

El Salvador: Measuring Cross-Border Digital Trade

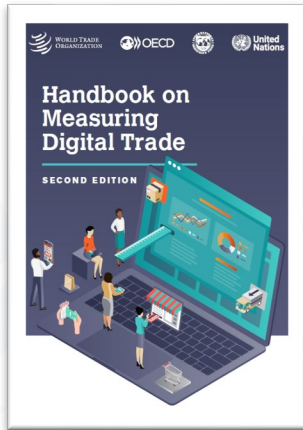
Management of Economic Studies and Statistics
Department of External Sector
2023



Agenda

- Background
- Information collected
- Pilot test
- Data Processing
- Visualization of cross border digital trade
- Classification challenges

Background



01



Since 2021, the Central Reserve Bank of El Salvador has undertaken efforts to measure cross-border digital trade



The measurement is based on the conceptual framework suggested in the Handbook on Measuring Digital Trade

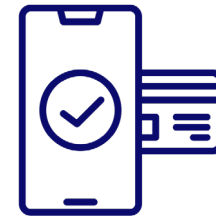


02

03



Source: credit and debit card payment data



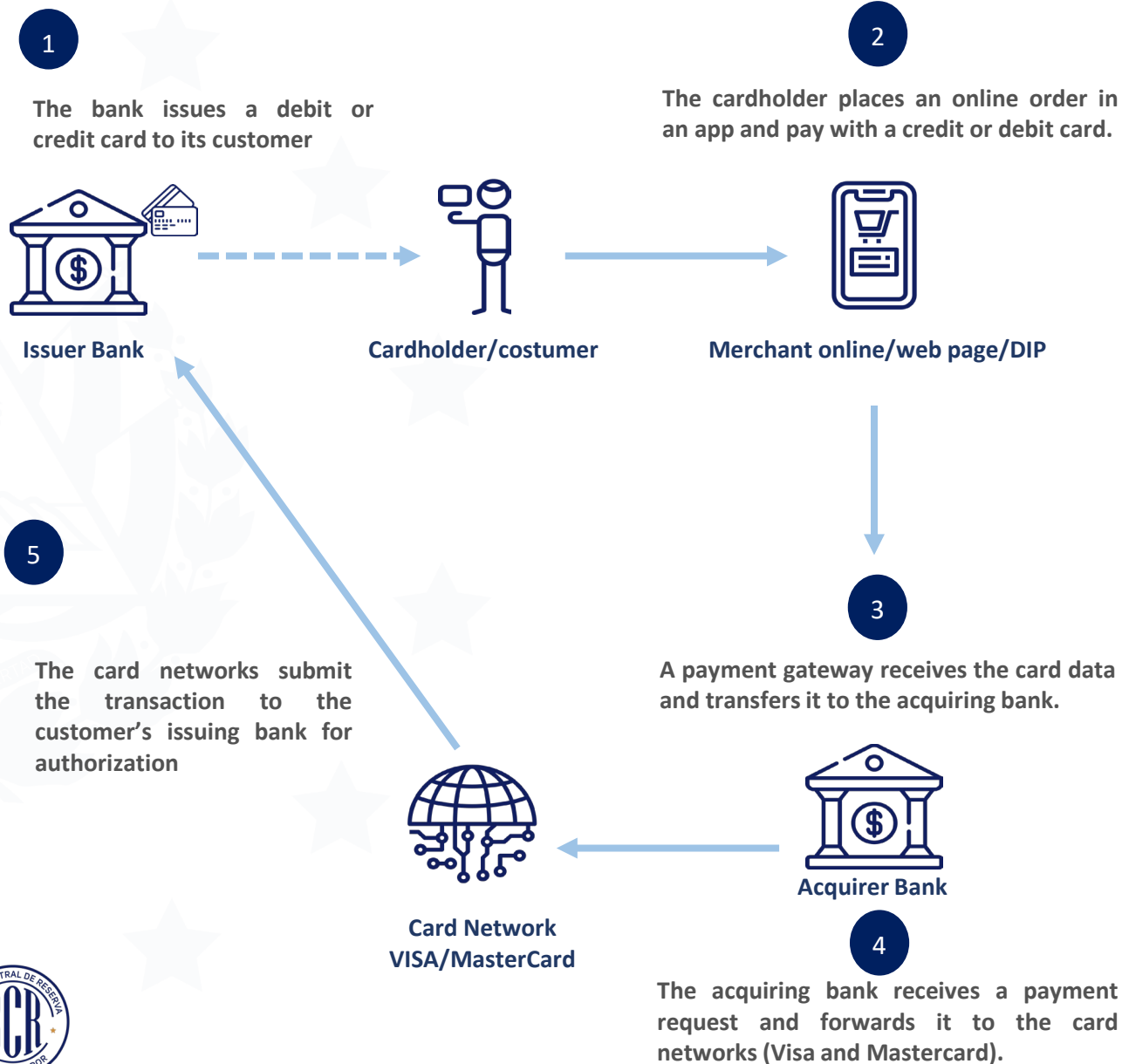
Informants: established financial institutions in El Salvador



04



Payment Card schemes - Data flow



Information collected

- **Issuer perspective operations:** Transactions and/or online purchases made abroad with a card issued in El Salvador



- **Acquiring perspective operations:** Transactions and/or online purchases made in El Salvador with a card issued in the rest of the world (financial institutions in El Salvador process these charges and thus obtain the information)



Information collected: variables

N°	Variables	Description	Issuer	Acquirer
1	Financial institution	Code of financial institutions.	X	X
2	Market type	Role of the financial institution in the transaction process (Issuer/Acquirer)	X	X
3	Unique Customer Identification Number (NIU)	Numerical or alphanumeric arrangement that is exclusively attributed to a bank customer.	X	
4	Kind of legal entities	It is the classification of the cardholder (1: Natural; 2: Legal).	X	
5	Gender of the cardholder	The gender of the cardholder.	X	
6	Document	The cardholder's type of document. The documents that must be presented are DUI, NIT, and others.	X	
7	Document Number	It is the document code presented according to the type of document selected.	X	
8	Municipality of residence of the cardholder	Municipality where the cardholder lives, according to DUI or information provided by the client.	X	
9	Unique identifier or card number	Last four digits of the cardholder's card number	X	
10	Card issuing country	This field indicates the country where the card was issued, complete this field according to the ISO 3166-1 alpha-3 code for countries.	X	X
11	Type of payment card	It is the type of card that was used in the transaction (credit or debit).	X	
12	Card franchise	Brand of the franchise to which the debit or credit card belongs.	X	X
13	Card category	Card category based on metal color.	X	
14	transaction date	Date the card transaction was made; must contain the following format: YYYY-MM-DD Ex. 2021-05-01	X	X
15	establishment name	Name of the establishment or business where the purchase was made.	X	X
16	Merchant Category Code (MCC)	The Merchant Category Code (MCC) is a four-digit number listed in the ISO 18245 standard for retail financial services. It is used to classify a company according to the types of goods or services it provides.	X	X
17	Transaction amount	Transaction value represented in US dollars	X	X
18	Country of domicile of the establishment	The country of the business where the transaction payments are directed, the code will be used according to the ISO 3166 country catalog.	X	X
19	Transaction authorization code	It is a number that confirms or refers to the fact that the debit card or credit card transaction has been approved.	X	X

Pilot test (Overcoming Challenges):

Detailed international purchase data was obtained from four banks, representing 94% of credit and debit card transactions from commercial banks in El Salvador. The subsequent analysis revealed specific characteristics of the received information.



Informants were requested to provide online transactions only



Enhancing Data Consistency through Catalog Standardization



Rigorous research for a more accurate MCC assignment, and replace the initial codes provided by banks.



Enhancing Merchant Name Standardization with Python Script



El Salvador: Cross-border digital trade measurement 2021



Data process

Data transformation:

- Using a Python script we process each dataset, and standardize it, for consolidation into a single database. Subsequently, data cleaning is performed, which includes tasks such as removing duplicates.

Data modeling:

- The final step is data modeling in Power BI and the analysis of data through dashboards to obtain statistics on cross-border digital trade.



1

Data collection and storage:

- Credit and debit card transaction data is received from multiple financial institutions in a web repository. Subsequently, we download the data.



2

Business Name Standardization:

- Once the database is clean, one of the key challenges is standardizing the names of businesses or establishments, for which Python regular expressions are employed.



3



4

EL Salvador: Cross-border Digital Trade 2021



DEPARTAMENTO DEL SECTOR EXTERNO 2021

Tipo de comercio digital

Todas

Género

Todas

DIPS

Todas

Comercio

E-COMMERCE

NO E-COMMERCE

Bienes o Servicios

BIENES

SERVICIOS

EL SALVADOR - COMERCIO DIGITAL TRANSFRONTERIZO

Seleccionar fecha

1/1/2021

12/31/2021

Monto

\$460.6M

Transacciones

19.2M

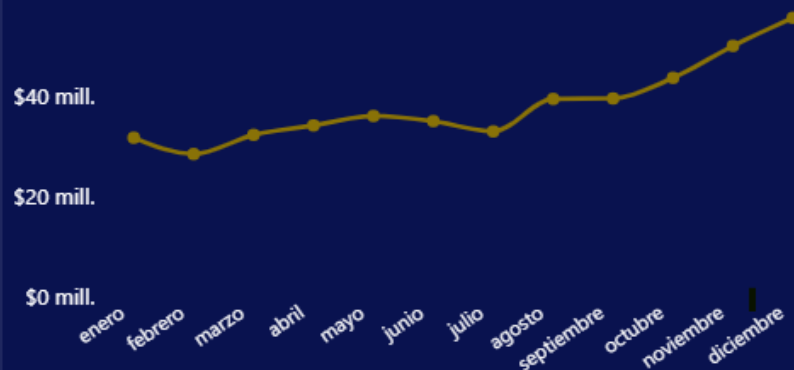
Mujeres

31.6 %

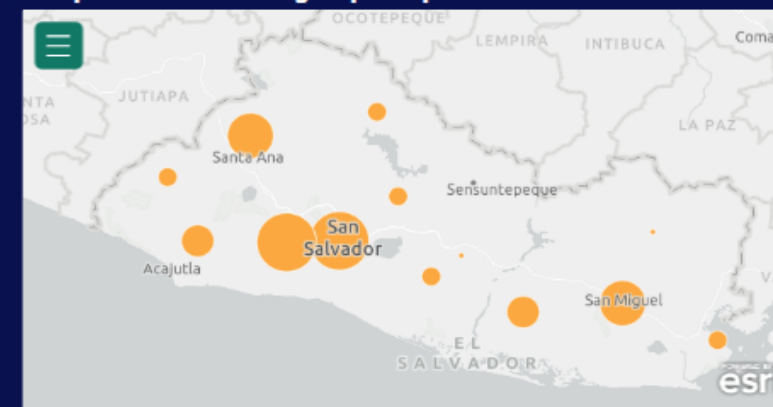
Hombres

57.7 %

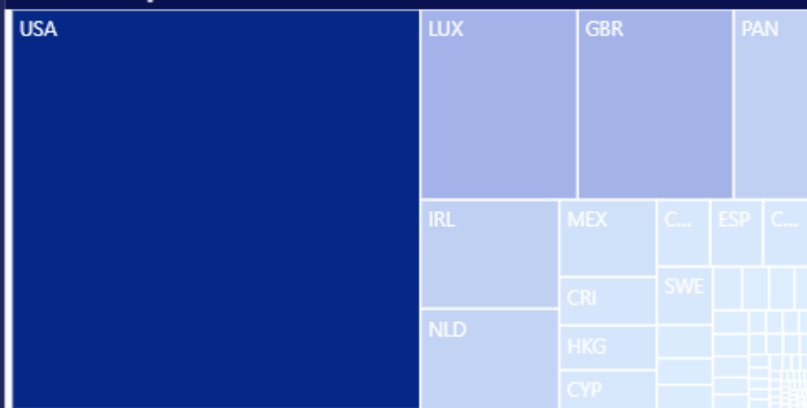
Tendencia mensual de compras



Compras de comercio digital por departamento



País de compra



Top 10 establecimientos

Establecimientos	No Transacciones	Total de compras
PAYPAL	32966	\$37,016,623.74
AMAZON MARKETPLACE	36986	\$30,008,976.69
EBAY	31915	\$21,820,278.96
FACEBOOK	23367	\$21,051,575.91
AVIANCA	19016	\$19,327,271.25
NETFLIX	1859	\$18,545,911.83
AMAZON	26709	\$16,746,907.13
UBER	11103	\$15,651,693.51
APPLE	6484	\$15,520,409.93
ROACOMPRO	1574	\$15,251,954.9



Cross-border Digital Trade 2021: Goods



DEPARTAMENTO DEL SECTOR EXTERNO
2021

Tipo de comercio digital

Todas

Género

Todas

DIPS

Todas

Comercio

- E-COMMERCE
- NO E-COMMERCE



Bienes o Servicios

- BIENES
- SERVICIOS



EL SALVADOR - COMERCIO DIGITAL TRANSFRONTERIZO

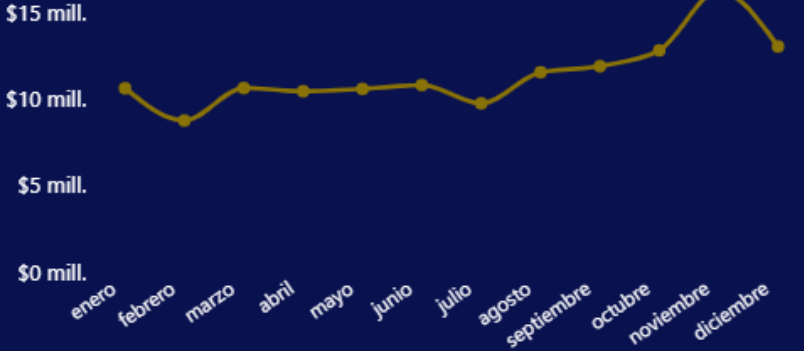
Seleccionar fecha

1/1/2021

12/31/2021



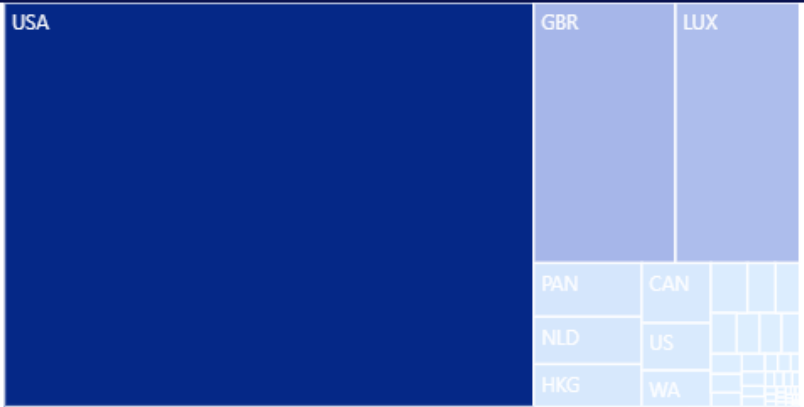
Tendencia mensual de compras



Compras de comercio digital por departamento



País de compra



Top 10 establecimientos

Establecimientos	No Transacciones	Total de compras
AMAZON MARKETPLACE	36986	\$30,008,976.69
EBAY	31915	\$21,820,278.96
APPLE	6484	\$15,520,409.93
ALIEXPRESS	23491	\$12,082,871.33
ALIBABA.COM	7123	\$11,955,446.25
SHEIN	25586	\$8,291,129.94
WALMART	12691	\$2,611,666.22
AEROPOST.COM	12260	\$2,438,771.42
MATUS INTERNATIONAL	663	\$2,378,741.31
BEST BUY	3465	\$2,176,264.64



Cross-border Digital Trade 2021: Services



DEPARTAMENTO DEL SECTOR EXTERNO 2021

Tipo de comercio digital

Todas

Género

Todas

DIPS

Todas

Comercio

E-COMMERCE

NO E-COMMERCE

Bienes o Servicios

BIENES

SERVICIOS

EL SALVADOR - COMERCIO DIGITAL TRANSFRONTERIZO

Seleccionar fecha

1/1/2021

12/31/2021

Monto

\$323.5M

Transacciones

16.5M

Mujeres



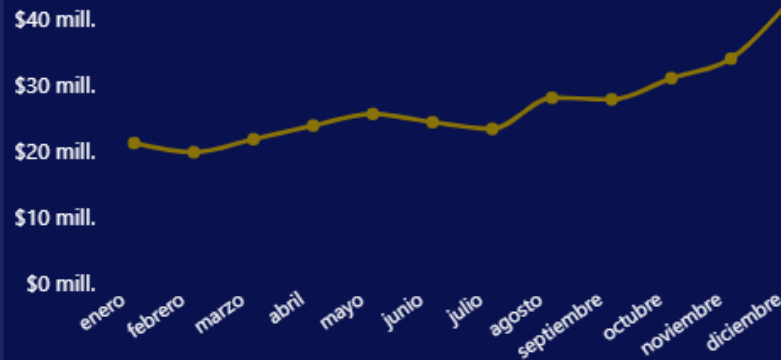
31.0 %

Hombres

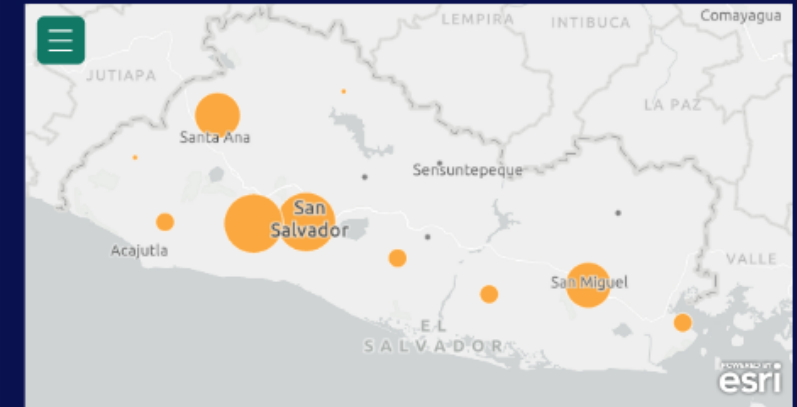


57.9 %

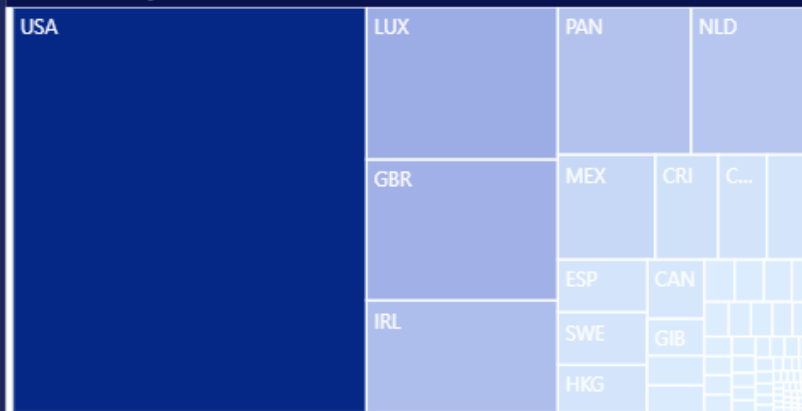
Tendencia mensual de compras



Compras de comercio digital por departamento



País de compra



Top 10 establecimientos

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PAYPAL	32966	\$37,016,623.74
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NETFLIX	1859	\$18,545,911.83
AMAZON	26709	\$16,746,907.13
UBER	11103	\$15,651,693.51
BOACOMPRO	1574	\$15,251,954.9
UNITED AIRLINES	9219	\$12,371,563.29
AIRBNB	12692	\$9,608,734.63
GARFNA	1547	\$8,048,047.03



Cross-border Digital Trade 2021: DIPS



DEPARTAMENTO DEL SECTOR EXTERNO 2021

Tipo de comercio digital

Todas

Género

Todas

DIPS

Selección múltiple

Comercio

E-COMMERCE

Bienes o Servicios

BIENES

SERVICIOS

EL SALVADOR - COMERCIO DIGITAL TRANSFRONTERIZO

Seleccionar fecha

01/01/2021

31/12/2021

Monto

\$184.0M

Transacciones

7.4M

Mujeres



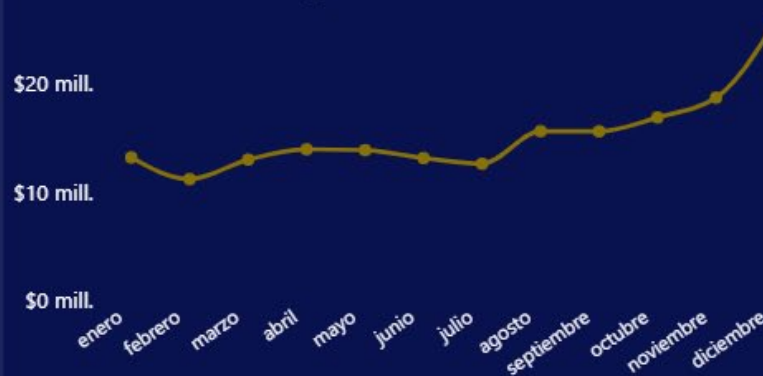
27.8 %

Hombres



63.3 %

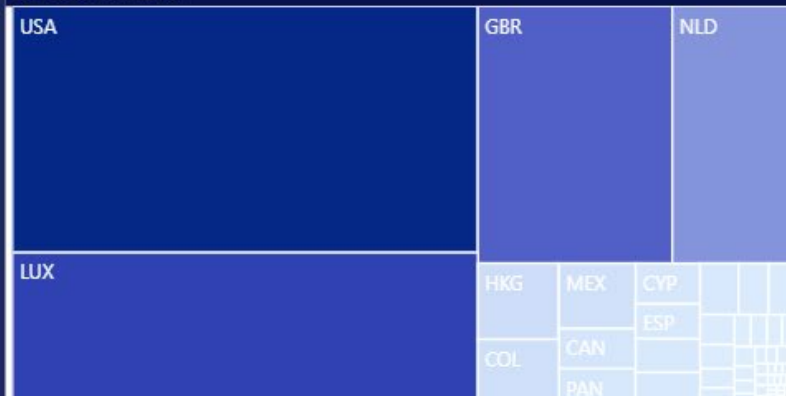
Tendencia mensual de compras



Compras de comercio digital por departamento



País de compra



Top 10 establecimientos

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PAYPAL	32966	\$37,016,623.74
AMAZON MARKETPLACE	36986	\$30,008,976.69
EBAY	31915	\$21,820,278.96
UBER	11103	\$15,651,693.51
BOACOMPRA	1574	\$15,251,954.9
ALIEXPRESS	23491	\$12,082,871.33
ALIBABA.COM	7123	\$11,955,446.25
AIRBNB	12692	\$9,608,734.63
UBER EATS	7590	\$5,110,877.13
RAPPI	4960	\$2,738,745.02



Cross-border Digital Trade 2021: Digitally ordered



DEPARTAMENTO DEL SECTOR EXTERNO 2021

Tipo de comercio digital

ORDENADO

Género

Todas

DIPS

Todas

Comercio

- E-COMMERCE
- NO E-COMMERCE
- NO HAY COINCIDENCIA

Bienes o Servicios

- BIENES
- SERVICIOS

EL SALVADOR - COMERCIO DIGITAL TRANSFRONTERIZO

Seleccionar fecha

01/01/2021

31/12/2021

Monto

\$276.4M

Transacciones

7.0M

Mujeres



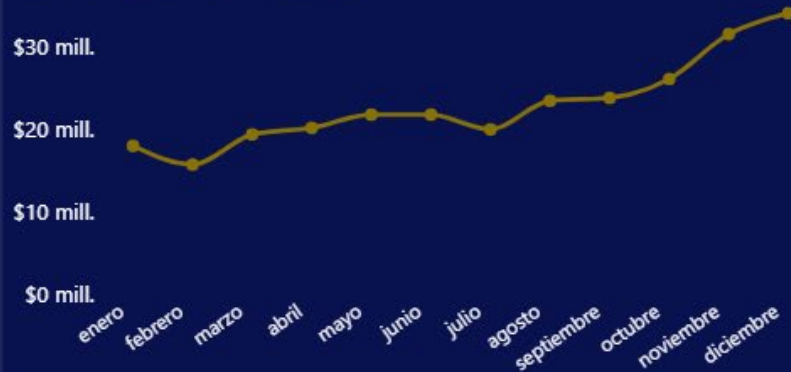
33.8 %

Hombres

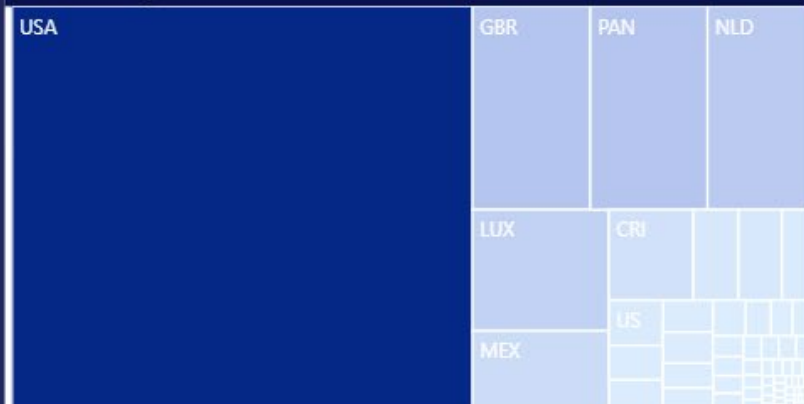


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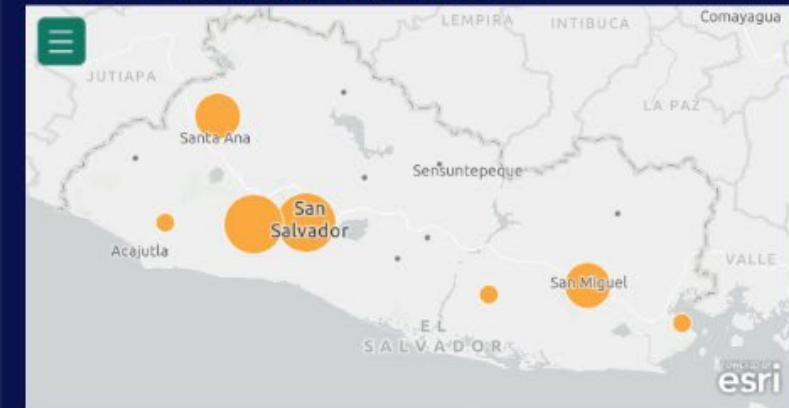
Tendencia mensual de compras



País de compra



Compras de comercio digital por departamento



Top 10 establecimientos

Establecimientos	No Transacciones	Total de compras
AMAZON MARKETPLACE	36986	\$30,008,976.69
EBAY	31915	\$21,820,278.96
AVIANCA	19016	\$19,327,271.25
AMAZON	26709	\$16,746,907.13
UBER	11103	\$15,651,693.51
APPLE	6484	\$15,520,409.93
UNITED AIRLINES	9219	\$12,371,563.29
ALIEXPRESS	23491	\$12,082,871.33
ALIBABA.COM	7123	\$11,955,446.25
SHEIN	25586	\$8,291,129.94



Cross-border Digital Trade 2021: Digitally ordered and delivered



DEPARTAMENTO DEL SECTOR EXTERNO
2021

Tipo de comercio digital

ORDENADO-ENTREGADO

Género

Todas

DIPS

Todas

Comercio

E-COMMERCE

NO E-COMMERCE

Bienes o Servicios

SERVICIOS

EL SALVADOR - COMERCIO DIGITAL TRANSFRONTERIZO

Seleccionar fecha

01/01/2021

31/12/2021

Monto

\$184.2M

Transacciones

12.2M

Mujeres



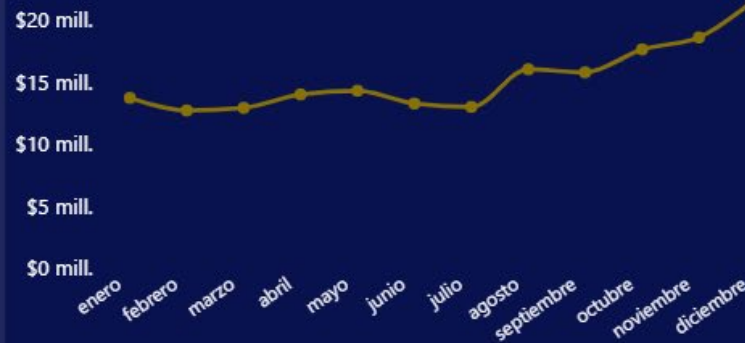
28.3 %

Hombres



60.6 %

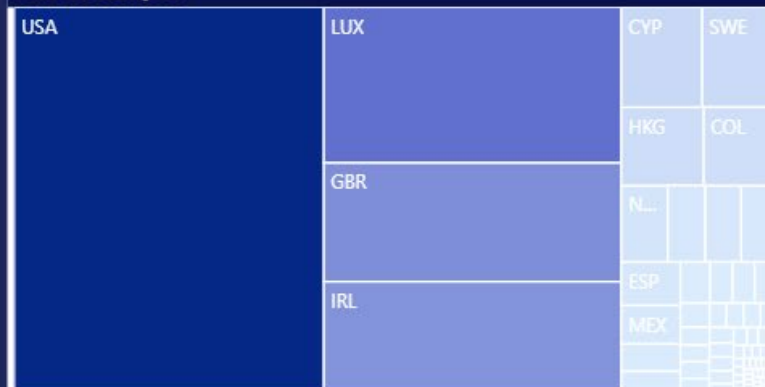
Tendencia mensual de compras



Compras de comercio digital por departamento



País de compra



Top 10 establecimientos

Establecimientos	No Transacciones	Total de compras
PAYPAL	32966	\$37,016,623.74
FACEBOOK	23367	\$21,051,575.91
NETFLIX	1859	\$18,545,911.83
BOACOMPRA	1574	\$15,251,954.9
AIRBNB	12692	\$9,608,734.63
GARENA	1547	\$8,048,047.03
SPOTIFY	661	\$4,587,605.55
DIGICEL DING	3861	\$3,750,685.31
PLAYSTATION	2796	\$3,577,292.99
DISNEYPLUS	2053	\$3,276,416.15





Limitations of credit and debit card information for measuring cross-border digital trade

- 1. Challenges in the Classification of Goods and Services:** The separation between goods and services for classification becomes complicated, especially when using digital intermediation platforms. Example: Microsoft
- 2. Complexities with Digital Intermediation Platforms:** Platforms such as Airbnb, PayPal and Uber pose particular challenges in determining the residency of countries involved in transactions. In addition, they make it difficult to clearly distinguish between the amounts attributed to purchased goods or services and the commissions retained by the platform. Uber example
- 3. Lack of detailed information:** makes it difficult to accurately classify goods It is not possible to use the Central Product Classification (CCP) for the classification of goods since only the name of the company is known and not the product purchased. Example Amazon
- 4. Measurement of Exports in Digital Commerce:** Measuring exports in digital trade presents challenges, since online card payments do not always necessarily correspond to digital trade. Example. Purchases through payment linkscommerce

Thank you

Contact: gabriela.aquino@bcr.gob.sv





BANCO
CENTRAL
DE RESERVA