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Contracts

Navigating the Landscape of Transactions: Understanding Firms' Transactional Governance Structures in Six Latin American Countries

David C. Francis

This note[1] summarizes findings from a new paper, which lays out a methodology to determine the types of mechanisms—be they the legal system, civil organizations, or shared business interest—that firms use when entering into agreements with their suppliers and customers. Specifically, the note summarizes the data exploration technique (known as Latent Class Analysis) used in the paper and shows some basic results in terms of the attributes of each class. Four basic classes are used for dealing with suppliers (pure bilateralism, bilateralism with private support, bilateralism with legal support, and strong comprehensive) and with customers (pure bilateralism, bilateralism with private support, bilateralism with weak support, and weak comprehensive). Lastly, some basic correlations between the likelihood of class membership and firm-level characteristics are shown.

Introduction

Forty years ago, Oliver Williamson (1979) pioneered the idea that since it is costly (in terms of time, money, and information) for firms to enter into agreements, those "contracts" are almost always left as incomplete. The details are left to be hashed out between parties using the institutions available to them—whether they be government intervention, the legal system, or the intervention of other third parties (such as business associations, friends, or goons). This theory of the 'governance of contractual relations' has proven to be a powerful framework for understanding the types of agreements firms enter into (and under what particular circumstances). In fact, the work earned Williamson the Nobel Prize in Economics in 2009.

However, while quite a bit of work has been done to explain the specific mechanisms used for entering and operating within agreements, there is still little, comprehensive understanding of the relative frequency with which firms use those same mechanisms. An exception is Hendley and Murrell (2003), who usefully classify the principle mechanisms firms use to make enforceable agreements: in brief, these are 1) personal relationships and (perceived) shared trust; 2) mutual interest in an ongoing business relationship; 3) paid, private dispute resolution; 4) assistance from government officials; 5) the intervention of other third parties; and 6) the legal system. While their work features an application of the "relative, aggregate importance of each mechanism" in the specific case of Romania, much more is to be done by extending such a framework systematically to other countries, markets, and circumstances.

A recent paper[2] lays out an extension of this approach—attempting to classify the relative importance of these mechanisms when employed together—by analyzing representative survey data for six Latin American countries across these six mechanisms, for both agreements with suppliers and customers. The paper also uses a technique that is somewhat novel to the economics literature (though common in other social sciences), known as Latent Class Analysis or LCA. This is a statistical technique that does not require an a priori theory of the expected, relative frequency of different mechanism types. This is both fortunate and necessary: fortunate because such a comprehensive theory has not been clarified in the literature and necessary because making sense of the myriad combinations and intensities that firms use to enter agreements involves parsing a daunting set of data. The result of such analysis is a systematic classification of so-called transactional Governance Structures[3] that underlie firms' relations with both their suppliers and customers.

These results are meant to be informative, but also, to act as a cartographer's toolkit for further research applying similar questions in various countries and contexts. Indeed, the paper finds that all Governance Structures (for

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relations with both suppliers and customers) build upon bilateral mechanisms; and while bilateralism is sometimes complemented using more formal institutions, it is never supplanted by those mechanisms. The prevalence of contractual Governance Structures varies by firm characteristics, but these Governance Structures tend to vary more *within* countries than between them.

From Individual Mechanisms to Governance Structures

Defining the exact mechanisms that firms use when entering and operating within agreements is a difficult task, but one that has fortunately been tackled somewhat recently in the literature. As noted above, these attempts have generally settled on a comprehensive list of six mechanisms.[4] While many past studies have applied each of these mechanisms *individually* to frame specific transactions, there is little understanding of the *coordinated combination* of these mechanisms. A formalized definition of this combination, that is a (transactional) Governance Structure, is an "institutional framework within which the integrity of a transaction is decided."[5] Yet while the use of individual mechanisms has merited substantial discussion, no systematic efforts to discern these relative patterns (and in a way consistent across countries) exists. The lack of an understanding of these patterns means that researchers lack the tools to draw any conclusions on whether firms in La Paz, Bolivia, rely more or less on a combination of law and bilateral trust than firms in La Paz, Argentina, or, indeed, La Paz, Arizona. While valuable on its face, this exercise can also shed light on current points of contention: for instance, if personal relationships and trust are complemented by or substituted by legal remedies.

Data and Analysis

The lack of a clearly defined theoretical framework means that there are not readily available and testable hypotheses about the expectations of the relative importance of the mechanisms that govern firms' transactions with suppliers and customers. This absence, though, does not render the task impossible; in fact, the task lends itself to more exploratory statistical techniques. A Governance Structure itself cannot be observed (one can only observe the stated intensity with which each firm considers each mechanism as effective) and so one must assume those observations are indicative of an underlying (or latent) characteristic. As its name implies, then, LCA is suited for this sort of task. LCA allows researchers to first identify the 'classes' (i.e. Governance Structures) and, then, to also determine the estimated prevalence of those classes. Moreover, LCA is well-suited for large amounts of (otherwise nearly intractable) information. However, while used fairly widely in other social science disciplines, LCA is not deeply rooted in the economics literature[6]: much more space in the accompanying paper is dedicated to explaining LCA.

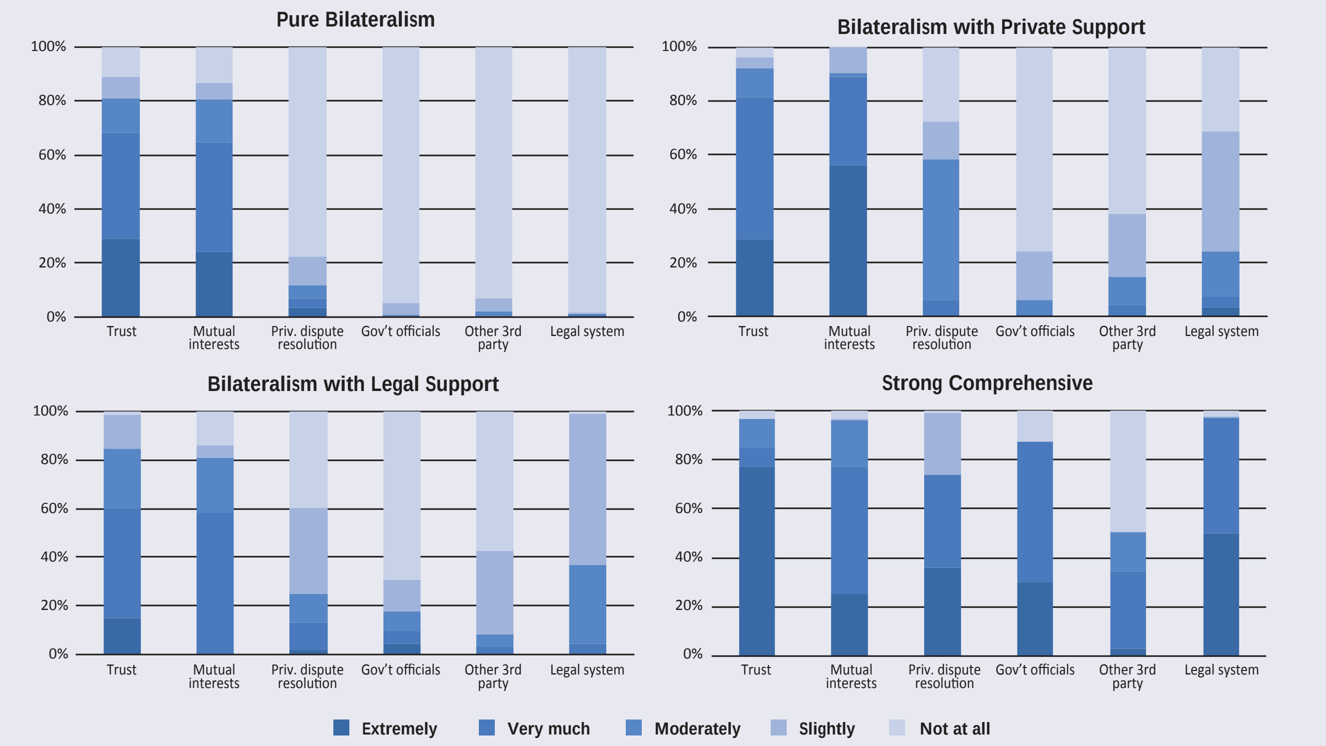
To do this analysis, the paper uses data from a unique set of questions included in the 2017/8 World Bank Enterprise Surveys (ES) in six South American countries: Argentina, Bolivia, Ecuador, Paraguay, Peru, and Uruguay.[7] Data was gathered for over 3,300 observations.[8] These surveys are based on face-to-face interviews with top managers and business owners, among officially registered firms with at least five employees.[9] The data from these surveys are based on a complex, stratified survey design, and taking these aspects into account, can be considered as nationally representative.[10] Specifically, the questions asked to what degree each of the six mechanisms was regarded as effective when making agreements; the set of questions was asked both for suppliers, then for customers.[11] Respondents were asked to rate effectiveness on a five-point Likert scale from "Not at all" to "Extremely". On a cursory glance, the usefulness of LCA is apparent: with six questions (each with five possible responses), a total of 15,625 possible response patterns (i.e., specific combinations of answers) is possible. Though a number far lower is observed in the data (711 for suppliers, 631 for customers), without a tool such as LCA, one would need to anticipate what possible Governance Structures and groupings would emerge by coding or classifying *each* of these observed patterns.

Discovery of Classes: Description of Governance Structures

As mentioned above, the aim of LCA is to discover classes—here, Governance Structures—as well as to estimate the prevalence of firms across these classes (which will be covered in the next section). Since this discovery is itself a probabilistic exercise, it allows researchers to express a degree of uncertainty. In fact, the chosen approach first estimates the likelihood of observing each set of question responses given a class membership.[12] Then, each firm can be assigned a probability of specific class membership; and finally, these probabilities of class membership can be evaluated against specific firm characteristics. To give a specific example: suppose one observes a firm that says trust and mutual interests are "very much effective" and all other mechanisms are "not at all" effective.[13] LCA first estimates what is the likelihood of observing this response pattern given membership in a certain class. To preview later sections: the likelihood of observing this set of responses given membership in a class that is mostly bilateral would be comparatively high. In turn, LCA reveals that the likelihood that a firm giving these responses of being in that class would also be high. Lastly, this likelihood can be correlated with the characteristics of firms that are more likely to be in that class.

LCA's discovery of Governance Structures has the advantage of not requiring an a *priori* model of the relative

Figure 1 **Predicted Response Probabilities (Suppliers)**



importance of each mechanism and how these fit together. However, this does not mean that researchers using LCA are not required to make choices. The paper lays out several of the key assumptions applied, including various tests of those assumptions. Two points merit mention here. First, the number—in this case four—of classes itself is a choice.[14] LCA allows researchers to choose between imposing any number of classes. These classes should provide meaningful insights, such that adding (or removing) a class does not obscure the usefulness of the exercise.[15] Four classes are presented as this number allows for a more digestible classification, which provides a generally well-fit model. Second, the paper's application of LCA imposes no further assumptions based on underlying, firm characteristics. This includes, for example, the country where a firm is located. That is, the underlying Governance Structures are assumed to be common (an assumption also inherent in any pooled regression analysis); what can vary are firms' likelihood of being in each class, contingent on, say, country or other characteristics.

Governance Structures - Suppliers

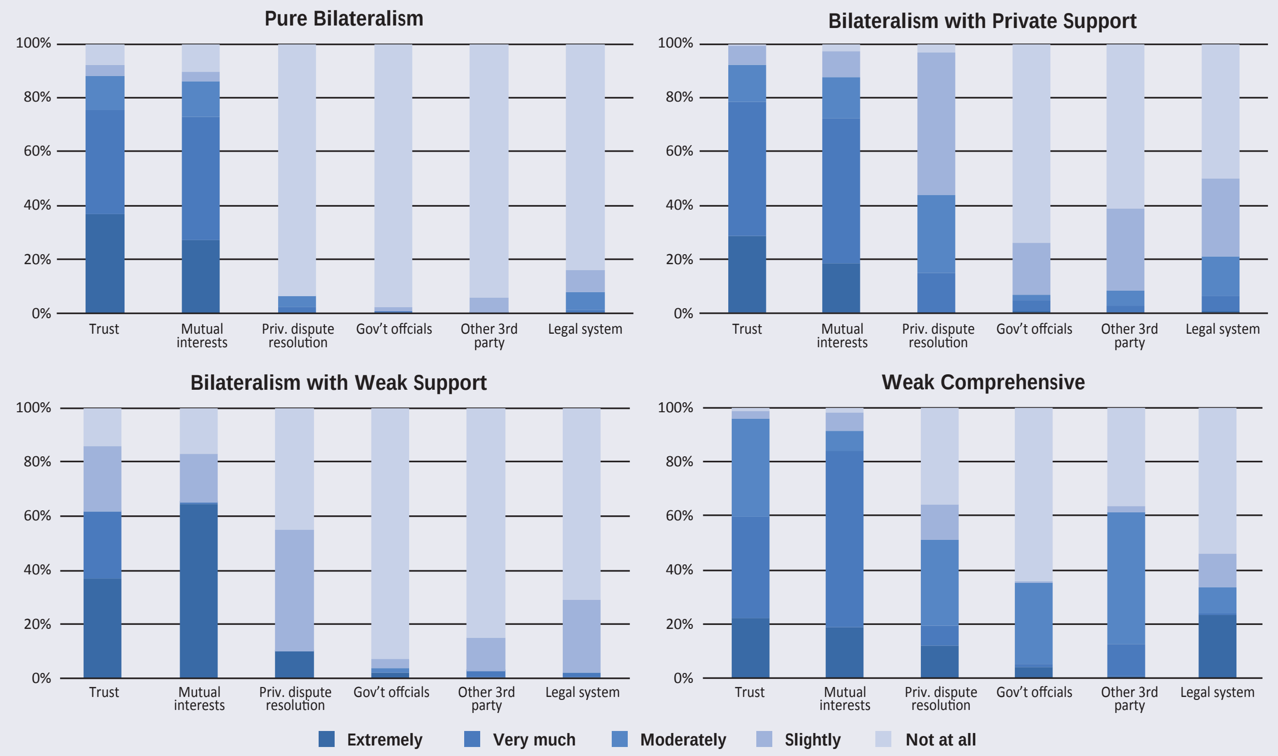
For the patterns attributable to each class to be well-understood, it is helpful if they are also well-named. In looking at relations with suppliers, one stark finding is that all classes rely heavily on both bilateral trust and mutual interest (together these two mechanisms as termed here as "bilateral"). Governance Structures differ mostly on the dimensions in how they elaborate beyond this bilateralism, if at all. To preview the discussion, what stands out immediately is how pervasive these bilateral mechanisms are: they are nearly ever-present and are generally complemented by (and not substituted for) other mechanisms. Indeed, while there was a long-held view that well-heeled legal mechanisms may cause firms to substitute away from bilateral ones, this does not appear to be the case.[16]

a. **Pure Bilateralism (B):** considering this finding, the first class is the most self-evident, and is characterized by a near-exclusive reliance on only bilateral mechanisms. Figure 1, panel a. shows the estimated probabilities for this class.

b. **Bilateralism with Private Support (BP):** a second governance structure class can be described as bilateralism, but with paid private dispute resolution followed by the legal system as the supplementary mechanisms. This is consistent with how paid private third parties often work in practice. Arbitration mechanisms always need the backing of formal legal enforcement; the job of goons is often simply to forcefully remind miscreants of the possibility of legal sanctions.

c. **Bilateralism with Legal Support (BL):** a third class of governance structures is best called bilateralism with legal support when dealing with suppliers. This class is denoted by a somewhat weaker reliance on bilateralism and a stronger regard for the legal system (though with some complementarity with paid, private dispute resolution).

Figure 2 Predicted Response Probabilities (Customers)



d. Strong Comprehensive (SC): The last governance structure on the suppliers' side is best described as comprehensive (with a degree of higher effectiveness of all mechanisms), and strongly so.

Governance Structures – Customers

Regarding relationships with customers, the observed patterns can be similarly described as those governing how firms deal with suppliers. In fact, these patterns are so similar for the first two classes (a. and b.) that they are likewise named "pure bilateralism" and "bilateralism with private support", respectively. The third and fourth classes differ notably, however, and these are, in turn, given different names than for those dealing with suppliers (Figure 2). Specifically, these two classes are:

c. Bilateralism with Weak Support (BW): the third class on dealing with customers has some regard for bilateralism, but to a lesser degree than other classes, and only uses other, additional mechanisms to a lukewarm degree. In fact, among all eight governance structures, this class has the lowest rated aggregate effect of the 6 mechanisms. One might alternatively call this class 'ineffective governance' as it reflects a general lack of importance attributed to all mechanisms by the firms in this class.

d. Weak Comprehensive (WC): lastly on making agreements with customers, the fourth class is also characterized by its comprehensiveness, but this is denoted as 'weak' due to the lesser intensity of the reported effectiveness of mechanisms other than trust and mutual interest.

Prevalence of Classes: Which Firms are More Likely to be in which Classes

Of course, beyond the discovery of what classes of Governance Structures best describe patterns of how firms are operating, it is useful to see what the relative prevalence of those classes is as well. The probabilities of class membership are shown in Figure 3, together with standard errors. What is immediately notable is the pervasiveness of bilateralism. An estimated two-thirds proportion of firms use a governance structure of almost exclusively trust and mutual interest in their agreements with supplier as well as with customers.

Figure 3 Probabilities of Class Membership

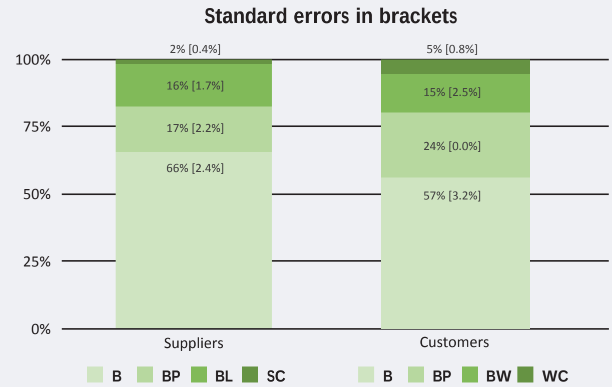


Table 1 **Predicted Class Probabilities, by Country**

Suppliers

	Argentina	Bolivia	Ecuador	Paraguay	Peru	Uruguay
Pure Bilateralism (B)	67%	52%	65%	71%	73%	61%
Bilateralism, Private Support (BP)	19%	24%	12%	13%	12%	15%
Bilateralism, Legal Support (BL)	12%	22%	23%	15%	15%	20%
Strong Comprehensive (SC)	2%	2%	1%	1%	0%	4%

Customers

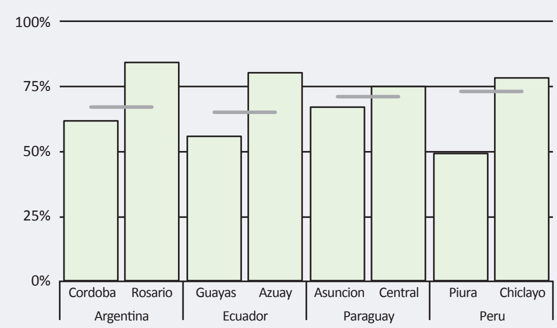
	Argentina	Bolivia	Ecuador	Paraguay	Peru	Uruguay
Pure Bilateralism (B)	62%	44%	44%	48%	62%	69%
Bilateralism, Private Support (BP)	19%	35%	33%	22%	29%	22%
Bilateralism, Weak Support (BW)	14%	9%	21%	22%	6%	5%
Weak Comprehensive (WC)	5%	12%	2%	9%	3%	3%

It is also worth looking at how class probabilities vary across and within countries (Table 1). Bolivia (though the least developed of the six), is the country where firms are the most likely to have governance structures that involve mechanisms beyond pure bilateralism; this seems in part due to a higher tendency for governance structures that also engage private support. This pattern holds for both agreements with suppliers and with customers. While some patterns may be somewhat surprising, such relationships are at best speculative and invite more investigation.

The richness of the data allows one to analyze whether some of these patterns can be parsed by looking at variation within each country, for instance, by location. For instance, the analysis reveals fewer, stand-out differences between countries, but yet there are marked differences *within* countries. Take, for example, the supplier-side class of Pure Bilateralism. In Argentina, Ecuador, Paraguay, and Peru[17] there are quite sizable differences between the cities or regions with the lowest and highest estimated shares of "Pure Bilateralism" governance for making agreements with suppliers. Figure 4 shows the regions in each of these countries with both the lowest and highest estimated probability of Pure Bilateralism in dealing with suppliers (only those countries where location is significant are shown; in Bolivia and Uruguay, intra-country, location differences are not significant). It is worth noting that in these particular regions, other class membership proportions may be informative. For example, in Argentina, Ecuador, and Paraguay, the region with the lowest probability of purely bilateral governance (Cordoba, Guayas, Asuncion, respectively), seems to turn toward legal support beyond bilateralism (relative to the region with the highest share of Pure Bilateralism); in Piura, Peru, this shift is one toward support from private mechanisms (i.e. Bilateralism with Private Support).[18] Again, these comparisons are only cursory and have not been thoroughly tested; however, the marked differences *within* countries is novel and something previously under-explored by researchers.

The ES data allow one to analyze patterns over other intriguing variables.[19] For example, aligning with some intuitive sense, both foreign-owned and exporting firms (Figure 5) tend to use governance structures that use mechanisms beyond bilateralism (this, both in dealing with suppliers and customers). In each, this shift from nearly exclusively bilateral mechanisms is generally toward private support and sometimes legal support. Similarly, large (100-399 employees), and particularly, very large (400+ employees) firms are less likely to use purely bilateral structures. Better managed firms (Figure 6), also show a similar pattern, either when dealing with suppliers or customers.

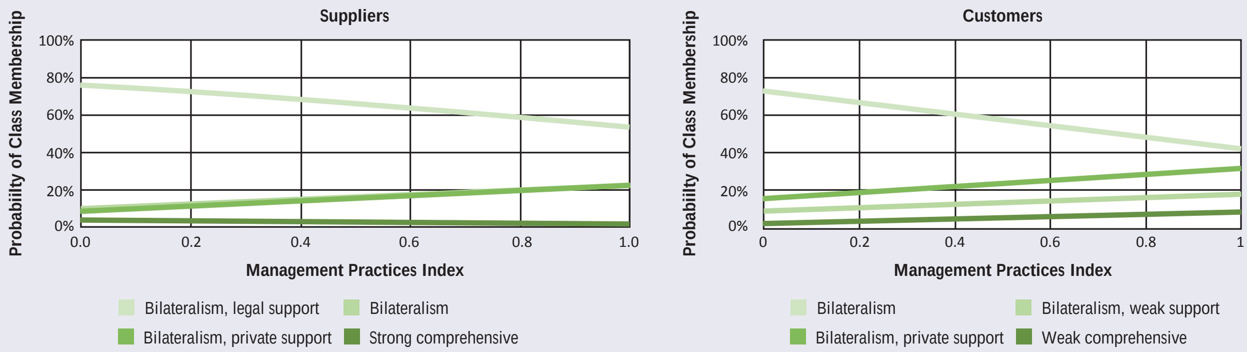
Figure 4 **Estimated Share of "Pure Bilateralism", Suppliers**



Note: Horizontal bars show country averages. Only countries where sub-national (regional) differences are significant are shown. That is, these regional differences are not statistically significant in Bolivia, nor in Uruguay.

Figure 5 Foreign Ownership, Export Status, and Governance Structures

Figure 6 Management Practices and Governance Structures



Conclusion: Discussion and Policy Considerations

This note summarizes the main results of a formal paper that provides a systematic way to classify and measure the prevalence of different Governance Structures for how firms regard agreements with suppliers and customers. This research addresses a topic that has not been formally studied before due to the lack of data, which has hindered the literature from providing a comprehensive, cross-country analysis of how firms use these mechanisms together. The use of LCA, presented in detail, will also be valuable to economists and other researchers wishing to apply such exploratory techniques to large and rather complex data.

The findings themselves are useful: the prevalence of bilateralism, for instance, may have implications for firms wishing to break into new markets—including foreign firms wishing to operate in these domestic markets—or to alter their supply chains and target new customers. That is, the mere chance for firms to take these sorts of actions may not be enough; firms almost certainly require a clear knowledge or reliable mechanisms before entering into these sorts of contracts and agreements. The preliminary findings are suggestive of these patterns, but researchers may want to test their own hypotheses using these presented results or they can similarly use an adapted version of an LCA method. It is worth noting that in the particular way LCA was used in the WB Working Paper, each possible response pattern is given a posterior probability of membership in each class. In other words, the only thing needed to calculate the likelihood of class membership would be responses to the survey questions used in the ES. These probabilities can then be easily estimated by anyone gathering such data and can be extended to later data collection. For those interested, the data are available via https://www.enterprisesurveys.org/en/survey-datasets.

Notes

1 This work benefitted from financial support provided by the Research and Development Center in Chile - Development Economics Vice Presidency.

2 Francis, D., N. Karalashvili, and P. Murrell, 2018. "Mapping the Landscape of Transactions: The Governance of Business Relations in Latin America." World Bank Policy Research Working Paper, No. 8564. This Enterprise Note is a summary work by one of the authors.

3 The paper uses the term Governance Structures (a slightly more succinct term for Transactional Governance Structure), as this is in line with the literature on the topic and will be familiar to some readers. It should not be confused with corporate governance, however, which can be summarized as the (often internal) rules that firms use to conduct their operations, including corporate structures, bylaws, etc. Governance Structures are certainly not wholly separate from corporate governance, but such structures also include informal or unwritten interactions as well. To distinguish the two terms, Governance Structure is capitalized throughout this note.

4 Hendley and Murrell, 2003

5 Francis, Karalashvili, and Murrell, 2018

6 Mike and Kiss (2018) are an exception, as their recent paper shows LCA is well-suited for addressing the issue of classifying governance structures.

7 Data collection efforts benefited from generous funding from the World Bank Group's Knowledge for Change (KCP) program. Due to funding restrictions, data collection was only possible in these six countries. A survey with similar, but modified and, thus, incomparable questions, was implemented in Colombia.

8 Precisely, the number of observations was n=3,350 for relations with suppliers and n=3,339 for relations with customers. Numbers differ due to item non-response, which was minimal. For a more complete explanation of treatment, please refer to the main paper.

9 For more information on the ES data collection and methodology, see: www.enterprisesurveys.org.

10 This aspect sets these data apart from previous efforts.

11 The paper features the exact English wording of the questions.

12 Researchers employing LCA have generally used either what is called a three-step or one-step method, our paper using the former. In the three-step method, one first calculates maximum likelihood estimates of observing response patterns given class membership; then posterior probabilities of class membership (based on response patterns) are determined; and lastly these probabilities can be correlated with co-variates, such as firm characteristics. See Vermunt (2010) or Bakk et al (2014).

13 This is, in fact, the most frequently occurring pattern vis-à-vis suppliers, accounting for 12% of responses.

14 The number of classes was arrived at through a series of exercises and criteria laid out in the paper, which also includes testing over various numbers of classes.

15 LCA relies upon an assumption that the responses to any two (or more questions) themselves are un-related, this being known as "local independence". However, allowing certain responses to be correlated (for instance between trust and mutual), may improve the fit of these models. The adjustment of these assumptions is explored and explained fully in the paper; indeed, allowing some correlations does seem advisable. The preferred model choice for suppliers was a four-class model with correlation structure 1-2,2-3,3-4,3-5,4-5. For customers the preferred model is a four-class 1-2,4-5,4-6,5-6 model.

16 For a long time, the dominant view in the literature was that formal legal arrangements for transactions were inconsistent with personalized relationships based on trust: the formality eroded the trust. But this view has been moderated somewhat especially after Poppo and Zenger's (2002) seminal contribution. Our results are consistent with the changing view but are based on a broader overview of existing governance structures than any current contribution to the literature.

17 In these four countries sub-national, regional differences were found to be significant. Here, and in the paper, only statistically significant differences are presented.

18 These differences are the greatest pair-wise supplier-side class difference after Pure Bilateralism (suppliers). That is, after noting that the largest difference in Pure Bilateralism in Argentina is between Cordoba and Rosario, the next largest difference is in predicted membership in Bilateralism with Legal Support.

19 To avoid a fishing expedition, the paper also addresses the multiple comparisons problem of looking at a wide number of co-variates to find the significant ones. The paper addresses this, including by applying such criteria as family-wise error rates or false discovery rates. The results presented here and, in the paper, hold up to these criteria.

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