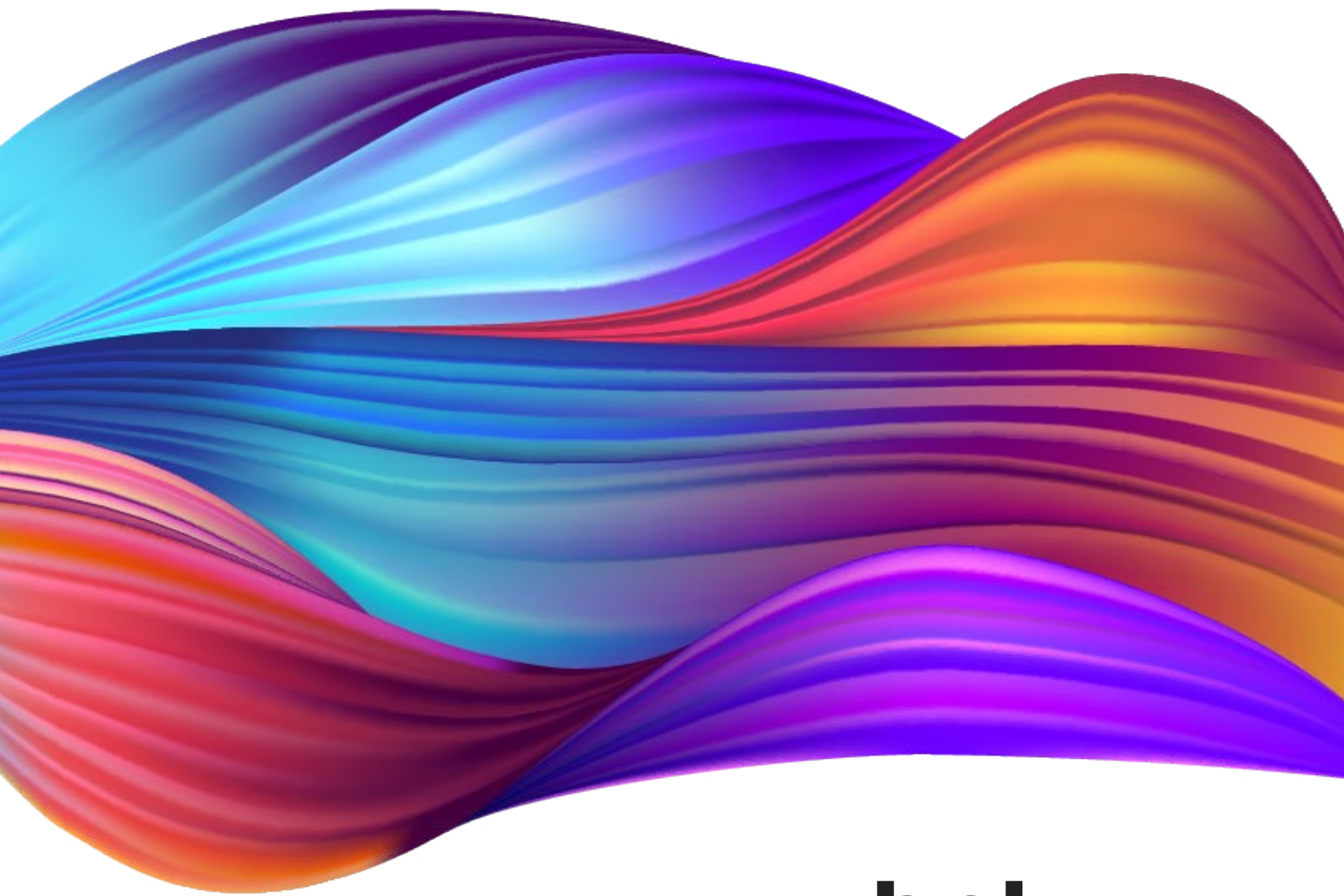


Mobile Wallets Report 2021



• **boku**

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Introduction

In 2019, mobile wallets overtook credit cards to become the most widely used payment type globally. In 2020, the COVID-19 pandemic became another accelerant of the continued digitization of the global payments landscape.

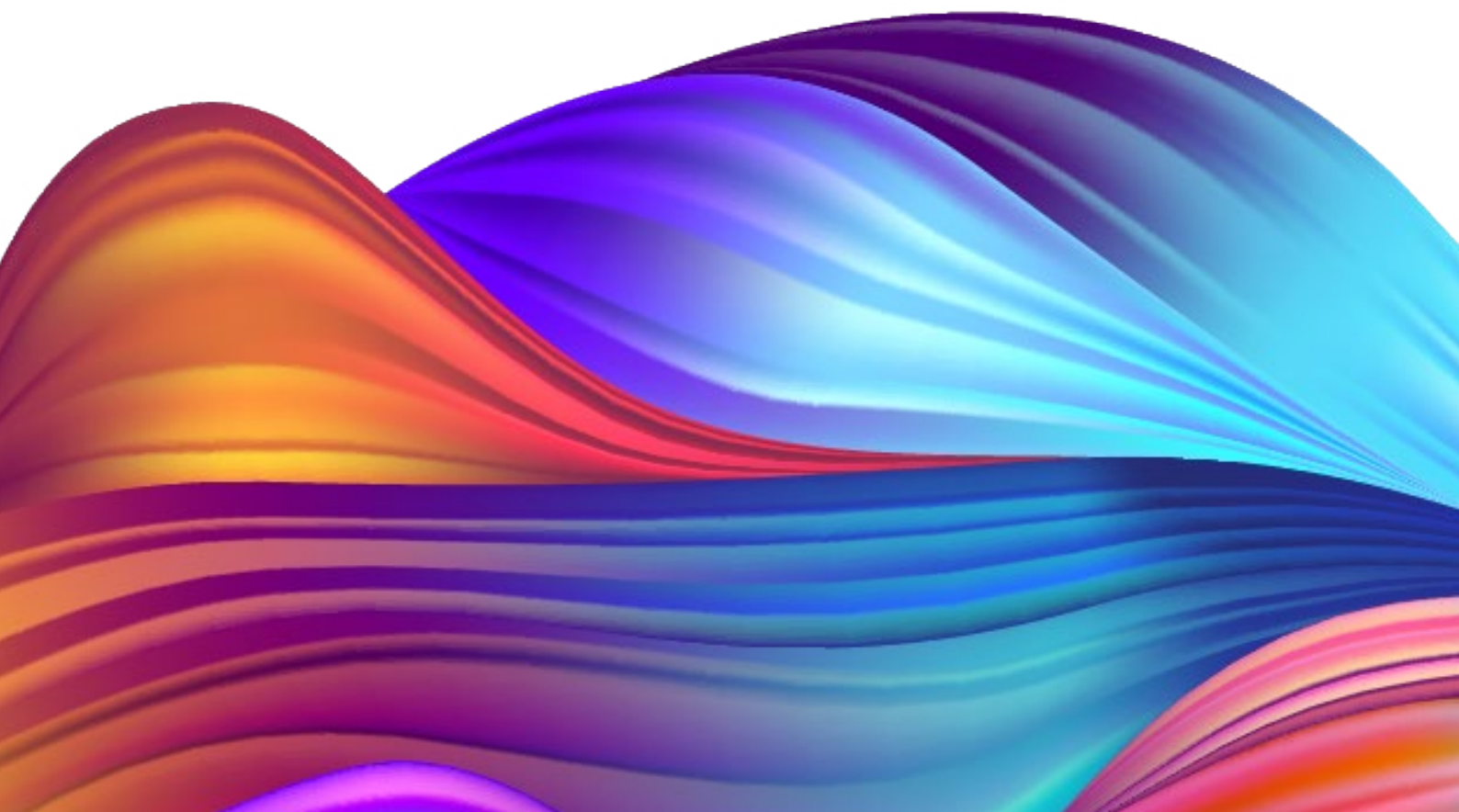
Despite this, there has been a lack of quality, consistent, information around the global, mobile payments landscape. Many global businesses find themselves reacting to the rapidly evolving payments landscape instead of proactively planning their mobile payments acceptance strategy.

This is why Boku has created the 2021 Mobile Wallets Report. We partnered with Juniper Research to collect mobile wallet market share and develop market forecasts along with in-market consumer surveys.

In this report, we'll uncover the global trends that are shaping the mobile payments landscape, digging deeper into regional trends, and even deeper into country-by-country analysis.

This report is designed to empower you the information you need to build your mobile payments acceptance strategy.

To learn more about Boku and the world's most comprehensive mobile payments network, please visit us at [boku.com](https://www.boku.com)



Global Trends

While the impact of the COVID-19 pandemic has been pointed to by many as a transformative effect on digital payments, it has merely been an accelerant of the digital payments revolution that has been underway for years. Mobile payments, and more specifically mobile wallets, have been the greatest driver of this revolution on a global basis.

This report will analyze the global mobile payments market in depth, focusing primarily on key developments within mobile wallets, as well as presenting data on how wallets are being used around the world. We will highlight key growth markets, and the trends driving this growth.

While countries and regions differ greatly in the current status, projected growth, consumer attitudes and more, there are a number of global trends that are worth further exploration:

The Bifurcation of Mobile Wallets

It's important to highlight the ways in which developed markets, primarily in North America and Western Europe, differ from the regions which are highlighted in this report.

Card-Based Mobile Wallets: In developed markets, in which debit, and especially credit card penetration dramatically exceeds the rest of the world, mobile wallets are far more likely to utilize payment card and contactless mobile device hardware, like NFC chips. The card-centric ecosystem, and the related dominance of OEM Pay services such as Apple Pay, Google Pay and Samsung Pay in Western markets has persisted as card payments have reached near ubiquity prior to the digital payments revolution. As such, wallets are almost entirely, card-based.

Card-based wallets are using contactless NFC payments with physical payment terminals that typically also accept card payments. These card-based wallets are increasingly adding express checkout functionality to merchants, so that consumers can use their stored payment and personal details.

Stored Value Mobile Wallets: In the rest of the world, and most notably in the markets covered in this report, payments cards have never reached the level of use that they have in North America and Western Europe. In many of these markets, cash and cash equivalent payment types are quite popular still today. As a result, mobile wallets have been built outside of the payment card ecosystem, and are increasingly becoming replacements for cash-based payment methods. These digital, stored value wallets can be funded directly from a bank account, or by other methods, including cash, bulk disbursements or P2P payments. Stored value mobile wallets rely on a multitude of cash in/cash out methods that enable consumers to digitize, transmit, and convert digital cash back into bank notes, when needed.

Stored value wallets are overwhelmingly using QR codes at the point-of-sale, as they have far greater ubiquity than NFC chips and enable merchants to accept payments with just a printed QR code and a mobile device. Stored value wallets are also being used online, both through the use of QR codes and integrated checkout processes that enable consumers to complete purchases on their mobile device.

Fundamentally, merchants, especially those that are globally dispersed, need to understand these models and the significant differences that exist. For global merchants, mobile payment acceptance is not about accepting one type of mobile wallet or another, but ensuring that consumers in every market will have the required selection on payment types in order to monetize transactions.

Regulation Catching Up to Untethered Growth

As mobile payments have become a global phenomenon, they are becoming the subject of increasing regulation as countries and regions attempt to play catch-up to the highly regulated nature of the payments market globally.

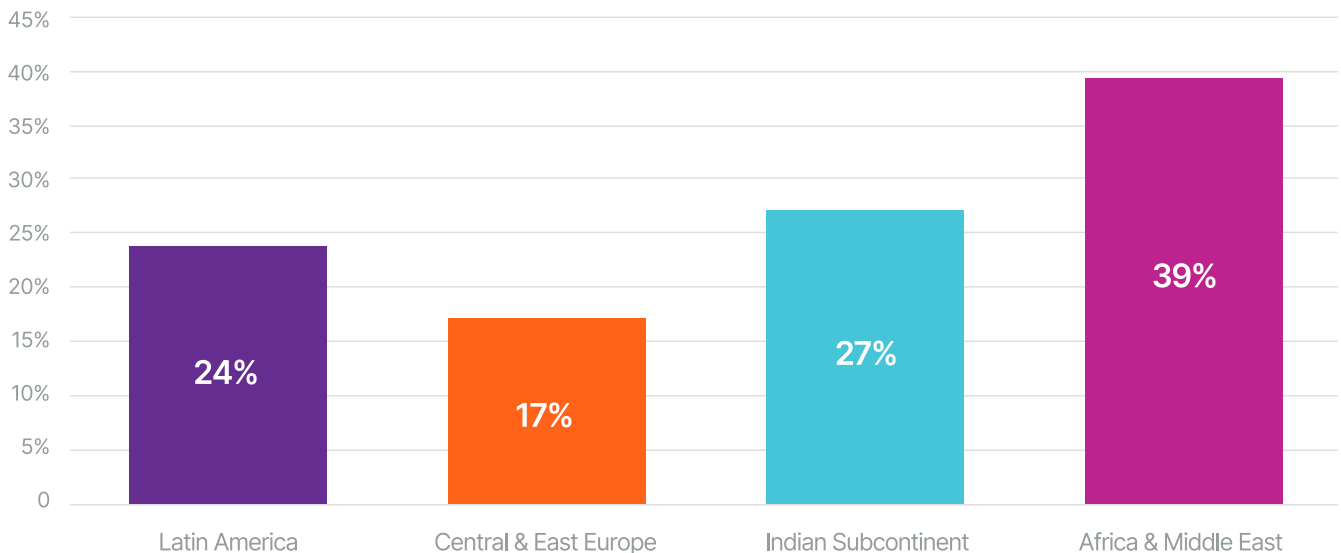
Much of this regulation has been to ensure that services are correctly licensed and users' information is secure, but recently regulation has been more of a driver for mobile wallet use than ever. This is in several ways:

Wallets are Bringing Billions of Consumers into Digital Commerce for the First Time

Mobile payments, both in the form of mobile money and now with modern, app-based mobile wallets have been a catalyst for bringing billions of new consumers into the digital economy, empowered with digital payments that enable them to transact online for the first time. Moreover, in many cases, as revealed in survey data in this report, consumers are using mobile wallets as a replacement for the traditional bank account.

UNBANKED POPULATION IN EMERGING MARKETS (2020)

Source: Juniper Research



While the unbanked rates in these regions remain high, smartphone penetration now outpaces bank accounts, enabling more and more consumers to access sophisticated, digital financial services.

Regulators have been key to supporting mobile wallet initiatives in order to boost financial and digital participation. For example, the Kenyan National Treasury issued supportive rules as far back as 2014, enabling a framework for mobile money growth.

Going forward, mobile wallets will continue to be critical in supporting greater financial and digital inclusion especially as eCommerce becomes mainstream in emerging markets. Jumia, the Nigerian eCommerce company that has become a pan-African marketplace, is just one example of this transformation.

Mobile Wallets are Accelerating the path to Cashless Societies

In several countries, mobile wallets have been an important way in which regulators are striving to reduce the rate of cash usage. Below, several countries who have taken this approach are examined:

- **Saudi Arabia:** As a part of the Vision 2030 strategy for the Kingdom's future, Saudi Arabia has targeted much greater use of digital payments, including aiming for 70% of payments being cashless by 2030.
- **Japan:** Japan is supporting more cashless payments, in order to become friendlier for international tourists, driven by the Tokyo Olympics. This has seen the widespread deployment of contactless POS terminals and mobile wallets within the country.
- **India:** While the government's 2016 banknote demonetization efforts were problematic for a number of reasons, they became a catalyst for mobile wallet adoption, with Paytm nearly doubling from 140 million to 270 million users in about a year.

Clearly, mobile payments can be a major driver for the transition to a cashless society, particularly where rates of card usage are low. As such, we anticipate that government backed mobile wallet initiatives will become increasingly important over the next five years.

National QR Code Payment Standards

As stored value wallets are being used primarily with QR codes at the point-of-sale, the lack of standardization across mobile wallets has created chaos for merchants and consumers alike. Traditionally, each wallet has had its own code for each merchant, resulting in a litany of QR codes that could be used for any given transaction.

To streamline the use of QR codes, regulators have started to introduce universal, standardized QR code schemes that operate across payment methods. For example, in India, the UPI system has led to a massive explosion in QR code payment use, by standardizing and opening the system. Outside of specific country regulations, EMVCo has published a set of standard rules for QR code payments, which has been adopted by several countries. There are numerous recent examples of increased standardization here:

- **Pakistan:** In September 2019, the State Bank of Pakistan mandated that all QR payment providers adopt the EMVCo QR payment standards, and that all current providers who are non-EMVCo had to comply with these standards by March 2020.
- **Indonesia:** Bank Indonesia rolled out the QRIS (Quick Response Code Indonesia Standard) in 2020, which requires each wallet provider to use a standard type of QR code for payments. This also applies to foreign mobile wallets being used by tourists whilst in Indonesia—and thus wallets from across the region will now have to use the standard code.
- **Saudi Arabia:** In February 2020, vendor HPS rolled out a QR-based National Payment System in Saudi Arabia in partnership with SAMA (Saudi Arabia Monetary Authority).

With the many other examples, QR code standardization is clearly growing rapidly. This presents an opportunity for mobile wallets, further accelerating the use of QR codes and mobile payment growth trends. We anticipate that more countries will adopt positive postures towards QR code regulation as they look to increase their cashless credentials.

The Increasing Domination of Asia

One consistent element among all of the commentary on eCommerce and mobile wallets is that Asia is the market to watch. This has been for a three main reasons:

- **China's Leading Role:** China has been the leading example of wallet use in the market to date. The likes of Alipay and WeChat Pay have been the go-to case studies for wallet deployment and have indeed seen sizeable growth to date.
- **Japan's Long History of Wallets:** Japan, while a less high profile market than China, does have a long history with wallets. The first mobile wallet in the world was launched by iMode (part of NTT Docomo) in Japan in 1999, showing how ahead of the curve it has been. These wallets have since proliferated into new areas and new brands have joined the fray, resulting in a highly dynamic market situation.
- **India's Emergence:** The launch of the UPI in India in August 2016, along with the country's demonetization efforts later that year were tipping points in terms of mobile wallet use in the country, resulting in the widespread use of mobile wallet payments since. This is the primary example of how a system rollout can stimulate rapid digital transition.

Going forwards, other areas of Asia will be main drivers of growth. We expect the following factors to contribute to this growth:

- **Emerging Economies:** In these areas, there are numerous economies that are well set to see rapid expansion in terms of mobile wallet use, such as Indonesia, the Philippines, Vietnam and Thailand. These markets do not have high levels of card usage, and thus are perfectly positioned for rapid mobile wallet growth.
- **Foreign Investment:** Further accelerating growth in emerging markets is the influx of capital coming from digital players around the world. Investments from China, Japan, and even Silicon Valley are driving the mobile payments ecosystem forward in Asia.

Asia will continue to be the largest mobile wallet region in the world, as Southeast Asia will more than compensate for stagnant growth in China.

The Emergence of New Markets

Although Asia Pacific has been the biggest regional market for mobile wallet usage, there has been significant growth within developed markets such as Latin America, Africa & the Middle East that are all expected to grow rapidly.

Latin America is well placed for growth, as it already has a high level of eCommerce, as well as several mobile wallets that are growing quickly. While card payments have been popular in Brazil in particular, overall it is well suited for digital payments disruption.

Africa & Middle East also has strong growth prospects. The rise of mobile money has seeded the market in Africa, meaning that there is already a very large addressable mobile wallets market. In this area, the challenge will be in broadening what users do with mobile wallets in these markets.

In both regions, we anticipate that 'super apps' can play a pivotal role, but that these apps are yet to emerge fully in these areas. We anticipate that over the next five years, mobile wallets in these markets will increase their capabilities and will enjoy a period of very strong growth as a result.

Real-Time Payment Schemes

Digital payments are not limited to stored value wallets, of course, and a new trend has been emerging in a number of markets: Real-Time Payments (RTP). Unlike traditional ebanking that relies on bank credentials like account numbers and transmit money through traditional, slower technologies, real-time payment schemes use digital credentials like phone numbers, mobile apps, and true to their name, modern technology that can transmit funds in real-time. These schemes are being driven both by retail bank partnerships as well as central banks looking to increase the use of digital cash payments.

A few examples of RTP schemes include:

- **Unified Payments Interface (UPI)** – India
- **PromptPay** – Thailand
- **Pix** – Brazil
- **Cobro Digital (CoDi)** – Mexico

RTP schemes are changing mobile payments in a few ways, most notably as a payment method that merchants can accept directly. For merchants, this means both being able to offer a payment option that more consumers may have access to, but also the promise of real-time settlement.

At the same time, RTP schemes are a boost to mobile wallets, as they enable another convenient, and now real-time method for topping up stored value wallets.

The impact on RTP schemes has yet to be fully realized for mobile wallets, and it is unclear if consumers will prefer to use RTP as a payment method over mobile wallets. Survey results from five countries conducted for this report indicate that discounts and rewards are a driving factor for mobile wallet use, and may give them an advantage over RTP schemes at the point of sale.

There are a number of emerging trends that are and will continue to impact the mobile payments ecosystem over the next five years. Moreover, new trends are likely to emerge as well. We will continue to monitor the mobile payments ecosystem globally over the next year to deliver key insights in our 2022 Mobile Wallets Report.

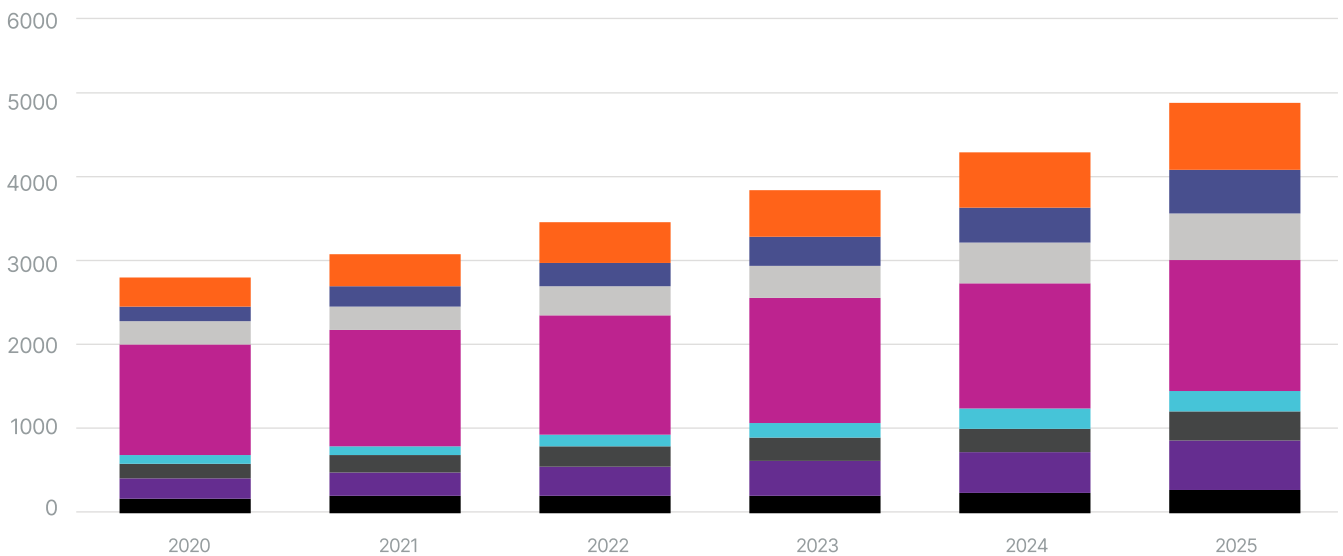
Global Metrics & Forecasting

At the end of 2020, there were over 2.8 billion mobile wallets in use, and we project this number to increase by nearly 74% over the next five years, to reach 4.8 billion by the end of 2025.

The following chart breaks down the contributions of each region globally towards mobile wallet use:

MOBILE WALLETS IN USE (M) BY REGION (2020-2025)

■ North America
 ■ Latin America
 ■ West Europe
 ■ Central & East Europe
 ■ Far East & China
 ■ Indian Subcontinent
 ■ Rest of Asia Pacific
 ■ Africa & Middle East



	2020	2021	2022	2023	2024	2025
■ North America	184.7	201.0	219.9	233.2	247.6	275.4
■ Latin America	227.3	277.5	336.6	406.9	494.9	605.7
■ West Europe	200.1	216.3	245.1	257.0	285.3	331.9
■ Central & East Europe	76.3	103.2	143.0	187.5	215.0	248.9
■ Far East & China	1,343.4	1,386.9	1,429.8	1,466.5	1,501.8	1,541.4
■ Indian Subcontinent	269.2	287.4	333.2	393.7	465.6	550.4
■ Rest of Asia Pacific	179.7	223.1	281.7	349.9	426.5	520.7
■ Africa & Middle East	322.9	390.0	471.4	561.5	669.6	798.2
● Global	2,803.7	3,085.5	3,460.6	3,856.5	4,306.3	4,872.7

- Far East & China will be by far the largest mobile wallet market, with WeChat Pay and Alipay accounting for a large number of users. These wallets will be used predominantly for eCommerce, but also have strong money transfer use cases.
- Africa & Middle East will also see high levels of adoption; growing by 147% between 2020 and 2025. This is driven by expanded usage of mobile money services such as M-Pesa, which are increasingly offering additional services such as access to eCommerce.
- eRetail payments continue to be the primary driver of mobile wallet usage in West Europe. However, some markets, such as the UK, are seeing contactless payments as a major driver of usage going forward; spurred on by the pandemic.

Fastest Growing Countries for Mobile Payment – Transaction Volume

Over the next five years, we project the following growth rates for mobile payment transaction volume by country (in millions of \$) :

	2020	2025	CAGR	
1	Russia	\$9,166.7	\$65,101.2	48.0%
2	Brazil	\$19,844.9	\$130,708.3	45.8%
3	Singapore	\$1,161.2	\$7,565.7	45.5%
4	Germany	\$17,120.4	\$105,219.8	43.8%
5	Malaysia	\$4,584.2	\$25,946.0	41.4%
6	Portugal	\$1,888.5	\$9,823.4	39.1%
7	Philippines	\$13,145.3	\$59,312.4	35.2%
8	Sweden	\$6,818.9	\$29,978.4	34.5%
9	Mexico	\$19,040.6	\$83,687.5	34.5%
10	Indonesia	\$22,968.9	\$98,093.6	33.7%
11	France	\$16,822.7	\$66,892.6	31.8%
12	Norway	\$2,876.7	\$10,825.6	30.4%
13	Thailand	\$8,827.3	\$33,104.6	30.3%
14	Vietnam	\$11,906.8	\$44,049.2	29.9%
15	Spain	\$13,319.6	\$40,110.7	24.7%
16	Denmark	\$4,273.4	\$12,483.0	23.9%
17	Saudi Arabia	\$8,332.2	\$23,449.4	23.0%
18	Netherlands	\$7,317.6	\$20,371.0	22.7%
19	UK	\$48,054.7	\$116,927.4	19.5%
20	India	\$167,579.8	\$401,690.4	19.1%
21	Australia	\$23,250.9	\$54,324.5	18.5%
22	Canada	\$30,630.6	\$68,994.6	17.6%
23	Pakistan	\$30,480.9	\$66,262.8	16.8%
24	US	\$469,187.1	\$1,018,392.2	16.8%
25	Japan	\$166,019.1	\$310,889.9	13.4%
26	United Arab Emirates	\$2,247.3	\$4,018.7	12.3%
27	Taiwan	\$28,709.3	\$47,835.9	10.8%
28	South Korea	\$66,246.7	\$108,549.5	10.4%
29	Egypt	\$21,254.9	\$34,826.6	10.4%
30	Nigeria	\$44,335.4	\$71,003.0	9.9%
31	China	\$3,377,408.9	\$5,344,518.5	9.6%
32	Kenya	\$110,987.5	\$160,053.4	7.6%

Fastest Growing Countries for Mobile Commerce – Physical Goods Sales

Over the next five years, we project the following growth rates for remote purchases of physical goods purchased using mobile wallets by country (in millions of \$) :

	2020	2025	CAGR
1 Brazil	\$3,496.7	\$16,335.8	36.1%
2 Mexico	\$1,594.3	\$7,347.4	35.7%
3 Pakistan	\$1,072.2	\$4,525.5	33.4%
4 India	\$9,115.4	\$32,005.4	28.6%
5 Russia	\$3,281.3	\$10,788.8	26.9%
6 France	\$5,895.8	\$18,325.8	25.5%
7 Germany	\$10,885.4	\$31,966.0	24.0%
8 Singapore	\$70.7	\$202.2	23.4%
9 Egypt	\$197.1	\$543.8	22.5%
10 Malaysia	\$332.7	\$912.7	22.4%
11 Thailand	\$681.5	\$1,822.1	21.7%
12 Kenya	\$991.3	\$2,635.8	21.6%
13 Indonesia	\$1,878.1	\$4,959.4	21.4%
14 Vietnam	\$896.2	\$2,340.8	21.2%
15 Philippines	\$1,091.9	\$2,848.1	21.1%
16 Australia	\$458.7	\$1,187.3	20.9%
17 Norway	\$1,768.9	\$3,981.6	17.6%
18 Sweden	\$2,970.9	\$6,647.6	17.5%
19 Netherlands	\$3,605.4	\$7,558.9	16.0%
20 Spain	\$4,899.1	\$9,834.6	15.0%
21 Portugal	\$1,130.3	\$2,249.0	14.8%
22 United Arab Emirates	\$69.9	\$136.7	14.4%
23 Denmark	\$2,181.8	\$4,161.1	13.8%
24 South Korea	\$15,556.1	\$28,796.4	13.1%
25 Japan	\$59,324.8	\$104,148.5	11.9%
26 Taiwan	\$9,684.4	\$16,866.9	11.7%
27 UK	\$23,474.5	\$40,646.3	11.6%
28 China	\$762,693.1	\$1,270,273.8	10.7%
29 Canada	\$13,544.9	\$22,349.4	10.5%
30 Nigeria	\$529.2	\$868.4	10.4%
31 Saudi Arabia	\$529.2	\$868.4	10.4%
32 US	\$188,090.3	\$287,688.8	8.9%

Fastest Growing Mobile Wallets

In 2020, there were 55 stored value mobile wallets that processed over \$1 billion in annual transactions. By 2025, we project that 69 stored value mobile wallets will process more than \$1 billion in transactions.

Over the next five years, we project the following growth rates for transactions processed by mobile wallet (in millions of \$) :

			2020	2025	CAGR
1	SadaPay	Pakistan	\$65.6	\$6,066.1	147.3%
2	MercadoPago	Brazil	\$4,073.7	\$43,156.6	60.3%
3	PicPay	Brazil	\$9,877.2	\$59,123.6	43.0%
4	GrabPay	Singapore	\$480.8	\$2,838.8	42.6%
5	Favepay	Singapore	\$320.5	\$1,892.5	42.6%
6	DBS PayLah!	Singapore	\$256.4	\$1,514.0	42.6%
7	YooMoney	Russia	\$3,964.3	\$22,662.3	41.7%
8	QIWI	Russia	\$3,267.3	\$18,677.7	41.7%
9	PayPal	Russia	\$435.6	\$2,490.4	41.7%
10	WebMoney	Russia	\$5,086.7	\$29,078.1	41.7%
11	Boost	Malaysia	\$1,240.7	\$6,773.8	40.4%
12	GrabPay	Malaysia	\$2,114.9	\$10,391.6	37.5%
13	Touch N Go	Malaysia	\$2,002.1	\$9,687.3	37.1%
14	GrabPay	Philippines	\$1,136.5	\$5,400.1	36.6%
15	PayMaya	Philippines	\$6,364.6	\$26,644.6	33.2%
16	MercadoPago	Mexico	\$7,546.9	\$31,307.0	32.9%
17	RappiPay	Mexico	\$4,025.0	\$16,697.1	32.9%
18	PayPal	Mexico	\$2,264.1	\$9,392.1	32.9%
19	G-Cash	Philippines	\$7,501.1	\$30,557.1	32.4%
20	Klip	United Arab Emirates	\$418.5	\$1,595.2	30.7%
21	PayPal	Brazil	\$1,279.6	\$4,869.0	30.6%
22	OVO	Indonesia	\$10,753.6	\$40,907.7	30.6%
23	Shopeepay	Indonesia	\$4,399.2	\$16,735.0	30.6%
24	LinkAja	Indonesia	\$3,910.4	\$14,875.5	30.6%
25	Gojek	Indonesia	\$3,714.9	\$14,131.8	30.6%
26	DANA	Indonesia	\$3,421.6	\$13,016.1	30.6%
27	Truemoney Wallet	Thailand	\$5,591.1	\$19,298.3	28.1%
28	LINE Pay	Thailand	\$2,625.1	\$9,060.8	28.1%
29	GrabPay	Thailand	\$430.1	\$1,484.5	28.1%
30	AirPay	Thailand	\$602.1	\$2,078.3	28.1%
31	mPay	Thailand	\$516.1	\$1,781.4	28.1%
32	Momo	Vietnam	\$7,503.1	\$25,765.0	28.0%

33	ViettelPay	Vietnam	\$3,564.0	\$12,238.4	28.0%
34	AirPay	Vietnam	\$1,500.6	\$5,153.0	28.0%
35	ZaloPay	Vietnam	\$750.3	\$2,576.5	28.0%
36	STC Pay	Saudi Arabia	\$6,492.2	\$20,026.4	25.3%
37	JazzCash	Pakistan	\$11,812.0	\$23,759.7	15.0%
38	Easypaisa	Pakistan	\$11,438.7	\$23,008.9	15.0%
39	PhonePe	India	\$57,093.5	\$112,175.2	14.5%
40	PayTM	India	\$43,918.1	\$83,797.9	13.8%
41	Google Pay (Tez)	India	\$29,944.2	\$57,135.0	13.8%
42	Amazon Pay	India	\$20,362.0	\$38,851.8	13.8%
43	LINE Pay	Japan	\$72,064.2	\$128,707.1	12.3%
44	Rakuten Pay	Japan	\$48,692.0	\$86,964.3	12.3%
45	AuPay (KDDI)	Japan	\$29,215.2	\$52,178.6	12.3%
46	PayPay	Japan	\$19,476.8	\$34,785.7	12.3%
47	MerPay	Japan	\$13,633.8	\$24,350.0	12.3%
48	Mobikwik	India	\$10,247.6	\$18,277.3	12.3%
49	Mi-Pay	China	\$4,454.1	\$7,403.0	10.7%
50	Vodafone Cash	Egypt	\$4,270.2	\$7,080.3	10.6%
51	CareemPay	Egypt	\$908.5	\$1,506.5	10.6%
52	Etisalat Cash	Egypt	\$906.2	\$1,502.5	10.6%
53	myFawry	Egypt	\$13,174.0	\$21,843.6	10.6%
54	Orange Cash	Egypt	\$1,894.7	\$3,141.6	10.6%
55	LINE Pay	Taiwan	\$10,639.1	\$17,532.5	10.5%
56	Jkopay	Taiwan	\$4,372.2	\$7,205.2	10.5%
57	Paga	Nigeria	\$23,191.2	\$37,408.0	10.0%
58	OPay	Nigeria	\$9,838.7	\$15,870.1	10.0%
59	MTN MoMoPay	Nigeria	\$7,027.6	\$11,335.8	10.0%
60	KongaPay	Nigeria	\$2,811.1	\$4,534.3	10.0%
61	PalmPay	Nigeria	\$1,405.5	\$2,267.2	10.0%
62	Kakao Pay	South Korea	\$29,564.6	\$47,246.3	9.8%
63	Naver Pay	South Korea	\$24,347.3	\$38,908.7	9.8%
64	Toss	South Korea	\$9,565.0	\$15,285.6	9.8%
65	PAYCO	South Korea	\$6,614.9	\$10,571.0	9.8%
66	E Wallet by Etisalat	United Arab Emirates	\$795.2	\$1,148.5	7.6%
67	Beam	United Arab Emirates	\$711.5	\$1,027.6	7.6%
68	Alipay	China	\$1,713,782.2	\$2,345,642.8	6.5%
69	WeChat Pay	China	\$1,570,967.0	\$2,150,172.6	6.5%

Asia Pacific

Asia Pacific is undoubtedly one of the most promising areas for mobile wallet growth, boasting many of the most active mobile wallet markets in the world, including China and India. However, emerging markets in this region are potentially the most important opportunities for wallet growth.

MOBILE WALLET USERS

2020 **2025** ▲
1.8B **2.6B**

POPULATION USING MOBILE WALLETS

2020 **2025** ▲
42.1% **58.6%**

MOBILE WALLET TRANSACTION VOLUME

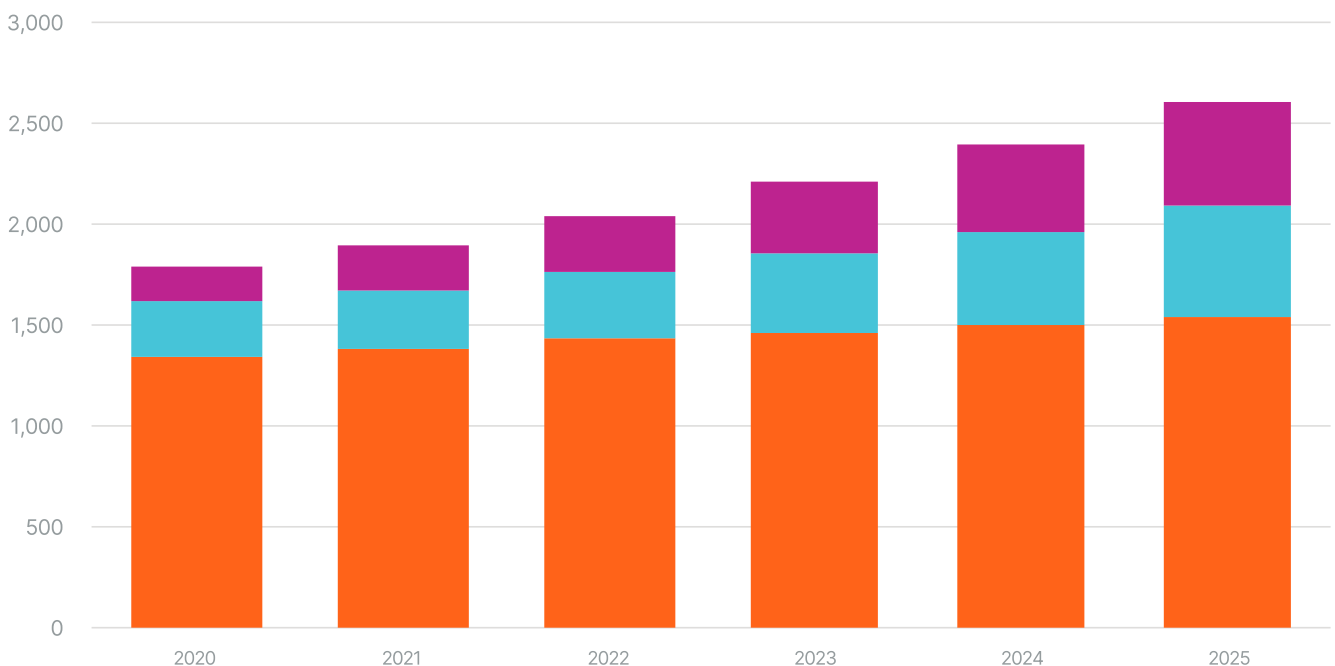
2020 **2025** ▲
377B **636B**

MOBILE WALLET TRANSACTION VALUE

2020 **2025** ▲
\$4.1T **\$7T**

MOBILE WALLET USERS BY REGION (M)

Far East & China Indian Subcontinent Rest of Asia Pacific



Asia Pacific – Regional Trends

We see the following trends shaping the mobile payments marketplace in Asia Pacific over the next five years:

International Expansion of Chinese Wallets are unlikely to be impactful

One major trend in the mobile wallet market in Asia Pacific has been rising expansion of the major Chinese wallets outside of their home market. There have been several notable expansions in the area:

- WeChat Pay was authorized for use in Indonesia in January 2020, which has a significant potential addressable market. This follows a long period of expanding into several emerging markets, including select countries in Africa.
- Alipay’s parent company, Ant Financial has established a more international presence, taking a stake in Pakistani mobile money platform bKash, as well as operating in Hong Kong, Japan, Singapore, South Korea, Vietnam and Australia, as well as markets in Europe and North America.

Despite the rise presence of these wallets internationally, their impact is mostly limited to allowing Chinese tourists to spend internationally, which has had limited utility during the COVID-19 pandemic. As such, while announcements regarding these wallets are still important, it seems unlikely that they will conquer emerging Asian markets as many once thought.

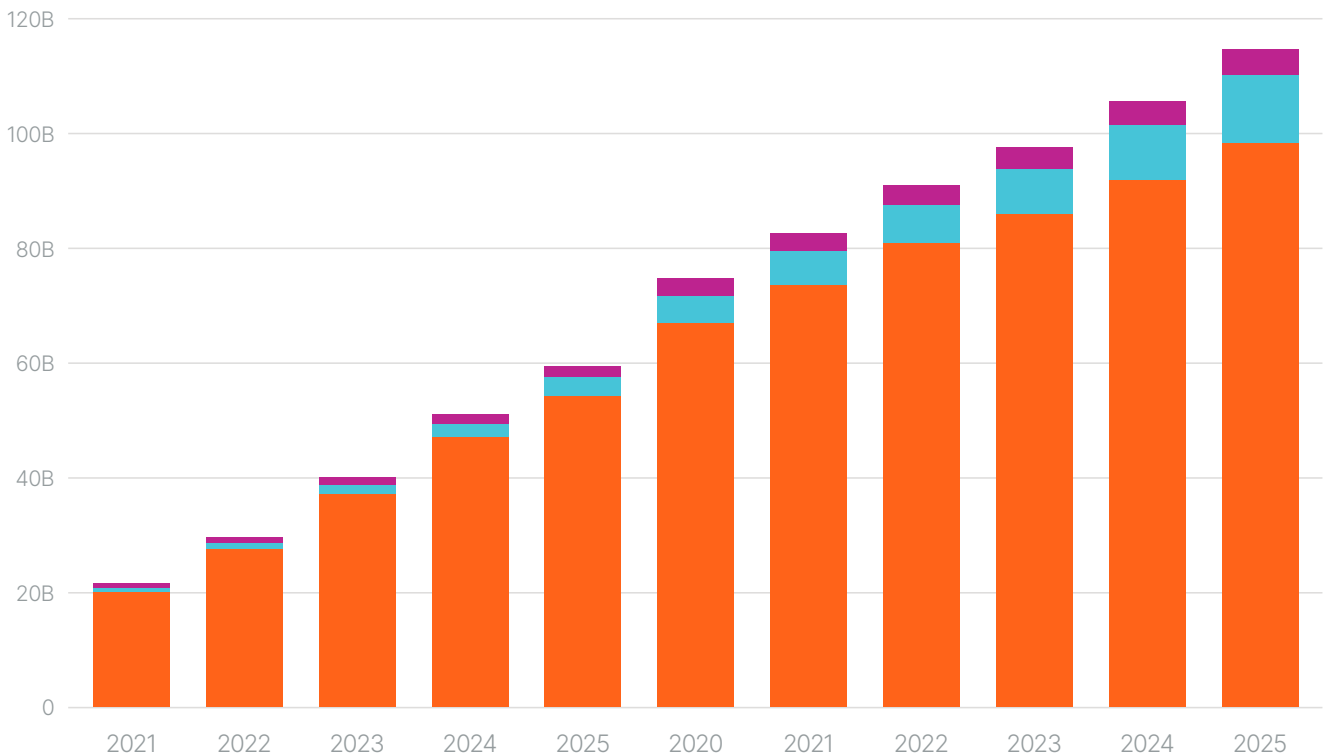
Rising eCommerce Use

For some years, Asia Pacific, led by Far East & China, has been a significant force in the eCommerce space, and this is anticipated to continue over the next 5 years.

In 2025, China will still be the main driver for eCommerce in Asia Pacific, given its large presence and continuing growth. However, over the next 5 years, large and important markets will have emerged in other countries, such as Indonesia, Pakistan, the Philippines and several others.

TOTAL REMOTE PHYSICAL GOODS PURCHASES (B), ALL DEVICES

Far East & China Indian Subcontinent Rest of Asia Pacific



Rapid growth in eCommerce use has been directly supported by rising mobile wallet use, with easy access to eCommerce being a major determining factor in which wallets succeed or fail. For eCommerce merchants, knowing which mobile wallets to support remains a significant challenge. With the wide availability of different wallets, the costs in supporting acceptance for all payment types is prohibitively high. As such, merchants need to prioritize the markets and payment methods that will deliver the greatest monetization, while working with partners that can accelerate their rollout.

QR Code Payments Leading the Way

In the Asian market, there have been a number of different approaches in the wallet space, But QR code payments have been leading for a number of years. This is a trend we anticipate will intensify over time, with national QR code scheme launches in markets in Asia, such as Singapore and Indonesia, supporting further growth. QR code payments are fundamentally suited to the Asian market. For the most part, card payments are not well established, meaning that to roll out card infrastructure, such as POS terminals, would be high cost. Comparatively, a QR code payment solution using a payment label or smartphone is much simpler and cheaper.

As such, we anticipate that QR codes will dominate in this region, although NFC will enjoy some success in certain countries, including Japan and South Korea. QR codes and their ease of deployment will drive their use, particularly in emerging markets.

Super Apps Important, but Not the Only Approach

To date, the term ‘super app’ has become synonymous with the rollout of digital payment services in Asia. In many cases, apps such as WeChat, Gojek and Grab have shown that mobile wallet features as part of a wider ecosystem are valuable. Indeed, these services have recorded strong growth throughout the past few years and have added more capabilities to their solutions over time.

However, super apps are not the only way to grow and reach users. Many mobile wallets in Asia are standalone mobile wallet services, without the being part of a wider super app ecosystem.

Ultimately, merchants need to determine how best to find and acquire new customers. Super apps born out of or partnered with existing marketplaces are likely the greatest avenues for customer acquisition, but don’t exist in every market, requiring merchants have a flexible strategy.

Takeaways

- Asia will continue to be the most advanced region in the world for mobile wallet adoption. While growth in China has largely plateaued, the emerging markets of the region are still experiencing hypergrowth
- Competition and investment throughout the region are driving significant fragmentation. In many markets, several mobile wallets are highly popular, and consumers tend to use multiple wallets
- Established markets like Japan and Korea are experiencing rapid mobile wallet adoption as cash-based payments are being rapidly displaced

For merchants who are looking to accept mobile payments, Asia Pacific is the obvious place to start. Mobile wallet adoption and transaction volumes make mobile payment acceptance a prerequisite to eCommerce in Asia Pacific. However, payment fragmentation, and rapidly changing consumer preferences make mobile payment acceptance a significant challenge



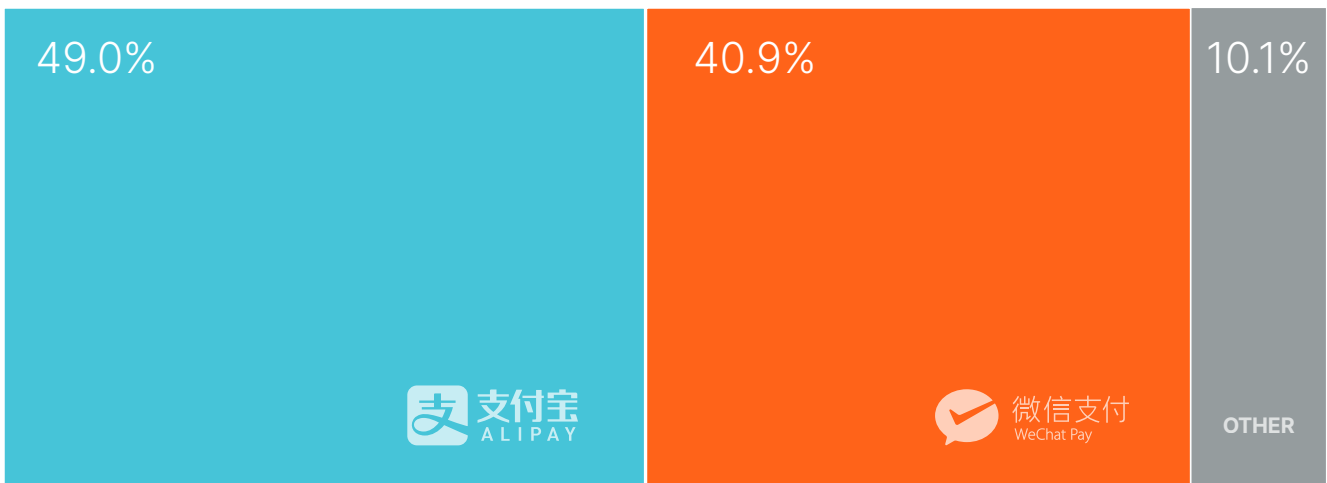
China

China is without a doubt the most mature mobile payments market in the world. WeChat Pay and AliPay form a duopoly for mobile wallets, with 1 billion and 1.2 billion users respectively. The lack of fragmentation as well as the concentration of users within these two wallets has meant that their acceptance is now commonplace, even amongst foreign merchants. While user growth in China is set to stagnate over the next five years, we expect to see continued growth in transaction volume and value.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$10.2K \$13.6K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>29.6% 31.3%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>1.18B 1.32B</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>83.6% 91.1%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>343B 511B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$3.5T \$5.5T</p>

WALLET MARKET SHARE

■ AliPay ■ WeChat Pay ■ Others

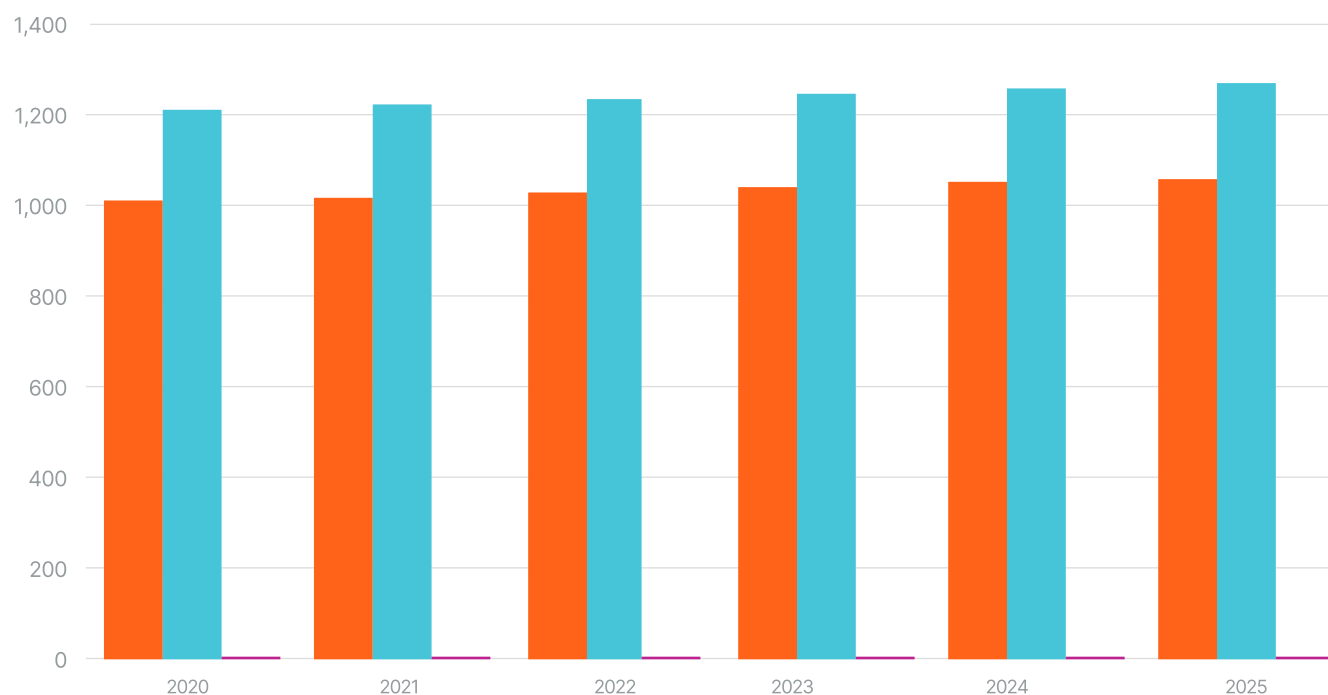


China – Competitive Landscape

China is a clear duopoly for mobile wallets, as both Alipay and WeChat pay have 1.2 and 1 billion users respectively in country with a population of 1.4 billion. These numbers make it clear that both the vast majority of the population are using mobile wallets, and that most Chinese consumers are using both WeChat and Alipay. While there are upstarts in China that combine to have over 250 million users, their penetration and usage pales in comparison.

USERS (M) BY MOBILE WALLET

■ WeChat Pay ■ Alipay ■ Mi-Pay



Takeaways

- China is by far the largest market for mobile payments in the world today. However, payment acceptance is high and the market is rapidly maturing
- While user growth is projected to slow to roughly 1.9% CAGR from 2020-2025, mobile payment volume is slated to increase by 7.9% over the next 5 years.
- China has a significant head start on the rest of the world when it comes to mobile payment acceptance, and the volume and value of transactions reflect that

Mobile payment acceptance has become table stakes for selling goods & services into China - most merchants already accept both Alipay and WeChat Pay, the duopoly that dominates mobile payments in the country. Despite stagnant user growth, China continues to grow in mobile payment transactions and value.



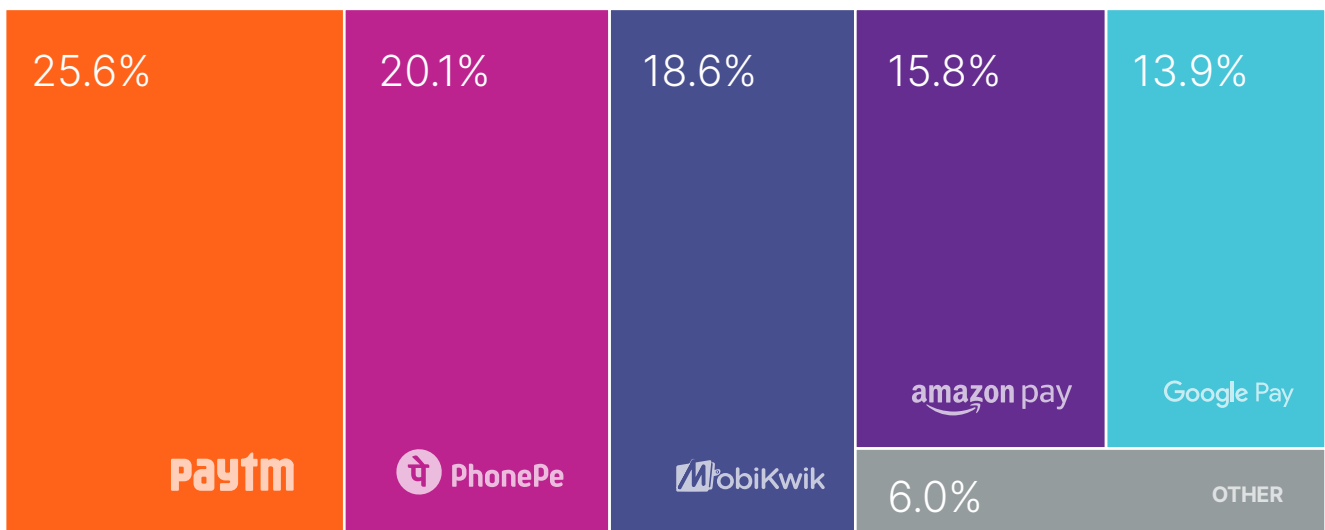
India

India is one of the more well-established mobile payments markets in the world. With over 200 million wallet users in 2020, which is expected to grow to over 434 million by 2025, mobile payments have taken hold. In 2016, India's demonetization policies led to rapid adoption of Paytm, with the wallet first reaching 10 million users in 2017.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$2K \$2.6K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▼</p> <p>40.7% 40.5%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>217M 434M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>15.7% 29.6%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>25B 71B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$172B \$417B</p>

MOBILE WALLET MARKET SHARE

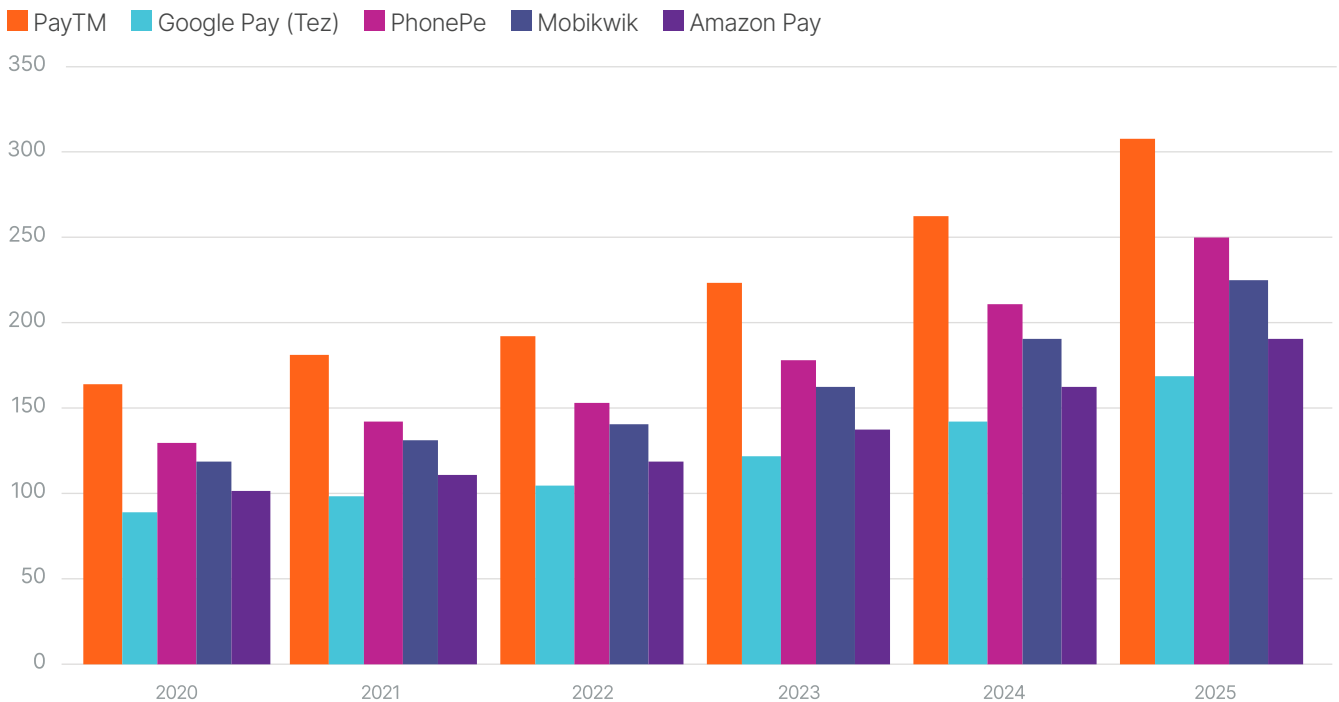
■ PayTM
 ■ PhonePe
 ■ MobiKwik
 ■ Amazon Pay
 ■ Google Pay
 ■ Others



India – Competitive Landscape

India is a highly competitive market for mobile wallets, as five mobile wallets have greater than 10% market share. New to the market is the Unified Payments Interface (UPI), an instant payments scheme supported by all major banks and used almost exclusively by mobile app. UPI has quickly become the top mobile payment method within India, and saw over 2.7 billion transactions in March 2021. The use of UPI creates a level playing field, which is stimulating India's wallets growth. Both GooglePay (formerly known as Tez) and AmazonPay enable wallet payments directly from UPI, while UPI can be used as a funding source for Paytm, PhonePe & Mobikwik.

USERS (M) BY MOBILE WALLET



Takeaways

- India is one of the most promising markets for mobile payments now and into the future, with 217 million wallet users today, set to double by 2025
- Support for multiple wallets is critical as survey respondents indicated an average of 3.5 wallets/ person
- Mobile wallet acceptance represents a significant incremental opportunity for merchants, as many consumers are adopting mobile wallets to gain access to digital payments for the first time, making eCommerce a possibility for the first time

India represents a massive market opportunity for online merchants, with a rapidly growing middle class and mass adoption of digital payments. It is however a challenging market due to high levels of competition and multi-wallet usage amongst many

India – Consumer Attitudes Deep Dive

Our consumer survey, which sampled 1,139 respondents, found that consumers use an average of **3.5 wallets in use per respondent**, the highest of any of our five deep dive countries. This means integrating all wallet options is essential in India for merchant success.

For the question “How long have you been using mobile wallets?”, 76% of respondents indicated that they started using mobile wallets over 2 years ago, showing how well established the mobile wallets market is in this country.

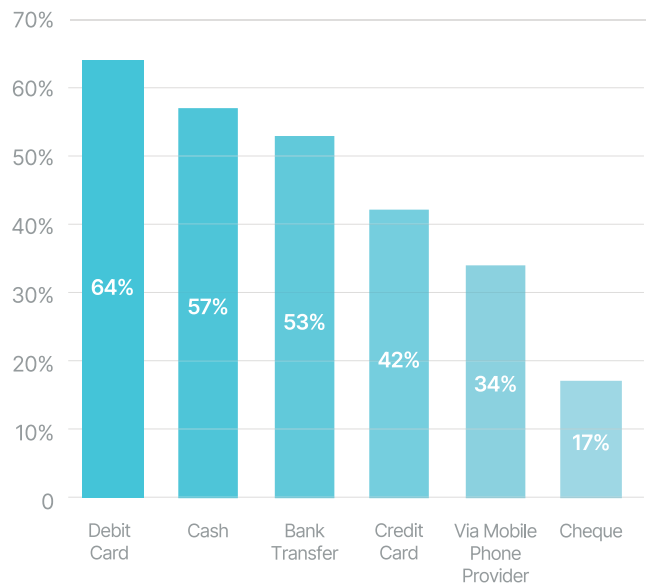
The chart below demonstrates that debit card has actually been the most displaced form of payment by mobile wallet innovation, but that cash is a close second, with bank transfer third. This is a clear indication that users are moving away from traditional, cash-centric payment methods into digital payments, which is further explained in the following chart:

In a market that has relatively high adoption as well as growth rates for mobile wallets, understanding the drivers become highly important.

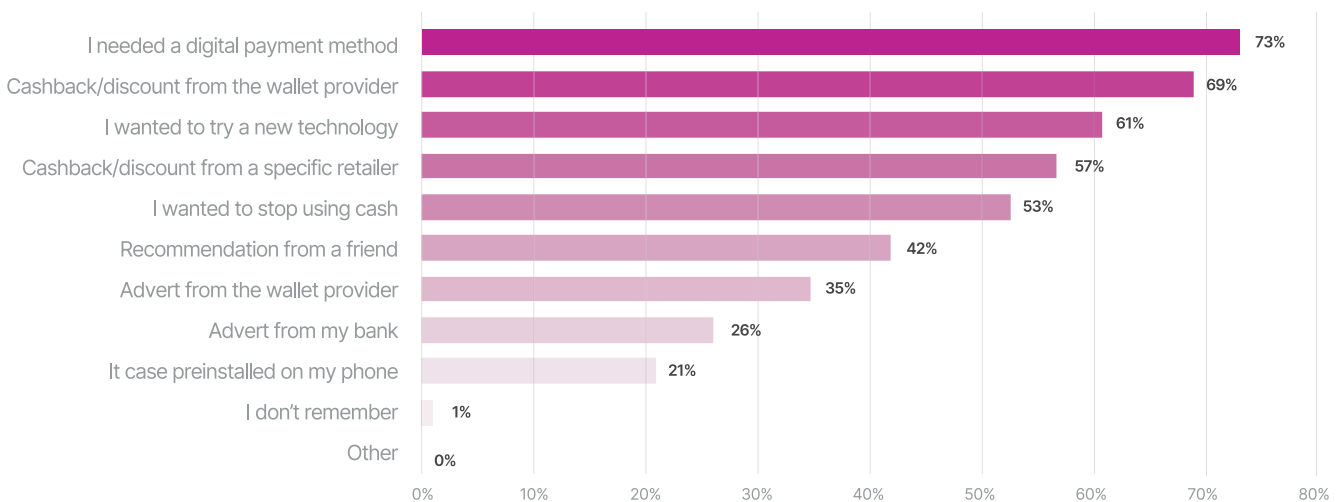
The need for a digital payment method is most likely due to a desire to transact online, where cash-based payments are not possible or expensive and inconvenient. The high response rate for a need for a digital payment method should be seen as an indicator to merchants that mobile wallet users in India are signaling high intent for online commerce.

Also interesting to note, are cash back offers, both from wallet providers and retailers. These types of promotions have clearly been effective in attracting new consumers to mobile wallets, but have likely also contributed to the competition and fragmentation that exists in the market.

PAYMENT METHODS USED PRIOR TO MOBILE WALLETS



DRIVERS FOR MOBILE WALLET ADOPTION





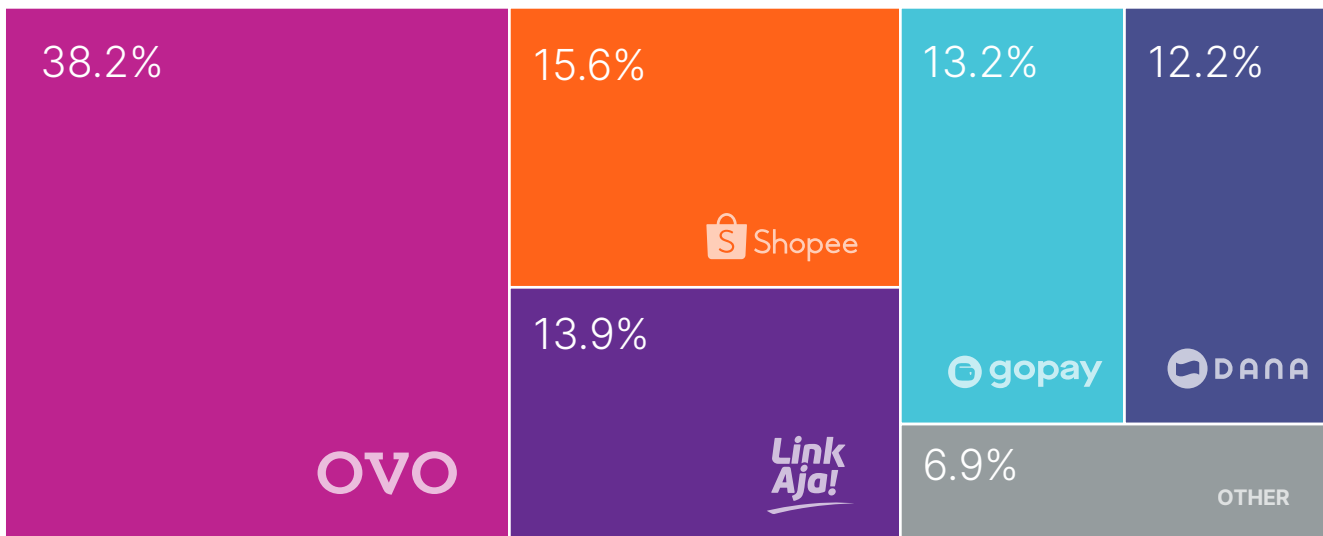
Indonesia

Indonesia represents one of the greatest opportunities for merchants accepting mobile payments. The third fastest growing country we profiled, mobile wallet penetration is set to triple over the next five years, with transactions growing nearly tenfold. A country with extremely low credit card penetration, mobile wallet adoption in Indonesia is bringing tens of millions of new consumers to digital commerce at a rapid pace.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$3.8K \$4K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>11.5% 13.2%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>63.6M 202M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>25.6% 76.5%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>1.7B 16B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$28B \$107B</p>

MOBILE WALLET MARKET SHARE

■ OVO ■ ShopeePay ■ LinkAja ■ GoPay ■ Dana ■ Others

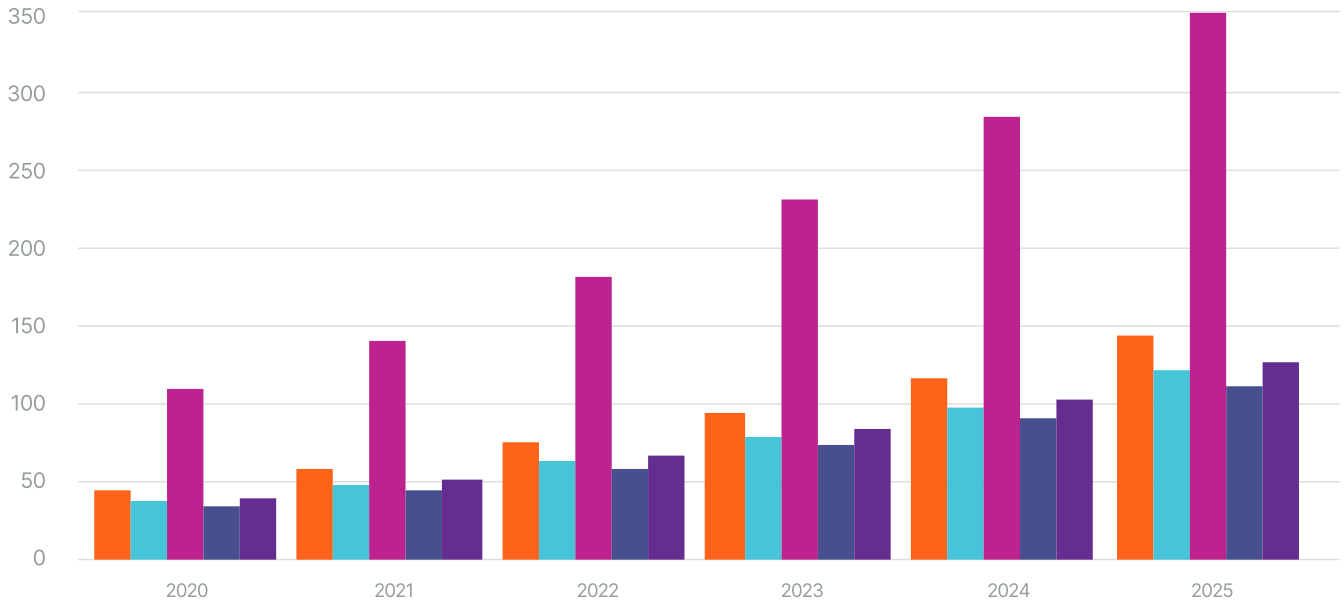


Indonesia – Competitive Landscape

Indonesia is a mobile payments market defined by extreme competition, with five mobile wallets battling for market share. Competition is particularly fierce as due to the rapidly growing market opportunity, with infusions of foreign venture capital funding aggressive promotional campaigns. ShopeePay, a relatively new entrant to the market has become the second most widely used wallet in Indonesia as a result of offering high rebates and other promotions to consumers. On average, consumers in Indonesia are using 3.16 mobile wallets, as they seek to maximize benefits from each one.

USERS (M) BY MOBILE WALLET

Shopeepay GoPay OVO DANA LinkAja



Takeaways

- Indonesia is one of the fastest growing mobile payments markets in the world, with mobile wallet users set to more than triple (from 63.6M to 202M) by 2025
- Market fragmentation is the greatest challenge to mobile payment acceptance in Indonesia, with five notable mobile wallets, and 3.16 mobile wallets per consumer
- With a young, mobile-only population, mobile wallets are being used heavily (81% of survey respondents) for online purchases

Indonesia is one of the fastest growing markets in the world for mobile payments but is one of the more challenging markets for merchant acceptance, due to fragmentation and rapidly changing consumer preferences. Indonesia is another country rapidly making the transition from cash-centricity to digital (mobile) payments.

Indonesia – Consumer Attitudes Deep Dive

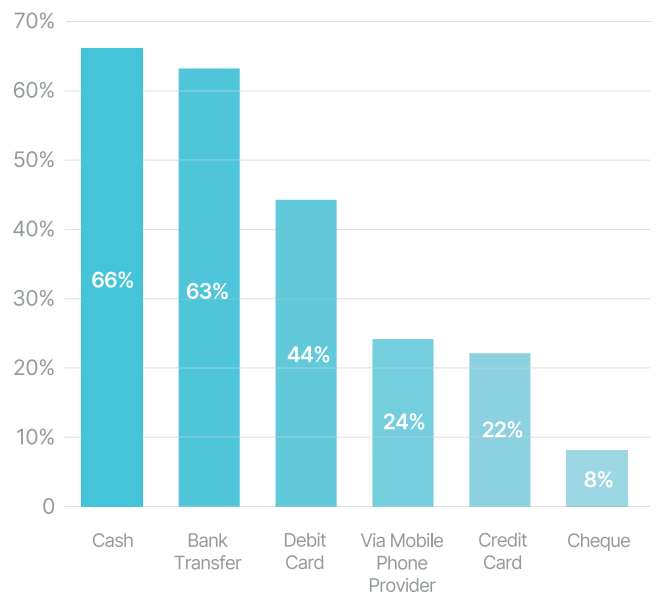
Our consumer survey, which sampled 1,035 respondents, found that consumers use an average of **3.2 wallets in use per respondent**, almost as many as our survey found in India.

As with many countries surveyed, we found that cash is the payment type being most displaced by the use of mobile wallets. In Indonesia, bank transfers and debit cards are the payment types most displaced. Even paying via mobile phone providers outranked credit cards, which can likely be attributed to the extremely low credit card penetration rate in Indonesia.

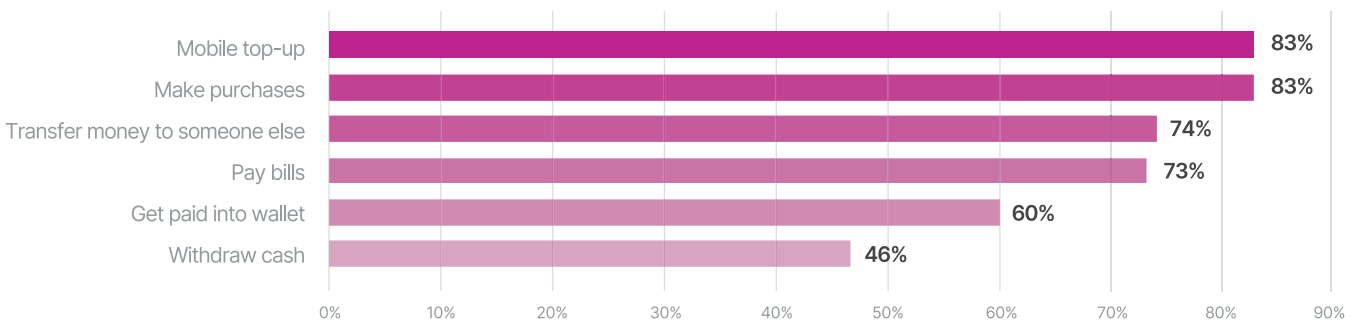
Indonesia, similarly to other emerging markets, has consumers utilizing mobile wallets for a wide set of use cases. While payments and mobile top-ups are the top use cases at 83% each, consumers are using mobile wallets for P2P transfers, bill payment, receiving payments and withdrawing cash at high rates. This signals the use of the mobile wallet as a proxy for a bank account.

In Indonesia, we have found that while mobile payments are being used at the point of sale, the use of online shopping is significantly greater, with 81% of respondents. When compared to in-store payments at around 40% when combined, this highlights Indonesia as an eCommerce centric market, especially for mobile payments. The survey further explained the reason for this, as respondents cited online shopping as the functionality of ‘Super Apps’ that they used most. These results align to Indonesia as a mobile-only market for most consumers in with heavy mobile wallet and Super App competition.

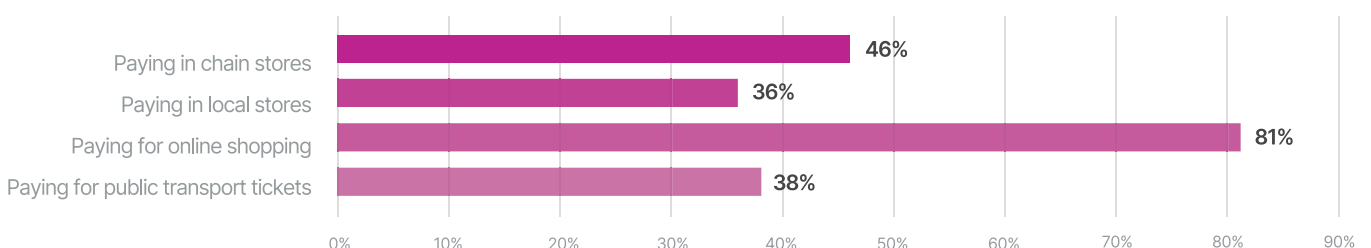
PAYMENT METHODS USED PRIOR TO MOBILE WALLETS



MOBILE WALLET ACTIVITIES

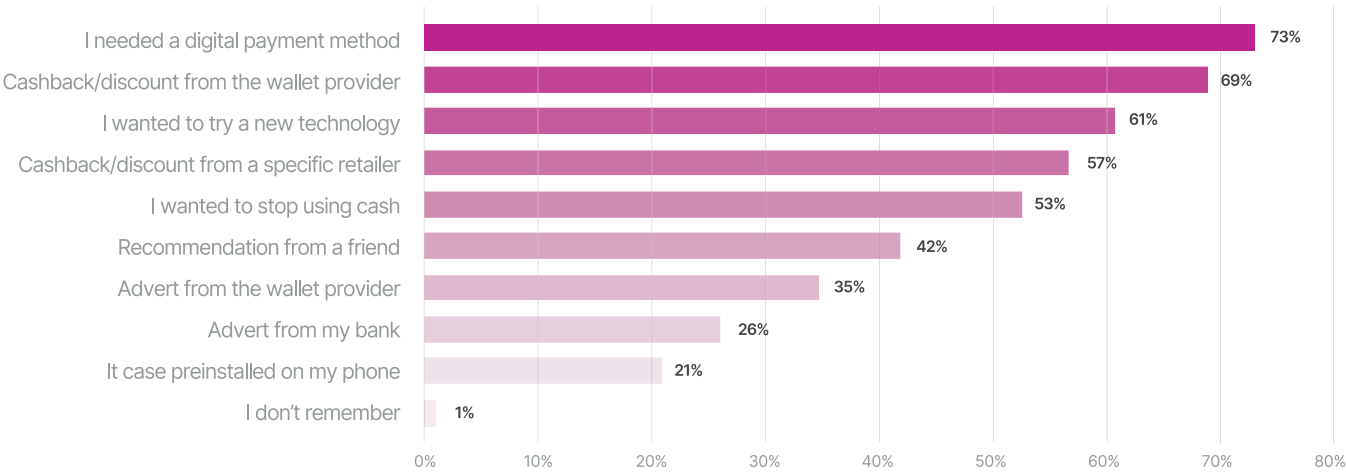


WHERE MOBILE WALLETS ARE USED



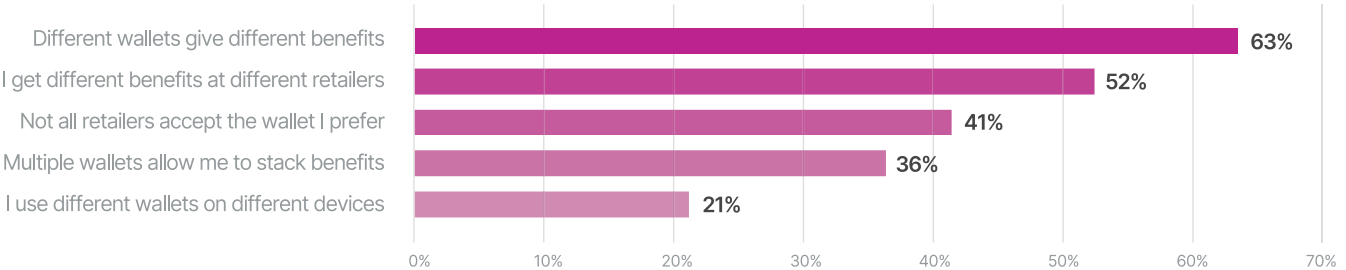
The rush to eCommerce is further supported by consumers drivers to adopt mobile wallets. Our survey found that the top reason consumer cited was, “I needed a digital payment method” which would be a requirement for many consumers, especially when considering the extremely low level of credit card penetration in Indonesia.

DRIVERS FOR MOBILE WALLET ADOPTION



Cash back and discounts are also cited as significant drivers for mobile wallet adoption, which has been the greatest contributor to the average of 3.2 wallets per consumer surveyed. These points were supported also by the question, “Why do you use more than one wallet?” to which the top two responses were about being able to obtain different benefits by using multiple wallets. This can happen both through the wallets providing different benefits themselves, or through the promotions that certain wallets may have with specific retailers. Additionally, 36% of consumers cited that they use multiple wallets to stack benefits.

REASONS FOR USING MORE THAN ONE MOBILE WALLET



The third-most popular response, at 41%, was that “not all retailers accept the main wallet I want to use,” highlighting the issue of merchant acceptance. From this response, it is clear that merchant acceptance is an issue for consumers, but that the consumers themselves are willing to adapt to utilize mobile payments.



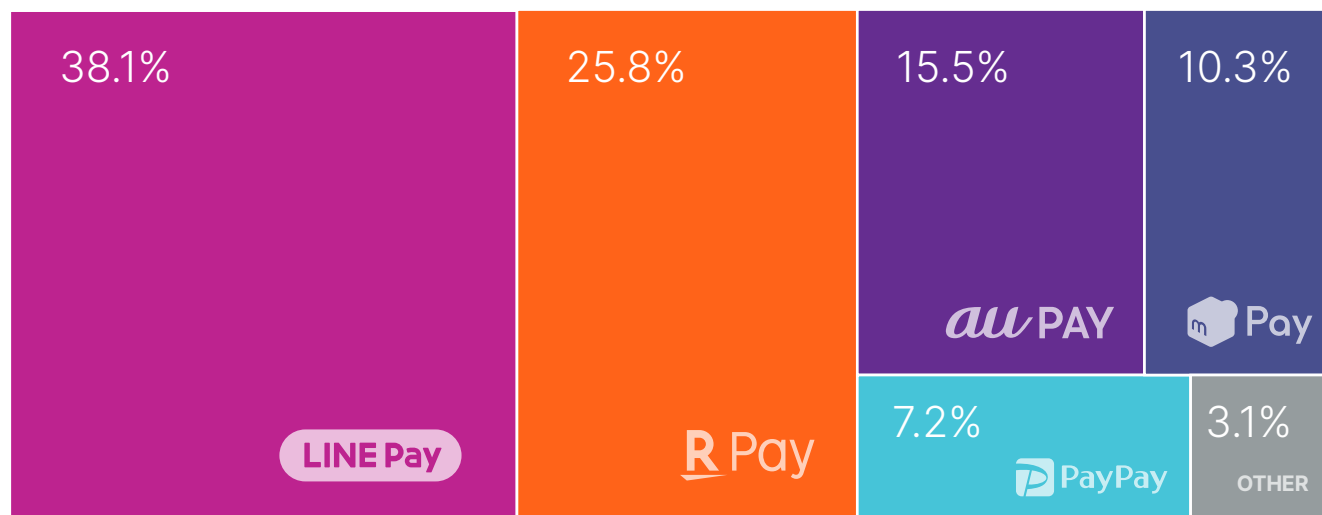
Japan

One of the most developed markets covered in this report, Japan is a country in which mobile payments have existed in many forms throughout the years. Despite strong credit card penetration, mobile wallets are playing a significant role in Japan, as they increasingly displace cash, moving Japan towards digital payment dominance. This market is highly fragmented, as many mobile payment options exist, as eCommerce marketplaces, messaging apps, and mobile operators all have wallet offerings.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$38.4K \$40.1K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>5.9% 7.1%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>89.1M 123.4M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>70.6% 98.6%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>7.2B 14.6B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$189B \$337B</p>

MOBILE WALLET MARKET SHARE

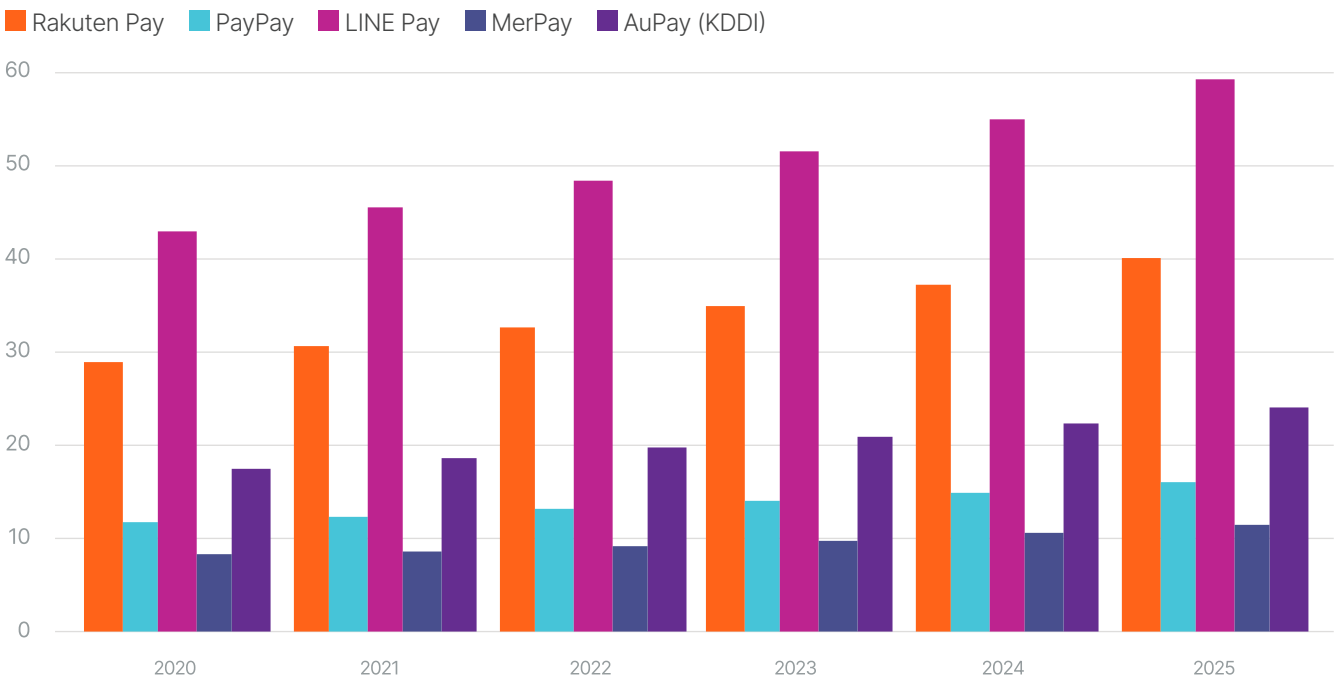
■ LINE Pay ■ Rakuten Pay ■ AuPay ■ PayPay ■ MerPay ■ Others



Japan – Competitive Landscape

Japan has a relatively mature, but rapidly evolving mobile payments landscape. The popular mobile messaging service, LINE, has nearly 40% market share. Mobile Operators have provided popular payment types for years, and KDDI's mobile wallet, AuPay is now the #3 wallet in the market. Two eCommerce marketplaces, Rakuten (Rakuten Pay) and Mercari (MerPay) have more than 30% market share combined. This market has a healthy level of competition, and the next five years will likely be determined by which ecosystem(s) have the best stickiness (telco vs. messaging vs. eCommerce).

USERS (M) BY MOBILE WALLET



Takeaways

- Japan is one of the few highly developed markets in which stored value mobile wallets are highly popular today; a history of mobile payment adoption as well as a desire to move towards cashless, non-card payment types are driving continued adoption
- Mobile wallets in Japan are being predominantly used for payments, unlike emerging markets for which mobile wallets offer more diverse financial services
- There remains plenty of room for growth over the next five years, as mobile wallet transactions are set to double (from 7.2 to 14.6 billion transactions/year)

Japan is very much a mobile-first market, where despite mass adoption of credit cards, consumers are preferring to pay with mobile wallets, eating mostly into cash transactions. With healthy competition from incumbents, fragmentation is likely to continue to exist in the Japan's mobile payments market.

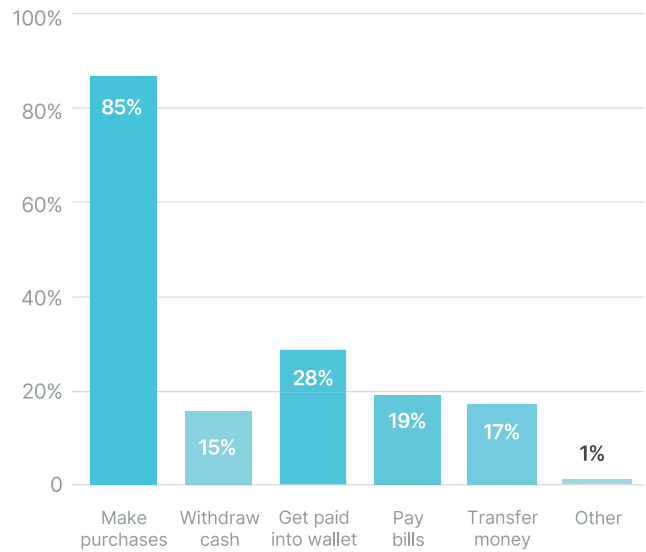
Japan – Consumer Attitudes Deep Dive

Japan is an unusual market in that it is both highly developed, with wide credit card adoption, but also has significant and growing mobile wallet usage. Our consumer survey, which sampled 1,008 respondents, found that consumers use an average of **2.2 wallets**. While not as high as markets like India and Indonesia, this data suggests consumers are adopting multiple wallets, especially to maximize benefits.

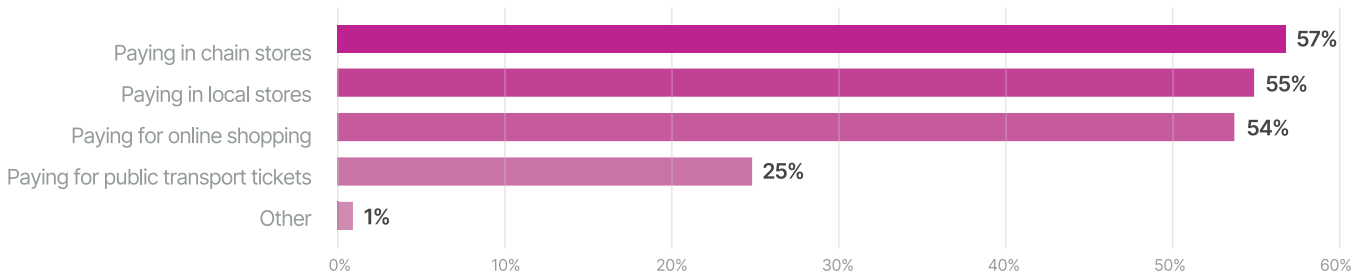
In Japan, unlike developing markets, wallets are being used predominantly to make purchases. In many developing markets, consumers are using mobile wallets as a proxy for a bank account, receiving payments withdrawing cash and making transfers. This metric speaks to the high rate at which Japanese consumers have bank accounts and continue to use them in parallel with their mobile wallet.

Having established that mobile wallets are being most used for payments, its interesting to understand where they are being used. Our survey found that in-store and online purchases rank at essentially the same levels. The availability of contactless payments using FeliCa from an early stage will have influenced the growth of in-store payments significantly.

MOBILE WALLET ACTIVITIES

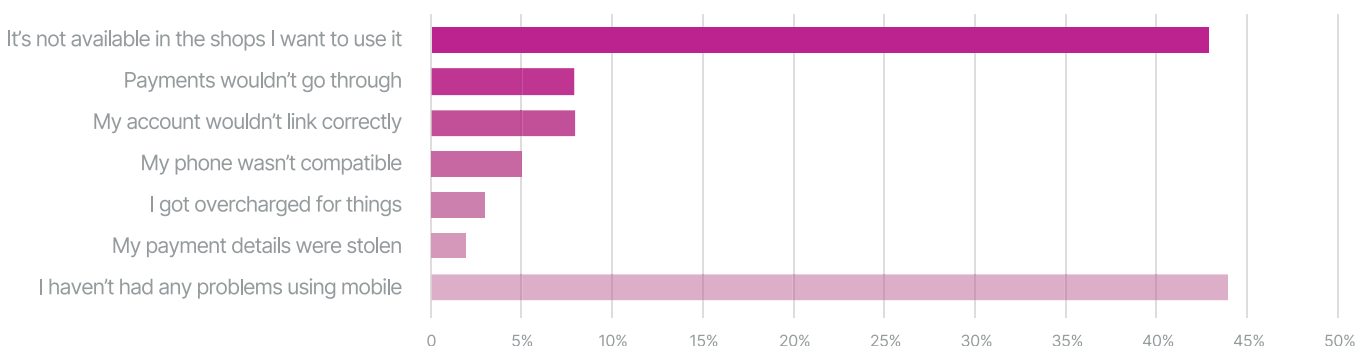


WHERE MOBILE WALLET ARE USED



The demographics for mobile wallet usage were particularly interesting in Japan. 35-44 year olds had the highest utilization of mobile wallet payments, both in-store and online at a combined 64% overall. Moreover, this group had an even higher rate of in-store mobile wallet usage at 67%, compared with 49% for 25-34 year olds and 37% for 18-24 year olds. While it is unclear why, this demonstrates significantly higher engagement with mobile wallets amongst 35-44 year olds.

WHERE MOBILE WALLET ARE USED



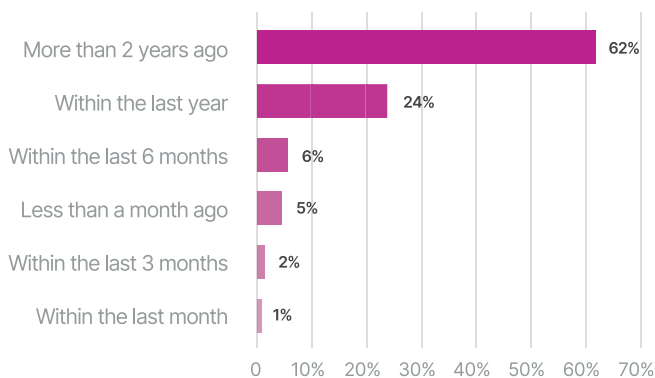
One aspect of the survey that does mirror emerging markets is that around the benefits of using a mobile wallet. Respondents indicated that the most compelling benefit of mobile wallet use was ‘they offer cashback and/or discounts on purchases’, which may help to explain why respondents averaged 2.2 mobile wallets. In addition to discounts, consumers seem to prefer the more experiential benefits of mobile wallet usage. The next most popular answers included not needing a physical wallet, and wallets being both a smoother and quicker way to pay.

Japan is a market highly experienced with mobile devices and clearly with mobile payments as well. For the question “How long have you been using mobile wallets?”, 76% of respondents indicated that they started using mobile wallets over 2 years ago, showing how well established the mobile wallets market is in this country.

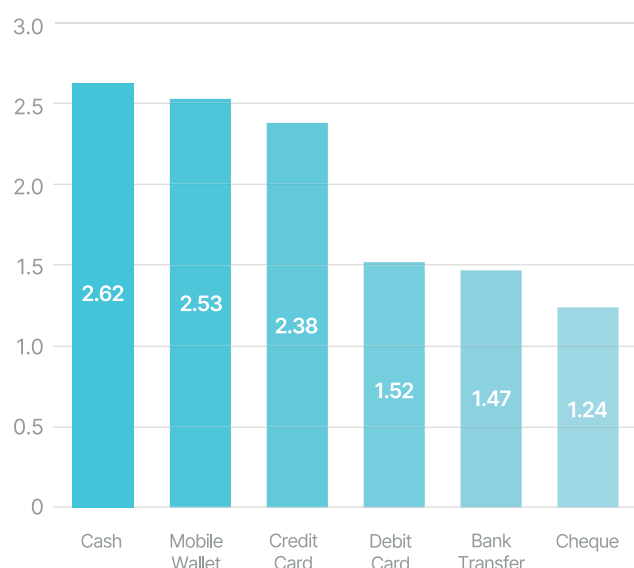
In Japan, despite having a high rate of credit card penetration, cash remains king. Our survey showed that consumers top three preferred payment methods were cash, followed by mobile wallets and then credit cards. Cash remains the most ubiquitous payment type in Japan, as 42% of survey respondents, more than any other, ranked cash as the best payment type for acceptance. Additionally, the Japanese are known for being security conscious, and our survey found that payment types directly linked to bank accounts (bank transfer, debit card & cheques) were ranked lowest for security, while Credit Cards (36%), Mobile payments (31%) and cash (20%) ranked the highest.

To better understand how mobile payments may be able to grow even further, we asked, “What problems, if any, have you had in using mobile wallets?” While more respondents (44%) said they haven’t had problems, 43% of respondents cited a lack of merchant acceptance. Japan faces a similar challenge to many other markets, as merchant adoption remains one of the largest impediments to growth.

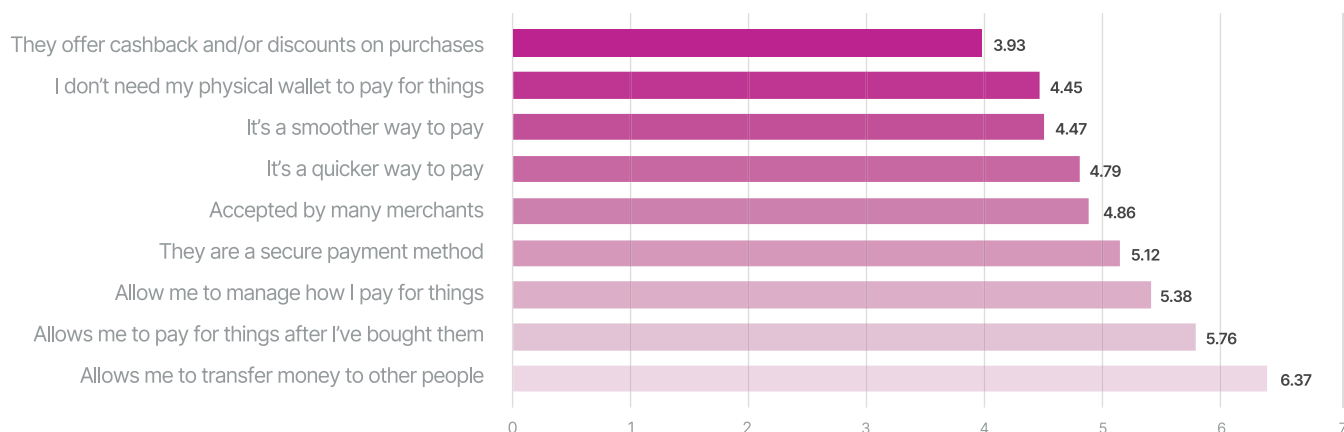
MOBILE WALLET TENURE



PREFERRED PAYMENT TYPES



MOBILE WALLET BENEFITS, RANKED (lower number, better)





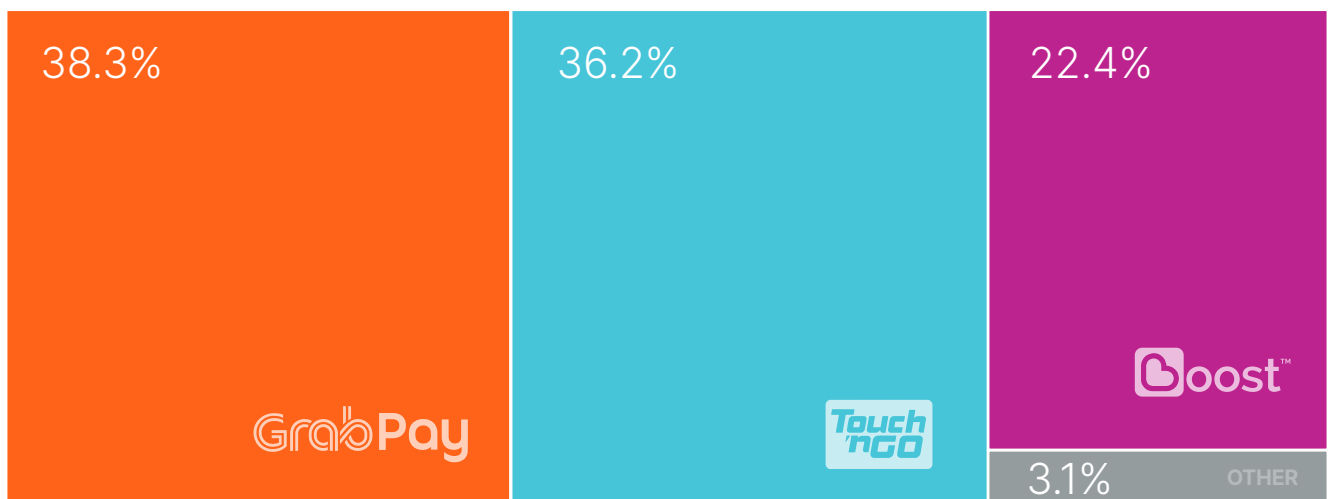
Malaysia

One of the more advanced developing markets in Southeast Asia, Malaysia boasts a GDP per capita that is roughly triple that of Indonesia and the Philippines. Mobile payment adoption in Malaysia is behind other Southeast Asian countries, as mobile wallets have been slower to enter and gain traction in the market. Malaysia, however is poised for hypergrowth over the next five years, as mobile wallet users and penetration are set to triple, with transactions growing more than tenfold.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$11.2K \$12K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>5.3% 7.9%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>10.3M 32.6M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>31.7% 93.9%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>338M 3.7B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$5.5B \$28.2B</p>

MOBILE WALLET MARKET SHARE

■ GrabPay
 ■ Touch N Go
 ■ Boost
 ■ Others

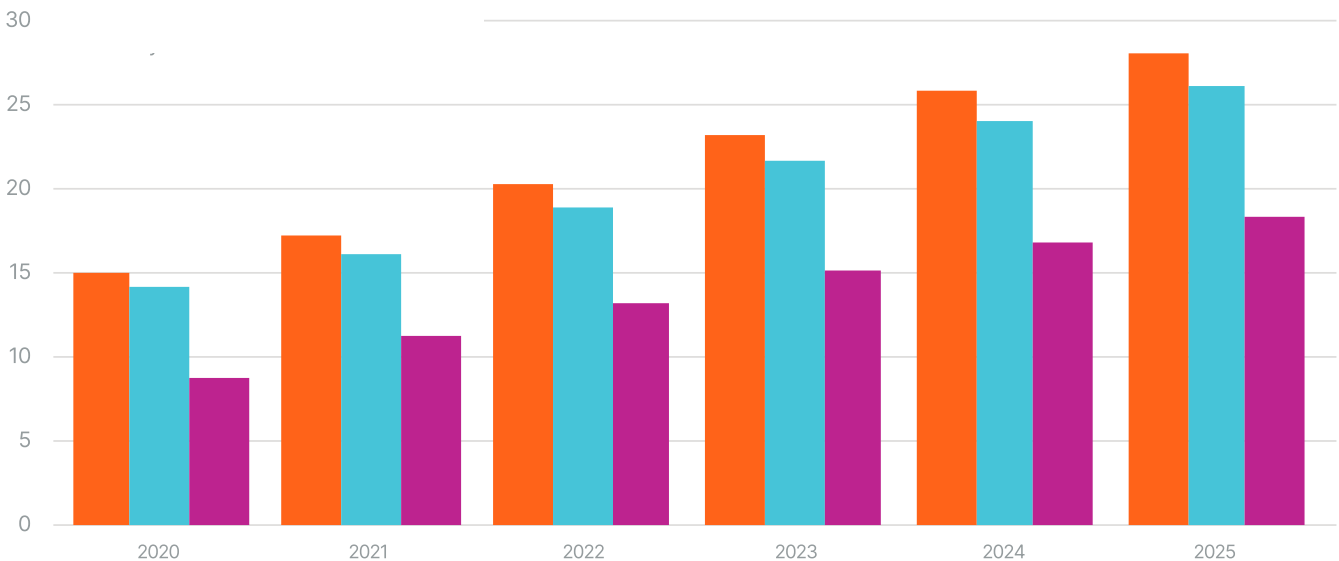


Malaysia – Competitive Landscape

In Malaysia, three mobile wallets are going to be doing battle for the 20+ million consumers that are expected to adopt mobile payments over the next five years. GrabPay has gotten out to a lead due to having been in the market longer than competitors as well as having Super App functionality and greater merchant adoption. Touch 'N Go, originally used for paying road tolls, has been gaining on GrabPay, thanks in part to investment from Ant Financial. Boost, the “pure-play” Malaysian wallet has also grown rapidly, and will continue to challenge over the coming years.

USERS (M) BY MOBILE WALLET

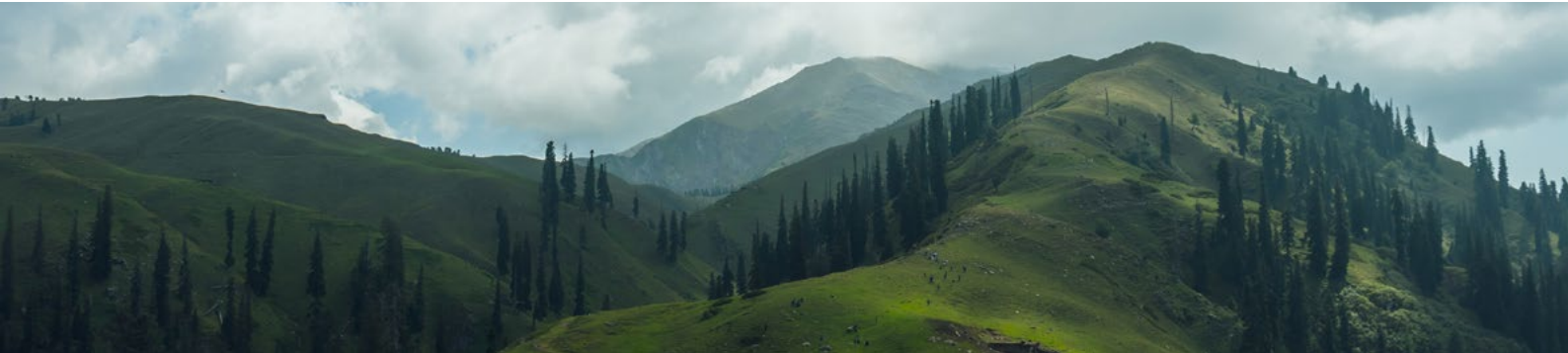
GrabPay Touch N Go Boost



Takeaways

- Malaysia is a rapidly growing market for mobile payments, and it will close the gap on fellow Southeast Asian countries over the next five years
- The market is dominated by a triopoly, with GrabPay and Touch 'N Go both close to 40% market share; Boost is growing and competitive at roughly 22% market share
- GrabPay is seen to have an advantage in the market as the only Super App, offering an ecosystem of services, and benefiting from greater acceptance than competitors

Malaysia is a market on the verge of a mobile payments explosion. Despite its advantages, GrabPay is being challenged by Touch 'N Go and boost, and market share may vary in the coming years. For merchants, this market represents a significant growth opportunity, so accepting several payment types will be critical.



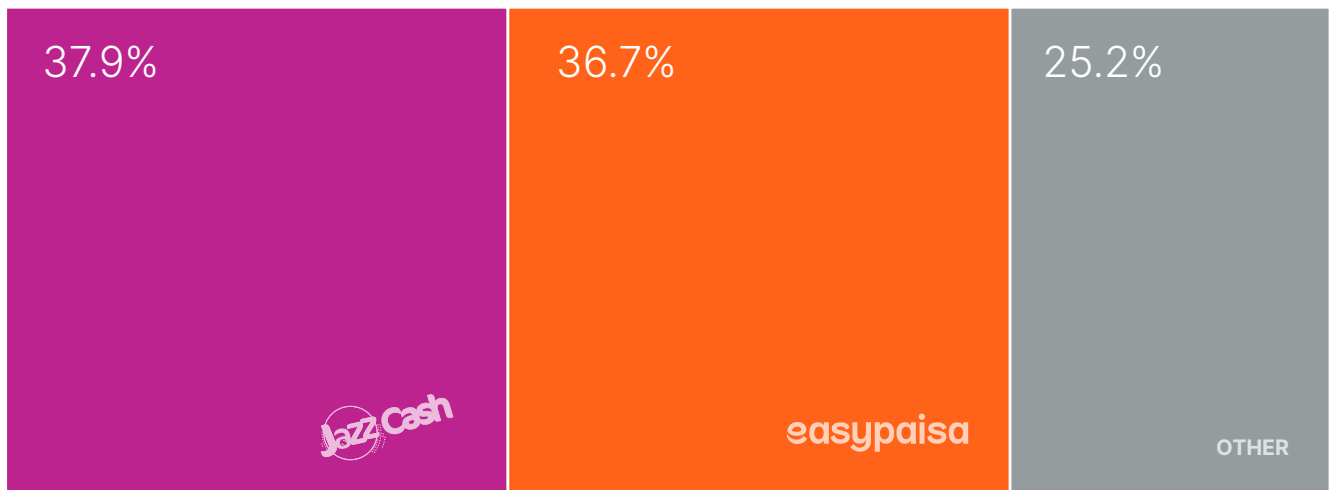
Pakistan

Pakistan is an underdeveloped market in which mobile payments can help accelerate economic growth. Today, mobile wallet spend is nearly as high as GDP per capita, suggesting either disproportionate purchasing power or usage amongst mobile wallet users. Mobile wallet usage in Pakistan is projected to more than triple over the next five years as the userbase more than doubles. Mobile payments in Pakistan are dominated by two players, Easypaisa and JazzCash, who together have greater than 70% market share.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$1.5K \$1.8K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▼</p> <p>95.2% 76.8%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>23.2M 56.2M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>10.5% 22.9%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>2.9B 9.2B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$31B \$68B</p>

MOBILE WALLET MARKET SHARE

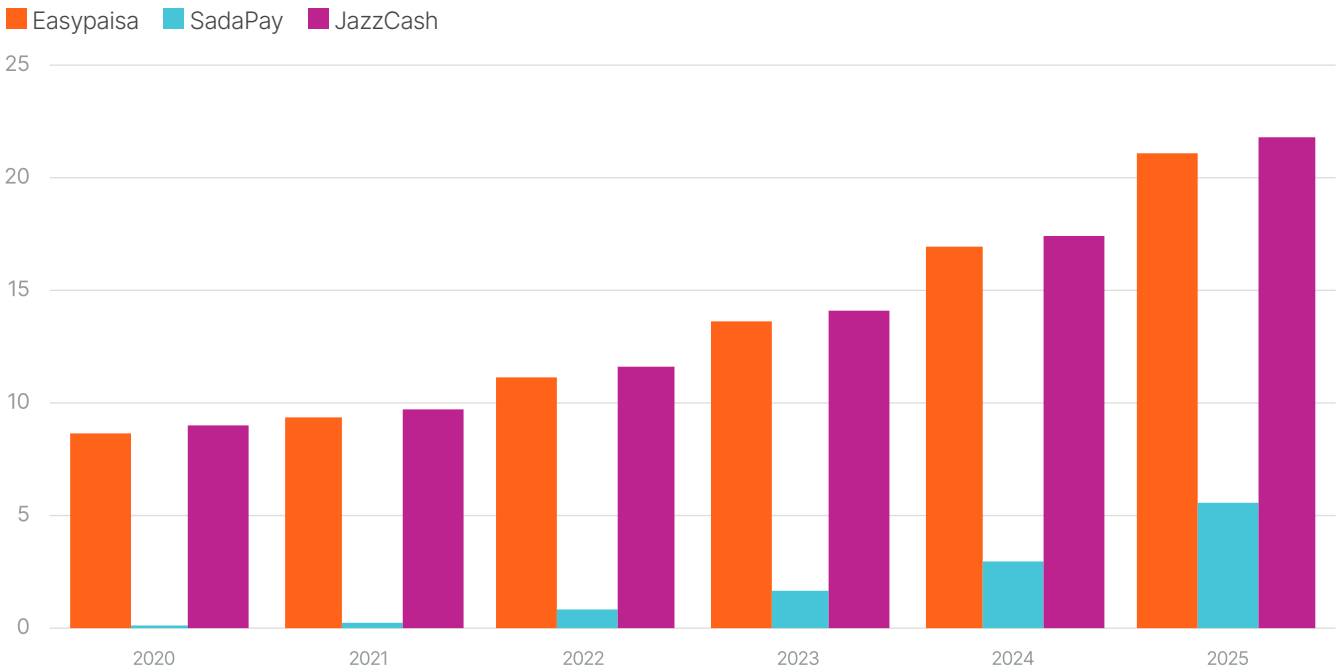
■ JazzCash ■ Easypaisa ■ Others ■ SadaPay (0.2%)



Pakistan – Competitive Landscape

Mobile wallet payments in Pakistan are dominated by Easypaisa and JazzCash, both developed by mobile operators Telenor and Jazz. As in many instances, telcos benefit from existing consumer relationships and ease of transacting with the use of just a mobile number. Telcos tend to fare better in markets in which smartphone penetration lags, as they can provide services more easily without an app; Pakistan is no exception. SadaPay, a newer entrant to the market is built for smartphone users, with the combination of an app, virtual and physical debit cards. Mobile payment users are set to more than double over the next five years, so competition is likely to only increase.

USERS (M) BY MOBILE WALLET



Takeaways

- Despite its lag in consumer purchasing power, Pakistan has benefitted from a relatively well-developed mobile money ecosystem
- Smartphone adoption is likely to be the greatest leading indicator of Pakistan's transition from traditional mobile money to mobile wallet and Super Apps
- Pakistan is set to more than double its mobile payments market across several measures, while payments volume is set to more than triple

Although potentially a lower priority market for merchants due to lesser purchasing power, Pakistan provides the promise of significant growth in mobile payments over the next five years. As Pakistan transitions from traditional mobile money to wallets, merchant acceptance is made easier by the duopoly of Easypaisa and JazzCash.



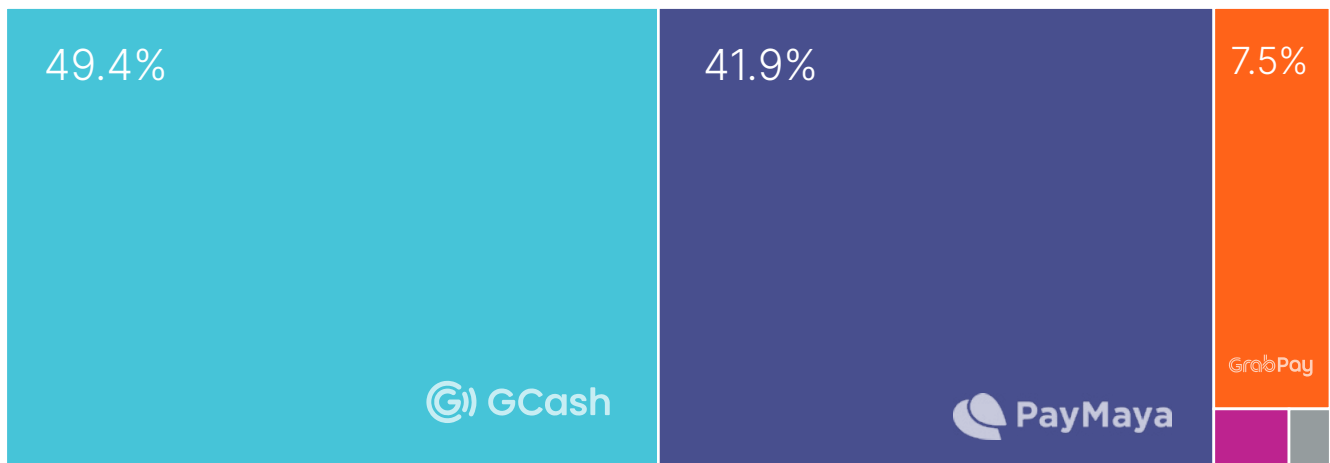
Philippines

The Philippines is another Southeast Asian market that is experiencing rapid economic and mobile payment growth. The mobile payments market is dominated by the duopoly of GCash and PayMaya, which are both born out of traditional mobile money and owned by mobile operators, Globe and Smart. Grab, the regional super app is looking to break the duopoly after a number of stops and starts in the Philippine market. The Philippines is poised for hypergrowth in mobile payments over the next five years with transactions set to increase by nearly ninefold, while user adoption is set to triple.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$3.2K \$3.8K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>21.6% 24.1%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>24.6M 75.5M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>22.4% 63.4%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>972M 8.99B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$15B \$63.4B</p>

MOBILE WALLET MARKET SHARE

■ Gcash
 ■ PayMaya
 ■ GrabPay
 ■ PayPal (0.7%)
 ■ Others (0.4%)

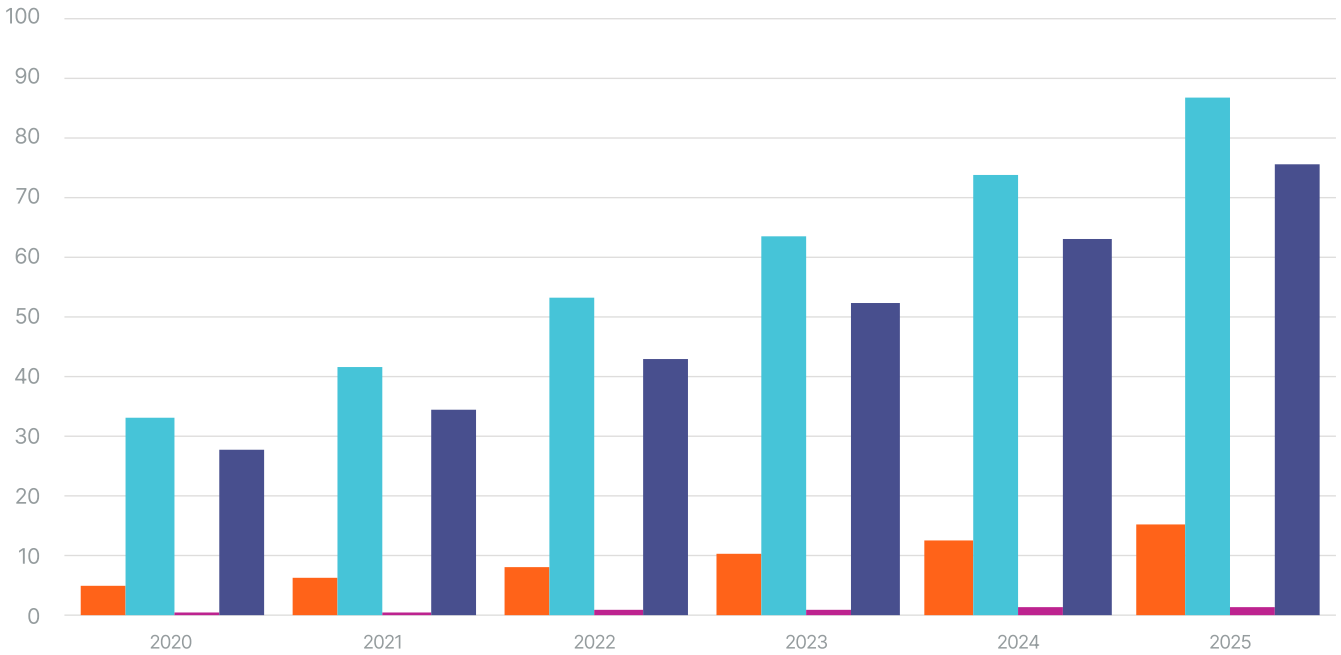


Philippines – Competitive Landscape

The mobile wallet duopoly of GCash and PayMaya in the Philippines mirrors the mobile operator duopoly of the two telcos that created those wallets, Globe and Smart. GrabPay is the most likely player to challenge the ecosystem, thanks to Super App functionality, significant foreign venture capital, as well as increasing smartphone penetration (due to reach 85% by 2025). Although GrabPay is growing more rapidly than GCash and PayMaya, we do not foresee it surpassing either one in the next five years.

USERS (M) BY MOBILE WALLET

GrabPay G-Cash PayPal PayMaya



Takeaways

- The Philippines mirrors many other Southeast Asian countries in terms of projected economic and mobile payment growth
- GCash and PayMaya are dominant in the market with over 90% market share combined, however GrabPay is poised to grow more rapidly, especially due to its more diverse offerings
- With over 50 million new mobile wallet users projected over the next five years, mobile wallet providers are likely to face stiff competition for new users

The Philippines is a rapidly growing economy and mobile payments market, just like many of its fellow Southeast Asian countries. For merchants selling into the Philippines, accepting GCash and PayMaya should be considered table stakes, with GrabPay providing the most promise for growth



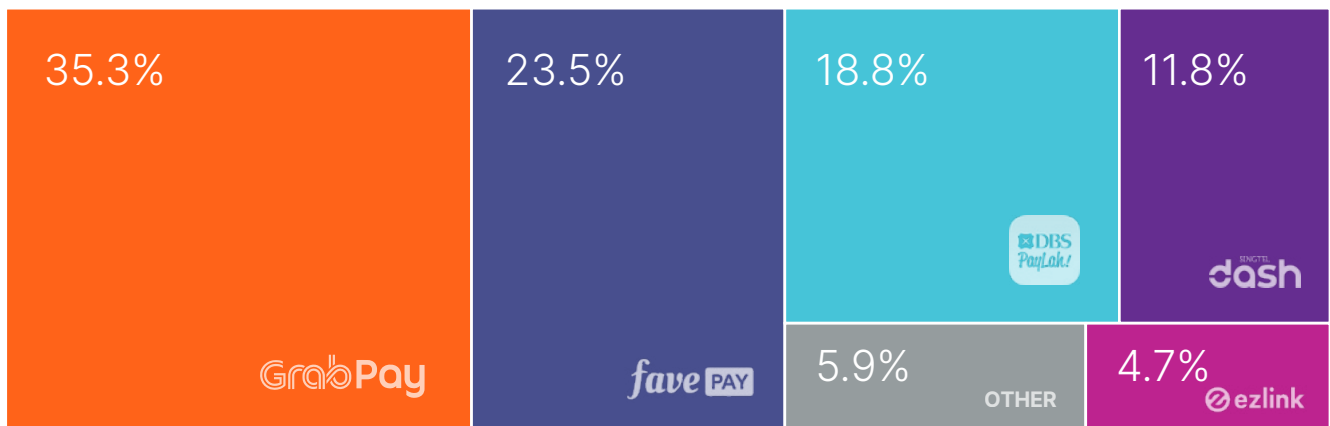
Singapore

Although a small market, with a population of just 5.7 million, the island nation / city-state has disproportionate spending power as well as eCommerce use. The technology hub for Southeast Asia, Singapore is set to reach mobile wallet penetration of nearly 95% by 2025. Mobile wallet transactions are projected to increase by 11x, as Singapore accelerates towards a highly digitized economy. Despite its small population, the mobile payments ecosystem is thriving, with a number of offerings that include the regional super app, Grab, a telco wallet (Singtel Dash), a bank-based wallet (DBS payLah!) as well as the digitization of the national transit card, EZ-Link.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$64.7K \$73.6K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>1.3% 2.1%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>1.8M 5.8M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>30.4% 94.7%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>101M 1.1B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$1.4B \$8B</p>

MOBILE WALLET MARKET SHARE

■ GrabPay
 ■ Favepay
 ■ DBS PayLah!
 ■ Singtel Dash
 ■ Others
 ■ EZ-Link

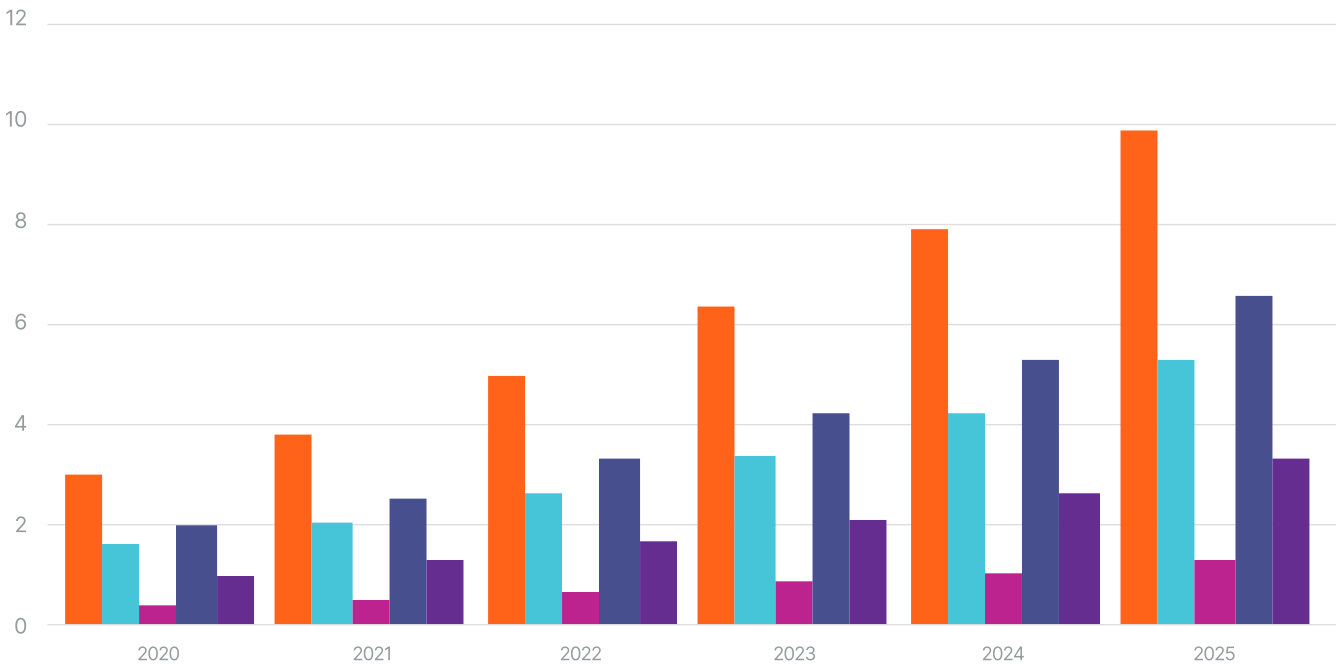


Singapore – Competitive Landscape

Singapore has a highly competitive mobile payments ecosystem, especially for a country with just 5.7 million residents today. GrabPay, the regional super app, which is headquartered in Singapore, has over 35% market share, and benefits from a host of financial services they provide. Favepay, known for its rewards program and ability to seamlessly integrate existing card payments, has been gaining on GrabPay. DBS PayLah!, Singtel Dash and EZ-Link all benefit from the stickiness they have as the state-owned bank, telco, and transit systems for Singapore.

USERS (M) BY MOBILE WALLET

GrabPay DBS PayLah! EZ-Link Favepay Singtel Dash



Takeaways

- Singapore is one of the wealthiest and technologically advanced countries in the world, let alone this report, and thus has a highly competitive mobile payments ecosystem, despite its small population
- GrabPay is the most widely used mobile wallet in Singapore, but many consumers are opting to use both as GrabPay provides super app functionality, while Favepay has a superior rewards program
- Singapore is moving quickly towards a cashless future, as nearly 95% of the population are projected to be using mobile wallets by 2025

Singapore is a small and somewhat fragmented mobile wallet market but is still of interest to many merchants as its residents are wealthier and more international than other countries in Southeast Asia. Singapore's mobile payments market will continue to expand thanks to consumers being heavy users of eCommerce and mobile payments.



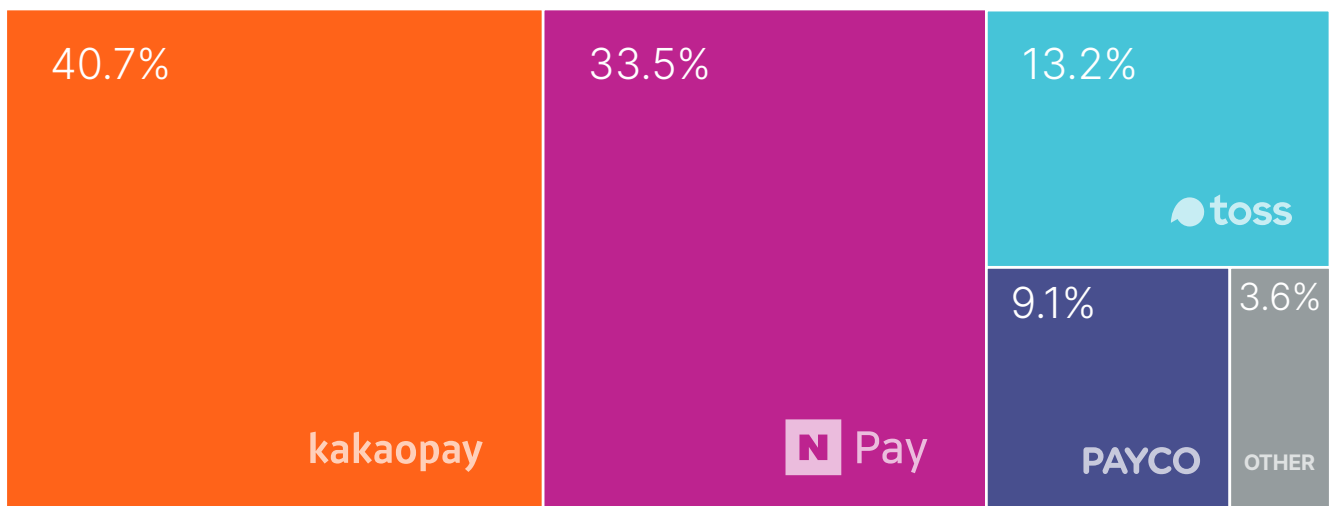
South Korea

South Korea is a well-developed economy and eCommerce market, that has widespread and growing mobile payment adoption thanks to smartphone penetration of over 90%. In addition to a desire amongst Koreans to go cashless, card payments are highly localized, and thus mobile wallets provide an additional option, especially for cross-border purchases. South Korea is projected to have strong, steady growth in mobile wallet users, transaction volume and value over the next five years.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$31.6K \$38.1K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▼</p> <p>6.1% 6.0%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>38.2M 52.3M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>73.2% 98%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>3.1B 5.5B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$72.7B \$116B</p>

MOBILE WALLET MARKET SHARE

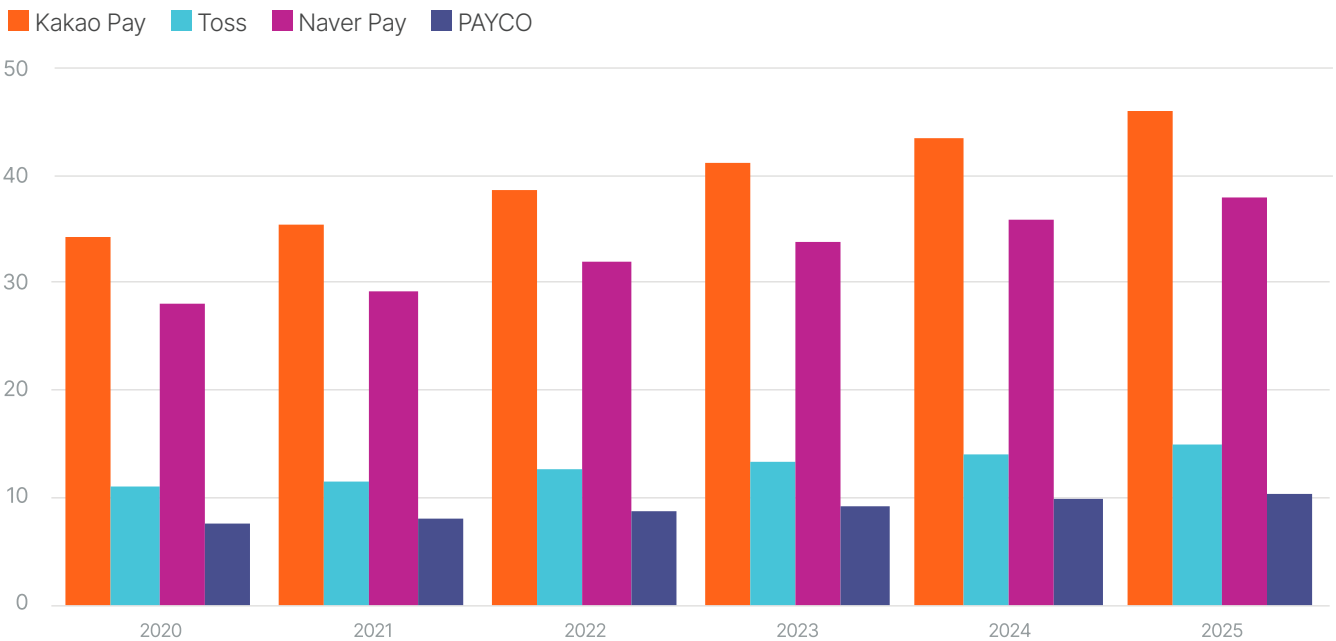
■ Kakao Pay
 ■ Naver Pay
 ■ Toss
 ■ PAYCO
 ■ Others



South Korea – Competitive Landscape

South Korea has a thriving, competitive mobile payments ecosystem, with KakaoPay being the clear market leader, followed by Naver Pay. KakaoPay benefits from the stickiness and ecosystem that has developed around KakaoTalk, the most popular messaging app in South Korea, mirroring the success of WeChat Pay in China and LINE Pay in Japan. Naver Pay, similarly is part of Naver, the well-established and popular search engine & web portal in South Korea. Toss is an up & coming digital bank and mobile wallet, that has been gaining traction amongst competitors.

USERS (M) BY MOBILE WALLET



Takeaways

- South Korea has a thriving mobile payments ecosystem, thanks to relatively high GDP per capita, smartphone penetration as well as desire to adopt digital payments
- There are four notable mobile wallets in South Korea, with KakaoPay and Naver Pay holding nearly 75% market share combined
- Mobile wallet acceptance in South Korea is of particular interest to global merchants as they open up more of the market due to the local nature of payment cards in the country

South Korea is a large and growing eCommerce market that is and will continue to adopt mobile wallets at a high rate. Moreover, with greater purchasing power, South Korea has one of the highest values per transaction of any market in this report. Global merchants should make South Korea a high priority for mobile payment acceptance now and into the future



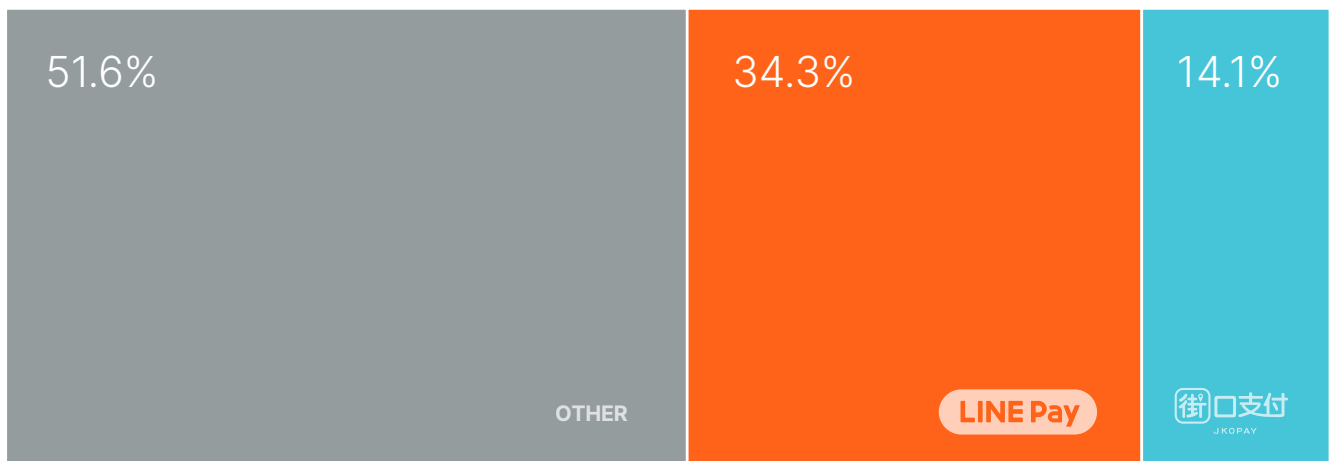
Taiwan

Taiwan is a fairly affluent, highly digitized market, in which mobile wallet penetration already exceeds 75% and is projected to reach close to 99% by 2025. Transaction volumes and value are projected to grow steadily over the next five years, with transaction volume projected to increase by more than 4X. The market has been dominated by LINE Pay, while JKoPay and phone-based card payments have been rapidly growing. While merchant acceptance for AliPay and WeChat Pay are both high in Taiwan, their use is almost strictly by Chinese visitors to Taiwan.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$53.7K \$59.1K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>3.4% 3.8%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>18.2M 23.7M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>76.9% 98.8%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>1.2B 5.5B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$31B \$51.2B</p>

MOBILE WALLET MARKET SHARE

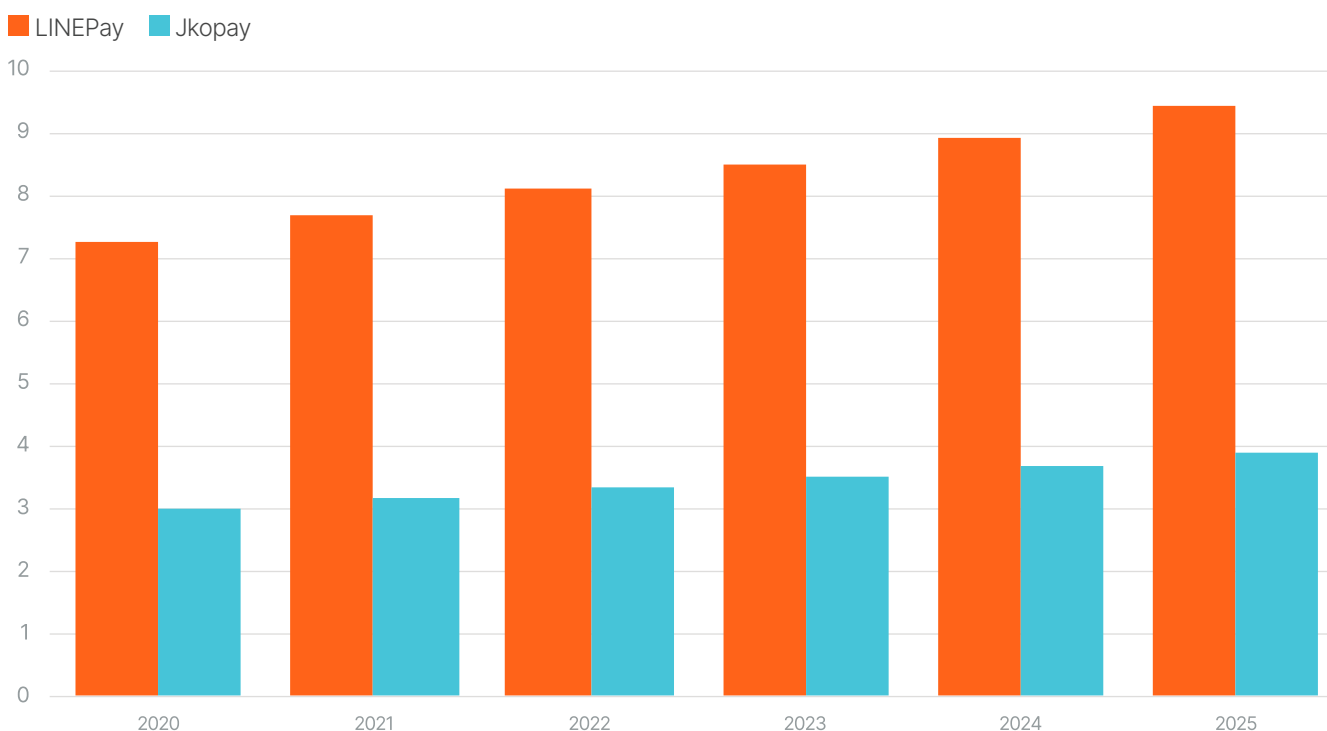
■ Others ■ LINE Pay ■ JKoPay



Taiwan – Competitive Landscape

Taiwan's mobile wallets market is dominated by LINE Pay, the Japanese messaging app, which is also the most popular messaging service in Taiwan. As in Japan, LINE Pay benefits from the LINE messaging and super app ecosystem. On the other hand, JKoPay is the homegrown, pure play mobile wallet, and has been gaining momentum in the market. While we project LINE Pay to retain market leadership, JKoPay is a serious contender.

USERS (M) BY MOBILE WALLET



Takeaways

- With significant purchasing power, smartphone penetration, and eCommerce usage, Taiwan is an attractive market for merchants to consider mobile payments acceptance
- Despite dominance from LINE Pay, merchants should also consider JKoPay, as it continues to grow
- Taiwan is already a mature payments market that is projected to reach nearly 99% mobile wallet penetration by 2025

Taiwan is an attractive market for merchants to consider for mobile payment acceptance. With strong eCommerce spend and consolidated payment options, Taiwan enables merchants to capture significant consumer spend with just two mobile wallets



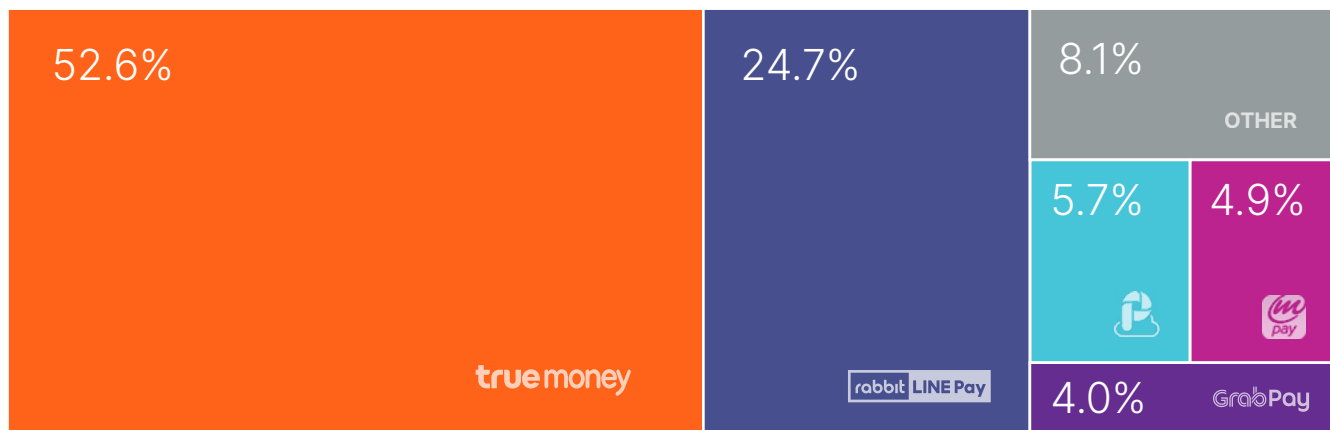
Thailand

Thailand is one of the more affluent developing markets in Southeast Asia and is in the beginning stages of mobile payment mass adoption. Over the next five years, mobile wallet usage is expected to more than triple in terms of users and transaction value, and transaction volume expected to increase by more than 7X. Thailand is dominated by TrueMoney, a mobile wallet from the mobile operator True, that has more than 50% market share. New to the market and gaining significant traction is the real-time payments scheme PromptPay, which is used both as a standalone payment option as well as an instantaneous top-up method for mobile wallets.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$7.4K \$9K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▼</p> <p>10.5% 9.9%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>15M 45.3M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>21.4% 63.4%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>492M 3.7B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$10.6B \$36.7B</p>

MOBILE WALLET MARKET SHARE

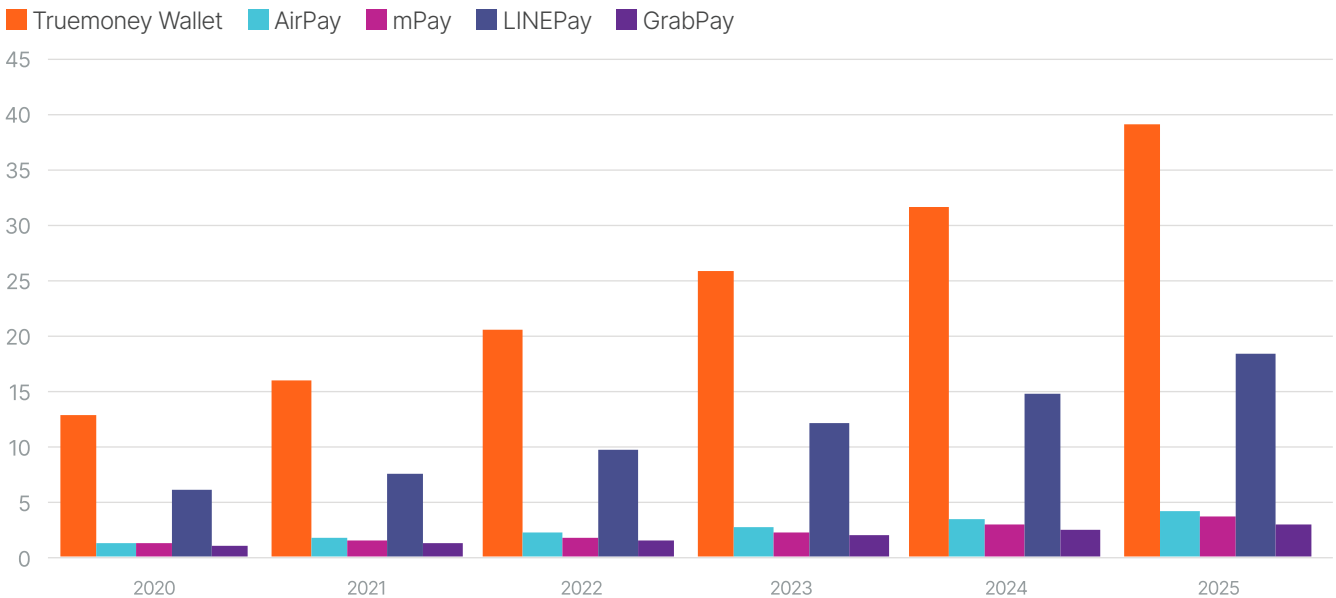
■ TrueMoney
 ■ RabbitLINE Pay
 ■ Others
 ■ AirPay
 ■ mPay
 ■ GrabPay



Thailand – Competitive Landscape

TrueMoney's dominance in Thailand can easily be attributed to its head start in the Thai market, founded in 2003. Originally a telco-centric mobile money wallet, TrueMoney has adapted to greater smartphone penetration with a more robust mobile app. RabbitLINE Pay, has leveraged both the popularity of the LINE messaging app as well as the partnership with the Rabbit transit card, which is especially popular in Bangkok. GrabPay has struggled to gain traction as Grab has entered and exited the Thai market a number of times, but its functionality as a regional super app as well as significant venture capital investment make it a formidable option. While we project TrueMoney to maintain market share, there will be significant competition for the 30M projected new mobile wallet users in the next five years.

USERS (M) BY MOBILE WALLET



Takeaways

- Thailand is another rapidly growing mobile payments market in Southeast Asia (set to grow roughly 3X in the next five years), that has greater purchasing power than several countries
- PromptPay, a new real-time payment option will likely increase mobile wallet usage as it makes topping-up mobile wallet accounts faster and easier for consumers

Thailand is a very attractive market for merchants to consider mobile payment acceptance, with significant growth projected over the next five years. PromptPay promises to be a force in payments, both as a direct payments option as well as a top-up method that will increase the convenience and usage of mobile wallets.



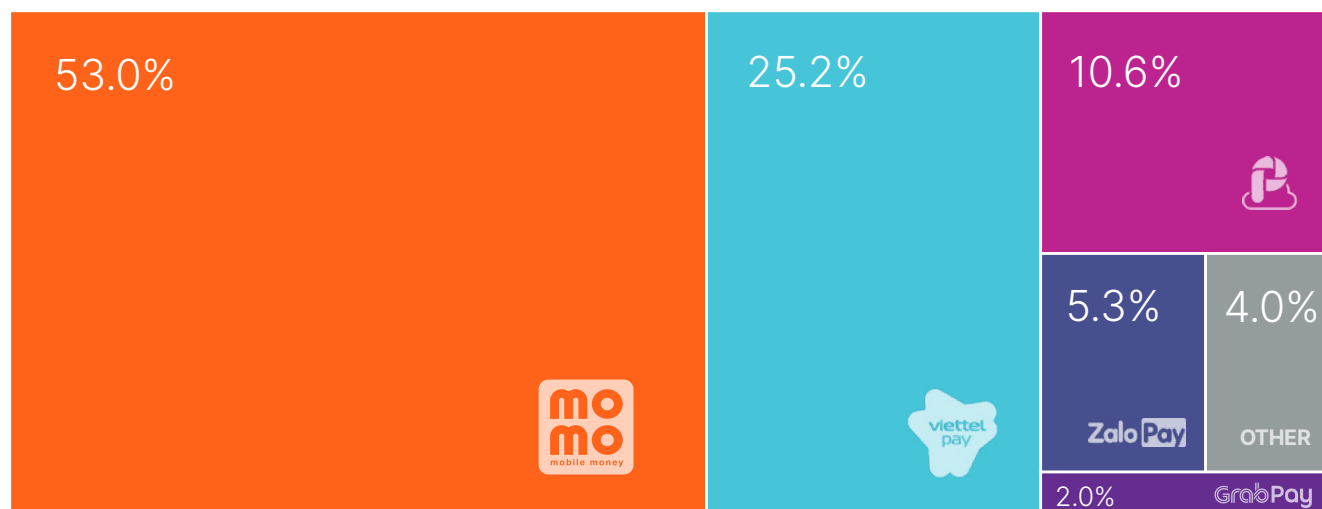
Vietnam

Vietnam, like many other countries in Southeast Asia, is primed for massive mobile payments growth. Mobile wallet transaction growth is projected to increase by more than 7X, while users and transaction value are projected to increase by more than 3X. Momo (Mobile Money) is the dominant wallet in the market, with over 50% market share and \$230M in venture capital raised. Momo has greater functionality than its competitors and is likely to pursue super app status with its newly raised funds.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$2.7K \$3.9K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>29.6% 23.7%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>19.2M 57M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>19.7% 55.5%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>674M 5B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$14B \$48.6B</p>

MOBILE WALLET MARKET SHARE

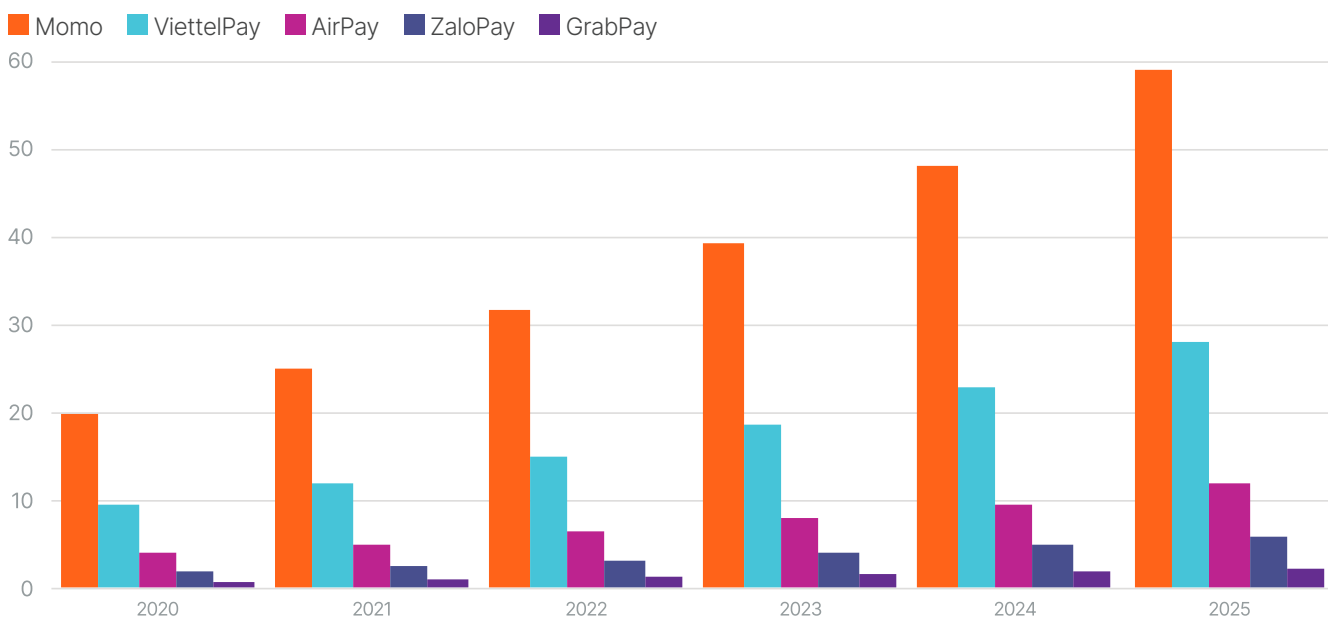
■ Momo
 ■ ViettelPay
 ■ AirPay
 ■ ZaloPay
 ■ Others
 ■ GrabPay



Vietnam – Competitive Landscape

While Momo is the mobile payment of the moment in Vietnam, there are a number of competitors that will be competing for the nearly 40M new mobile wallet users expected between now and 2025. ViettelPay, owned and operated by state-owned mobile operator, Viettel, has been experiencing rapid growth. GrabPay, as always is a serious contender due to regional power, super app functionality, and significant venture capital backing. Ant Financial has invested in eMonkey, which has yet to acquire significant market share.

USERS (M) BY MOBILE WALLET



Takeaways

- Vietnam is a rapidly developing mobile payments market projected to increase by at least 3x across all key metrics
- Due to high smartphone penetration, Vietnam now has the digital infrastructure and rapidly growing mobile payment usage, that make this market ready for eCommerce hypergrowth
- Momo has become a dominant mobile wallet, but there are a number of competitors, including Viettel, that merchants should evaluate for mobile wallet acceptance

Vietnam provides merchants with a rapidly growing market with a sizeable population and high smartphone penetration. While dominated today by Momo, there are a number of credible competitors that will be battling for the roughly 30 million new mobile wallet users projected to come online by 2025.

Africa & Middle East

Africa and the Middle East are poised to become “the next Asia” with swift economic development and large populations of consumers growing their purchasing power. Mobile payments are not new to the region, as both legacy mobile money and modern mobile wallets are present in markets around the region. While the African continent in particular has a high rate of underbanked consumers, smartphone penetration enables fintechs to drive greater economic empowerment.

MOBILE WALLET USERS

2020 **323M** 2025 ▲ **798M**

MOBILE WALLET PENETRATION

2020 **19.4%** 2025 ▲ **44.7%**

MOBILE WALLET TRANSACTION VOLUME

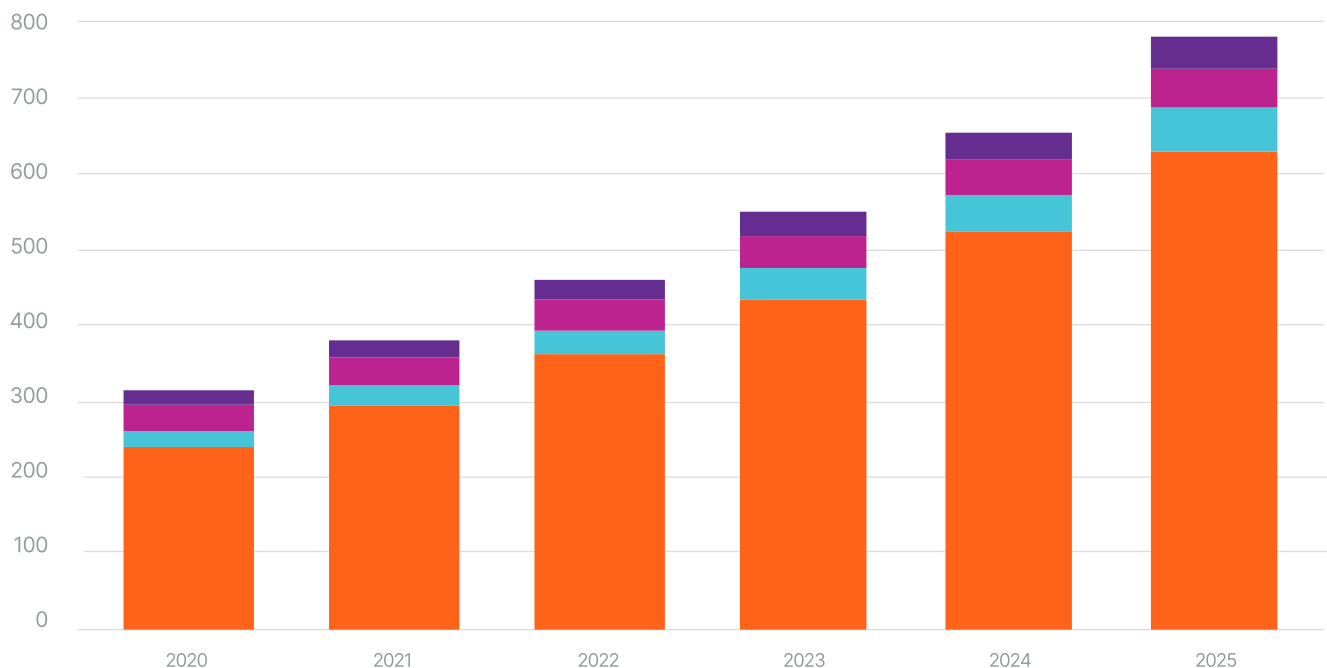
2020 **31B** 2025 ▲ **64B**

MOBILE WALLET TRANSACTION VALUE

2020 **\$420B** 2025 ▲ **\$677B**

USERS (M) BY MOBILE WALLET

Other Africa & Middle East Egypt Kenya Saudi Arabia UAE



Africa & Middle East – Regional Trends

We see the following trends shaping the mobile payments marketplace in Africa & the Middle East over the next five years:

Hypergrowth for Mobile Payments

While Africa was the birthplace of mainstream mobile money, growth and the proliferation of these services had largely plateaued in later years. However, a new phase of growth is upon us. We project that mobile payment adoption will increase by 147% over the next five years, with a CAGR of 16.3%. This growth is being led by Egypt, Saudi Arabia and the United Arab Emirates.

While Kenya retains the largest number of mobile payments users to date, this will change over the next few years. While Egypt is projected to overtake Kenya in number of mobile payment users by 2025, Nigeria, with its massive population and high growth rate is poised to become a mobile payments giant.

Mobile Payments Continue to Transform Africa

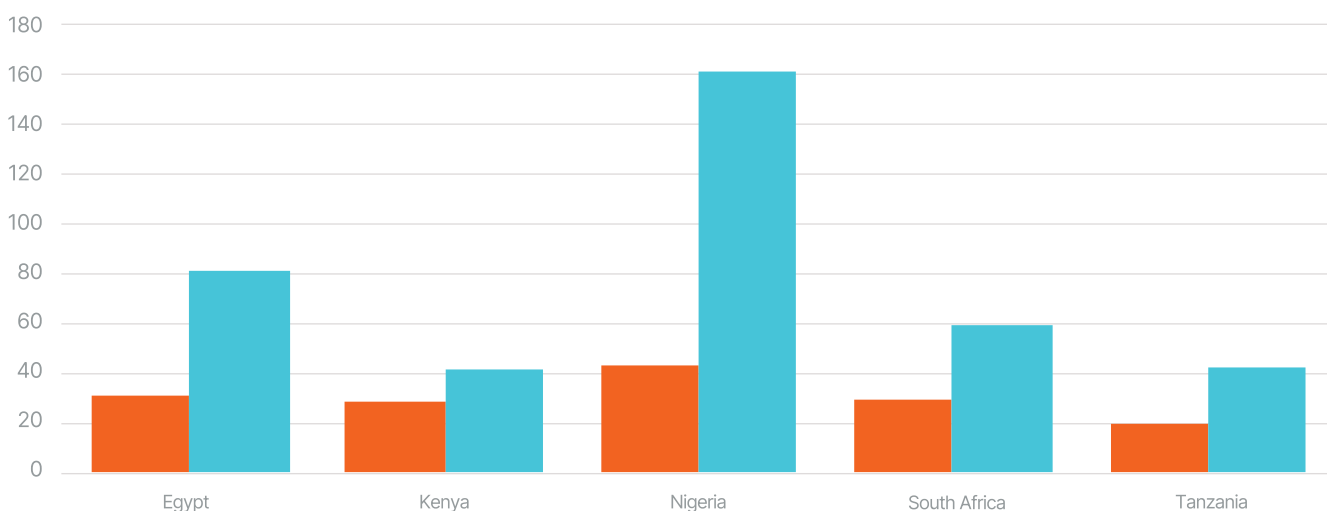
In Africa, the primary focus of mobile money has been on boosting financial inclusion. Mobile money services have been a major success story, particularly in sub-Saharan Africa. Kenya, for example has seen rapid growth of M-Pesa, which has become central to the economy and how it works in the country.

In other markets, the evolution from traditional, telco-based mobile money is evolving into mobile wallets that look and feel more like super apps coming out of Asia than the previous generation. Mobile money's success has come in large part due to the proliferation of mobile devices and networks throughout Africa that have well outpaced traditional financial services.

The evolution to next generation mobile payments is being driven by greater smartphone adoption throughout Africa. In Kenya, M-Pesa has rolled out a mobile app that replicates mobile wallet functionality, while in Nigeria, a host of new mobile wallets, born on smartphones are gaining traction and further momentum.

MOBILE HANDSETS VS BANKED INDIVIDUALS (M), 2021

■ Banked Individuals ■ Mobile Handsets



eCommerce Market is Small, but Growing Rapidly

To date, the eCommerce market has been relatively small in Africa & Middle East, however, this is quickly changing. This relatively modest market size has been due to a lack of required infrastructure. For example, Jumia, the Nigerian eCommerce platform, successfully went through an IPO in 2019, then raised over \$340 million in March 2021 in post-IPO secondary funding. eCommerce payments giant Stripe acquired Nigerian platform Paystack in October 2020 for a reported figure of over \$200 million.

As eCommerce in Africa is in a growth phase, the priority for eCommerce merchants interested in the region should be identifying the markets and payment methods with the greatest reach to drive short-term monetization, while building a long-term eCommerce strategy for the region.

In the Middle East, eCommerce has reached a greater level of maturity, supported by very high penetration of smartphones and demographics that skew younger. Now, the Middle East has become one of the fastest growing regions in the world for mobile payments, with wallets like STC Pay making merchant acceptance of mobile payments a priority in the market.

Takeaways

- Africa & Middle East is one of the regions poised to become the “next Asia” due to growing populations, consumer demand, and rapidly growing mobile payments and eCommerce infrastructure
- Merchants can leverage highly popular wallets in the region, like M-Pesa, STC Pay, Paga, and myFawry to maximize short term success, while other markets and payment types mature
- The Middle East represents the larger short-term opportunity due to greater purchasing power, smartphone penetration, demographics, and a rapidly growing mobile payments ecosystem

While it may be tempting to take a “wait and see” approach to mobile payment acceptance in Africa & Middle East, there are very real near-term opportunities that any global merchant should be taking seriously. Now is the time to get established in the market, as the long-term potential is immense.



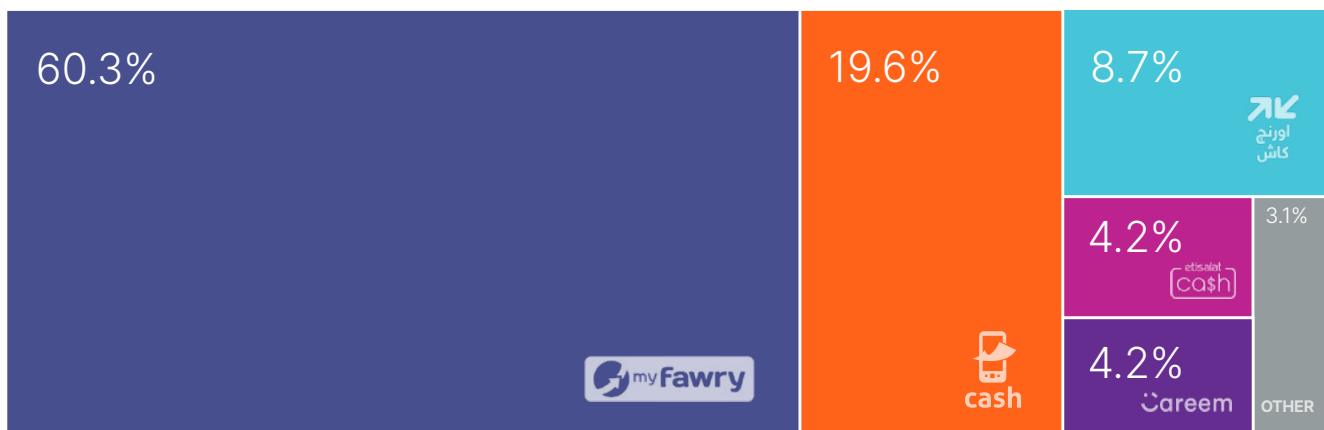
Egypt

Egypt straddles Africa and the Middle East both geographically and in terms of mobile payments. On one hand, Egypt has mobile money schemes like those seen across the African continent, offered by mobile operators Vodafone, Orange and Etisalat. At the same time, Egypt has CareemPay, which resembles modern mobile wallets from the middle east, and is a likely target for other regional offerings from the middle east. Mobile payments are already popular in Egypt, with penetration greater than 20% and more than 1 billion transactions in 2020. Egypt is set for significant growth, reaching over 50% mobile wallet penetration and over \$36 billion in annual transactions by 2025.

<p>GDP PER CAPITA</p> <p>2020 2025 ▼</p> <p>\$2.5K \$2.3K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▼</p> <p>44.9% 29.9%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>20.9M 57.9M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>20.3% 50.5%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>1.5B 3.3B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$21.8B \$36.2B</p>

MOBILE WALLET MARKET SHARE

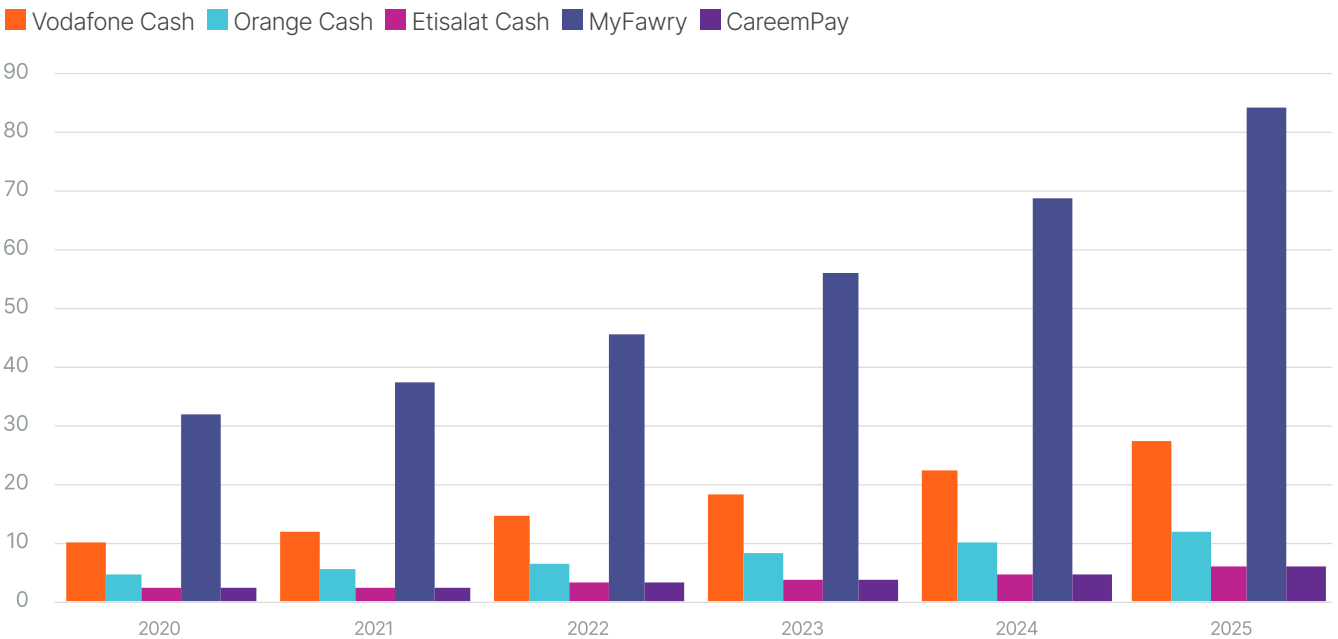
myFawry Vodafone Cash Orange Cash Etisalat Cash CareemPay Others



Egypt – Competitive Landscape

myFawry is a dominant force in Egypt with greater than 60% market share. Originally a cash-based voucher system, Fawry, has since launched their smartphone app mobile payments, myFawry. myFawry offers many mobile-money-like services for bill payments including mobile recharge, mobile and internet bills, utilities, digital content subscriptions and donations. We project that myFawry will continue to grow in popularity with the telco-based wallets maintaining consistent growth. CareemPay and potential market entry of other middle eastern wallets is something to keep an eye on over the next five years.

USERS (M) BY MOBILE WALLET



Takeaways

- Egypt is already a strong market for mobile payments that is projected to double in size over the next five years
- myFawry is the dominant mobile payment type in Egypt, with over 60% market share thanks to its success as a voucher payment system for many years
- Legacy, telco-based mobile money schemes are still somewhat popular, as Vodafone Cash has nearly 20% market share

Egypt is the largest mobile payments market in the middle east, and is projected to double in size over the next five years. Despite low purchasing power, high mobile payment adoption make acceptance important for merchants selling into the Egyptian market. Rapidly growing smartphone penetration is likely to accelerate mobile payment usage.



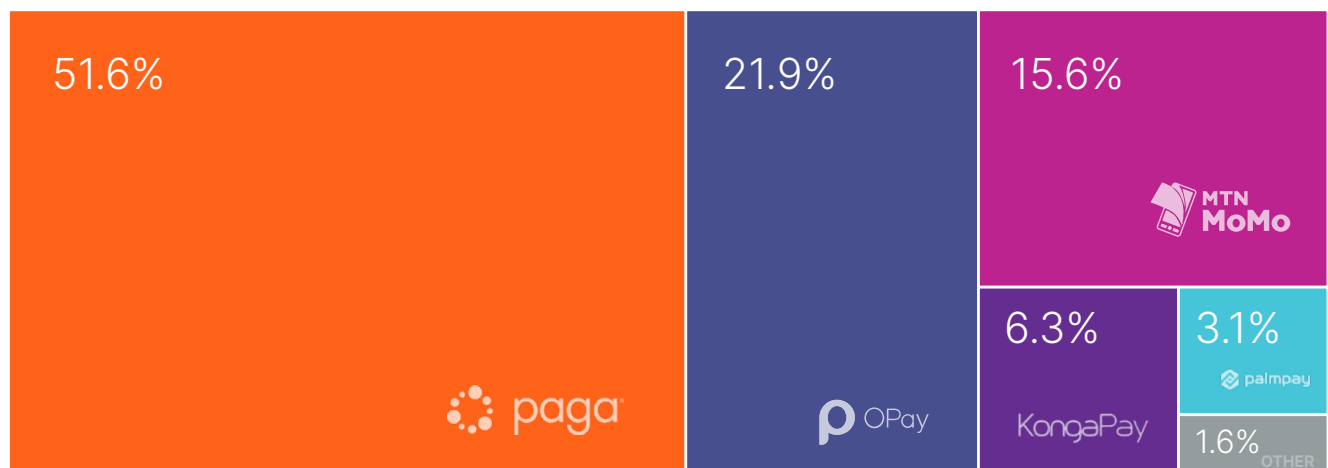
Nigeria

Nigeria is by far the largest country on the African continent, with a population of 200M. Like many African nations, Nigeria has had the presence of telco-led mobile money for many years, however, its burgeoning fintech sector has led to rapid maturation of its mobile payments. Jumia, the “Amazon of Africa”, was founded in Nigeria in 2012, and has gone on to demonstrate the potential for eCommerce across the region. With mobile wallet penetration of 9.2%, Nigeria has plenty of room for mobile payment development, and usage is projected to double over the next five years.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$1.9K \$2.9K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>13.3% 64.9%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>18.7M 42.1M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>9.2% 18.9%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>4B 7.5B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$45B \$72.5B</p>

MOBILE WALLET MARKET SHARE

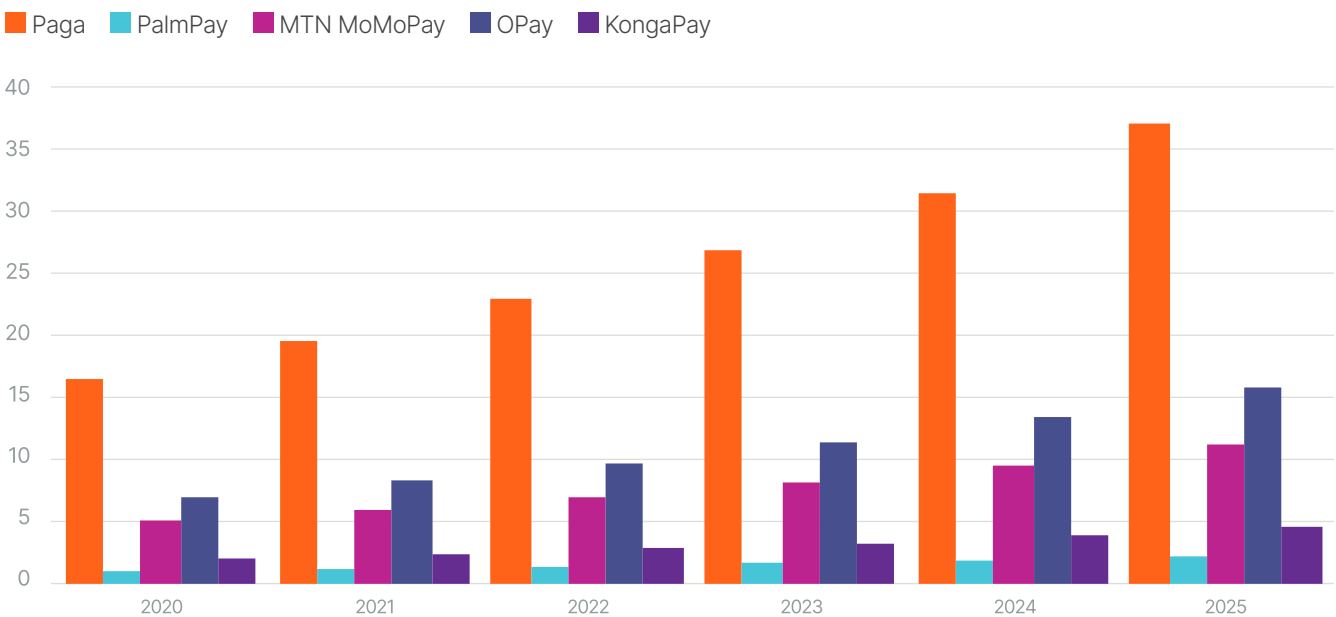
■ Paga
 ■ OPay
 ■ MTN MoMo
 ■ KongaPay
 ■ PalmPay
 ■ Others



Nigeria – Competitive Landscape

Mobile wallets are developing quickly in Nigeria, and the marketplace will benefit from the projected 23M+ users that will adopt mobile wallets over the next five years. Paga and OPay, the two most popular mobile wallets, have raised more than \$200M in venture capital combined. While Paga has a headstart in terms of userbase, OPay has raised \$170M to date, and is making a push towards market leadership. While mobile wallets in Nigeria have evolved from legacy interfaces to mobile apps, they are still focused on similar functionality like bill payment, mobile top-up, and P2P transfers.

USERS (M) BY MOBILE WALLET



Takeaways

- Nigeria is a country with massive potential that is still in the early days of moving from legacy mobile money solutions to more mature mobile wallet ecosystems like those seen throughout Asia
- Mobile wallet users are set to double over the next five years, with a number of wallet providers set to battle for new user acquisition.
- With a significant population and growing fintech sector, Nigeria is a market to watch for potential significant growth

Nigeria is one of the most promising markets for mobile payments in the region. In the midst of transition from legacy mobile money to modern mobile wallets, the country has already proven that it can be a strong eCommerce market thanks to the success of homegrown online marketplace, Jumia.



Saudi Arabia

Known for its natural resource wealth, Saudi Arabia is an economy that is rapidly digitizing, and the adoption of mobile payments is no exception. Over the next five years, the mobile wallet userbase is set to more than double, while transactions are set to increase by nearly 4X. STC Pay, the mobile wallet launched by Saudi Telecom is dominant with roughly two-thirds market share. While competition exists from Sadad and BanyanPay, we project that STC Pay will hold if not increase its market share.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$22.7K \$22.4K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>8.1% 9%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>5.7M 14.2M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>16.2% 38.2%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>732M 27.3B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$9.8B \$26.3B</p>

MOBILE WALLET MARKET SHARE

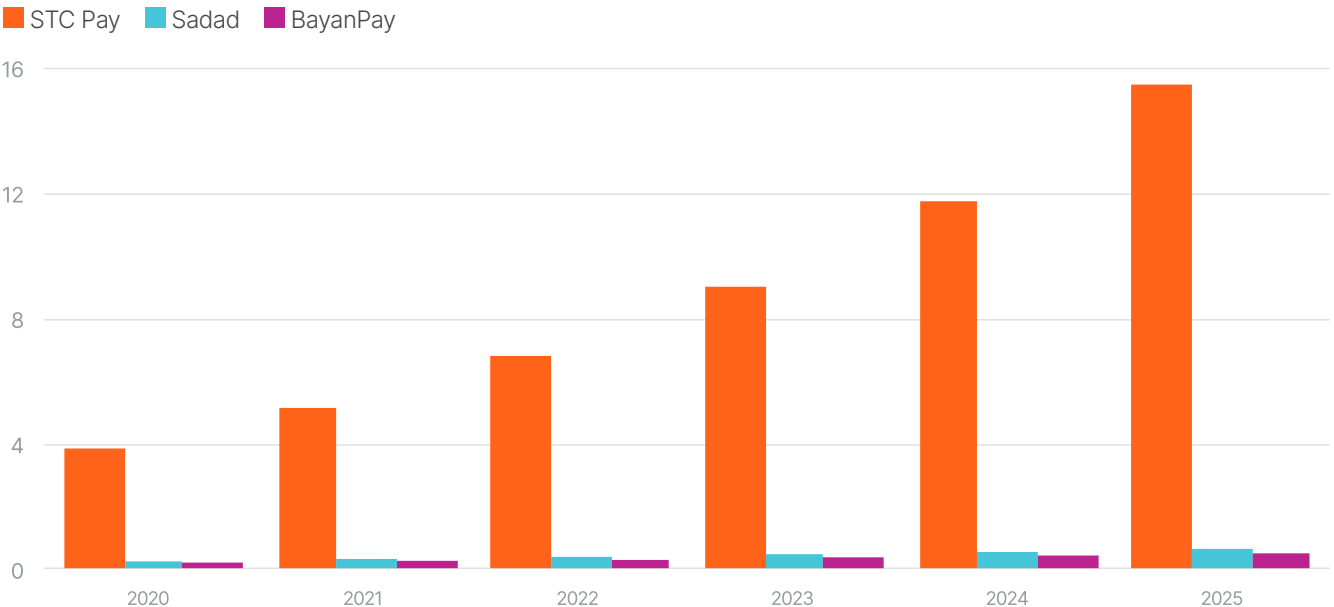
■ STC Pay
 ■ Others
 ■ Sadad
 ■ BanyanPay



Saudi Arabia – Competitive Landscape

Mobile payments are still relatively new to Saudi Arabia, but STC Pay has been dominant essentially since day one. Founded in 2018, STC Pay has already attracted nearly 4 million users, and is projected to exceed 15 million users by 2025, in a country with a population of 34 million. In November 2020, STC Pay announced an investment of \$200M from Western Union at a valuation of \$1.3 billion. The wallet clearly has eyes on expansion in Saudi Arabia as well as across the Middle East.

USERS (M) BY MOBILE WALLET



Takeaways

- Saudi Arabia is dominated by STC Pay, who has over two-thirds market share, and significant financial backing from Saudi Telecom and Western Union
- Mobile wallet users and payments are set to increase by more than double over the next five years
- Saudi Arabia is the largest eCommerce market in the middle east thanks to natural resources wealth

Saudi Arabia is an interesting opportunity for merchants as the largest eCommerce market in the middle east, with plenty of room for further growth. Mobile payment acceptance is simplified due to the consolidation of the market as STC Pay holds two-thirds market share. eCommerce and mobile payments growth makes Saudi Arabia a market worth further investigation



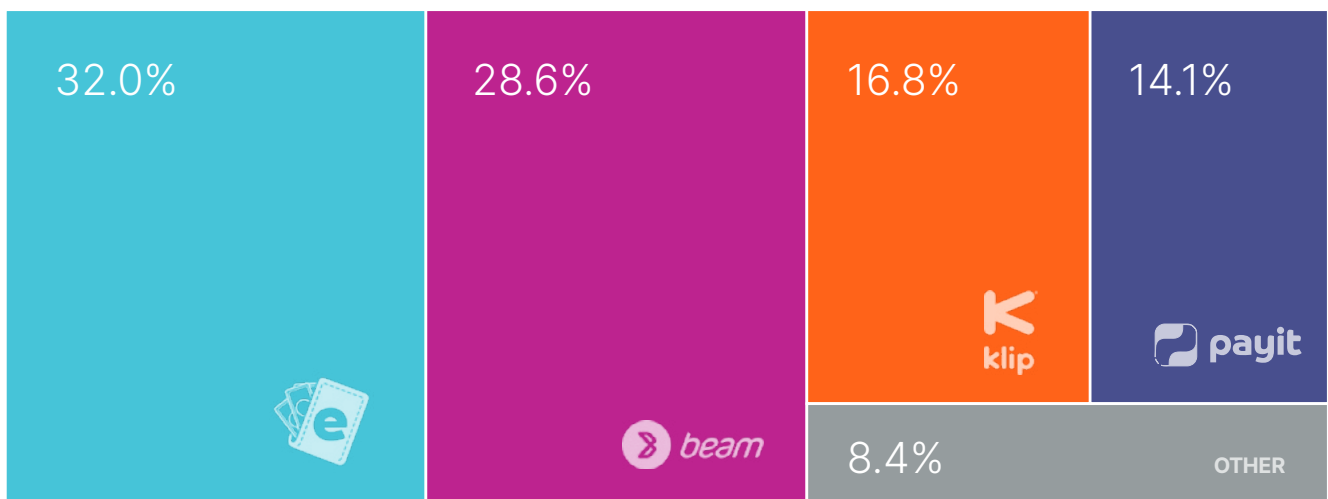
United Arab Emirates

The United Arab Emirates (UAE) has been largely successful in its push towards economic diversification from natural resources. Now the financial and logistics hub for the middle east, Dubai is building its case to become a global city. With a population less than 10 million, mobile wallets have been gaining momentum, despite comparatively small user numbers. Mobile wallet users and transactions are set to increase by roughly 2.5X over the next five years.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$42.5K \$45.4K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▼</p> <p>4.6% 3.1%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>1.4M 3.5M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>13.9% 34%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>119M 306M</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$2.5B \$4.6B</p>

MOBILE WALLET MARKET SHARE

■ eWallet (Etisalat)
 ■ Beam
 ■ Klip
 ■ Payit
 ■ Others

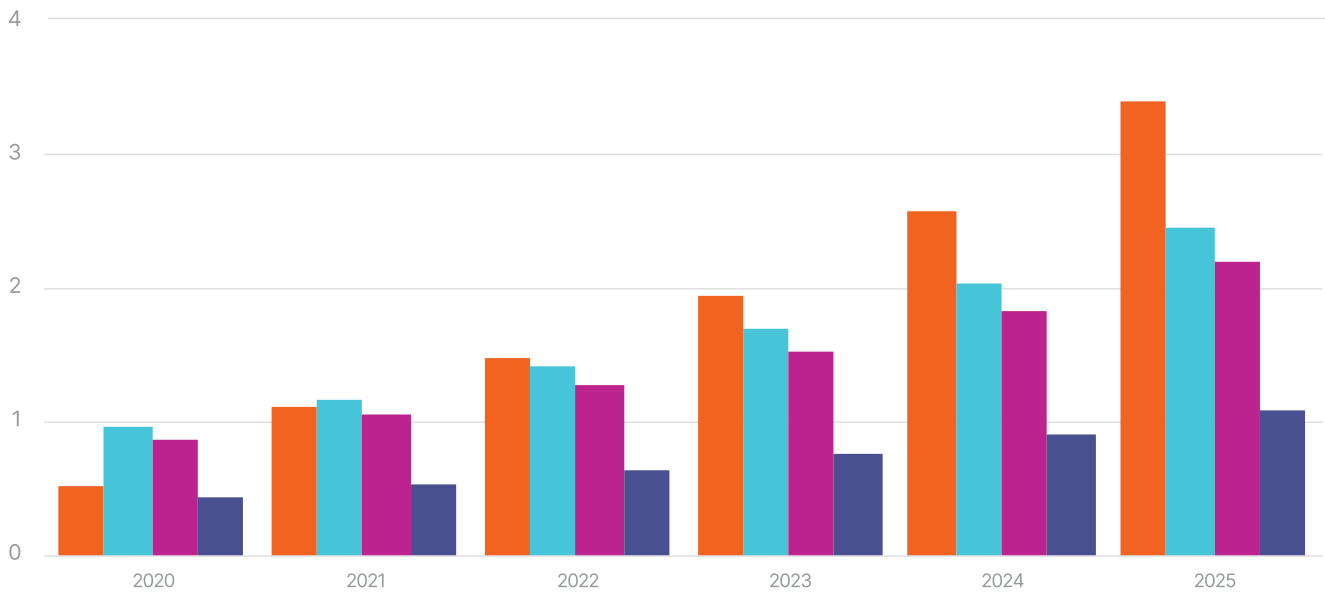


United Arab Emirates – Competitive Landscape

Despite its small population, the market for mobile payments in the UAE is quite robust. Mobile payments are quite new to the market, with the market leading eWallet (by Etisalat) having launched in May of 2020. Klip, launched in September 2020 is projected to overtake eWallet by 2022. Klip is backed by 15 of the leading banks in the UAE, promoting cashless payments. Following a \$200M venture capital raise, Saudi mobile wallet STC Pay is rumored to be eyeing regional expansion, including into the UAE.

USERS (M) BY MOBILE WALLET

■ Klip ■ eWallet (Etisalat) ■ Beam ■ Payit



Takeaways

- The UAE is a very new market for mobile payments, with the two market-leading mobile wallets having launched in the last year
- Despite its small population, the UAE is a relatively strong eCommerce market that is slated to grow significantly
- The UAE has robust competition within mobile payments with four notable mobile wallets today, and the potential of market entry from STC Pay

The UAE shares many similarities to Singapore, as regional financial and logistics hubs with small populations and thriving mobile payments ecosystems. The UAE is a market that is interesting for merchants due to a strong and rapidly growing eCommerce market

Latin America

Latin America is another promising region for mobile wallets growth outside of Asia. Long held back by consumers' preference for cash-based payments and comparatively lower smartphone penetration, the region is rapidly catching up to other mobile payments hotspots. Brazil and Mexico are the most notable markets for merchants due to their population sizes and purchasing power. Brazil has become the fintech hub for the region, with startups like PicPay, Nubank, and new real-time payments scheme, Pix, all making headway.

MOBILE WALLET USERS

2020 **323M** 2025 **798M** ▲

MOBILE WALLET PENETRATION

2020 **19.4%** 2025 **44.7%** ▲

MOBILE WALLET TRANSACTION VOLUME

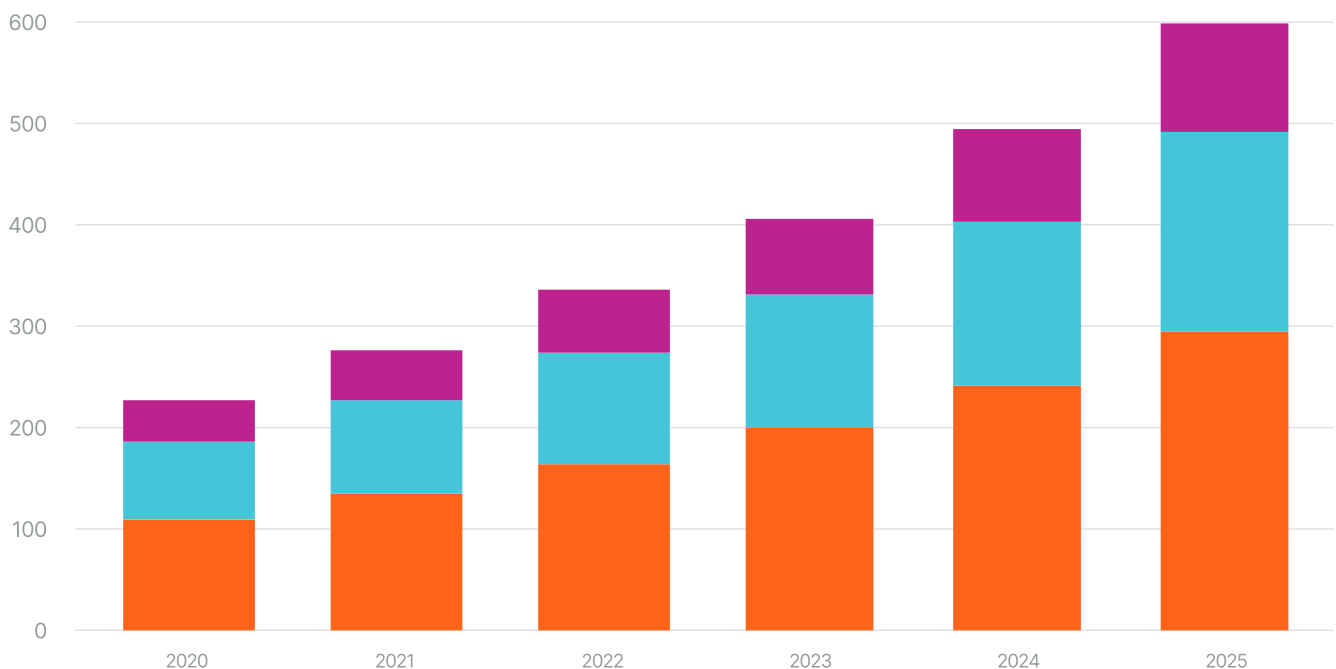
2020 **31B** 2025 **64B** ▲

MOBILE WALLET TRANSACTION VALUE

2020 **\$420B** 2025 **\$677B** ▲

USERS (M) BY MOBILE WALLET

Other Latin America Brazil Mexico



Latin America – Regional Trends

We see the following trends shaping the mobile payments marketplace in Latin America over the next five years:

Mobile Wallets Challenge Credit Card Dominance in Online Payments

In Brazil, the online payments landscape has typically been dominated by credit card use. Credit is very popular in the market: in March 2021, the Brazilian Central Bank stated that credit to households had reached 33.1% of GDP. This compares with 19.4% in the US in Q4 2020. In a research note dated January 2021, Moody's noted that the largest debt exposure in Brazil was credit card debt, and that roughly 11.2% of all households could not afford to repay their debts.

In this context then, credit and loans are an important aspect to be considered in the Brazilian market. This has importance for how wallets operate in these markets and means that elements such as digital BNPL will be more important in this market.

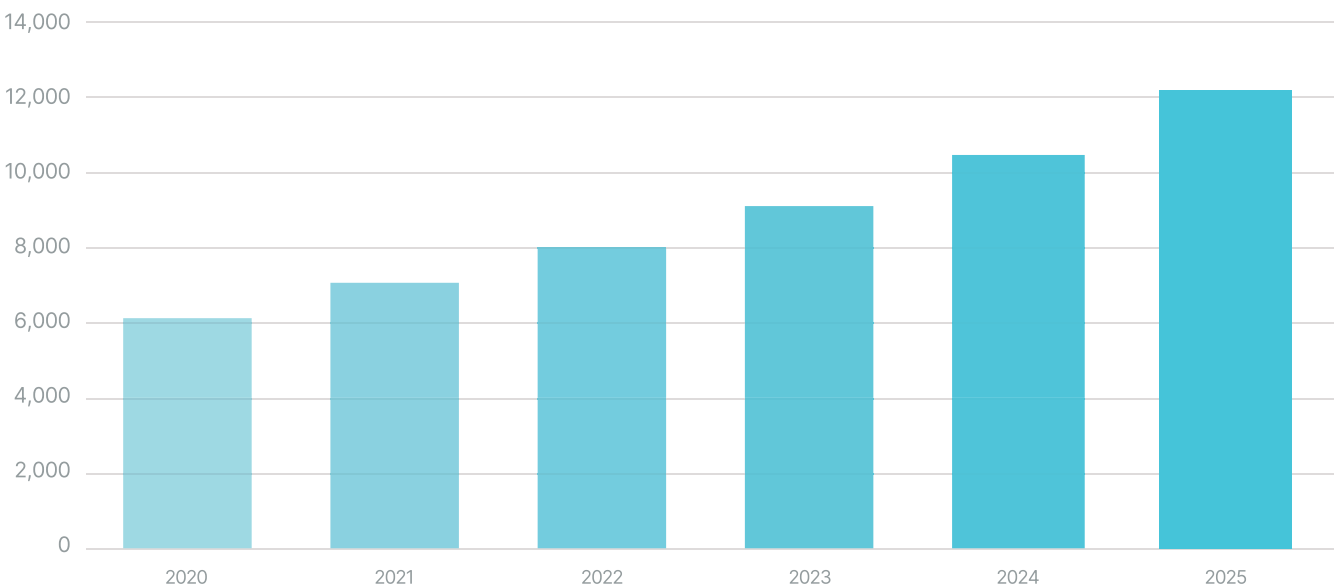
eCommerce Adoption Accelerating in Latin America

In the Latin American market, eCommerce has been accelerating rapidly for some time, and we anticipate that it will continue to grow over the next 5 years, as shown in the following chart:

Indeed, eCommerce platforms in the market have seen very strong growth. For example, in 2020, Mercado Libre saw year on year growth of 110% in GMV (Gross Merchandise Volume), to \$6.6 billion, as well as 149% growth in net revenue, to \$1.3 billion. Brazilian retail chain Americanas also saw an online GMV increase of 47.6% year on year to over \$5 billion.

Mobile wallet success is clearly linked to the growth of eCommerce in the markets in which they operate. This is particularly the case with Mercado Pago, as the wallet is directly linked to the marketplace Mercado Libre; as Mercado Libre scales, so does Mercado Pago. By streamlining the checkout process as much as possible with mobile wallets, merchants are improving their own chances going forward.

TOTAL TRANSACTION VOLUMES, REMOTE PAYMENTS FOR DIGITAL & PHYSICAL GOODS (M), LATIN AMERICA



Plenty of Super App Contenders, but No Dominant Ecosystems Yet

The role of the super app has been important in Asia, but in Latin America, a dominant super app has yet to emerge. However, there is much potential for this to develop over the medium to long term. Below we examine three possible contenders to be super apps in the region.

- **Mercado Pago:** Launched in 2003 as Mercado Libre's payment platform, this has evolved into a fully fledged mobile wallet platform, following the explosion of eCommerce in the Latin American market. Mercado Libre has a widening ecosystem, but Mercado Pago is still largely eCommerce focused.

- **Rappi:** Rappi, which was launched in 2015, is a multi-vertical company based in Colombia, which offers restaurant delivery, grocery delivery, eCommerce and other elements. Rappi Pay facilitates payments within the ecosystem, but lacks other elements to make it a complete super app ecosystem.
- **Nubank:** Nubank is a digital-only bank that was founded in Brazil. While not traditionally a mobile wallet, it has some super app features, and is building a wider ecosystem.

While there are many candidates, no one app has yet amassed enough elements to become a super app. We do however believe that it is likely that all of these apps and possibly others will become super apps in this market.

Instant Payments Disruption Being Felt

Instant payments are leading to significant disruption in how the payments markets in Latin America operate. While they were quite slow movers initially in terms of instant payments adoption, Latin American countries have since accelerated rapidly:

- **Brazil:** In November 2020, Brazil's Central Bank launched the PIX instant payments system. The system, which offers payments within 10 seconds on a 24/7/365 basis, is proving disruptive in the Brazilian payments landscape. PIX is revolutionary because banks are not the only bodies able to use the system, mobile wallets are also permitted to use the instant payment rails.
- **Mexico:** In October 2019, the Bank of Mexico launched the CoDi platform, which offers instant payment capabilities in the country. The system uses QR codes instore to initiate payments, and also has online capabilities. However, adoption of the system has been quite low, with only 6.4 million users as of December 2020, which was far behind the objective of 18 million by the end of September 2020. The Mexican system is limited, in so far as it can only be accessed via a traditional bank account.

These two examples provide an interesting contrast on how instant payments adoption can vary. By including mobile wallets within the remit of instant payments provision, Brazil has charted a much faster growth trajectory than Mexico. Indeed, we anticipate that future instant payment schemes will follow the Brazilian example, which will act as a stimulating factor for mobile wallet growth going forward.

Takeaways

- Latin America is a region with a growing mobile payments ecosystem made possible by increased smartphone penetration
- While Latin America lacks a Super App ecosystem to date, regional fintech powers Mercado Pago, Nubank, and Rappi are all likely candidates
- Brazil and Mexico are the two largest markets for merchants, and Brazil alone will account for 33% of mobile wallet transactions across all of Latin America by 2025

Latin America is a rapidly emerging mobile payments region, albeit starting from a lower baseline than others. Consumers in Latin America are rapidly embracing eCommerce and mobile payments, moving away from cash-based payment types and store credit that have dominated the financial landscape. Merchants should look to establish a foothold in Brazil and Mexico as they seek a regional strategy in LATAM.



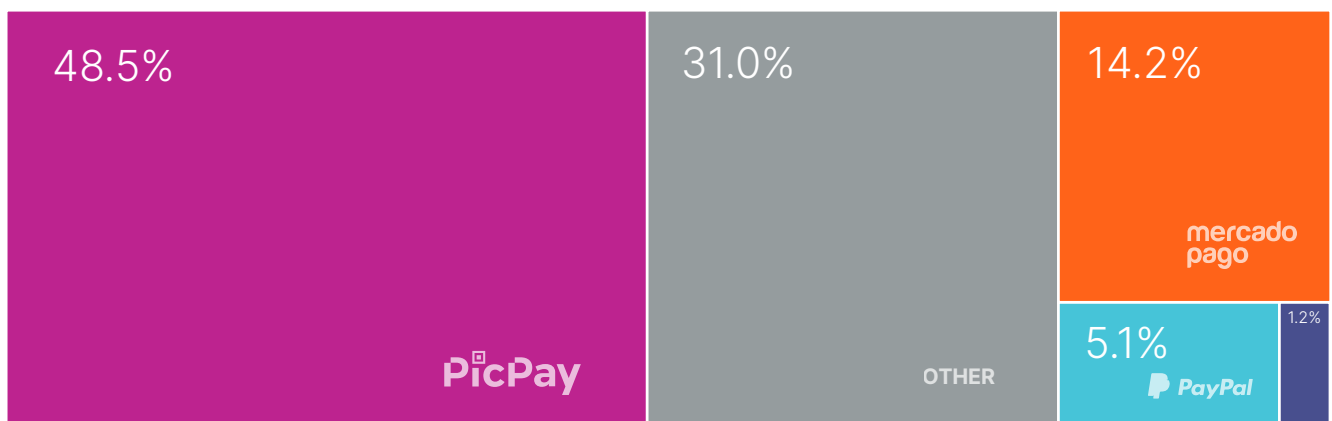
Brazil

Brazil is the largest eCommerce market in Latin America, with \$21 billion transactions in 2020 supported by a population of over 200 million. An emerging market with relatively high smartphone penetration, Brazil has become the fintech hotspot of Latin America. While mobile wallet penetration is already high, at 35.5%, this is projected to reach 86.6% by 2025, with 197 million mobile wallet users. This user growth is projected to dramatically impact transactions, increasing by more than 5X to 8.5 billion by 2025, at a value of \$146 billion. Pix, the Brazilian central bank's real-time payments scheme launched in November 2020 and is already being widely adopted by consumers.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$8.3K \$8.8K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>4.7% 9.3%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>75.6M 197M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>35.5% 86.6%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>1.5B 8.5B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$26B \$146B</p>

MOBILE WALLET MARKET SHARE

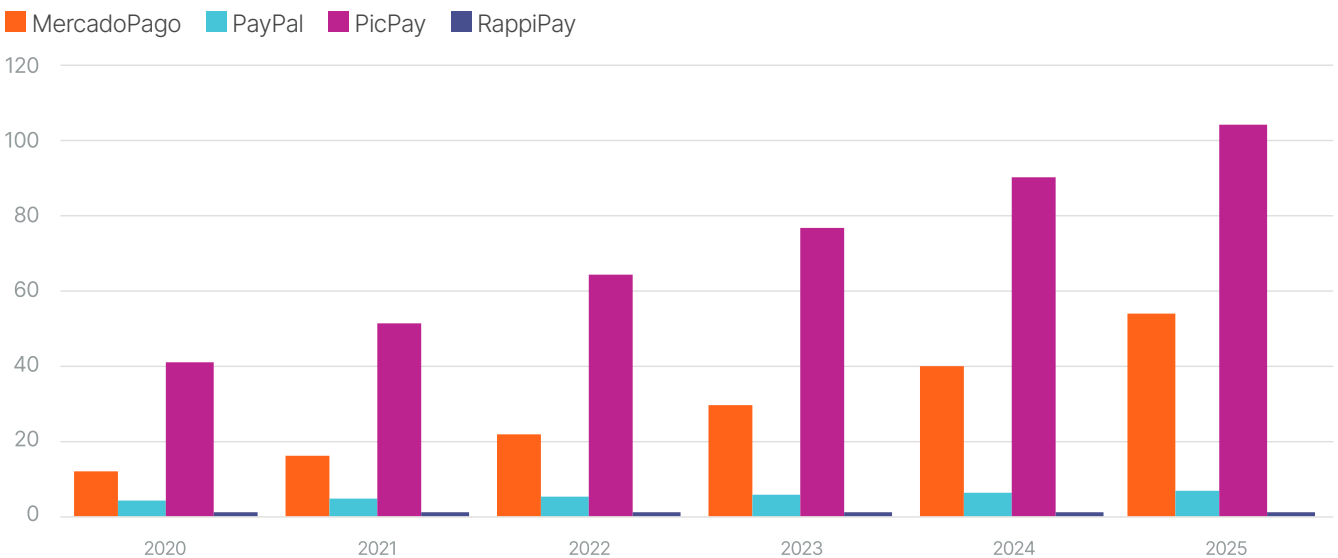
■ PicPay
 ■ Others
 ■ MercadoPago
 ■ PayPal
 ■ RappiPay



Brazil – Competitive Landscape

Brazil is a country with a robust and growing mobile payments market. PicPay, launched in 2013, has become the most popular mobile wallet in Brazil, and in April 2021 filed preliminary paperwork to IPO on the Nasdaq exchange. Public investment from the US and beyond is expected to fuel additional growth and services for PicPay. Challengers to PicPay include regional powerhouses Mercado Libre, the eCommerce Marketplace of Latin America, and its mobile wallet MercadoPago, as well as Rappi, the food delivery service of Latin America, and RappiPay. The recent launch of Pix is certainly worth keeping an eye on, especially to see if consumers prefer to use it as a direct method of payment or a top-up mechanism for mobile wallets.

USERS (M) BY MOBILE WALLET



Takeaways

- Brazil is the biggest eCommerce and mobile payments market in Latin America, with over 200 million residents and \$21 billion in 2020 eCommerce revenues
- Brazil is becoming a highly competitive mobile payments market as MercadoPago, RappiPay and real-time payment Pix will challenge PicPay
- Mobile Wallet penetration and usage are set to explode in Brazil, with user penetration reaching 86.6% (197M consumers) of Brazilians by 2025

Brazil is set to become the most attractive mobile payments marketplace outside of Asia. With projected rapid growth in mobile wallet adoption along with an emerging eCommerce ecosystem, consumer demand is clear and on the rise. Competition for those consumers will remain strong, with mobile wallets and real-time payments scheme Pix all on the rise.

Brazil – Consumer Attitudes Deep Dive

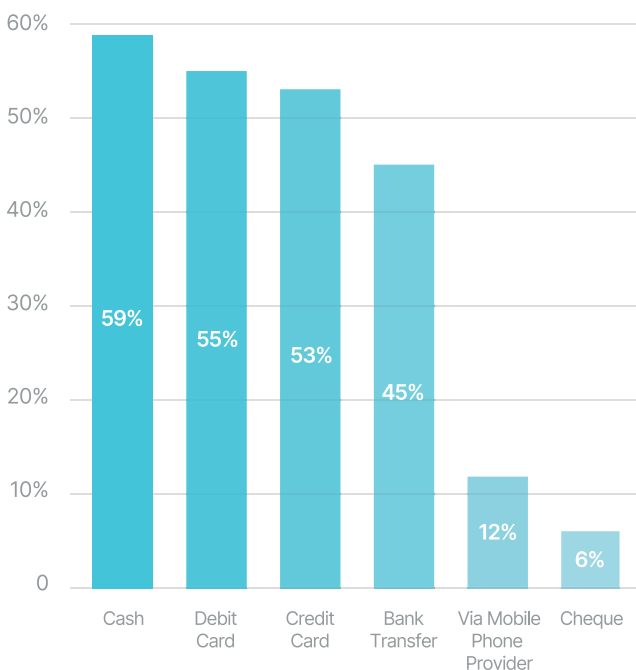
Our consumer survey, which sampled 1,043 respondents, found that respondents were using 2.4 wallets each, and 46% of mobile wallet users have started using mobile wallets within the last year. This speaks to the nascency of mobile payments in Brazil, especially when compared with Indonesia, where 76% of consumers reported having used a mobile wallet for more than two years.

The survey also showed that 80% of respondents were using mobile wallets to make purchases, a number that indicates significant usage of wallets for payments, but also room to grow to reach the ubiquity that payments have in other developing markets. Brazil's high rate of unbanked consumers is reflected in the fact that 66% of respondents reported that they are getting paid into a mobile wallet. Lastly, the most frequently used activity for Brazilian respondents was bill pay at 89%, which is a strong indicator that Brazilian consumers are using mobile wallets in place of cash-based payments, like boletos.

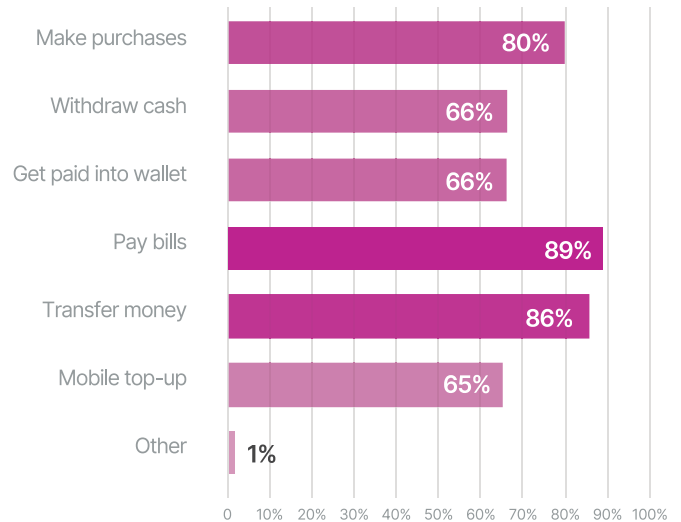
While the previous question strongly suggested that wallets are being used as a replacement for cash, the next question, "How did you used to pay for the things you now pay for with mobile wallets?" highlights it more explicitly: Here we can see that cash is the payment method being most displaced by mobile wallets, with debit cards, credit cards and bank transfers thereafter.

These numbers may be further impacted by the continued adoption of mobile payments. When asked, "What problems, if any, have you had in using mobile wallets?", 24% of respondents, more than any other possibility, responded that "it's not available in the shops that I want to use it". In other words, merchant adoption of mobile payments is still preventing consumers from using mobile wallets as much as they would like.

PAYMENT METHODS USED PRIOR TO MOBILE WALLETS

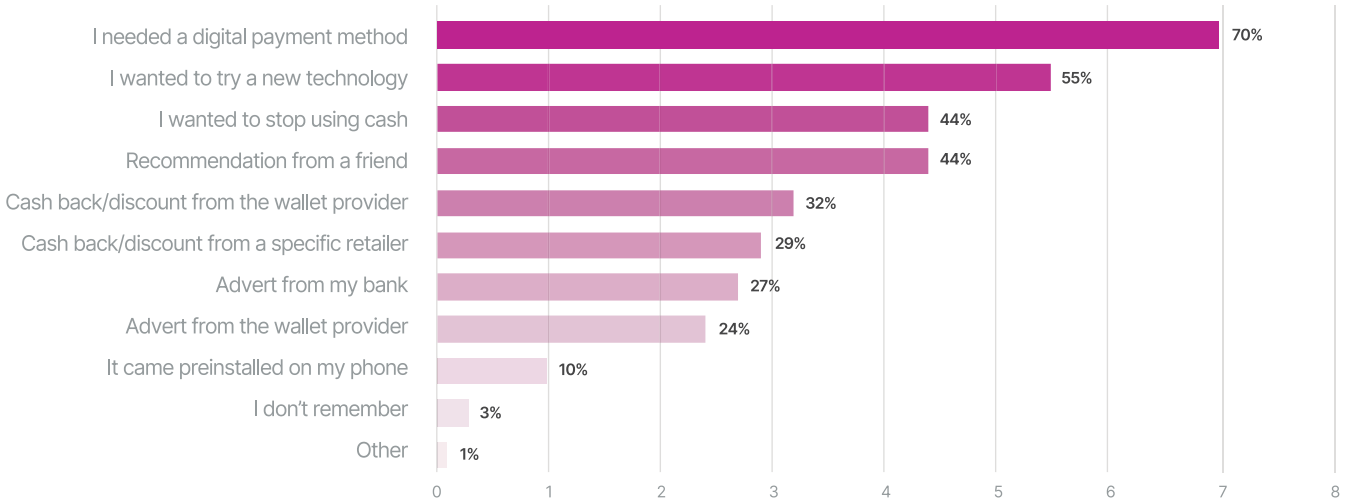


MOBILE WALLETS ACTIVITIES



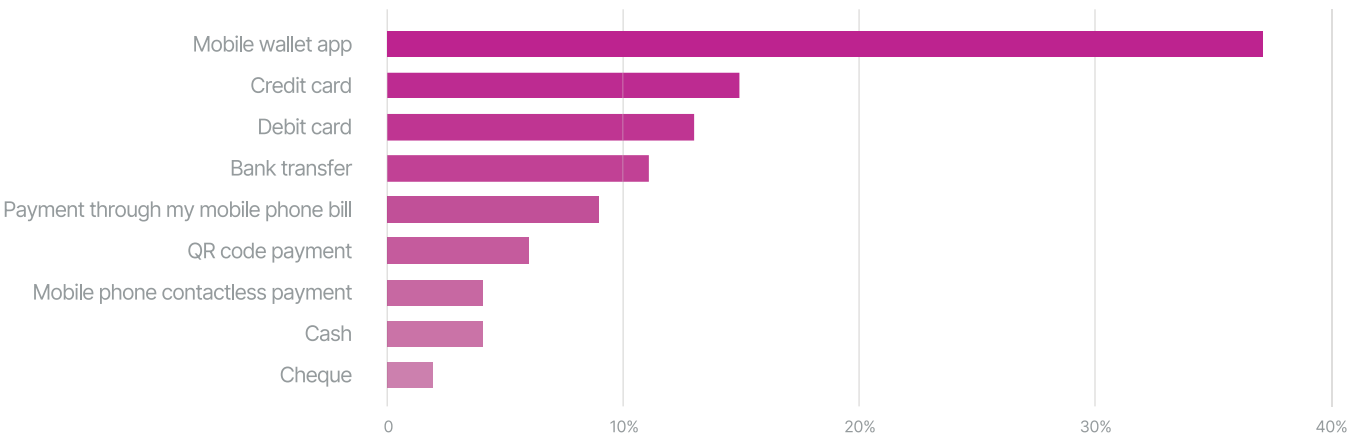
In a market where mobile wallet penetration has been accelerating, understanding why consumers are beginning to use mobile wallets is quite interesting. We asked respondents, "What made you start using mobile wallets?", to which 70% indicated they needed a digital payment method. With Latin America having now become the fastest growing eCommerce region in the world, the ability to pay online makes mobile wallets very attractive. In fact, the survey found that paying for online shopping was the leading use case for mobile wallet purchases, with 96% of respondents, followed by paying in local stores (72.8%) and paying in chain stores (63.5%). At the same time, 44% of respondents indicated a desire to stop using cash, the third most popular answer. Once again, further data that shows the displacement of cash amidst the move to mobile payments.

DRIVERS FOR MOBILE WALLET ADOPTION



Spend management may provide a strong explanation as to why Brazilian consumers are looking to move from cash to mobile payments. When we asked, “Which payment type is easiest to keep track of?”, mobile wallets were selected by 37% of respondents, far greater than any other payment type. On the other hand, cash was second lowest, with just 4% of respondents.

WHICH PAYMENT TYPE IS EASIEST TO KEEP TRACK OF (%)





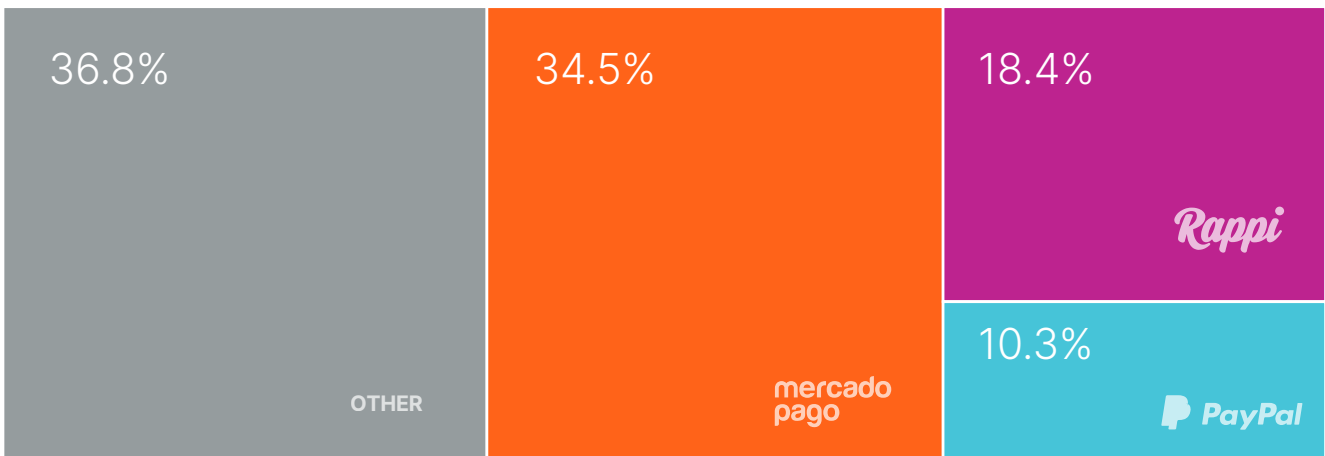
Mexico

Mexico is the second largest mobile payments market in Latin America, and similarly to Brazil, poised for hypergrowth over the next five years. Mobile wallet penetration is set to increase from 32% to 82%, with 71 million new mobile wallet users. Mobile payments are displacing highly popular cash voucher payments, like OXXO, which is similar to Fawry, the popular Egyptian payment method. OXXO launched its own mobile wallet, Spin by OXXO in March 2021. Mexico is still a nascent mobile payments market, and the market is quite fragmented in terms of payment options.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$9.5K \$9.1K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>6.2% 9.7%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>41.6M 113M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>32.1% 82%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>1.3B 5.4B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$22B \$91B</p>

MOBILE WALLET MARKET SHARE

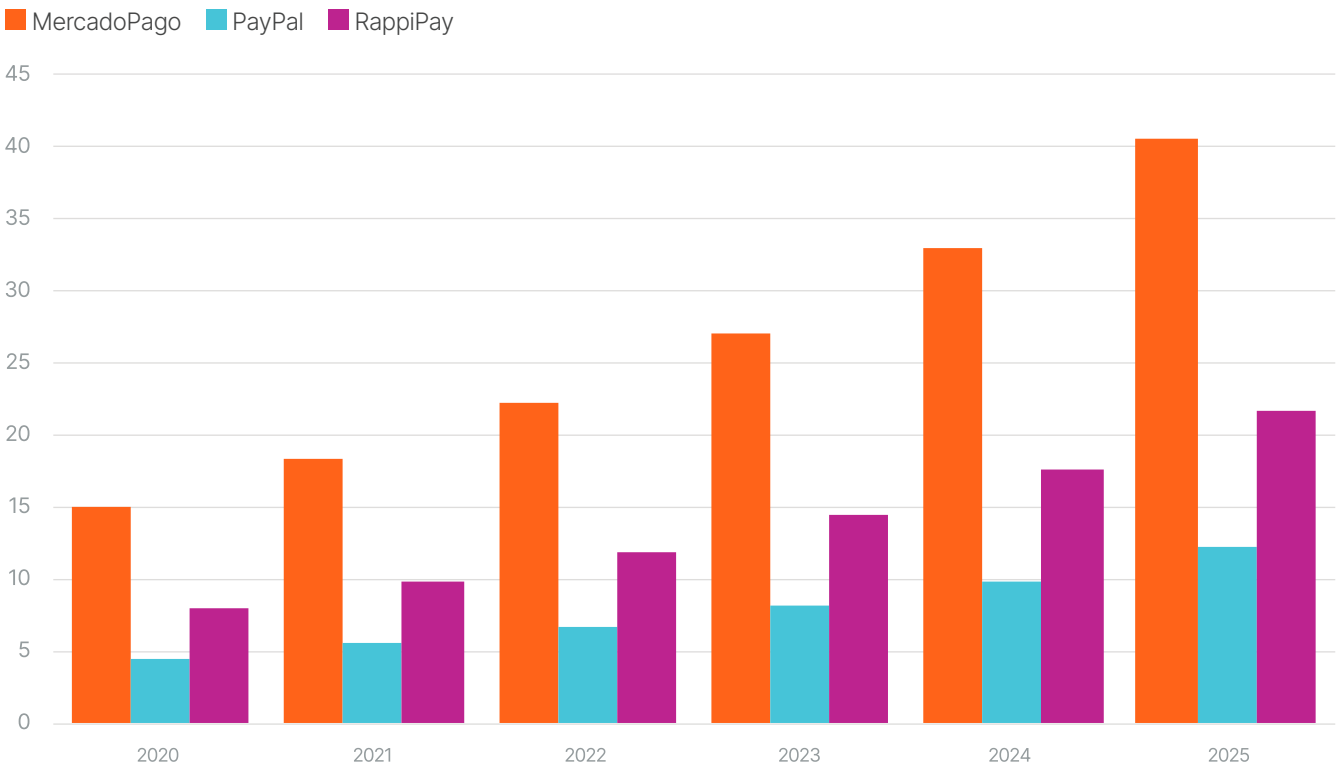
■ Others ■ MercadoPago ■ RappiPay ■ PayPal



Mexico – Competitive Landscape

Mexico's mobile payments ecosystem is highly fragmented, as "other" payment types make up the plurality of market share. New entrants include OXXO's mobile wallet, Spin by OXXO, as well as the real-time payments scheme CoDi, developed by the Mexican Central Bank. MercadoPago is the most popular mobile wallet today, followed by a more recent market entrant in RappiPay. Unlike Brazil, Mexico lacks a popular, homegrown wallet as of today. Moreover, PayPal remains popular, likely in part due to the country's proximity and shared economic activity with the United States.

USERS (M) BY MOBILE WALLET



Takeaways

- Mexico's mobile wallet ecosystem is dominated by the Latin American regional payment types, MercadoPago and RappiPay
- The payment ecosystem is highly fragmented and changing rapidly due to new, local market entrants Spin by OXXO and CoDi, the Mexican real-time payments scheme
- Mexico is primed for hypergrowth in mobile payments, with annual payment value set to increase more than fourfold over the next five years

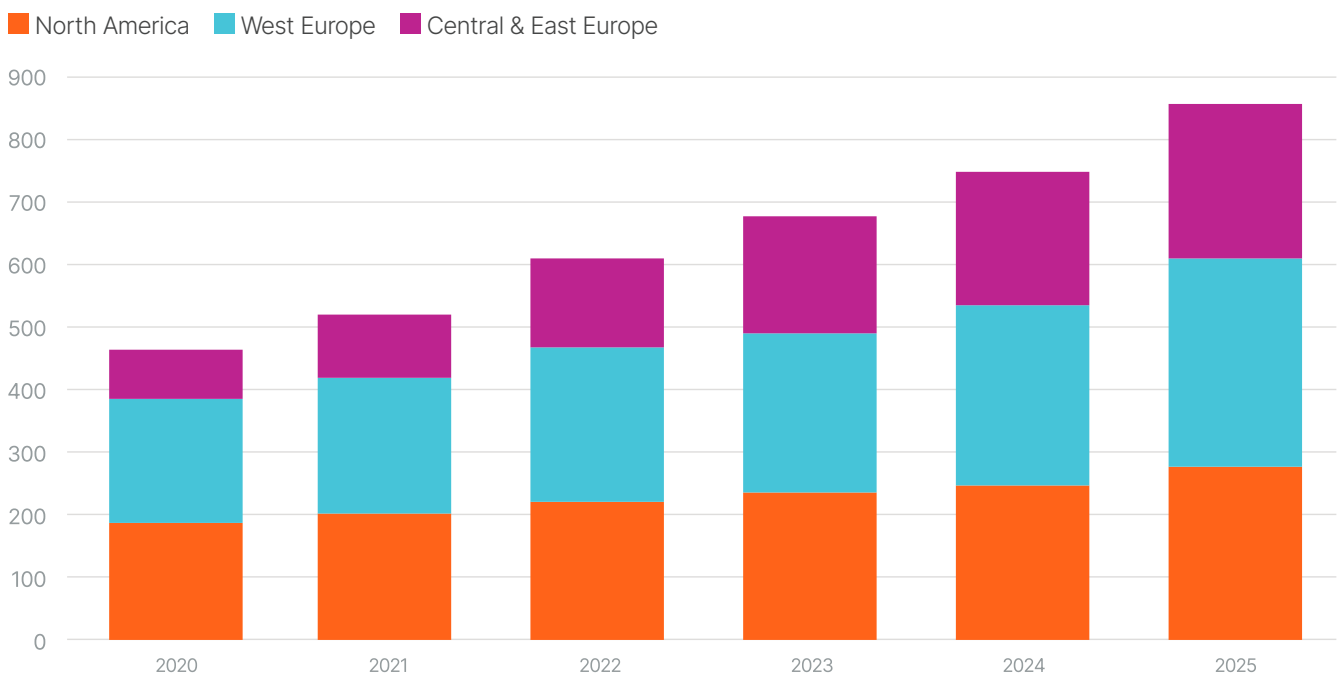
Mexico is a very promising market for mobile payments, with significant growth projected over the next five years. Payment type fragmentation presents challenges for mobile payment acceptance, but merchants will be wise to invest in this market, as mobile payments will bring millions of Mexicans into eCommerce for the first time.

Rest of World

In the rest of the world, mobile wallets have mostly followed the card-based model, rather than the super app model that has flourished in Asia. This section will explore the trends driving the market and outline our forecasts in the area.

Rest of World Overview

NUMBER OF PEOPLE USING MOBILE WALLETS (2020-2025)



Rest of World – Regional Trends

NFC, Device-Based Mobile Payments Lead the Way

Outside of Asia, Africa, the Middle East and Latin America, mobile payments are being dominated by hardware-based, primarily NFC-device payments. As North America and Western Europe have heavy concentrations of credit cards and NFC enabled smartphones, consumers are adopting these technologies versus the stored-value wallets used just about everywhere else.

eCommerce Growth Slower Than Other Regions

While eCommerce is growing at a steady pace in the rest of the world, it is not as rapid as in Asia, Latin America or Africa & Middle East. While eCommerce has intensified globally during the pandemic, ultimately

it is a much more mature market than others. As the rate of growth is slower, merchants need to be more creative about how to incentivize revenue growth and user adoption. Choosing the right mobile wallets to partner with can be an accelerator in that regard.

Country-Level Initiatives Can Lead to Specific Solutions

While these areas have mostly been dominated by card-based wallets, this is not always the case. In fact, several countries have national schemes or national differences that cause exceptions to the dominance of this model.

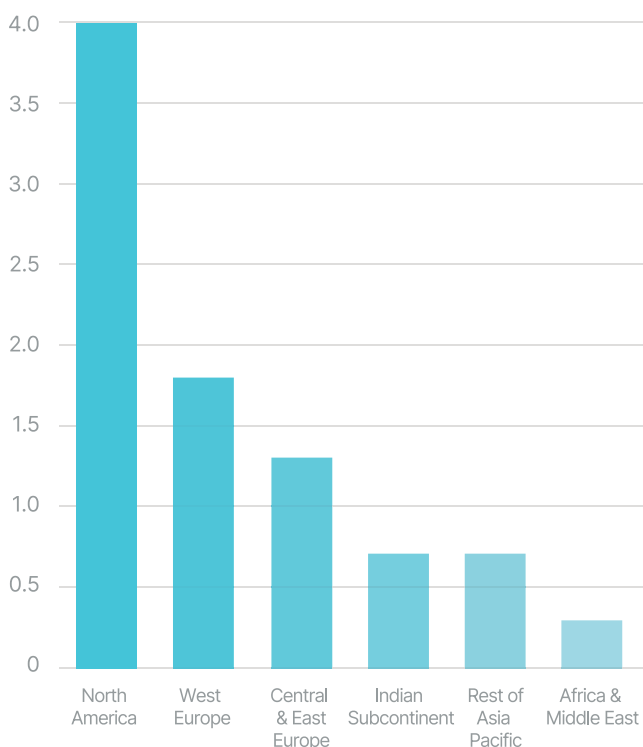
For example, in the Netherlands, the iDEAL system involves facilitating payments on mobile using a national QR code system. This has led to a payments market in the Netherlands which is focused on this different type of mobile payment, rather than cards. In Russia, wallet services have developed as a result of the popularity of online services, such as Yandex, rather than as a proxy for cards.

Ultimately, while the card proxy model is dominant in these areas, there will be numerous countries that develop alternative capabilities which drive mobile wallet markets forward.

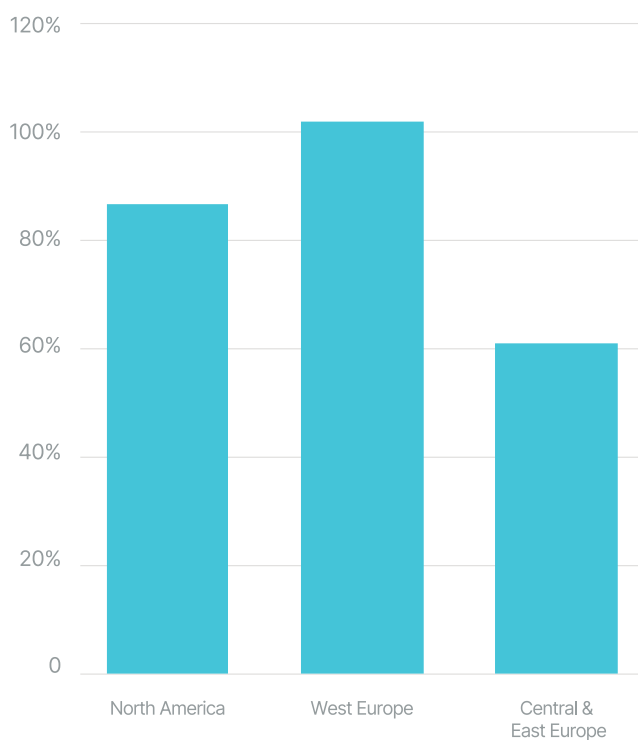
Takeaways

- The Rest of the World has a thriving consumer payments ecosystem that is highly credit card centric. When combined with high smartphone and NFC-device penetration, these countries have simply digitized the existing card infrastructure to support device-based card payments
- While Asia, Latin America, Africa and the Middle East that are experiencing eCommerce hypergrowth, the rest of the world is experiencing consistent but relatively speaking flat growth
- Some examples of stored value wallets and real-time payments schemes are emerging from the rest of the world, so merchants should monitor consumer adoption to ensure they maintain relevant payment acceptance

SMARTPHONE PENETRATION AS A PROPORTION OF POPULATION, 2021 (%)

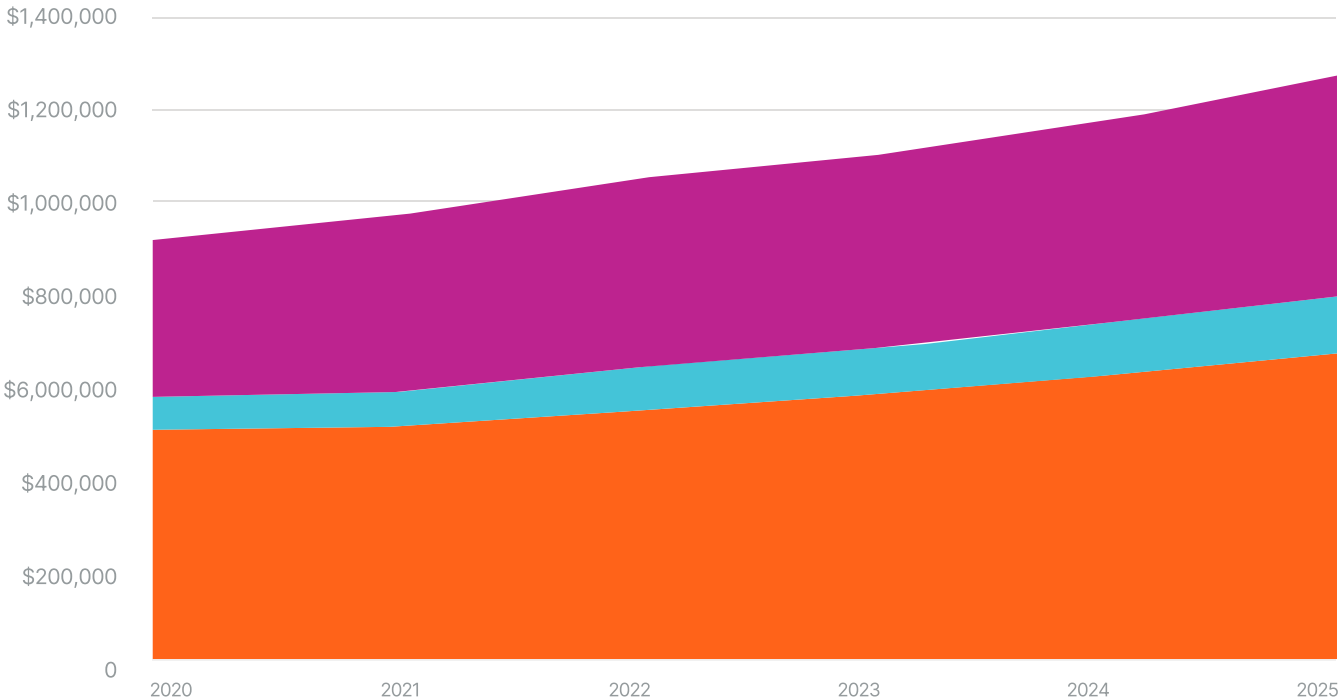


AVERAGE NUMBER OF CARDS PER PERSON BY REGION (2021)



TOTAL TRANSACTION VALUE, REMOTE PHYSICAL & DIGITAL GOODS PURCHASES MADE USING MOBILE HANDSETS & TABLETS (\$M)

NORTH AMERICA **CENTRAL & EAST EUROPE** **WEST EUROPE**



The rest of the world is experiencing mobile payments through the digitalization of credit cards on mobile devices with NFC chips. While some stored value wallets and real-time payments exist in these countries, they are few and far between. Merchants should monitor mobile payments in the rest of the world to ensure they maintain relevant payment acceptance.



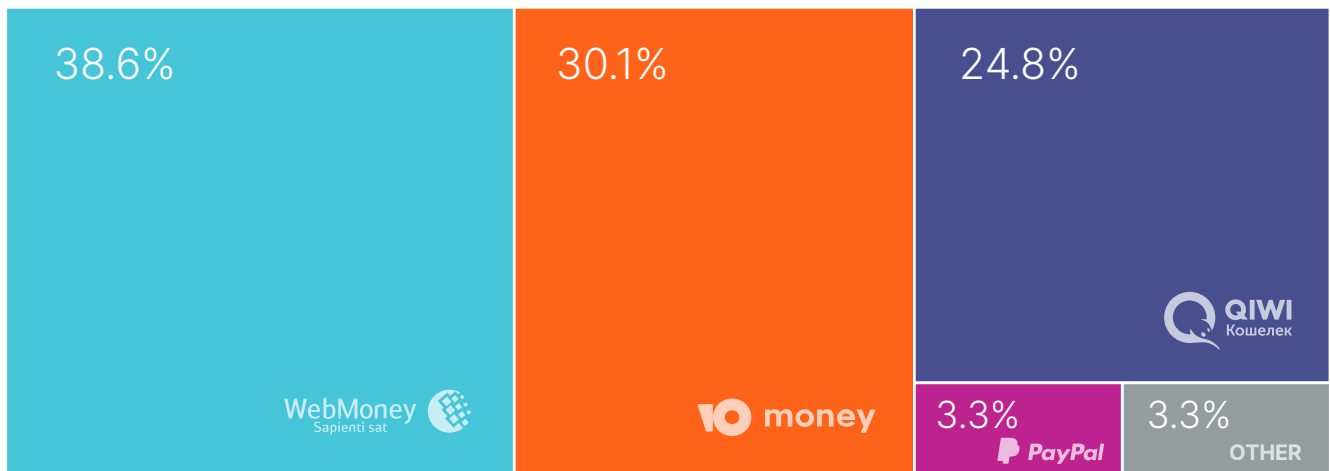
Russia

Russia's mobile payments market is shaped by mature, legacy players, who are rapidly adapting to the age of mobile-first, digital commerce. Of the four most popular mobile payment types in Russia, QIWI is the youngest, having been founded in 2007. Well established mobile payment types, combined with increasing smartphone penetration and a rapidly growing eCommerce sector have set up Russia for the next five years of mobile payments growth. We project that annual mobile payments value will increase by nearly 6X to \$75.4 billion, with wallet penetration reaching 78.5%.

<p>GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>\$10.8K \$13.3K</p>	<p>WALLET SPEND TO GDP PER CAPITA</p> <p>2020 2025 ▲</p> <p>4.1% 5.3%</p>
<p>MOBILE WALLET USERS</p> <p>2020 2025 ▲</p> <p>34.9M 115M</p>	<p>MOBILE WALLET PENETRATION</p> <p>2020 2025 ▲</p> <p>24.1% 78.5%</p>
<p>MOBILE WALLET TRANSACTION VOLUME</p> <p>2020 2025 ▲</p> <p>774M 5.1B</p>	<p>MOBILE WALLET TRANSACTION VALUE</p> <p>2020 2025 ▲</p> <p>\$13.2B \$75.4B</p>

MOBILE WALLET MARKET SHARE

■ WebMoney
 ■ YooMoney
 ■ QIWI
 ■ PayPal
 ■ Others

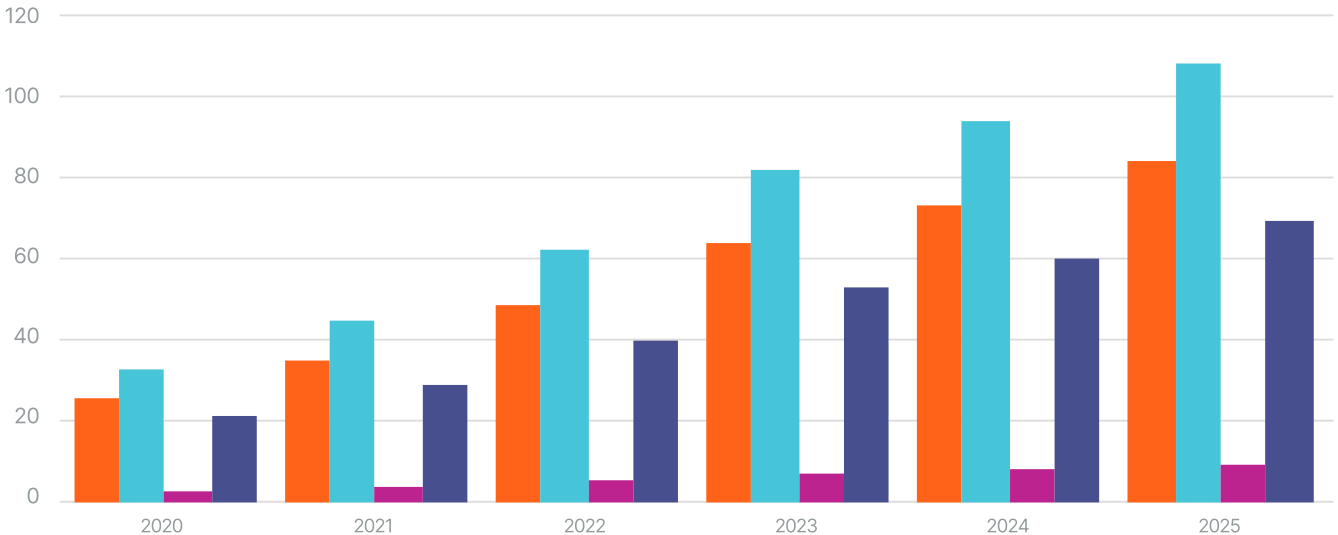


Russia – Competitive Landscape

Russia's mobile payments market is defined by payment types that are quite old, by mobile payments standards. WebMoney and PayPal (both founded in 1998) YooMoney (founded in 2002) and QIWI (founded in 2007) have adapted to several monumental shifts, most notably, from desktop PCs and the web to the app-based mobile wallets they are today. WebMoney, YooMoney & QIWI all make up a triopoly, with greater than 90% market share combined.

USERS (M) BY MOBILE WALLET

■ YooMoney/Yandex.Money ■ WebMoney ■ PayPal ■ QIWI



Takeaways

- Russia has highly advanced mobile payments infrastructure, thanks to payment methods that are over 20 years old that have modernized towards payment types seen in other regions around the world
- Mobile payments usage is projected to grow rapidly due to the combination of established payment types, smartphone penetration and eCommerce growth
- There are three mobile payment types in Russia that make up 90% of mobile wallet usage; with similar market shares they are all important for merchant acceptance

Russia is the most promising mobile payments market in Europe, with well-established payment types and users. Merchants should be looking at accepting all three of the most popular payment types as they are all projected to continue growing over the next five years.

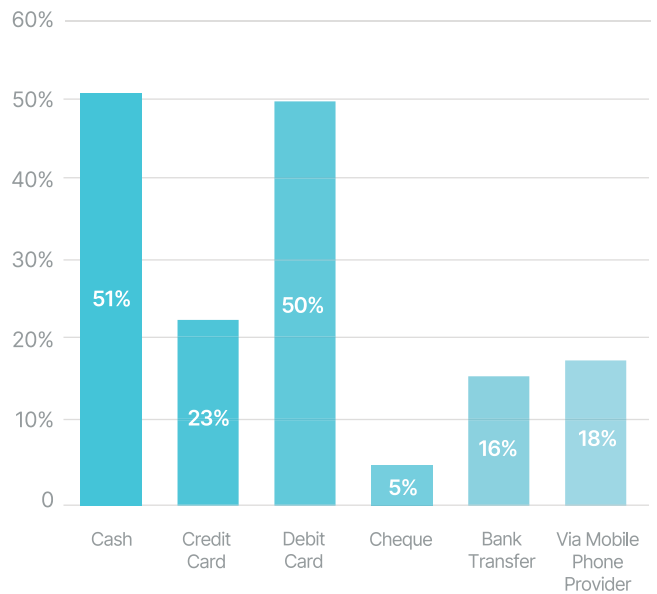
Russia – Consumer Attitudes Deep Dive

Our consumer survey, which sampled 1,060 respondents, found that consumers use an average of **2.4 wallets in use per respondent**, equal to that of Brazil. Russia is the most mature mobile payments market arguably in the world. For the question “How long have you been using mobile wallets?”, 68% of respondents indicated that they started using mobile wallets over 2 years ago, showing how well established the mobile wallets market is in this country.

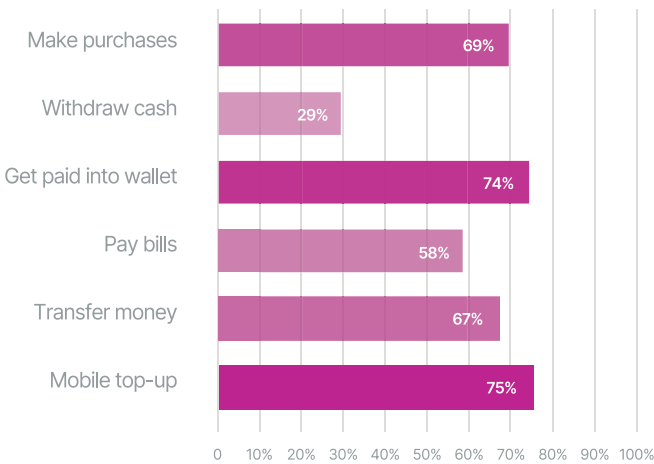
While Russia is a very different market in terms of the age of mobile payments, it is very similar to others in terms of the payment methods that consumers used prior to mobile wallets. Cash is the most widely displaced payment method, followed closely by debit cards. This could be an indication of either previously low levels of credit card utilization or potentially those moving to mobile wallets skewing more heavily towards consumers without credit cards or some combination of the two.

Russian consumers are using mobile wallets across a wide range of use cases, according to the consumer survey. In fact, Russia has the greatest diversity of use cases of any of the five countries we surveyed.

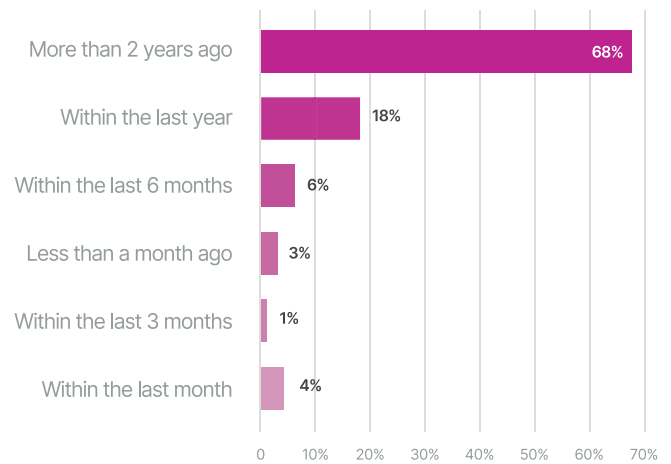
PAYMENT METHODS USED PRIOR TO MOBILE WALLETS



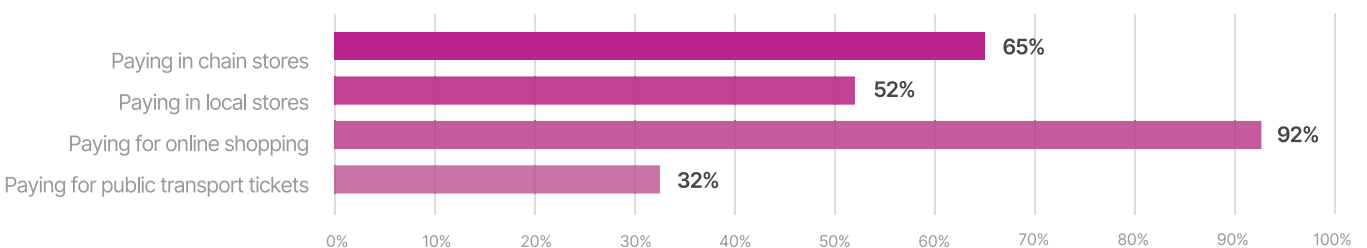
MOBILE WALLETS ACTIVITIES



MOBILE WALLET TENURE



WHERE MOBILE WALLETS ARE USED

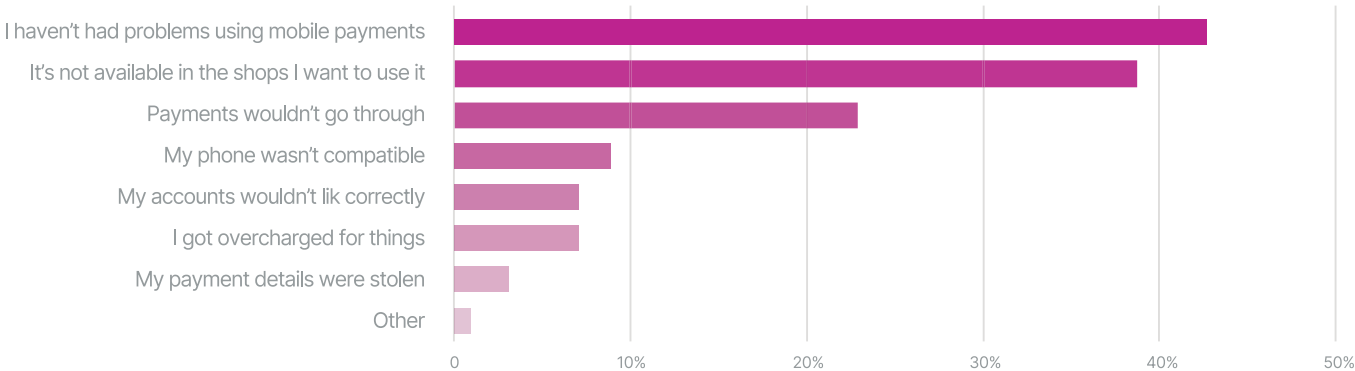


Much like the developing markets covered in this report, making purchases and mobile top-up rank amongst the most common use cases, along with P2P transfers and bill payment. What is unique to Russia is the high level of consumers who are getting paid into their mobile wallet. This could be due to different behaviors that are a result of the long-time presence of mobile wallets in the country.

Also unique to Russia is the locations in which mobile payments are being used. Russia has the greatest spread of mobile wallet usage for online shopping vs in-store purchases. At 92%, nearly all consumers are using mobile wallets for online purchases, which may be another metric attributable to the maturity of mobile payments in Russia, as well as merchant acceptance online versus in-store.

Merchant acceptance was another relevant topic that emerged when we asked Russian consumers, “What problems, if any, have you had in using mobile wallets?” Other than those who reported they haven’t had any problems (43%), the most popular answer was that their payment type wasn’t available for use at 39%. As mobile wallets are popular for eCommerce, which is likely to only expand with the growth of mobile wallets over the next five years, acceptance should be a priority for merchants.

MOBILE PAYMENT CHALLENGES



2021 Mobile Wallets Report Methodology

Boku commissioned Juniper Research, an independent research firm based in the United Kingdom, to research, compile, and report the outputs for both the survey and forecast data contained in this report.

Survey Methodology

Juniper Research conducted an online survey of more than 5,000 mobile wallet users across Brazil, India, Indonesia, Japan and Russia in April and May 2021. The respondents were incentivized for their participation. The results were not weighted. The results are presented with a $\pm 3\%$ margin of error at the 95% confidence level.

Forecast Methodology

The forecasts use data gathered from a number of Juniper Research's Fintech & Payment research suites. The forecasts and datasets are updated on a quarterly basis (most recently in May 2021); those informing the Digital Wallets Deep Dive Data & Forecasting document include Digital Ticketing, eCommerce Payments, Contactless Payments, Digital Banking, Digital Money Transfer & Remittances and QR Code Payments.

These individual datasets enabled us to gauge the extent of wallet usage across a range of payment types, in terms of user base, transaction volume and transaction value, on a national, regional and global basis.

Please note that for all forecasts, we look at wallet adoption and usage only for open wallets, ie those that have the ability to make payments on multiple sites, rather than in reference to an ability to transfer funds between different wallets. Thus we do not focus on transactions conducted via cards stored by a retailer purely for use on that retailer's website or mobile app.

• **boku**