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Articles

When Licenses Become Numbers: Methodological Limits of Slave Voyages in Regional Analysis

Cuando las licencias se convierten en números: límites metodológicos de *Slave Voyages* en el análisis regional

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Abstract. This article reassesses quantitative estimates of the transatlantic slave trade to Bahia by comparing Slave Voyages (TSTD 2) with a newly reconstructed fiscal series from Salvador's Customs House landing accounts for enslaved Africans from the Costa da Mina (1724-1761). It argues that divergences across series are not competing measures of the same phenomenon but reflect distinct documentary regimes: TSTD relies heavily on licensed navigation and algorithmic imputations, whereas customs accounts record the trade as a fiscal fact –human merchandise effectively incorporated into colonial markets and the Crown's revenue circuit. By examining the use of licenses, average capacity coefficients, and assumed mortality rates, the study highlights how layered inference can blur the boundary between observed data and estimates and generate duplication and inconsistency at the regional level. It calls for integrating fiscal records and for transparent revision of Brazil-related TSTD data.

Key words: treasury administration; slave trade; quantitative history; methodology.

Resumen. Este artículo reevalúa las estimaciones cuantitativas del tráfico transatlántico de esclavos hacia Bahía al comparar *Slave Voyages* (TSTD 2) con una nueva serie fiscal reconstruida a partir de las cuentas de desembarco de la Aduana de Salvador para africanos esclavizados procedentes de la Costa da Mina

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(1724-1761). Sostiene que las divergencias entre series no son medidas rivales de un mismo fenómeno, sino expresiones de regímenes documentales distintos: el TSTD se apoya principalmente en navegación autorizada e imputaciones algorítmicas, mientras que las cuentas aduaneras registran el tráfico como hecho fiscal –mercancía humana efectivamente incorporada a la economía colonial y al circuito recaudatorio de la corona–. Al analizar licencias, coeficientes medios de carga y mortalidad supuesta, el estudio muestra cómo inferencias sucesivas pueden borrar la distinción entre dato observado y estimación y producir duplicaciones e inconsistencias regionales. Concluye señalando la necesidad de integrar registros fiscales y revisar con transparencia los datos del TSTD para Brasil.

Palabras clave: administración hacendaria; tráfico de esclavos; historia cuantitativa; metodología.

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Estimates of the Transatlantic slave trade in Luso-Brazilian historiography

According to Herbert Klein (1987), systematic studies of the slave trade began as early as the nineteenth century within the English abolitionist movement. These early initiatives, however, were strongly shaped by immediate moral and political concerns and generally lacked rigorous quantitative problematization. Only in the mid-twentieth century did the transatlantic traffic in enslaved Africans come to be treated as a historiographical problem with greater analytical density. This shift was catalyzed by Philip Curtin's *The Atlantic Slave Trade: A Census* (1969), which –by advancing global estimates– moved the debate from a predominantly normative register to the terrain of historical quantification (Klein, 1987).

Curtin's estimates, far from closing the discussion, proved to be a problematic point of departure. While they offered a global frame of reference, they also exposed the weaknesses inherent in the scarcity, fragmentation, and heterogeneity of the available sources. The intense debate that followed mobilized a broad agenda of archival research in European, African, and American repositories aimed both at verifying and at critically revising Curtin's figures. It became clear that such estimates were not merely objective data, but historiographical constructions conditioned by the sources consulted and by the methodological assumptions adopted.

Within this context, the 1999 digital publication of the *Trans-Atlantic Slave Trade Database* (TSTD) represented a significant advance by systematizing information on Atlantic voyages undertaken to transport enslaved Africans. The project was, however, a collective undertaking marked by profound regional asymmetries, stemming from unequal access to sources and from the very logic of documentary preservation. As its editors emphasized, the database consolidated information collected since the 1960s (Eltis et al., 1999), but it did not eliminate structural gaps.

These limitations were particularly evident in the Brazilian case, where figures appeared systematically underestimated in the early versions of the TSTD. As Alexandre Vieira Ribeiro observed, this underestimation did not reflect the marginality of the slave trade to the Estado do Brasil; rather, it resulted from the relative scarcity of exploited serial documentation in Luso-Brazilian archives. This diagnosis opened a second phase of research characterized by a deliberate effort to incorporate sources previously neglected or only partially explored, thereby reframing the problem of estimates on the basis of new documentary *corpora* (Ribeiro, 2008).

Brazilian historiography, however, had long attempted to gauge the volume of enslaved Africans disembarked during Portuguese colonization in the Americas. In the absence of continuous serial records of landings, authors such as Pandiá Calógeras (1930), Roberto C. Simonsen (1944), and Affonso de E. Taunay (1941) relied on qualitative evidence, indirect inference, and historical analogies. Though pioneering, these estimates were strongly conditioned by general economic assumptions and broad explanatory models, which limited their capacity to capture regional, conjunctural, and institutional variation in the slave trade.

In the mid-twentieth century, Edmundo Lopes (2012) introduced a methodological inflection by using the values of fiscal contracts levied on the circulation of enslaved persons as indirect indicators of the volume of disembarkations. This procedure was innovative insofar as it linked fiscality to the slave trade, but it rested on problematic assumptions –such as stable rates, regular collection, and a direct correspondence between auctioned contracts and the effective circulation of enslaved Africans.

Maurício Goulart (1949), in turn, expanded the analytical scope by incorporating variables such as plantation labor demand, average slave productivity across productive activities, survival rates, and African export flows. Yet despite its broader evidentiary base, his approach remained heavily dependent on equilibrium models of supply and demand, tending to smooth discontinuities and conjunctural shocks that were intrinsic to Atlantic slaving.

The works of Luiz Vianna Filho (1988) and Pierre Verger (1968/1989) advanced the field by introducing –albeit partially– quantitative sources. Vianna Filho, by exploiting the *Livro de visitas em embarcações da África* for 1803-1810, remained confined to a narrow temporal window, while Verger based his estimates on the auction values of fiscal contracts such as the 3$500 réis duty and the *dez tostões* levy for the Fortress of Ouidah. Innovative as these approaches were, they presupposed a stable relation between fiscal proceeds and the number of enslaved Africans transported.

Jean-Baptiste Nardi (1996) proposed a significant methodological innovation by estimating landings of Africans from the Costa da Mina through summaries of tobacco cargo recorded in licenses issued by the Junta for Tobacco Administration. By treating tobacco as a key variable, he highlighted its centrality in Atlantic exchanges. Yet reliance on that commodity as a proxy imposes clear limits, since it is now recognized that other goods were also mobilized in the trade.

Corcino Santos's (2000) direct incorporation of customs sources, through the *prestações de contas* of the Salvador Customs House for 1772-1777 –represented an important advance insofar as it relied on records closer to the moment of actual landing. Even so, it remained a limited series.

Finally, Alexandre Vieira Ribeiro's (2005) proposal to estimate landings from applications for licenses to sail to the Costa da Mina exemplifies the field's methodological dilemmas. By assuming that every granted license resulted in a completed voyage and that each vessel carried an average of 290 enslaved persons, the approach adopted assumptions that tend to inflate or homogenize results –particularly in contexts marked by losses, interdictions, shipwrecks, and significant variation in shipboard capacity. The exceptions identified for certain years in the last quarter of the eighteenth century (namely 1776; 1780-1781; 1789-1798) only underscore the conjectural character of such estimates.

The Trans-Atlantic slave trade database and disembarkations in the Captaincy of Bahia: methodological issues

In 2008, with the release of the second version of the TSTD –made available online via the *Slave Voyages* website– the database began to incorporate a broader and more diversified documentary base. In this TSTD 2 version, the data for the captaincy of Bahia were substantially expanded, above all through the systematic incorporation of *alvarás* (licenses) authorizing trade with the Costa da Mina. As Alexandre Vieira Ribeiro (2008) notes, "[t]he new data about the slave trade to Bahia were drawn mainly from the *alvarás* para navegar, that is, the licenses to sail to the African continent, located in the Arquivo Público do Estado da Bahia (APEB), in the Arquivo Nacional do Rio de Janeiro (ANRJ), and in the Biblioteca Nacional do Rio de Janeiro (BNRJ)" (p. 131).

The inclusion of this documentary set represented a significant advance in the empirical coverage of Bahian slaving within the database. Yet it also reinforced a methodological problem already present in earlier estimates: the equation of a granted license with a voyage actually undertaken, as well as the assumption of a relatively stable average shipboard capacity.

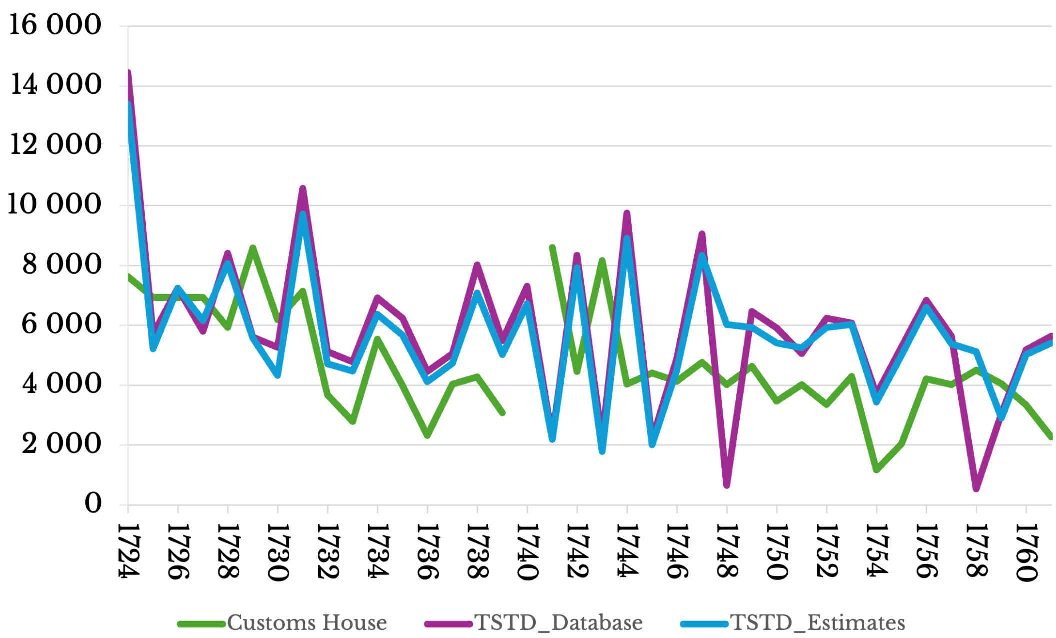
In addition to the licenses, TSTD 2 incorporated some quantitative, serial sources relating to landings –most notably the *prestações de contas* of the Bahia Customs House, identified through the *Projeto Resgate Barão do Rio Branco* within the avulses series for the captaincy of Bahia in the Arquivo Histórico Ultramarino. This is particularly valuable documentation because it is closer to the moment of effective disembarkation. Even so, the series is incomplete –lacking, for example, the years 1725 to 1729– which limits its use as a continuous basis for broader estimates.

More recently, in investigating the fiscal dimension of the slave trade between Bahia and the so-called Costa da Mina, specifically the 3$500 réis duty levied on enslaved Africans originating from that region, a new series of landing accounts produced by the Salvador Customs House was reconstructed. These data were extracted directly from the Customs House clerk's books and remitted to Lisbon for the Conselho Ultramarino, covering the period from 1724 to 1761. The series consists exclusively of descriptive statistics, which on the one hand imposes analytical constraints but on the other provides a regular, institutionally standardized fiscal record of the entry of enslaved Africans.

The reconstructed customs data are presented in Figure 1 in comparison with the corresponding series from TSTD 2 (*Slave Voyages*). This comparison not only allows an assessment of convergence across different documentary sets but also makes explicit the distortions and silences produced by methodologies based predominantly on sailing licenses –thereby reinforcing the need for an approach that integrates fiscality, circulation, and administrative practice in the study of the Atlantic slave trade.

The disparity among the three series is striking. Particularly noteworthy is the fact that, at certain points, the TSTD_Estimates series yields values lower than those recorded in the TSTD_Database series. This is, at minimum, paradoxical, since the estimates series is commonly assumed to consist of inferred statistical values –i. e., outputs of extrapolation, modeling, or corrective procedures– whereas the database series would, in principle, correspond to descriptive statistics derived directly from identified voyages.

Figure 1. Volume of enslaved Africans disembarked in Bahia, 1724-1761



Source: Customs House (Salles, 2024b); TSTD_Database (*Slave Voyages*, available at https://www.slavevoyages.org/voyages/ZnKMq7TZ, accessed January 21, 2026); TSTD_Estimates (*Slave Voyages*, available at http://www.slavevoyages.org/estimates/lrsiVgaE, accessed January 21, 2026).

No clear and transparent methodological explanation can be found on the *Slave Voyages* website regarding how the TSTD_Estimates series is constructed, nor of the criteria governing its relation to the TSTD_Database series. This absence of methodological documentation compromises the intelligibility of the results and hinders a critical evaluation of the database's internal consistency.

It should be noted that, in 2020, when the present investigation began, the values of the TSTD_Estimates series –when the same query parameters were selected– were generally and systematically higher than those of the TSTD_Database series. Such behavior plausibly suggested that the estimates constituted an extrapolation or upward correction of observed values designed to compensate for documentary gaps and under-registration.

From 2021 onward, however, this pattern appears to invert: in several years, the figures in the TSTD_Estimates series fall below those in the TSTD_Database series (see Figure 1). This abrupt change points to a relevant methodological inconsistency in the management of these series over time, especially because it was not accompanied by any public explanation of changes in algorithms, statistical assumptions, or source-treatment criteria.

More troubling still is that this shift affects a database widely used by scholars across fields to underpin quantitative analyses, regional comparisons, and long-run interpretations of the transatlantic traffic in enslaved Africans. In this context, the absence of methodological transparency is not a minor issue: it undermines reproducibility and, ultimately, the reliability of conclusions derived from these series.

Explaining the discrepancy between the customs series and the TSTD_Database series

Having established this, we may turn to the foundations of the discrepancy between the Customs House series and the TSTD_Database series. The observations that follow apply exclusively to landings in Bahia of enslaved Africans from the so-called Costa da Mina over the eighteenth century, and they should be read as a critique of the prevailing mode of historical quantification applied to the Atlantic slave trade.

The mismatch between the series does not stem from conjunctural fluctuations in the trade, nor from minor documentary imperfections, but rather from a structural methodological choice built into the construction of the TSTD database. The data set for the captaincy of Bahia was assembled from a deeply heterogeneous documentary typology in which sailing licenses predominate-sources that, though serial, record neither embarkation nor disembarkation volumes and contain, in any strict sense, no descriptive statistical content about the trade as actually carried out.

Under such circumstances, the figures attributed to the TSTD are not the result of empirical observation of the historical phenomenon, but of successive inferential operations: licenses are converted into voyages; voyages into numbers of enslaved persons; and these volumes are then adjusted by average mortality rates that are themselves imputed. The algorithm thus performs a documentary transubstantiation: an administrative authorization becomes a quantified historical fact regardless of whether the voyage took place, succeeded, or culminated in taxable landings in Bahia.

The so-called TSTD_Database, therefore, is not a database in the strict observational sense, but a modeled construction composed of multiple layers of inference whose results are presented under the appearance of observed data. In this process, the distinction between *data* and *estimate* is methodologically obscured.

This, in turn, renders even more problematic the existence of a second series –TSTD_Estimates– constructed from the database itself. If the database is already an estimate, then the estimates series constitutes a re-estimation of values that were never directly observed. It is a second-order quantification, an estimate of an estimate, or more precisely, a statistical abstraction without a direct empirical referent. Whether the final values are higher or lower is beside the point: the issue is not the direction of the bias, but the dissolution of the link between number and document.

The use of sailing licenses as the basis for constructing quantitative series also reveals a fundamental conceptual confusion between administrative expectation and historical realization. A license is not a voyage; a voyage is not a landing; and a landing is not necessarily a taxable landing. Each stage is subject to multiple contingencies: shipwrecks, seizures, *interimperial* conflict, route deviations, illicit trade, higher-than-expected mortality, and systematic under-declaration. Ignoring this chain of uncertainty is tantamount to substituting a closed theoretical model for a historical process.

The fragility of the procedure is compounded by assigning average cargo values based on vessel nomenclature. In Portuguese navigation, ship types often bear only a tenuous, if any, relation to actual carrying capacity. As both documentation and specialized historiography indicate, such designations were frequently tied to rigging and sail plan rather than hull tonnage. The case reported by Cândido Domingues Souza (2011), in which a single vessel's classification was changed from *sumaca* to *patacho* because of sail configuration alone, illustrates the arbitrariness of this taxonomy.

Scholarship on Portuguese shipbuilding is consistent in emphasizing the impossibility of standardizing carrying capacity by virtue of these nominal categories (Mauro, 1973, 1989; Farias & Salles, 2019). Yet the TSTD assigns fixed average coefficients to fluid categories, converting historical imprecision into merely apparent statistical precision.

Against this backdrop, the contrast with the Customs House series is revealing. Although customs documentation is also shaped by under-registration, smuggling, and administrative failure, it records the slave trade at the moment when it becomes institutionally legible to the state: when human merchandise is incorporated into the fiscal circuit. It is, therefore, an imperfect but empirically situated record anchored in concrete administrative practice rather than retrospective projection.

Comparing the series thus shows that the core problem is not simply numerical divergence, but the coexistence of two incompatible epistemic regimes: on the one hand, a fiscal quantification-imperfect but anchored; on the other, an algorithmic quantification detached from a direct documentary referent. The historiographical risk is evident: by naturalizing the *Slave Voyages* series as *data*, scholars may replace source criticism with confidence in a model, and history with statistics.

To give empirical substance to these methodological concerns, the following section examines the TSTD 2 records for the *patacho* Nossa Senhora da Conceição e Santo Antônio da Mouraria between 1720 and 1740. This vessel was selected because its designation is relatively unusual: within the database, only fifteen vessel records include the name Mouraria, which significantly reduces the risk of homonymy. In other words, given the limited number of occurrences, it is plausible that the records analyzed here refer to the same vessel, despite minor variation in the invocation recorded. This makes the case particularly suitable for evaluating the TSTD's procedures of imputation and duplication. Table 1 presents the twelve records of supposed voyages attributed to this *patacho* between 1720 and 1740.

It should be noted that, within TSTD 2 (*Slave Voyages*), relatively few voyages are supported by sources that actually provide disembarkation figures. Most records derive from what the project itself classifies as qualitative sources, especially sailing licenses, which, though serial, do not in themselves contain descriptive statistical data on the number of enslaved Africans landed. Even so, recurring duplications can be observed.

In the case of voyages #51766 and #40248, for example, the sources supporting their inclusion are, respectively, the entry of a license in the Customs House register and the entry of the same license in the Tobacco Board's records. In other words, the same passport is recorded in two different institutions, rather than necessarily pointing to two distinct voyages. Voyages #51792 and #51873 likewise appear to involve duplication: the former (1722) would correspond to the recording of the license, while the latter (1723) appears as the voyage's realization and successful landing. A similar issue is visible in #50548 and #50574. The cases presented here are merely illustrative of a broader problem.

Menino and Martins (2020) have shown, for instance, that voyages #49200 and #49677, attributed to João Abreu, were not only duplicates but were never carried out, and that this information appears in the very source used to enter them into the TSTD. The case involved an authorization for a voyage from Madeira, with a stop in Bahia, to acquire enslaved people in Angola.

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Table 1. Voyages of the patacho Nossa Senhora da Conceição e Santo Antônio da Mouraria in TSTD 2, 1720-1740

Voyage	*Vessel name*	*Shipmaster*	*Year*	*Enslaved Africans landed*
#51766	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Manoel da Costa Porto	1721	-
#40248	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Manoel da Costa Porto	1721	-
#51792	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Manoel da Costa Porto	1722	-
#51873	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Antônio Gonçalves	1723	399
#51903	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Manoel do Couto Santos	1724	-
#51928	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Manoel do Couto Santos	1726	-
#50529	Nossa Senhora da Conceição S Antônio da Mouraria e Almas	Antônio Nunes de Brito	1728	-
#50548	Nossa Senhora da Conceição S Antônio da Mouraria	Antônio Nunes de Brito	1730	-
#50574	Nossa Senhora da Conceição S Antônio da Mouraria	Antônio Nunes de Brito	1731	405
#50604	Nossa Senhora da Conceição e Santo Antônio da Mouraria	José de Matos Carvalho	1734	426
#51969	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Manoel de Araújo Bastos	1739	326
#51997	Nossa Senhora da Conceição e Santo Antônio da Mouraria	Manoel de Araújo Bastos	1740	-

Source: *Slave Voyages* (available at https://www.slavevoyages.org/voyages/cjcHb9kA, accessed January 21, 2026).

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It should also be added that there are Customs House landing accounts for vessels arriving from the Kingdom of Angola. For the eighteenth century, this constitutes a relatively complete series tied to royal oversight of the Angola slave contract.

In TSTD 2 (*Slave Voyages*), it appears that the information collected was not subjected to sufficiently systematic critical consolidation: records from different sources were entered without necessary documentary vetting and without consistent de-duplication procedures. The result is the creation of duplicate voyages and, in certain cases, the inclusion of voyages that, by documentary evidence, did not occur. This suggests the need for a revision of the database to consolidate information and reduce distortions, using procedures proper to quantitative and serial history (Cardoso & Brignoli, 1983, pp. 260-347).

For such a corpus to be consolidated, that is, for collected information to be properly treated, it is indispensable to understand the institutional functioning of the slave trade: how a redeeming voyage was administratively organized in the colony. Methodologically, this entails subjecting sources to criticism through an archaeology of institutions capable of reconstructing routines, information flows, and the function of each record.

With respect to trade with the Costa da Mina during the seventeenth century and the first half of the eighteenth, the governor-general held exclusive jurisdiction over navigation. The first step, therefore, was to request authorization to sail. Once granted, an alvará (a navigation passport) was issued and recorded in multiple venues: in the Secretariat of State's books (government) and in the Provedoria-mor's books (the Treasury). The passport was then presented to the Customs House for registration and for the posting of a bond backed by guarantors, securing the future payment of duties generated by the venture. The bond's value varied with the vessel's tonnage –that is, its cargo capacity. Finally, after 1699, the passport was also presented to the tobacco superintendent for registration and for the release of the cargo of the commodity deemed essential to the trade with the Costa da Mina: tobacco. In the second half of the eighteenth century, the Sugar and Tobacco Inspection Board, created in 1751, acquired exclusive jurisdiction over navigation to the Costa da Mina in 1754, altering this administrative routine (Salles, 2024a).

It is therefore unsurprising that in the same year, especially in the first half of the eighteenth, the same license for the same intended voyage appears recorded in multiple sources (government books; the Provedoria-mor's general registers; Tobacco Board records; and/or the Salvador Customs House). This does not, however, imply the occurrence of distinct voyages. Rather, it reflects the ordinary circulation of information: the same administrative act recorded in multiple venues, i. e., routine administrative and fiscal procedures being followed –an "empire of paper". Moreover, a passport's registration in government and treasury books does not prove that the voyage actually took place: it records an authorized intention, a necessary but insufficient condition for preparation.

That said, it must be recognized that the slave trade between the captaincy of Bahia and the Costa da Mina operated under a specific administrative and fiscal structure. Within this mass of records, the document that provides the greatest certainty regarding the occurrence of a voyage and the resulting landing is the Customs House landing account relating to collection of the 3$500 réis duty on enslaved Africans from the Costa da Mina –that is, a quantitative, serial fiscal source.

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As already noted, since the 2000s, Corcino Santos's research has made clear the existence of these accounts. Accordingly, the current state of research makes it increasingly difficult to defend continued estimation of the Bahia –Costa da Mina slave trade based solely on sailing licenses while setting aside the quantitative– or, if preferred, descriptive statistical –records produced by the Salvador Customs House.

One might argue that the difference between the number of licenses granted and the number of vessels that actually landed enslaved Africans in Salvador would reveal systemic disorder, i. e. smuggling. To avoid such a generalizing inference, the next section examines the conditions under which the customs accounts were produced and, consequently, their reliability. Before doing so, it is worth noting some plausible explanations for the discrepancy between the number of licenses and recorded landings: *a*) the voyage may never have occurred, since fitting out a vessel required the mobilization of substantial capital; *b*) if it did occur, the crossing was subject to contingencies: storms, shipwrecks, and seizure by competing European powers. Only a more detailed investigation of the *alvarás* (passports) will allow these hypotheses to be confirmed or refuted.

Fiscal administration in the Captaincy of Bahia: the conditions of source production

To begin with, one must understand the dynamics of the port of Salvador. This was not an ordinary port town, but the head of the Estado do Brasil, a calling station on the India Route (Carreira da Índia) and one of the key nodes of Portuguese Atlantic circulation. It was not a simple anchorage, but a space densely occupied by administrative, fiscal, and military institutions exercising overlapping jurisdictions: the governor-general's administration; the Treasury's Provedoria-mor; the Customs House; and the complex system of fortresses guarding the entrance to the Bay of All Saints (Lapa, 1968).

Given this institutional configuration, it is not reasonable to assume that vessels of any kind could enter Salvador without being noticed by the multiple authorities operating in the port. Thus, at least with respect to the occurrence of arrivals, the recording of vessels tends, broadly speaking, to correspond to the port's actual traffic.

The same cannot be asserted with equal certainty regarding the number of "heads" cleared –i. e., the number of enslaved Africans effectively landed and recorded. Here, one may admit the possibility of discrepancies between actual landings and the number recorded in clearances. Even so, the administrative and fiscal logic of the Portuguese empire must be taken into account. Between January 1, 1725, and December 31, 1727, the proceeds of the 3$500 réis duty per enslaved person from the Costa da Mina were farmed out to Jerônimo Lobo Guimarães.

This meant that the duty was collected by the Customs House treasurer on the basis of clearances entered in the customs clerk's book. Both were royal officials, but they operated under the direct scrutiny of the contract's administrators –here, Simão Lobo Guimarães, the contractor's brother. It was his task to verify each clearance recorded at the Salvador Customs House, since the contract's profitability depended directly on the volume collected. This institutional arrangement tends to strengthen the reliability of the figures for this interval, because the difference between the auction price and actual receipts fell entirely on the contractor: in case of surplus, he received the profit; in case of deficit, he bore the loss vis-à-vis the Royal Treasury (Salles, 2024b).

Between 1728 and 1740, the duty was administered directly by the Royal Treasury under a royal provision, without an intermediary private agent. Even so, qualitative documentation suggests a context of mutual surveillance that helps validate the data. Between 1733 and 1743,

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constant disputes between the captaincy's two principal treasury officials –the provedor-mor and the Customs House provedor– created an environment of reciprocal oversight. Available sources contain no denunciations of smuggling specifically concerning the duty on enslaved Africans in this period (Salles, 2024b).

Tensions between these officials were, in fact, long-standing. In 1719, the Customs House provedor, Domingos da Costa de Almeida, accepted a denunciation against the provedor-mor, Luís Lopes Pegado e Serpa, who spent thirteen years imprisoned in Lisbon's Limoeiro prison. Acquitted for lack of proof, Serpa was later reinstated as provedor-mor, an office with jurisdiction over the port. Their animosity was widely known. According to the governor-general, the Count of Galveias (1742), the two officials "quarreled over any matter, however insignificant", adding that "none of this would happen if there were good understanding instead of the distrust that exists between them" (Conde das Galveias, 1742).

Rather than undermining the documentation, this climate of institutional conflict tended to reinforce the credibility of fiscal records, since mutual distrust functioned as an informal control mechanism, reducing the scope for durable collusion and systematic manipulation of clearances.

It should also be recalled that between 1731 and 1743 Bahia housed the General Intendancy of the Law on the Export of Gold (*Intendência Geral da Lei da Extração do Ouro*), created to curb the export of gold dust to the Costa da Mina. Under this pretext, an especially rigorous surveillance regime was established over vessels sailing on that route. The Intendancy comprised an intendant, a clerk, and a bailiff, and operated through systematic inspections: six visits prior to departure and six upon return. All cargo was carefully recorded in the Intendancy's books to be compared with the vessel's tonnage and with results at return.

The intensity of surveillance can be gauged by the fact that from 1735 the office of intendant was held by the provedor-mor himself, Luís Lopes Pegado e Serpa, who introduced an additional procedure: he conducted a final inspection at the moment of departure and personally accompanied the vessel to the bay's bar to ensure that no additional cargo was loaded after the final review (Luís Lopes Pegado e Serpa, 1738).

Further evidence of effective customs enforcement in Salvador can be found in duties charged to clearing agents who failed to prove the satisfaction of clearances made in the Islands of São Tomé and Príncipe. This is particularly evident in 1736, when no vessel sailed directly to Bahia; all cleared in the archipelago. Even so, a "reminder" receipt (*receita por lembrança*) of 45$500 réis was registered, corresponding to thirteen "heads" in excess of those cleared in the islands (Conde das Galveias, 1742).

What, concretely, did it mean to "fail to present clearance" at the Salvador Customs House for a dispatch made in the islands? Every commodity passing through customs and cleared received the relevant seal, and the clearing agent received a ticket indicating the agent's mark (a visual identifier), the commodity, the cleared quantity, and the duties paid. With enslaved persons the procedure was similar, though with important differences: they did not receive a seal, but had to bear their owner's brand, burned into the skin in Africa. In 1724, for example, Miguel Francisco - who shipped goods on the *sumaca Nossa Senhora de Oliveira*, captained by Manuel Ferreira Farinha, to the Costa da Mina - recommended that his enslaved persons be branded "peito direito com duas marcas de cachimbo, declarando-se no livro de portaló" (Nascimento, 1977, p. 22).

These "excess heads", enslaved persons on board who had not been counted in the clearance in Africa or in the islands, also underscore the difficulty of calculating mortality on the Atlantic leg between the archipelago and Bahia. For, as a rule, vessels that stopped at the island customs

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houses arrived in Brazil with more enslaved persons than those declared in the prior clearance, rather than fewer, as one might expect. Nor does the smuggling hypothesis hold, since it was more advantageous to clear in São Tomé and Príncipe in terms of *peça da Índia* than per head in Bahia.

To illustrate, seven vessels from the Costa da Mina bound for Bahia, with a stop in São Tomé and Príncipe between July 22, 1738, and October 27, 1739, cleared 2 803 heads in the archipelago, which were assessed as "one thousand six hundred and fifty-four pieces, seven thirds and one quarter of a piece", totaling 5:795$641 réis in duties, as shown in the clearances presented to the Salvador Customs House (Domingos da Costa de Almeida, 1739).

The most plausible explanation, therefore, is that these additional heads were loaded after clearance in the islands. Yet at present we lack sources that allow us to reconstruct initial embarkation on the African coast with comparable precision. In this context, using Customs House landing series as the basis for estimation becomes a relevant heuristic exercise. The central question then becomes how to calibrate losses in the transatlantic crossing.

For the São Tomé and Príncipe - Bahia route, it was possible to calculate mortality between 1748 and 1761, since the sources allow comparison between the numbers cleared in the archipelago and the enslaved persons who arrived alive in Salvador. The average found was 5%, substantially below the approximately 12% mortality rate assumed in TSTD 2 (*Slave Voyages*). Given that direct voyages from the Costa da Mina to Bahia were generally shorter than those with a stop in the islands, it is plausible to suppose that mortality on the direct route was even lower, though this remains a hypothesis rather than a definitive empirical conclusion (Salles, 2024b).

It should also be noted that between 1741 and 1764 the Salvador Customs House regularly hosted the administrator of the contract for the 3$500 réis duty on enslaved Africans from the Costa da Mina. This private agent reinforced oversight both of royal officials and of private actors, since his profits depended directly on the Royal Treasury's effective collection. Such convergence of interests between contractor and state tends to increase the reliability of the records produced (Salles, 2024b).

Taken together, these factors, especially the concurrent presence of multiple agents and institutions in the port of Salvador, support the proposition that the figures reported to the Crown reflect the Customs House's actual traffic. Even if not perfectly exact, they constitute the most consistent approximation of the general trend of the slave trade in the captaincy of Bahia during the period under analysis.

Conclusion

Considering the evidence presented, it is reasonable to argue that the series reconstructed from the Bahia Customs House landing accounts for enslaved Africans arriving in Salvador from the Costa da Mina constitutes, given the current state of research, the least distorted series available. It therefore offers the best empirical approximation to actual disembarkations from that African region in the captaincy of Bahia and, stricto sensu, the most reliable statistical series for this specific flow.

This conclusion is reinforced by Figure 1, which indicates that the different series analyzed should not be treated as competing measures of the same phenomenon, but rather as expressions of distinct documentary regimes. While the TSTD privileges the reconstruction of the trade from authorized and estimated navigation, i.e., from administrative expectations and statistical inference, the customs series captures the slave trade as a fiscal fact, that is, as human merchandise effectively incorporated into the colonial economy and the Crown's revenue-collecting circuit.

Figure 1 thus provides empirical support for a critique of the uncritical use of Slave Voyages data for fine-grained regional analyses, while also pointing to the need to integrate fiscal records centrally in order to understand how the slave trade operated concretely within the Portuguese mercantile and tributary apparatus. The point is not to reject global quantification initiatives, but to recognize their limits when applied to spatial and institutional scales that require higher empirical precision.

It is nevertheless necessary to extend this research effort by systematically reconstructing the Salvador Customs House landing accounts for enslaved Africans arriving from Angola, which would allow a more precise estimate of total slave landings in Salvador over the period. This is a crucial task for overcoming fragmentary readings of the trade and for integrating, in a consistent manner, the different African routes that supplied the Estado do Brasil.

Moreover, analogous landing accounts were produced by other treasuries and customs houses in Portuguese America, notably those of Pernambuco and Rio de Janeiro. Reconstructing these series represents another promising avenue of research, capable of yielding a broader and more comparative view of the slave trade within the Portuguese colonial space.

Finally, it bears emphasizing that the Trans-Atlantic Slave Trade Database is one of the largest and most significant initiatives in historical quantification and international scholarly cooperation since the International Committee on Price History. Yet the Brazilian data, especially for the eighteenth century, require a thorough revision guided by the principles of quantitative and serial history, with particular attention to source criticism, documentary consolidation, and a rigorous distinction between observational data and statistical inference.

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