

Gender dynamics in employment associated with Brazilian international trade in Knowledge-Based Services (KBS): an analysis of total and bilateral trade with South America in 2019

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Sections

- 1 Context and Motivation
- 2 Objectives
- 3 Methodology
- 4 Results
- 5 Conclusions
- 6 Bibliography

Context and Motivation

- International trade contributes to the productive and socioeconomic development of a country: the productive and trade specialization of a country has impacts on the population as a whole with different effects on different social groups.
- International trade is not neutral in the face of gender inequalities that persist in economies (Azar, Espino and Salvador, 2009; Fontana, 2009).
- The paid labor market is one of the privileged *loci* to discuss the impacts of changes in international trade flows on a society and on the well-being of its population, even when analyzing the literature on the relationships between trade and gender.

Context and Motivation

- Different sectors → different economic and technological spillover effects for the rest of the economy; different job insertions.
- Overall, industry is considered as the nucleus of economic dynamism. However, we can show that the border between industry and services (and agriculture) has decreased and the weight of services in it VA has increased.
- Services trade has gained importance in recent decades, partly associated with the advancement of GVCs: *Trade in services has experienced an average annual growth of 5.4% between 2005 and 2017, exceeding the average of 4.6% recorded in trade in goods (WTO, 2019).*
- Beside that, the analyzes of the relationships between trade and gender in general do not consider or do not focus on trade in services, mainly Knowledge-Based Services (KBS).

Objectives

- 1 Estimate and analyze the content and quality of female and male employment associated with the Brazilian international trade of KBS, also known as modern services or global services, in 2019, seeking to answer whether gender inequalities in the Brazilian labor market are reproduced in this context.
- 2 Due to the importance of South America (SA) as a Brazilian trading partner, estimate and analyze the content and quality of employment associated with bilateral trade with SA, and compare it with that associated with total international trade.

Knowledge Based Services

What are KBS?

- Activities that use **intensively high technology and/or demand skilled labor** to take advantage of technological innovations. In general, the classifications converge in stating that KBS cover a wide range of areas, such as business, financial, technological, insurance, pensions, professional, R&D and telecommunications services (OECD, 1999).
- The line between traditional service activities and KBS is currently very blurred, and the trend is for it to become even more blurred (Loungani et al, 2017). Furthermore, as economies develop, activities become more complex and the dualism between traditional and modern sectors disappears (Rodrik, 2014).

KBS Classification Proposal

Services <i>Harmonized classification between CNAE domicilio, CNAE 2.0 y SCN</i>	Proposed Classification	Technological Standard	Education <i>(% of employed people by educational level, 2022)</i>	
	Traditional services/ KBS	Traditional/Modern (Eichengreen y Gupta, 2013)	Incomplete primary education	Complete higher education
Electricity, gas and other services	Traditional services	Traditional	6%	40%
Water, wastewater and waste management	Traditional services	Traditional	35%	13%
Trade (wholesale and retail) and repair of motor vehicles and motorcycles	Traditional services	Traditional	42%	6%
Ground transportation	Traditional services	Traditional	24%	8%
Aquatic transport	Traditional services	Traditional	22%	24%
Storage, auxiliary transportation and mail activities	Traditional services	Traditional	14%	18%
Accommodation	Traditional services	Traditional	16%	15%
Food	Traditional services	Traditional	25%	7%
Real estate activities	Traditional services	Traditional	5%	35%
Other administrative activities and complementary services	Traditional services	Traditional/Modern	21%	12%
Surveillance, security and investigation activities	Traditional services	Traditional	12%	6%
Public administration, defense and social security	Traditional services	Traditional	8%	43%
Membership organizations and other personal services	Traditional services	Traditional	16%	13%
Artistic, creative and performing activities	Traditional services	Modem	9%	35%
Public and private health	Traditional services	Traditional	4%	45%
Air Transport	KBS	Modem	2%	41%
Editing and editing integrated into print	KBS	Traditional	2%	62%
Television, radio, film and image and sound recording/editing activities	KBS	Modem	5%	45%
Telecommunications	KBS	Modem	2%	22%
Development of systems and other information services	KBS	Modem	1%	62%
Financial intermediation, insurance and complementary pensions	KBS	Modem	1%	62%
Legal, accounting, consulting and corporate headquarters activities	KBS	Traditional/Modem	1%	70%
Architecture, engineering, technical testing/analysis and R&D services	KBS	Modem	3%	65%
Other professional, scientific and technical activities	KBS	Modem	3%	50%
Non-real estate rentals and management of non-financial intangible assets	KBS	Modem	11%	23%
Education	KBS	Traditional	4%	63%

Source: Own elaboration.

Methodology

Employment content

- **Source:** Castilho (2007), Kupfer, Freitas and Young (2003) and CEPAL (2021a; 2021b; 2022).
- **Dimensions:** female and male employment associated with total and bilateral exports and imports with South America.
- **Data:** Input Output Matrix estimated for the Brazilian economy by Alves-Passoni and Freitas (2020), data from the labor market, from the PNAD Contínua, and from international trade in goods and services, available in SISCOMEX and SISCOSEV.

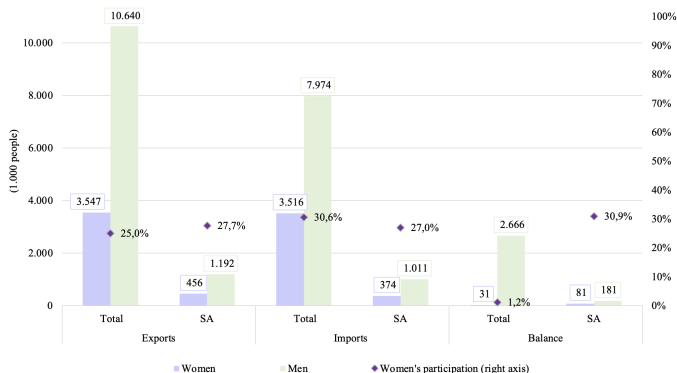
Methodology

Job quality

- **Source:** Saboia and Kubrusly (2013), Castilho, Costa and Saludjian (2015) and Ferreira (2022).
- **Dimensions:** total economy, exports and imports; total trade or by trading partner; aggregated or disaggregated by activity; women or men.
- **Components:** formality; hourly income; % of women (or men) in leadership or management positions; duration of employment; horizontal segregation.
- **Data:** data from the labor market, from the PNAD Contínua, and from international trade in goods and services, available in SISCOMEX and SISCOSEV.

Results

Graph 1 - Employment content associated with total and bilateral international trade with South America, disaggregated by sex, 2019



Source: Own elaboration. Data: Alves-Passoni and Freitas (2020), PNAD Contínua, SISCOMEX and SISCOSEV.

Results

Table 1 - EQI associated with the total economy and total and bilateral international trade with South America, disaggregated by sex, 2022

QEI (2022)		Women	Men
Total Brazil		0,693	0,700
Exports	Total	0,589	0,691
	SA	0,613	0,712
Imports	Total	0,637	0,720
	SA	0,590	0,692

Source: Own elaboration. Data: Alves-Passoni and Freitas (2020), PNAD Contínua, SISCOMEX and SISCOSEV.

Results

Table 2 - Employment content associated with total and bilateral international trade with South America, by macro sectors, disaggregated by sex, 2019

Sectors	QEI Average (2022)	Women				Men			
		Exports		Imports		Exports		Imports	
		Total	SA	Total	SA	Total	SA	Total	SA
Agriculture	0,348	932.086	41.036	174.822	69.409	3.862.530	170.282	728.866	289.723
Industry	0,423	631.471	118.013	888.094	79.986	1.786.372	306.757	2.042.566	203.836
Construction	0,283	6.767	491	4.484	371	171.163	12.423	113.433	9.396
Services	0,463	1.976.661	296.060	2.448.383	224.672	4.819.585	702.373	5.089.002	507.753
<i>KBS</i>	0,525	508.264	60.890	710.852	43.443	597.655	70.853	902.204	49.501
<i>Tradicional Services</i>	0,373	1.468.397	235.170	1.737.530	181.229	4.221.930	631.520	4.186.798	458.251
Total	0,427	3.546.984	455.600	3.515.783	374.439	10.639.651	1.191.834	7.973.866	1.010.708

Source: Own elaboration. Data: Alves-Passoni and Freitas (2020), PNAD Contínua, SISCOMEX and SISCOSEV.

Resultados

Table 3 - Employment content associated with total and bilateral international trade with South America, by KBS, disaggregated by sex, 2019

Knowledge Based Services	QEI Average (2022)	Balance			
		Women		Men	
		Total	SA	Total	SA
Financial intermediation, insurance and complementary pensions	0,776	- 33.406	1.735	- 34.123	1.773
Editing and editing integrated into print	0,650	- 6.911	1.983	- 6.843	1.964
Air Transport	0,586	- 693	232	- 1.565	525
Television, radio, film and image and sound recording/editing activities	0,562	- 2.740	604	- 4.928	1.086
Education	0,560	- 14.953	1.335	- 4.946	441
Development of systems and other information services	0,494	- 15.007	591	- 51.323	2.022
Architecture, engineering, technical testing/analysis and R&D services	0,472	21.855	1.981	36.590	3.316
Legal, accounting, consulting and corporate headquarters activities	0,470	13.531	5.239	12.794	4.953
Non-real estate rentals and management of non-financial intangible assets	0,437	- 146.620	2.089	- 229.168	3.265
Telecommunications	0,398	- 2.004	259	- 3.135	405
Other professional, scientific and technical activities	0,365	- 15.639	1.399	- 17.901	1.601
Total KBS	0,525	- 202.588	17.447	- 304.549	21.352
Total Services	0,463	- 471.722	71.388	- 269.417	194.620
Total General	0,427	- 31.202	81.161	2.665.785	181.126

Source: Own elaboration. Data: Alves-Passoni and Freitas (2020), PNAD Contínua, SISCOMEX and SISCOSEV.

Conclusions

- 1 In the Brazilian case, gender dynamics in jobs associated with international trade end up reproducing gender biases and evidencing a detrimental situation for female workers in general: *female underrepresentation is greater and the quality of jobs is worse.*
- 2 In bilateral trade between Brazil and South America, the participation of women in jobs associated with international trade is greater and of better quality.
- 3 International trade associated with services, particularly KBS, presents higher quality in relation to aggregate international trade. In addition, female representation increases.
- 4 International KBS trade, mainly in a regional context, is presented as an opportunity to stimulate the Brazilian economy given the capacity of these services to boost the productivity of other sectors and help promote gender equality in the labor market.

Thank you for your attention!

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