between the moral bonds that prevent the noncompliance, on the part of the farmer, of the contract established, and the immediate financial benefits arising from the breach of contract. The possibility of obtaining immediate benefits with contracts break encourages agents to behave opportunistically (WILLIAMSON, 1985) although affected by its bounded rationality (SIMON, 1956, 2000) and the information and power imbalance (AKERLOF, 1970; STIGLER, 1961).

0,03 q26 9 0,11 9 0,02 0,02 0,05 0.02 90'0 0,08 00'0 0,02 0,03 0,02 00'0 0.03 0,03 0,07 00'0 0,05 0,03 0,05 0,01 0,0 0,01 0,00 0,09 0,01 0,02 0,02 0,02 0,07 0,07 0,04 0,04 -0,05 0,03 0,04 90'0 0,04 0,01 0,0 0,01 90'0 0,00 0,01 0,02 0,02 0,09 0,09 0,09 0,02 0,13 -0,05 0,02 -0,07 0,03 0,04 0,01 0,0 0,0 0,07 0,0 -0,01 0,07 0,0 0,03 0,03 q24 g 23 0,02 9 q22 0,03 0,05 0,13 0.30 00'0 0,0 0,04 0,0 0,10 -0,07 0,05 60'0 0,05 0,25 0.05 60'0 0,14 0,22 90'0 0,25 0,1 0,02 0,05 0,02 0,0 0,02 0,04 0,07 0,01 70,0 0,01 0,01 920 0,02 0,05 0,02 0,05 90'0 90'0--0.13 -0,16 0,26 -0,18 0,22 1,00 -0,25 -0,18 -0,08 0,14 -0,03 0,03 0,04 0,04 0,21 -0.02 0,04 0,03 -0,04 -0,05 -0,02 0,05 -0,07 0,31 0,27 1,00 0,22 0,01 0,0 0,04 0,34 0,33 0,07 0.33 0,07 0, 0,27 0,22 0,00 0,0 0,0 0.27 -0.07 0,0 0,15 0,13 0,05 0,04 60'0 60'0 0,03 1,00 0,34 0,34 0,04 60'0 0,05 90'0 0,0 0.24 0,01 0,0 90,0 -0,07 9,0 0,07 9,0 8 0,24 0,16 -0,15 0,45 -0,31 0,13 0,05 90'0 -0,22 0,03 0,03 0,07 0,02 0,02 -0,03 1,00 90'0-0,03 0,11 0,05 0,0 -0,03 -0,03 0,04 0,0 0,03 0,07 0,04 0,01 -0,02 0,07 0,03 -0,04 0,07 -0,02 0,0 0,0 -0,03 60'0 0,0 0,12 60'0--0,13 0,15 0,10 0,0 0,02 0,02 0,02 0,03 0,03 0,04 9, 0.11 0,26 0,16 0,21 0,25 00'0 -0,03 0,05 0,11 0,07 1,00 0,04 0,04 0.07 60'0 0,03 0,04 0,07 0,04 0.05 0,05 0,02 0,0 0,0 0.03 00'0 0,04 0,05 0,04 0,03 66 0,01 0,07 0,10 1,00 0,10 0,08 0,05 0,03 90'0 90'0 0,03 60'0 0,02 0,02 60'0 0,04 60'0 0,02 0,05 0,02 86 0,01 0,0 0,01 0,0 0,04 0,01 0,0 0,0 6 -0,03 1,00 60'0 90'0 0,16 0,02 0,05 0,04 0,04 0,03 0,04 0,0 0,04 0,01 0,04 0,01 0,02 0,00 0,0 90'0 0,02 -0,0 0,05 0,03 96 1,00 9, 9, -0,07 0.07 0,07 -0,05 0,02 -0,07 -0,01 0,0 4 0,07 63 90.0 0,02 0,03 0,05 0,02 90'0 0.04 0,01 60'0 0,02 0,04 0,0 0.01 0,0 0,07 0,0 42 -0,05 0,02 0,21 0,01 -0,03 90'0 60'0 0,05 0,03 0,02 0,05 0,02 0,03 0,03 0,03 90'0 0,04 1,00 0,0 0,01 0,07 0,01 0,03 0,04 0,04 0.03 -0,07 0,04 0,04 0,0 market 91 92 93 95 97 98 99 910 q12 q13 q16 q17 420 924 11 421

Source: the authors.

Fable 1 – Correlation Matrix

### 4.7 CLUSTER ANALYSIS

The cluster analysis seeks to establish a classification according to the natural relations that occur in a set of variables of a sample, creating groups by similarity (JOHNSON; WICHERN, 1998). In this survey, the cluster analysis was applied in the sense of establishing two different groups of tobacco growers: (a) the ones who breach contracts and (b) those who do not. As a result, it was possible to obtain the formation of two homogeneous groups, the first (Cluster 1) built by farmers with lower incidence of contractual breach and the second (Cluster 2) built by farmers with higher incidence of contractual breach in the survey reference crop (Table 1).

Table 2 – Cluster Configuration

Chanda /Danilara	Number of Farmers		
State/Region	Cluster 1	Cluster 2	
Rio Grande do Sul	272	357	
Santa Catarina	251	247	
Paraná	204	106	
Sample	727	710	

Source: the authors.

In Cluster 1, 37% of the farmers are from Rio Grande do Sul, 35% from Santa Catarina and 28% from Paraná. About the education level, in this cluster 66% of the farmers have not finished basic education. The rural properties that compose this group have an average size of 39 acres and the tobacco crops use an average space of 6.7 acres. Most properties (43%) have an area of up to 10 acres and the properties with an area over 74.1 acres, total 11%. As for the size of tobacco tillage, 31% of them have an area of over 7.4 acres. Concerning the condition of ownership of the cultivated area, 78% are owners of the farming land. In Santa Catarina this percentage is higher, 88%, whereas tobacco growing in rented land is more frequent in Paraná, where only 66% of the farmers are the owners of the farmland.

The farmers from Cluster 1, on average, already develop this activity for 16 years, and 33% have an experience less than 10 years of tobacco growing, while 29% are already in this activity for more than 20 years. In 82% of the production units of this cluster, there is no other significant source of income but the agricultural activity. It is important to highlight that in 54% of the production units, there is another agricultural source of income that has important economic significance and is not linked to tobacco growing. In Rio Grande do Sul, only 39% of the components of this group

said they have another agricultural activity that is relevant to the family income. The dependence of the farmers in relation to the income coming from tobacco growing is more noticeable in Rio Grande do Sul.

The owner of the property and his wife performs the tobacco production activity, in 53% of Cluster 1 cases, and in 35% the whole family is involved. The hiring of external work force happens mainly during the harvest time (30% of the cases), but it is important to highlight that in this group in 40% of the production units, hiring external work force does not happen.

The farmers from Cluster 1 have a relationship of 10 years, on average, with the company that had hired the crop of reference for the survey. 34% of the farmers have a relationship of up to 5 years with this company and 50% of the farmers reported having, during all the time they have dedicated to the growing of tobacco, kept contract with only one company.

Regarding the perception about the IPS, 90% of the tobacco growers believe the system generates benefits for everybody involved in it (farmers and tobacco processing company). To grow more tobacco than what was in contract with the integrator company is an uncommon practice among farmers of this group, in which 67% informed that they just plant the area agreed with the tobacco company.

In Cluster 1, only 11% of the farmers had already sold tobacco to companies other than the one that hired the production. This number is higher among farmers from Santa Catarina, reaching 16% of the farmers. In this group, 41% of the farmers said they had received several buying proposals for their production by individual agents or agents who represent other companies. Again, the farmers from Santa Catarina are the more harassed ones by these agents, from which 68% affirmed having received two or more buying proposals for their production. For the farmers who were classified in Cluster 1, just 31% of the proposed purchase by an intermediary agent has a higher price than the one set in contract with the integrator company.

In the group of farmers with lower incidence of contractual breach, 80% of the farmers informed being partially or totally satisfied with the prices paid by the crop contracting company. This satisfaction with the prices is reflected in the percentage of 87% of the farmers from this group having not breached the contract with the integrator company by selling part or the wholly contracted crop. Most of the farmers from Cluster 1, (56%), said that the contractual breach with the integrator company is a dishonest practice.

Only 2% of the farmers of Cluster 1 believe that the industry is not concerned in the sense that the farmer makes a good crop and that the harvested tobacco gives

him a good profit. About the matter of fidelity with the crop contracting company, 94% of the farmers evaluate that it brings benefits for both, farmer and industry. Moreover, 80% of the farmers from this group consider the contract signed with the industry as a commitment that must be totally fulfilled and 33% said they would not breach the contract even if they had a better offer or better selling condition.

About the tobacco international market, 95% of the farmers expressed having little or no information about this matter. As for the indebtedness of the farmers, only 3% of them revealed having debts with input suppliers or in local markets. The most frequently mentioned forms of indebtedness are with PRONAF (47%) and the tobacco companies (43%). Little more than 90% of the farmers from Cluster 1 understand that their specific investments for the tobacco growing have already been recovered. Lastly, 82% of the farmers from this Cluster revealed not intending to leave the tobacco growing activity.

Cluster 2 shows as main characteristic the gathering of tobacco farmers who had higher incidence of contractual breach in the 2007/2008 crop. This Cluster brings together 710 farmers, being 50% from Rio Grande do Sul, 35% from Santa Catarina and 15% from Paraná. As for the education level, 72% of the farmers have not completed the basic education. The rural properties that build this Cluster show an average size of 35.58 acres and the tobacco crops use an average of 7.17 acres. About the size of the tobacco crops, 43% of them have an area of over 7.41 acres. Most of the properties (43%) have an area of up to 24.71 acres, whereas the properties with an area of over 74.13 acres account for only 8%. In relation to the condition of ownership of the cultivated area, it is possible to highlight that in Cluster 2, 78% of the farmers are owners of the tillage lands. As in Cluster 1, in Santa Catarina this percentage is higher, 86%.

The farmers from Cluster 2, on average, have already developed this activity for 18 years, whereas only 10% have less than 5 years of experience in tobacco growing, and 37% are in this activity for more than 20 years. In 85% of the production units in this Cluster there is no significant source of income other than the agricultural activity and in 51% of the production units, in the same way, there is no other source of agricultural income of significant economic importance besides the tobacco growing.

In Cluster 2, the owner of the property and his wife performs the tobacco growing activity in 48% of the cases and in 39% the whole family is involved. Hiring external work force happens mainly during the harvest time (38% of the cases), but it is important to highlight that in this group in only 28% of the production units there is no hiring of external work force.

The farmers from Cluster 2, on average, have a relationship of 9 years with the contracting company, 40% of the farmers have a relationship of up to 5 years with this company and 28% said they have, during all the time they dedicated to tobacco growing, kept contract with only one company. Regarding the perception about the IPS, 35% believe that the system only generates benefits for the tobacco company. Growing more tobacco than what was in contract with the integrator company is a relatively common practice among farmers from this group, where 59% revealed they plant exactly the area that was in contract with the tobacco company and other 38% informed growing more than what was set in contract with the tobacco company.

In Cluster 2, 62% of the farmers had already sold tobacco to companies other than the one that hired their production. This proportion is slightly higher among farmers from Rio Grande do Sul (64%). In this Cluster, 73% of the farmers said they have received several buying proposals for the production by individual agents or agents representing other companies different from the one that hired the production. For the farmers, 74% of the buying proposals made by an intermediary show a higher price than the one that was in contract with the integrator company.

In the group of farmers with higher incidence of contractual breach, only 36% of the farmers said they are partially or totally satisfied with the prices paid by the contracting company. This dissatisfaction with the prices is reflected in the percentage of 61% of the farmers from this group having breached the contract with the integrator company by selling part or the wholly hired production in the 2007/2008 crop. Only 6% of the farmers consider the contractual breach a dishonest practice.

In the same way, 11% of the farmers from Cluster 2 do not believe that the tobacco company is concerned about the farmers having a good crop and that the harvested tobacco would give them a good profit. About the fidelity with the contracting company, 22% of the farmers evaluate that it brings benefits only for the tobacco company. Because of this, only 30% of the farmers from this group consider that the contract set with the industry represents a commitment that must be totally fulfilled and only 2% of the farmers indicated they would not breach the contract even having an offer with better price or better selling condition.

About the tobacco international market, also demonstrated by Cluster 1, 95% of the farmers have expressed little or no information about it. As regards to indebtedness, 8% reported having debts with input suppliers or in the local market. The most mentioned are with PRONAF (45%) and with the tobacco companies (40%).

Among farmers from Cluster 2, 86% believe that their specific investments for tobacco growing have already been recovered. Finally, 33% of the farmers repor-

ted having intention to stop with the tobacco growing activity. Some differences between Cluster 1 and 2 can be observed. On average, the tobacco farmers from Cluster 2 already develop this activity for a longer time, however they are less loyal to the companies they have contracts with. This is highlighted by the average number of companies they have already established contracts, and the portion of farmers who have kept contract with just one company. In Cluster 1, there is a smaller portion of hired work force and the fields are smaller. Besides this, a larger portion of farmers from this group trusts in the benefits of the IPS.

In Cluster 2, the practice of forming larger crops than what was in the contract is more common, as well as the breach of contracts signed with the integrator company, a practice that just a few of these farmers consider dishonest. This group is also more harassed with buying proposals by intermediaries, which, in most cases, offer higher prices than those practiced by the contracting company of the crop. The portion of farmers unsatisfied with the prices practiced by the company is substantially higher in Cluster 2, in which farmers, in a large portion, do not believe that the companies are interested in their good economic performance.

Many farmers in Cluster 1 believe that contractual fidelity brings benefits for both, farmer and industry, while in Cluster 2 this portion is smaller. A big difference between farmers from Cluster 1 and 2 is noticed in the understanding they have in relation to the contract. In the first group, the contract is seen as something that must be fulfilled, while in the other group there is not this understanding by the farmers. The result is that the tobacco farmers from Cluster 2 are more likely to breach the contract with the integrator company. Finally, it is possible to highlight that the share of farmers who have debts with input suppliers and with local market is greater in Cluster 2, as well as farmers who want to quit the tobacco growing activity.

Board 2 – Synthesis of Clusters' Differences

Theoretical Variable	References	Analytical Question	Clus- ter 1	Clus- ter 2
Reputation	Williamson (1985)	Did not break the contract with the integrator company.	87%	61%
Bounded Rationality	Simon (1997 e 2000)	Only unfinished elementary school.	66%	72%
Bilateral Dependence	Williamson (1998)	No other significant income source.	82%	85%
Frequency of the Transactions; Rep- utation	Williamson (1985)	Average time relationship with the contractor firm of the crop.	10 anos	9 anos
Reputation	Williamson (1985)	Contract established with only one company on previous crops.	50%	28%
Bilateral Dependence	Williamson (1998)	Belief that the integrated production system generates benefits for all.	90%	63%
Opportunism  Reputation; Absence of Trust	Williamson (1985)  Das & Teng (1998)	Previous tobacco sales to other companies.	11%	62%
Uncertainty and Volatility of the Industry	Dyer (1996 e 1997)	Satisfaction with the prices paid by the contracting firm of the crop.	80%	36%
Markets' Automatic Adjustment Mechanisms	Hill (1990)			
Reputation; Opportunism	Williamson (1985)	The breaking of the contract with the integrator is a dishonest practice.	56%	6%
Trust	Hagen e Choe (1998)	Fidelity with the firm brings mutual benefits.	94%	22%
Reputation; Opportunism	Williamson (1985)	The contract signed with the industry is a commitment that must be fully met.	80%	30%
Influence of the environment on the rational choices.	Simon (1956)	To have debts with suppliers of raw materials or in the local market.	3%	8%

Source: the authors.

The Board 2 provides a comprehensive discussion of the theoretical implications from the results obtained with the clusters analysis. The bounded rationality, as described by Simon (1956, 1997 and 2000), present mainly between farmers and iden-

tified by the low level of education and the strong influence of the external environment to the transaction, acts more forcefully in the group of producers who break their contracts with companies. The breach of contract is also more frequently found among farmers who have no greater links with business and therefore are not concerned to form a positive reputation. As seen, a positive reputation among agents (WILLIAMSON, 1985) makes bonds of trust (HAGEN; CHOE, 1998) that enforces the contracts fulfilment and reduces transaction costs (WILLIAMSON, 1998). The breach of contract is an opportunistic behavior (WILLIAMSON, 1985) by farmers and this practice is influenced as by the perception about the benefits of the relationship with industry (HAGEN; CHOE, 1998; WILLIAMSON, 1998) as the uncertainty and volatility that perceives the environment in which they carry out transactions (DYER, 1996, 1997).

### 5 CONCLUSION

The main goal of the survey was to establish the socioeconomic characteristics and the relational aspects between farmers and tobacco processing companies, which could be related to the opportunistic behavior set in the breach of contract on the part of the farmers. Based on the survey data it was possible to conclude that the contractual breach happens in special situations that bring together the elements that can be summarized as follows:

- a) Larger share of foreign manpower added to the family unit of production; shorter relationship time with the contracting company of the crop; greater contractual turnover with integrative companies;
- Lower degree of credibility in the benefits coming from the IPS; lower degree of trust in the intentions and goals of the integrator company; history of contractual breach in previous crops;
- Bigger harassment of the farmer by middlemen agents; higher prices offered by the middlemen; lower degree of satisfaction with the prices paid by the contracting company of the crop; perspective of receiving a better price for the tobacco grown;
- d) Lower perception about moral reflections/restrictions of the contractual breach; lower perception of the contract as a formal legal piece which establishes commitments between the parties;
- e) Higher degree of indebtedness with input suppliers and with local market; higher need of retrieving the capital invested in specific assets (tobacco curing barns).

The cluster analysis highlighted the main distinctive characteristics of the tobacco farmers who are more predisposed to contractual breach. Farmers who breach contracts are longer in the productive activity and have already changed the integrator company for several times. These farmers are those who most hire external work force to the family unit and have debts with the input suppliers and local markets. The degree of trust in the benefits of the IPS is lower. They cultivate crops that are bigger than what they had in contract with the tobacco company and have a history of contractual breach in the past, a practice that is not considered fraudulent by the farmers.

The farmers who breach contracts are also the ones most harassed with buying proposals for their tobacco production by intermediaries, offering them higher prices for purchasing the tobacco that was already contracted by other company. Normally, they are farmers who are unsatisfied with the prices practiced by the integrator company and do not believe that this one is interested in their good economic performance with the tobacco growing activity. That is why many farmers intend to quit the tobacco growing activity. In the same way, they do not believe that the contractual fidelity brings joint benefits for farmers and tobacco companies. These findings are entirely consistent with Transaction Cost Economic Theory that support the analysis.

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