



Mobile app trends: 2023 edition

A global benchmark of
app performance

ADJUST





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INTRODUCTION

Looking at the mobile app industry in 2023

Marketers have always had to be strategic. As 2023 shapes up to be another unprecedented year, they have to be more strategic than ever before. With the combination of the economic downturn and tightening of budgets in industries worldwide, the ever-increasing complexity of the data- and user-privacy ecosystem, and the ongoing impact of the decreased reliance on digital in many markets post-COVID, mobile marketers and advertisers are finding themselves in a perfect storm. After the storm, however, comes the rainbow.

To put things into context with a few numbers, [mobile ad spend did grow by 14% in 2022](#), from US\$295 billion to \$336 billion. While impressive, this is actually significantly slower than the preceding years, which have grown by between 22% and 26% year-over-year (YoY) since 2018. With ad spend slowing, consumer spend also dropped, down 2% YoY to \$167 billion, [breaking mobile's](#)

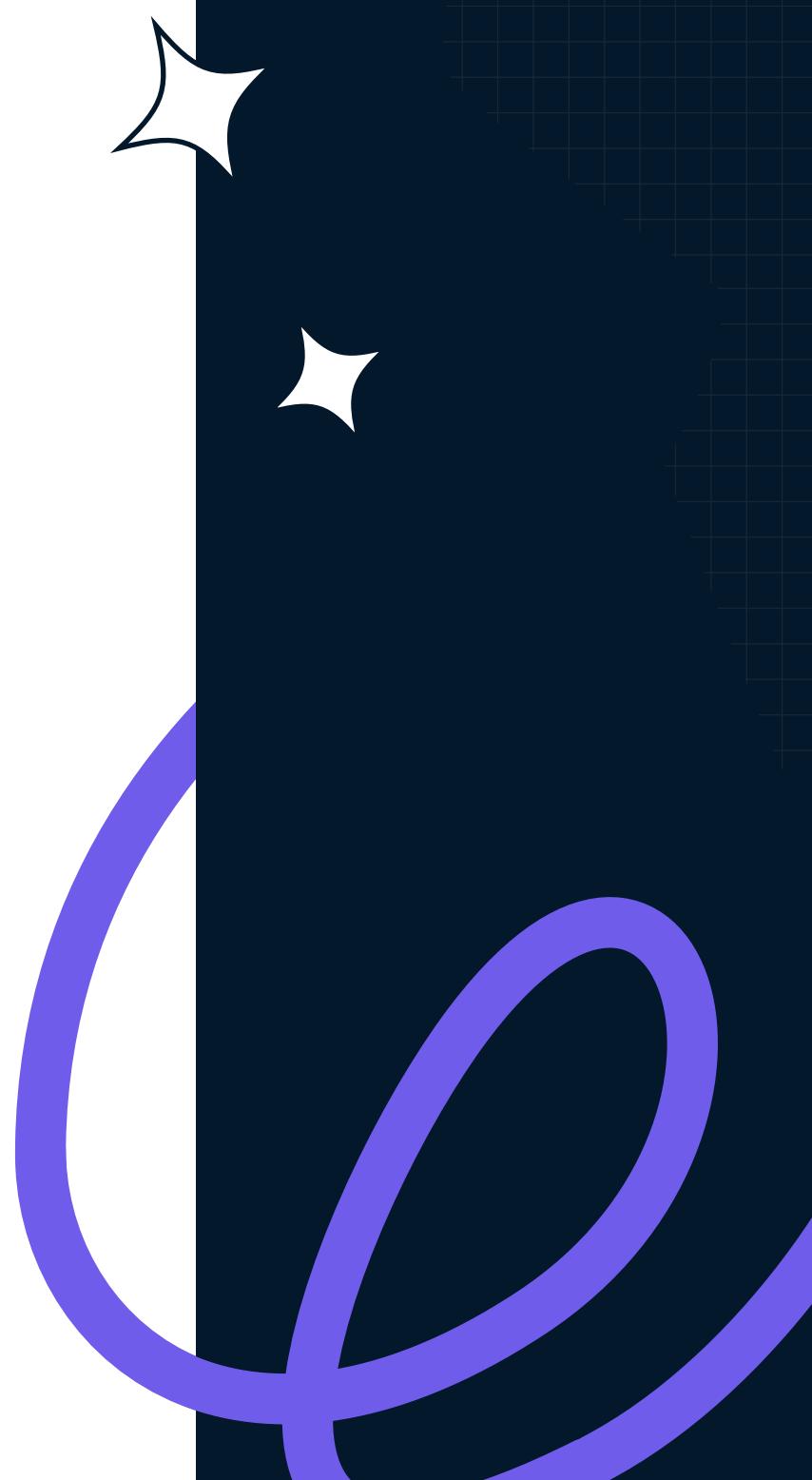
[non-stop growth](#) trend for the first time since its emergence as a market in 2007.

Despite how these numbers look at a high level, there's a lot to be optimistic about in 2023, with massive growth opportunities represented and a clear message that mobile continues to be a force to be reckoned with. For example, by combining 2023's ad spend and consumer spend, we reach over half a trillion dollars that was spent on the mobile market—a huge figure that was achieved for the first time. In addition to this, Adjust data reveals that many regions and verticals performed well despite the overall conditions, which we examine in this ebook.

Now is a pivotal moment for marketers to focus on optimizing performance and maximizing returns with accurate attribution data, in-depth reporting, key insight identification, and tactical cross-platform growth. It's the teams equipped with the

right tools that will be able to adapt to ever-changing market conditions, as well as user behaviors and preferences, while driving undisrupted growth. In 2023, it's essential to prioritize customer needs, meet users where they are with highly segmented, personalized experiences, and to drive up lifetime value, ROI, and retention.

App trends 2023 takes a deep dive into actionable Adjust data and draws on industry and c-level expertise to provide marketers, developers, and the industry at large with the knowledge and insights needed to measure, optimize, scale, and drive strategic growth in 2023.



“

“Global conditions and user needs are evolving rapidly, but the need for growth and ROI in the mobile app marketing industry remains the same. Delivering highly customized, seamless user experiences, executing on cross-platform campaigns, and tapping into the potential of new channels will prove invaluable for marketers and developers seeking sustained and strategic growth in 2023 and beyond. **Maximizing marketing efficiency via centralized data and investing in the tools needed to make fast and impactful decisions** is what will ultimately result in campaigns that get results.”

ADJUST



Simon Dussart
CEO

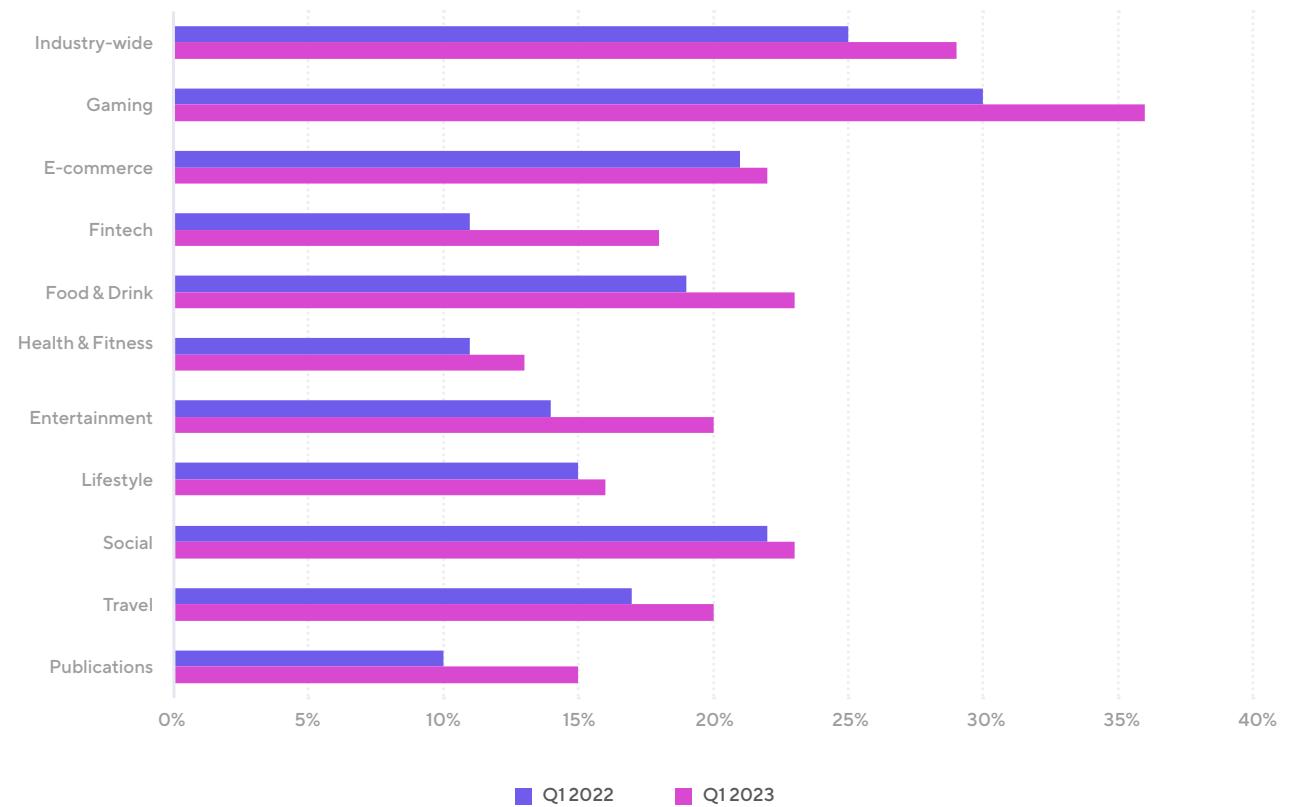
The ever-evolving data privacy space

While advertisers are continuing to iterate on and tweak their SKAdNetwork (SKAN) strategies, Google's rollout of Privacy Sandbox on Android (now in beta!) is also right around the corner. The past two years have demonstrated that remaining agile and taking a solutions-based approach keeps the disruption of data privacy developments to a minimum. Creative, strategic teams equipped with the right tools and a holistic approach to attribution, measurement, and analytics have everything at their disposal to drive sustained growth in 2023 and to prepare for changes to come in the longer-term future.

Adjust's [Conversion Hub](#), for example, empowers teams with custom-built, tailored-to-app, and limitless conversion value mapping. As part of our overall SKAN Solution Suite, we make navigating the iOS space in 2023 easier than ever before.

And there's more good news. With data-privacy now the norm, user education on the topic is improving, resulting in continually increasing opt-in rates. While measurement and attribution solutions focused on aggregated data are essential to success, device-level data provides insights and signals that help to further improve SKAN and conversion value strategies. With this in mind, ATT opt-in rates for Q1 in 2023 have climbed yet again, giving us an overall industry average of 29%, up four percentage points YoY. Gaming has reached a massive 36% and fintech has climbed from 11% to 18%.

ATT opt-in rates Q1 2023 vs. Q1 2022 (Global)



“

“TikTok is building innovative product solutions that empower brands to engage with the TikTok community, drive tangible actions and grow their business. 2022 was another year of continued investment in this area with improvements in our iOS signal mitigation solutions to recover campaign performance. We saw that over 75% of iOS revenue leverage App Profile Page, a native instant page for iOS campaigns that uses onsite signals for predicting user outcomes.”



Chen-Lin Lee

**Director - Global Ad-Tech
Partnerships**

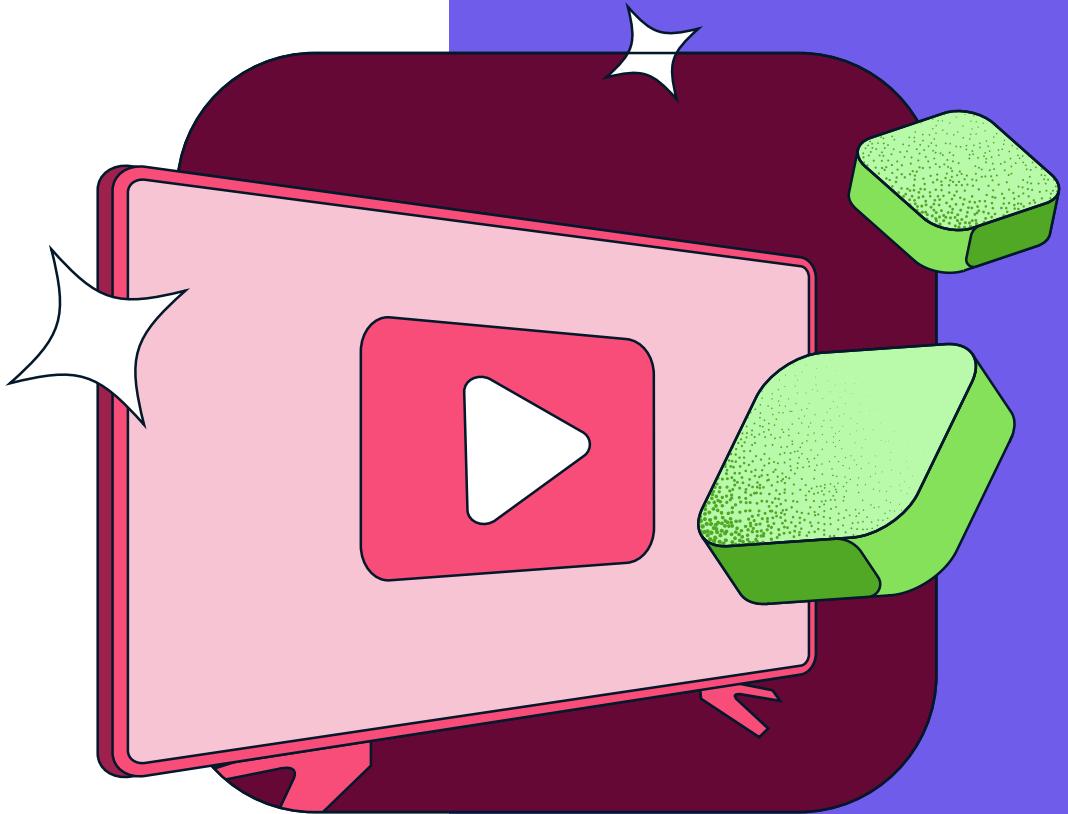
Strategic channel diversification and CTV

As we think more creatively about user acquisition (UA), channel diversification is one of the most effective ways to gain a competitive edge. Some channels offer huge audiences but are challenging to track, like podcasts and influencer marketing, while social media platforms like Reddit and Quora allow you to tap into niche audiences but have smaller reach. It could also be time to reboot your search engine optimization (SEO) strategy, to amp up your approach to public relations, or to give your referral program some love.

With [almost half of media experts](#) believing that connected TV holds the most potential for innovation in 2023, this is the “new” channel that will have the biggest impact this year. In the U.S., 93% of users are reachable via CTV, along with 67% of people in the U.K. and 63% of Germany. By 2024, India is set to be the third biggest CTV market. Advertising-

based video-on-demand (AVOD), free ad-supported streaming TV (FAST), and the growing white-label streaming technology space will make it easier to reach specific audiences, run tailored ads with precision, and grow ROI through conversion.

In 2023, there’s no reason not to be treating CTV as a performance channel. Leverage Adjust’s [AdVision](#) to tap into conversion opportunities, measure and attribute on CTV, understand its assisting power within your channel mix, and transform it into a performance channel.



Centralized data and MMM

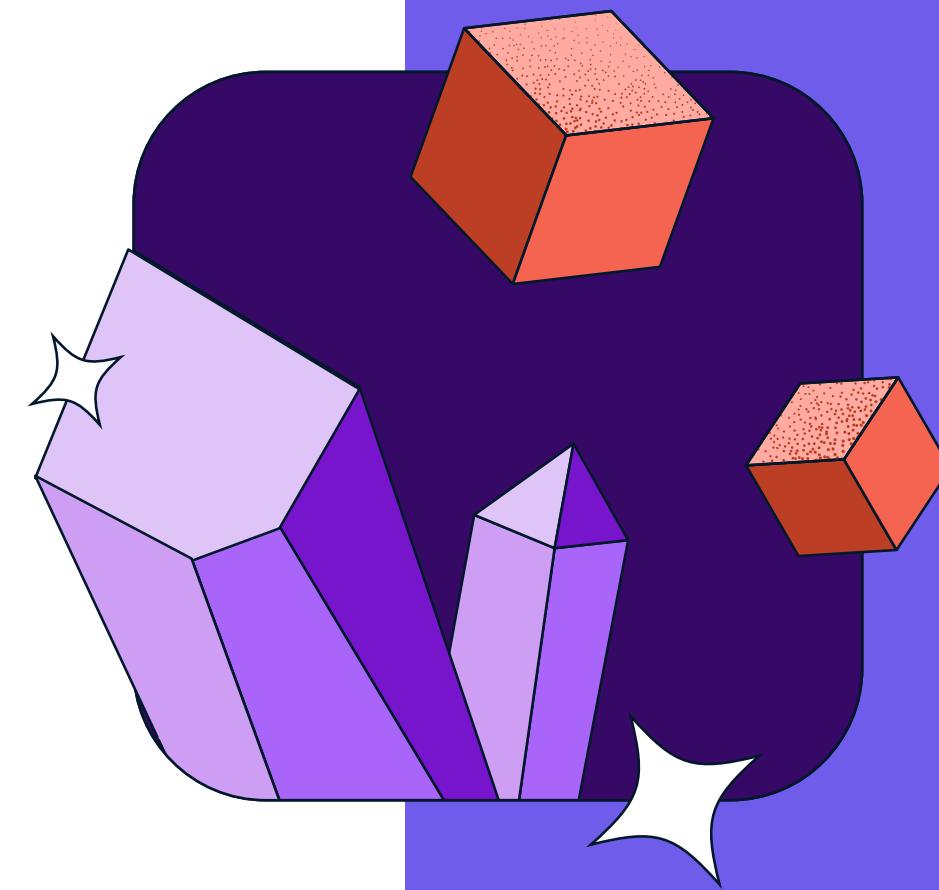
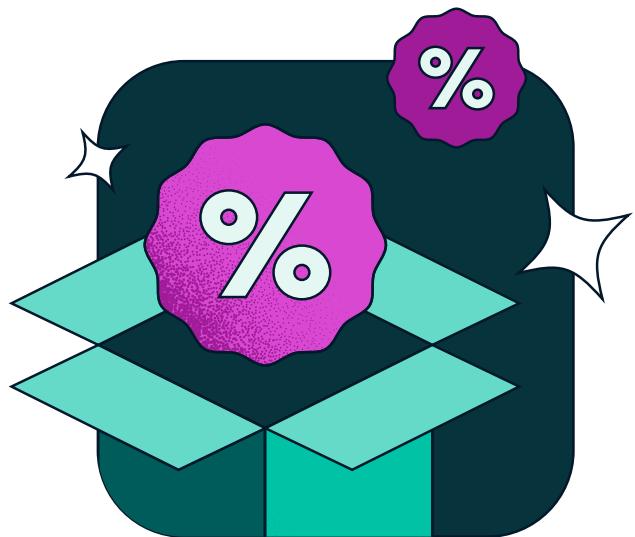
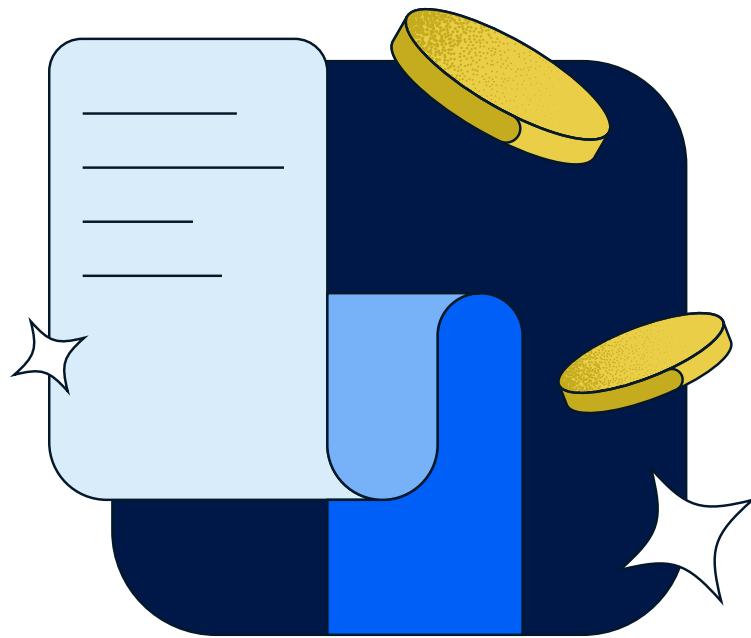
For everything we've explored so far to work effectively, marketers need to be able to make accurate, rapid decisions on where and how to allocate their budgets. A unified, centralized approach to data analysis and reporting means data from all channels and sources is readily available in one place for efficient decision making. And in an economy where we have to be extremely strategic regarding spend, centralized data enables reduction and streamlining of expenses while continuing to scale. Adjust's [Datascape](#), for example, unifies all data in one space with straightforward views and insights for quick analysis and even quicker decision making.

The comeback of mix media modeling (MMM) also enters the space here, as companies focus more on forecasting and strategic budget planning. MMM functions as a way to determine the impact of marketing tactics on a business objective, working in parallel with the data-driven attribution side of the equation. It also fits in perfectly as a way to measure the impact or success of new channels mentioned above, which pose more complexity on the measurement side, but are an extremely effective way to find users.

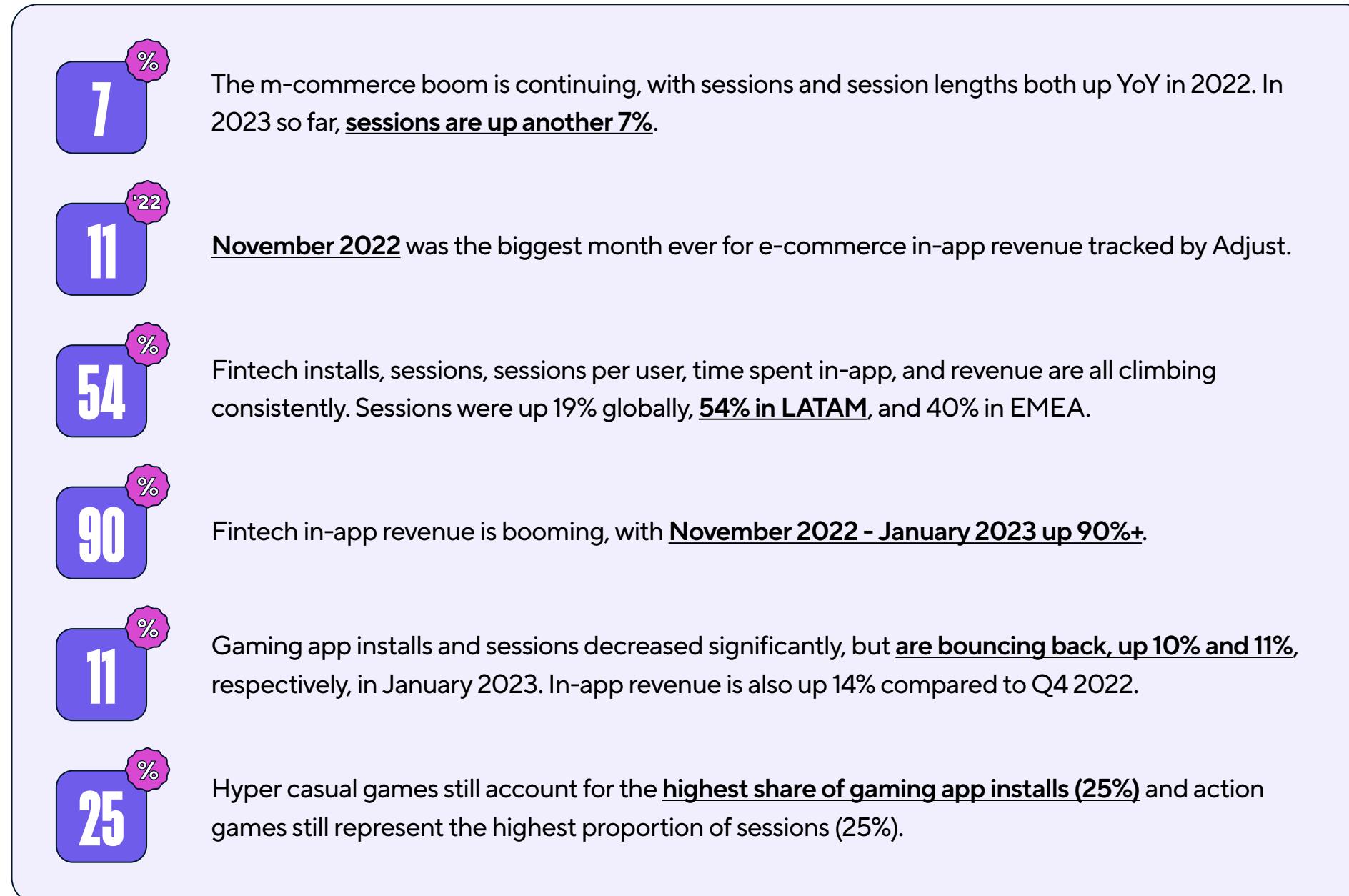


The verticals: E-commerce, gaming, and fintech

In this ebook, we are drilling down into mobile e-commerce, gaming, and fintech to provide our top insights and findings for these industry-defining verticals. By analyzing recent performance in the context of past, current, and upcoming developments in mobile marketing and advertising, we provide the tips, tricks, and actionable data points marketers and developers need to find, understand, and retain high value users in 2023.



Key takeaways



The methodology

VERTICALS:

E-commerce, gaming, fintech

REGIONS:

Global, EMEA, APAC, LATAM, North America

DATASET:

A mix of Adjust's top 5,000 apps and the total dataset of all apps tracked by Adjust. Our data comes from two sources, one including a list of 45 countries and one with approximately 250 based on the ISO 3166-1 standard.

DATE RANGE:

January 2021 - January 2023

RATIOS AND SHARES:

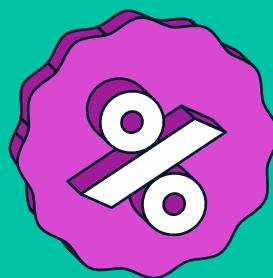
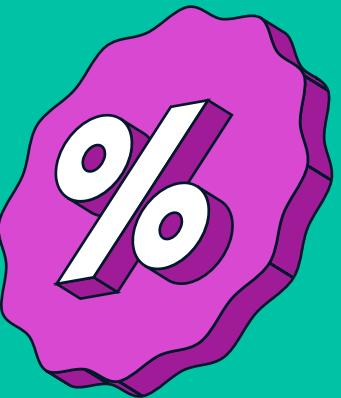
The reattributions share and paid/organic ratio are both expressed as ratios, where X:1. In the case of the paid/organic ratio, a value of 3 (3:1) would mean that for every 100 organic installs, there are 300 paid installs. Similarly, for the reattributions share, a value of 0.7 (0.7:1) would mean that for every 100 installs, there are 70 reattributions. Stickiness is represented as a percentage, meaning a stickiness ratio (daily active users (DAU) / monthly active users (MAU)) of 0.34 would be represented as 34%.

All dollar amounts are represented in USD.

PART 1

E-commerce

Industry stats, trends, and predictions



10 most downloaded shopping apps in 2022

Worldwide

1	SHEIN 229M	6	Flipkart 115M
2	Meesho 210M	7	Pinduoduo 79M
3	Shopee 203M	8	Alibaba.com 66M
4	Amazon 195M	9	Lazada 64M
5	Shopsy 141M	10	Mercado Libre 58M

apptopia



Industry stats, trends



Mobile commerce accounted for [two-thirds \(66%\) of all global e-commerce retail sales](#) in 2022. In APAC it reached 80%.



Mobile e-commerce sales in [2022 hit \\$415.93 billion](#), representing a growth rate of 9.9%, the first time it has ever fallen below double digits. Total e-commerce sales exceeded [\\$1 trillion](#).



Insider Intelligence predicts m-commerce sales to hit \$534.18 billion by 2024, which would make up 40.4% of all e-commerce sales. In 2023, 7% of all retail transactions will take place via mobile devices.



[53% of consumers](#) use their smartphones for shopping.



Social commerce sales reached [\\$45.74 billion in 2022](#), with shoppable ads growing on platforms like TikTok and Instagram in 2023—apparel and fashion are the leading categories (35.6%) in [livestream shopping events](#).



China is the [global leader for contactless payment adoption](#) with mobile wallet transactions expected to exceed \$5.5 billion by 2025.



What we're keeping an eye on in 2023: One-click checkouts, price comparison apps, social commerce, shoppable ad formats, and hyper-personalization.

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Maintaining agility in this changing mobile ecosystem is of critical importance. From rapidly introducing product features that better serve our community and advertisers, to diversifying **revenue streams and embracing new industry standards around measurement**, Snap has proved adaptable and resilient. And in Q4 our DR revenue grew year-over-year alongside 17% growth in our community, which now includes 375M Daily Active Users.”

Snap Inc.



Kathleen Gambarelli

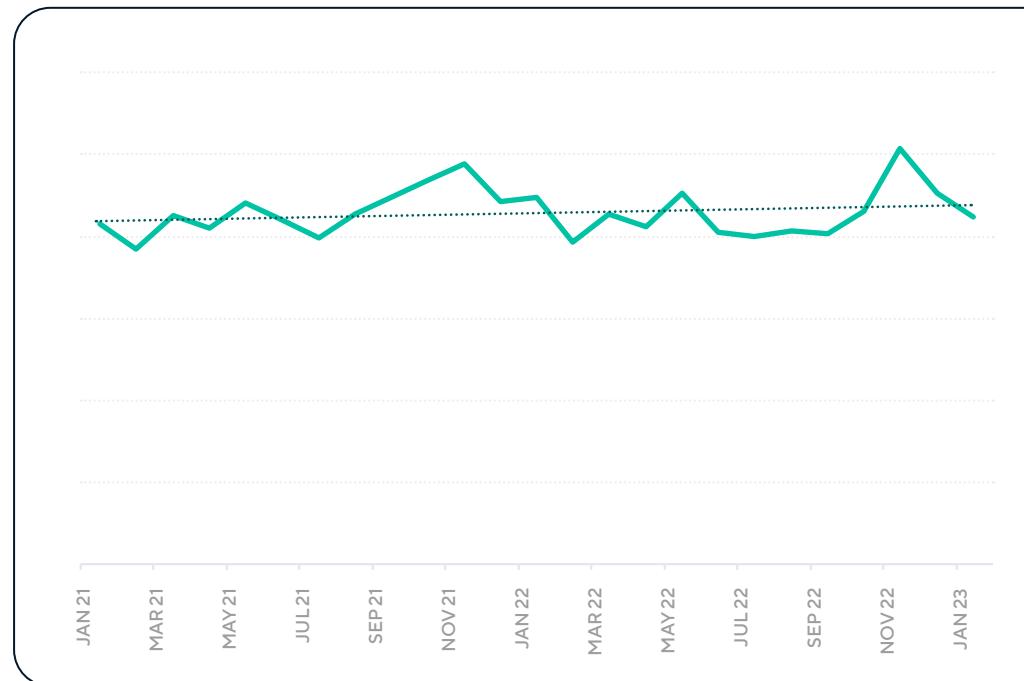
**Group Product Marketing
Manager, Revenue**

Installs and finding users

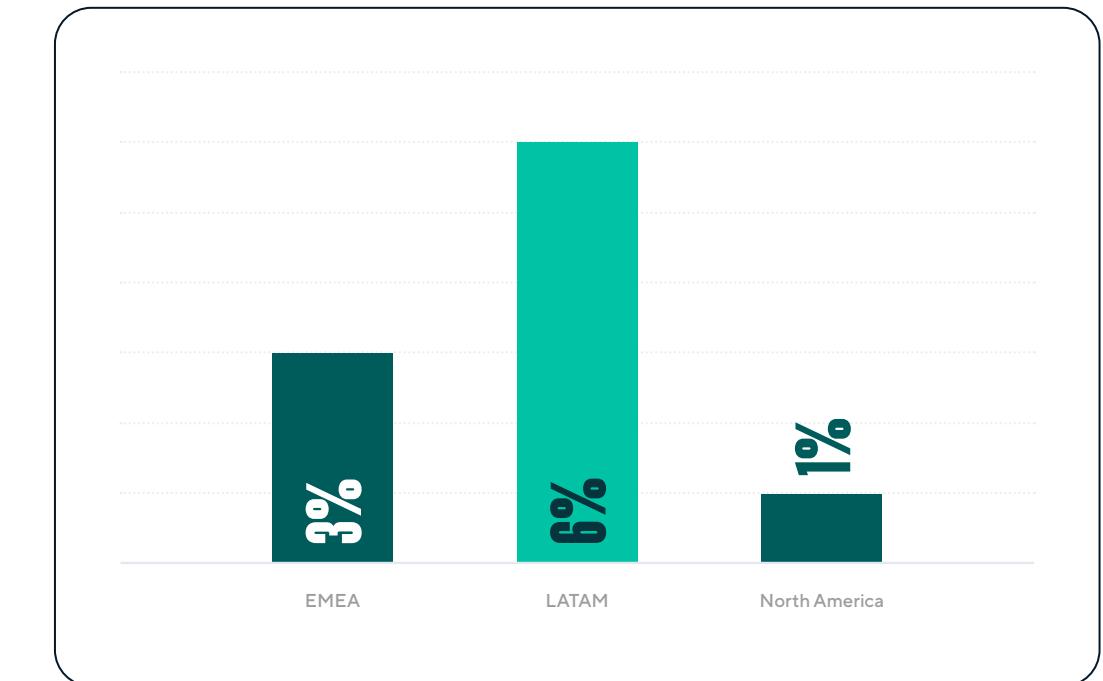
Global installs of e-commerce apps declined slightly in 2022, down 0.6% compared to 2021. November (as usual) was the highest charting month, with installs increasing 21% compared to the 2022 average. November and May both saw YoY growth of 4%. Encouragingly, installs in 2023 so far are trending upward, with January 2023's average 4% higher than 2022.

The most impressive growth for e-commerce in 2022 was seen in EMEA (3%) and LATAM (6%), with North America following at 1%. In November, APAC installs were 19% above the 2022 average, EMEA installs were up 25%, LATAM installs climbed 11%, and North America jumped by 15%.

E-commerce app install growth January 2021 - January 2023 (Global)



E-commerce app install growth percentages YoY 2021 - 2022



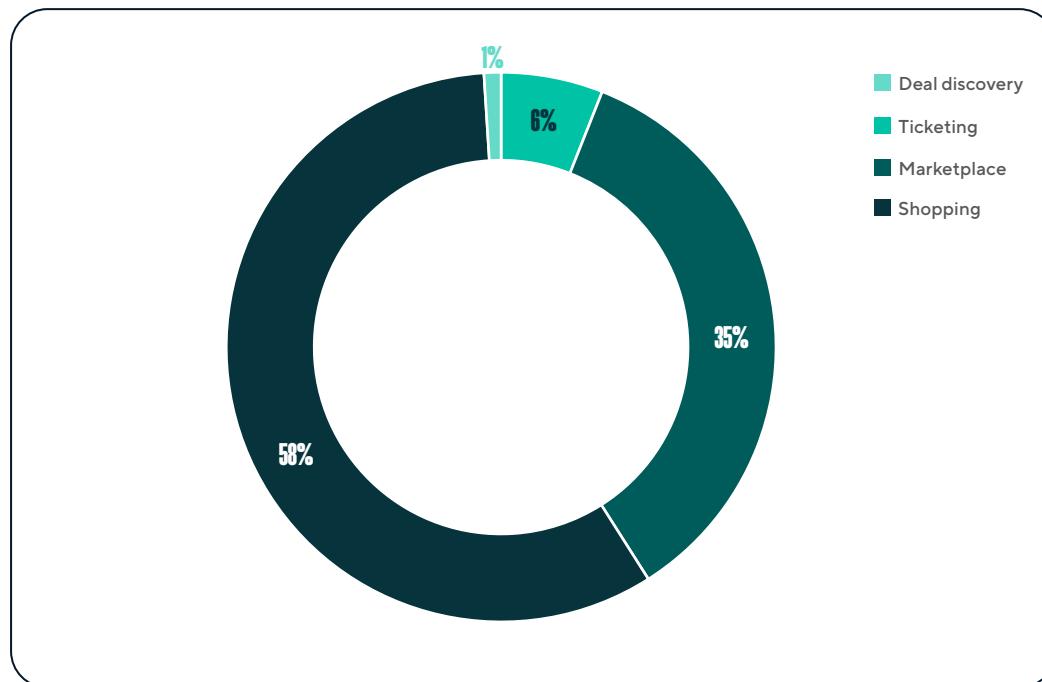
BONUS

Shopping app installs grew 2% globally and 3% in EMEA.
Marketplace apps grew 13% in LATAM.
In 2023 so far, EMEA is up 6%, LATAM is up 13%, and North America is up 7%.

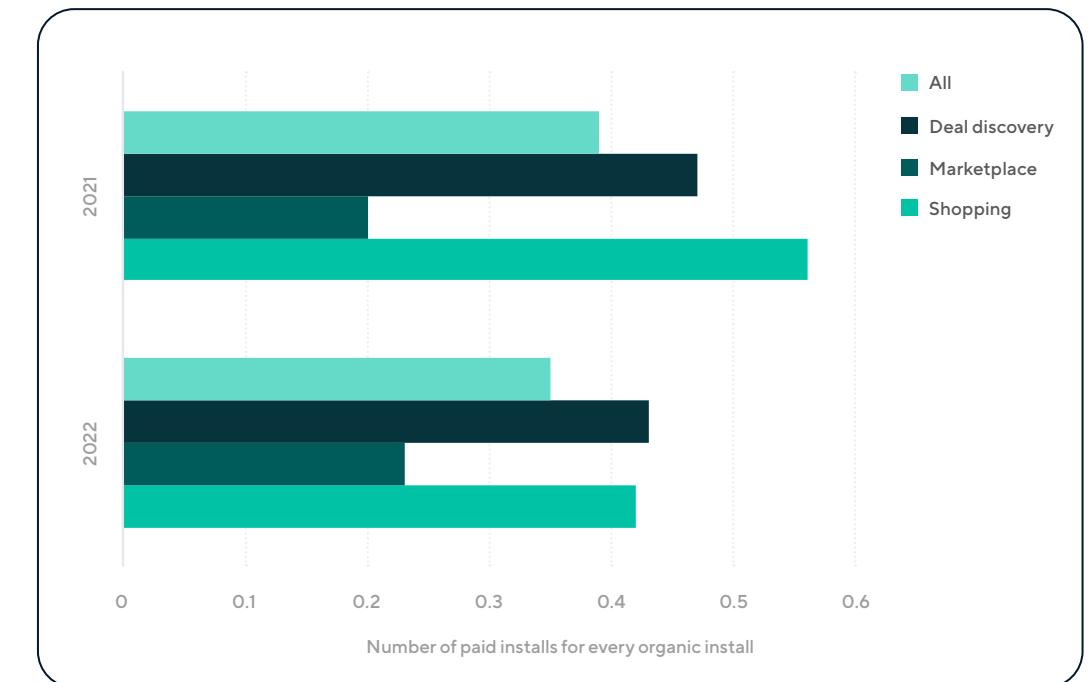
Shopping apps made up 58% of all e-commerce installs in 2022, marketplace accounted for 35%, deal discovery apps represented 6%, and ticketing apps scraped in with 1% of the total share.

Breaking total installs down by paid vs. organic, we see that 2022 had significantly less paid installs than 2021, despite installs remaining consistent at a global level, and even growing in many markets. The ratio of paid to organic installs for e-commerce overall decreased from 0.39 in 2021 to 0.35 in 2022. The biggest decrease was seen by shopping apps, which dropped from 0.56 to 0.42. Marketplace was the only vertical to grow its paid share, sliding up from 0.2 to 0.23.

E-commerce app installs by vertical 2022 (Global)



E-commerce app paid/organic ratio 2021 - 2022 (Global)



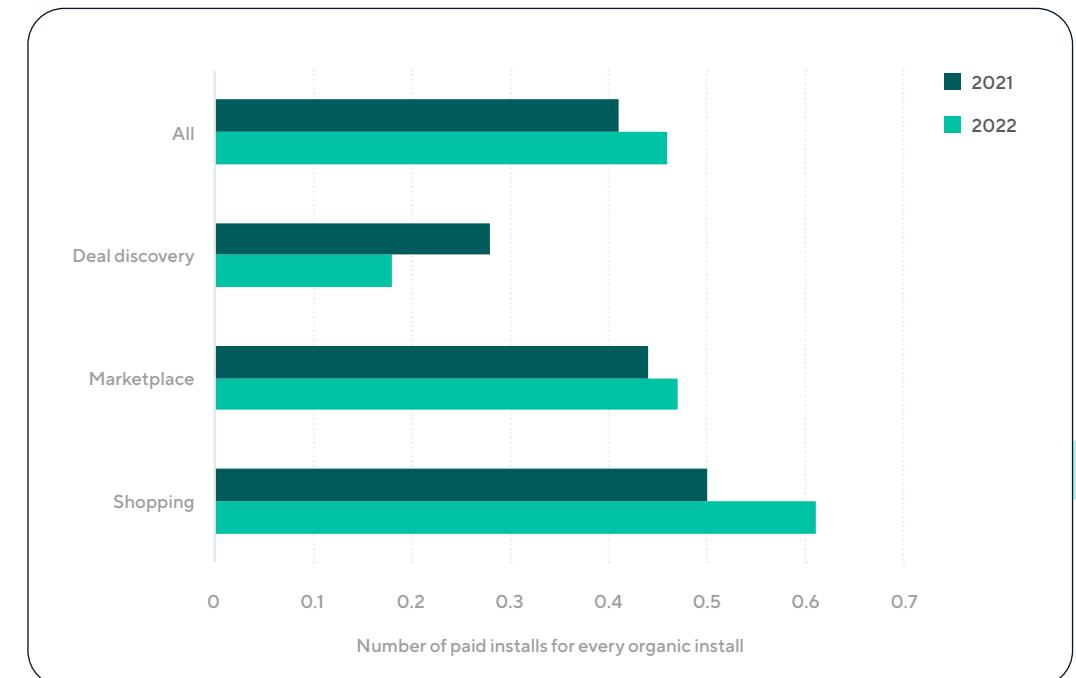
Interestingly, the number of partners that each app is working with increased in 2022 (from 4.8 to 5), despite the decrease in paid installs. This indicates that as marketers and developers decrease their paid budgets, they are simultaneously investing in channel diversification to reach new audiences. Shopping apps currently work with the most partners in the e-commerce space, with a median of 5.3.

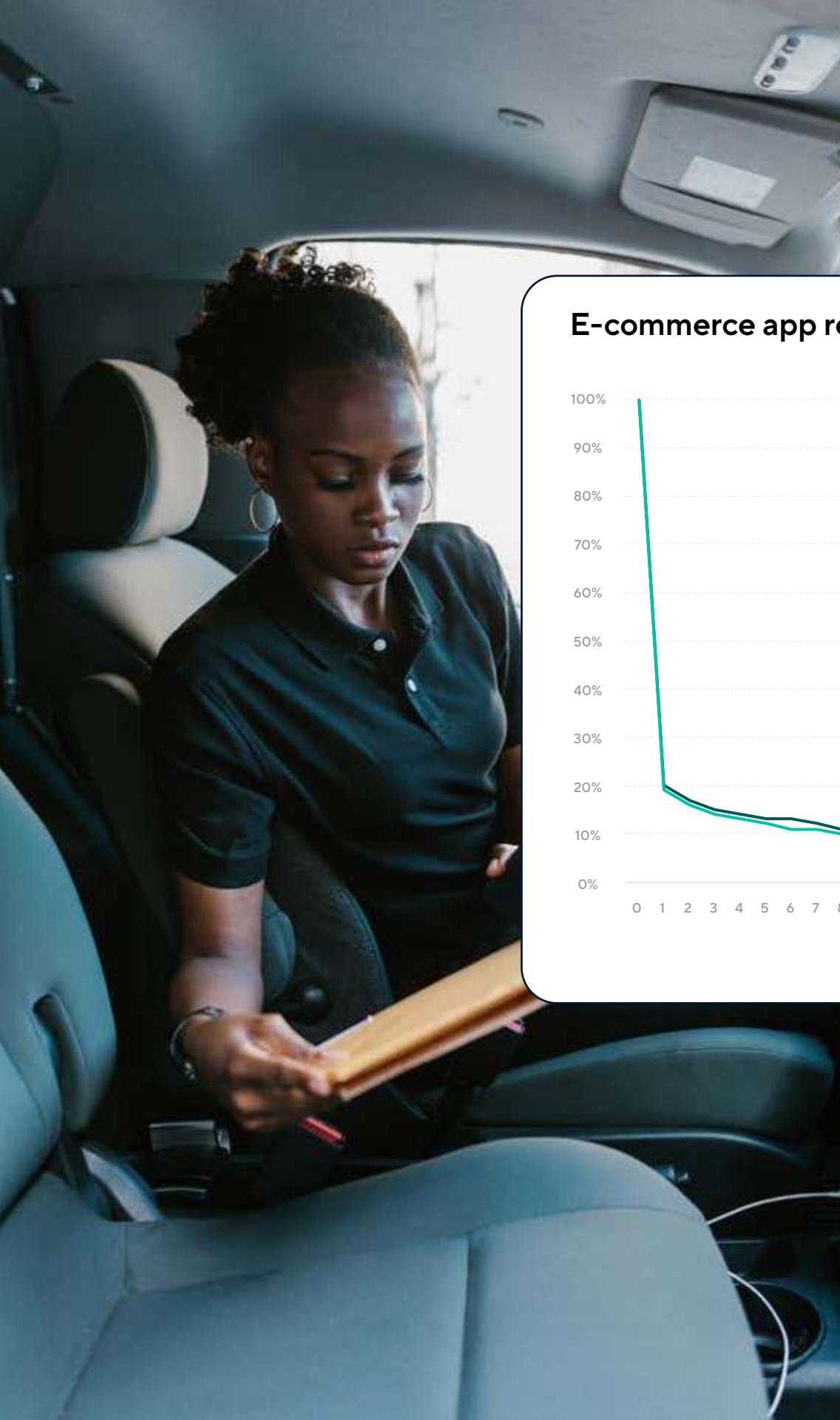
Looking now at the reattribution share, we also see that (except for deal discovery) the number of reattributions increased significantly in 2022—from 0.41 to 0.46. Again, it was shopping apps with the most notable difference, jumping from 0.5 to 0.61.

E-commerce partners per app 2021 - 2022 (Global)

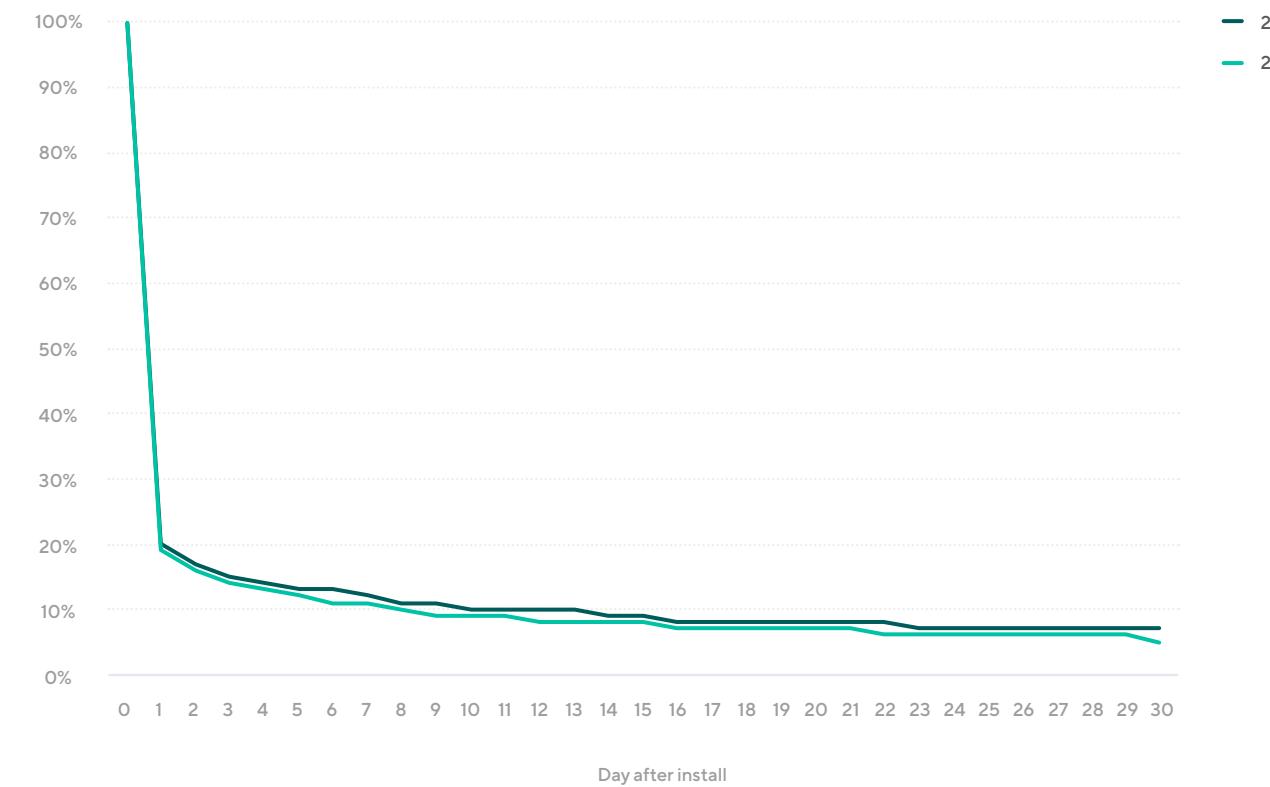


E-commerce app reattribution share 2021 - 2022 (Global)





E-commerce app retention rates 2021 - 2022 (Global)



Despite the increase in reattributions, organic installs, and the diversification of channels, retention rates, unfortunately, decreased slightly in 2022. Day 1 rates dropped from 20% to 19% and Day 14 decreased from 9% to 8%.

BONUS

In Q4 2022, marketplace apps had the highest Day 1 retention rates within the e-commerce vertical, at 25%.

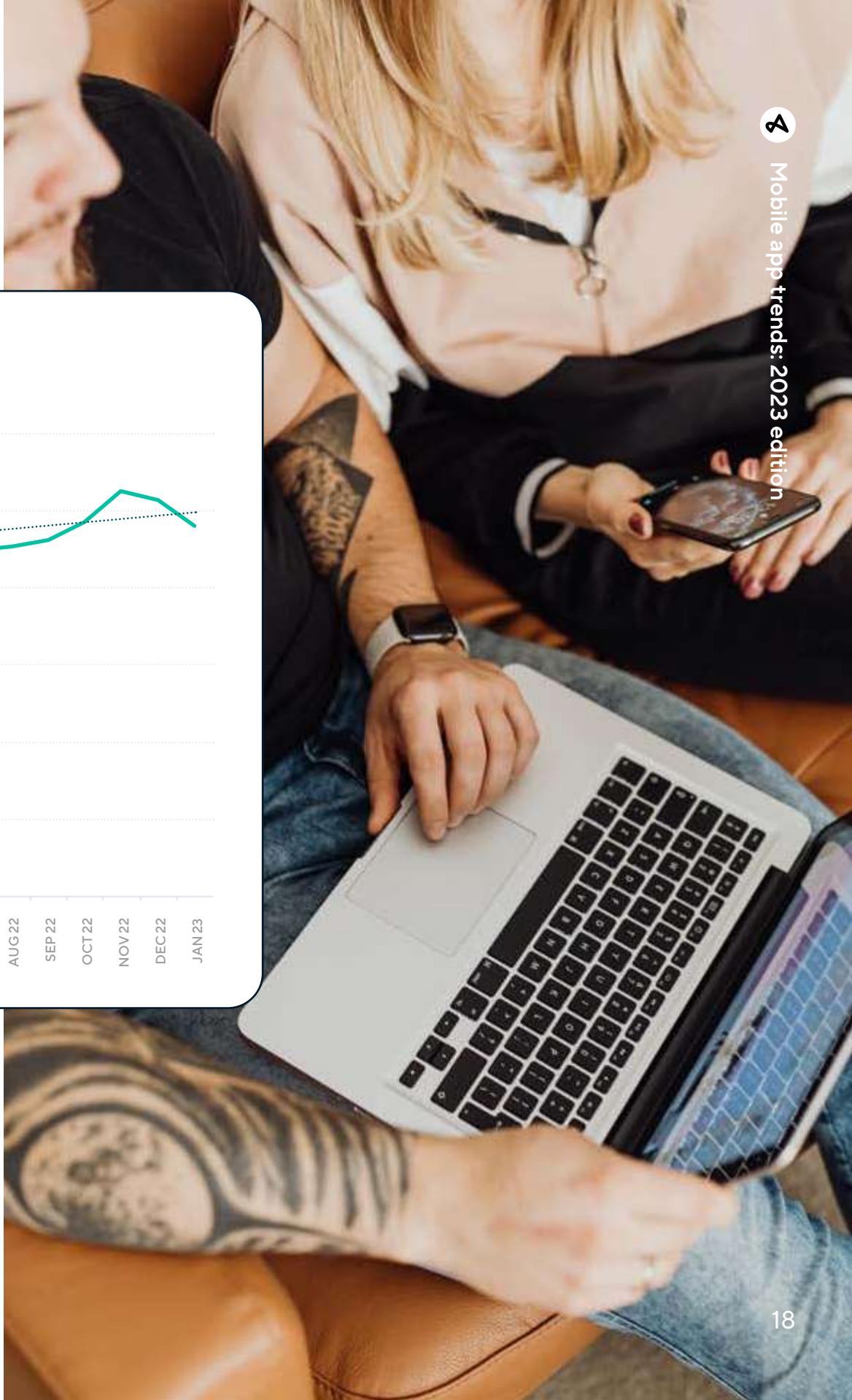
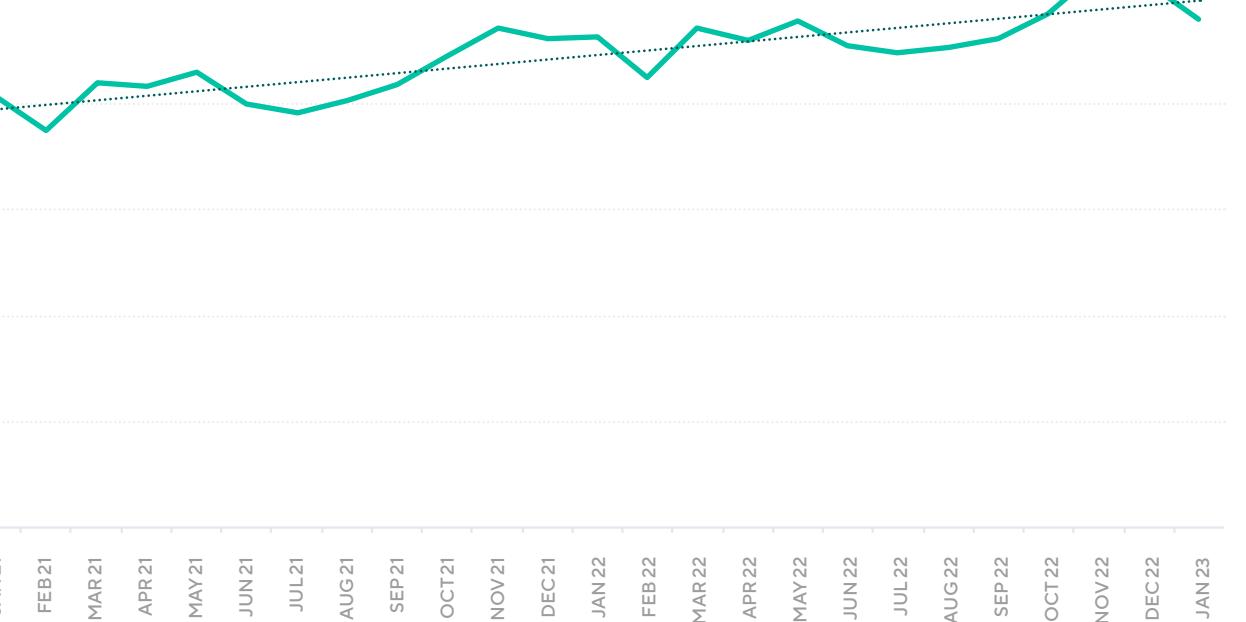
Sessions and user trends

While installs were lukewarm but showing positive signals overall, sessions for e-commerce apps in 2022 performed exceptionally well, and things are continuing to look up in 2023 so far. Global sessions for mobile e-commerce overall grew 12% YoY, with November a further 13% up. Couple this with the huge pandemic-fuelled rates seen in 2021 and 2020, and it's clear that e-commerce's march forward is not about to slow down.

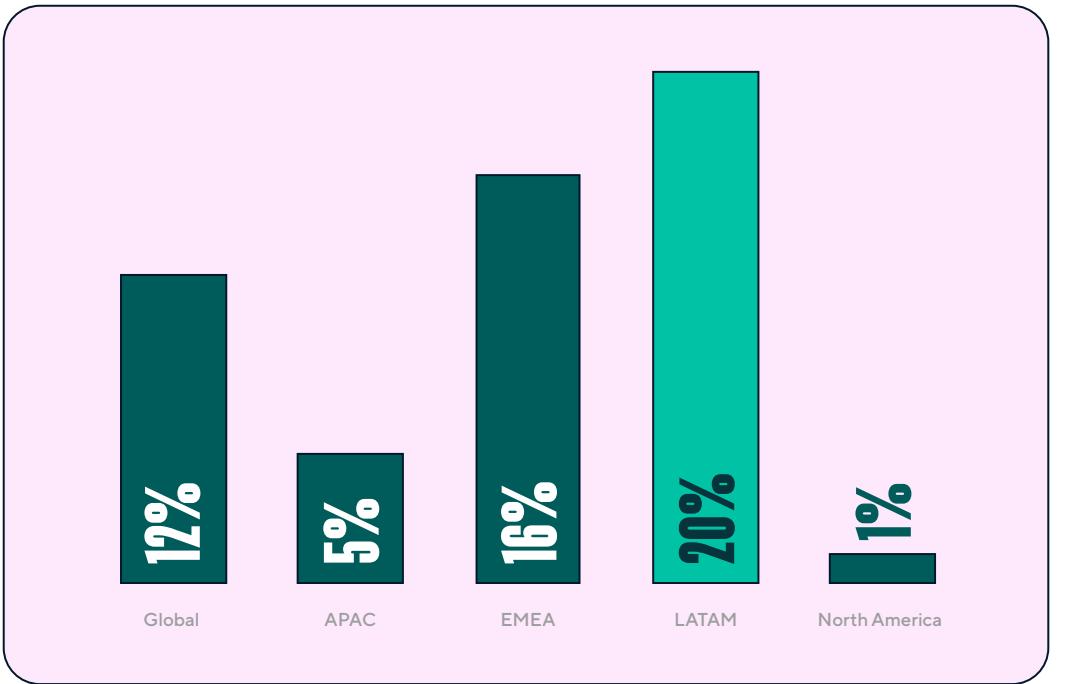
BONUS

E-commerce sessions are booming in 2023 so far, with January 7% up on the 2022 average.

E-commerce app session growth January 2021 - January 2023 (Global)



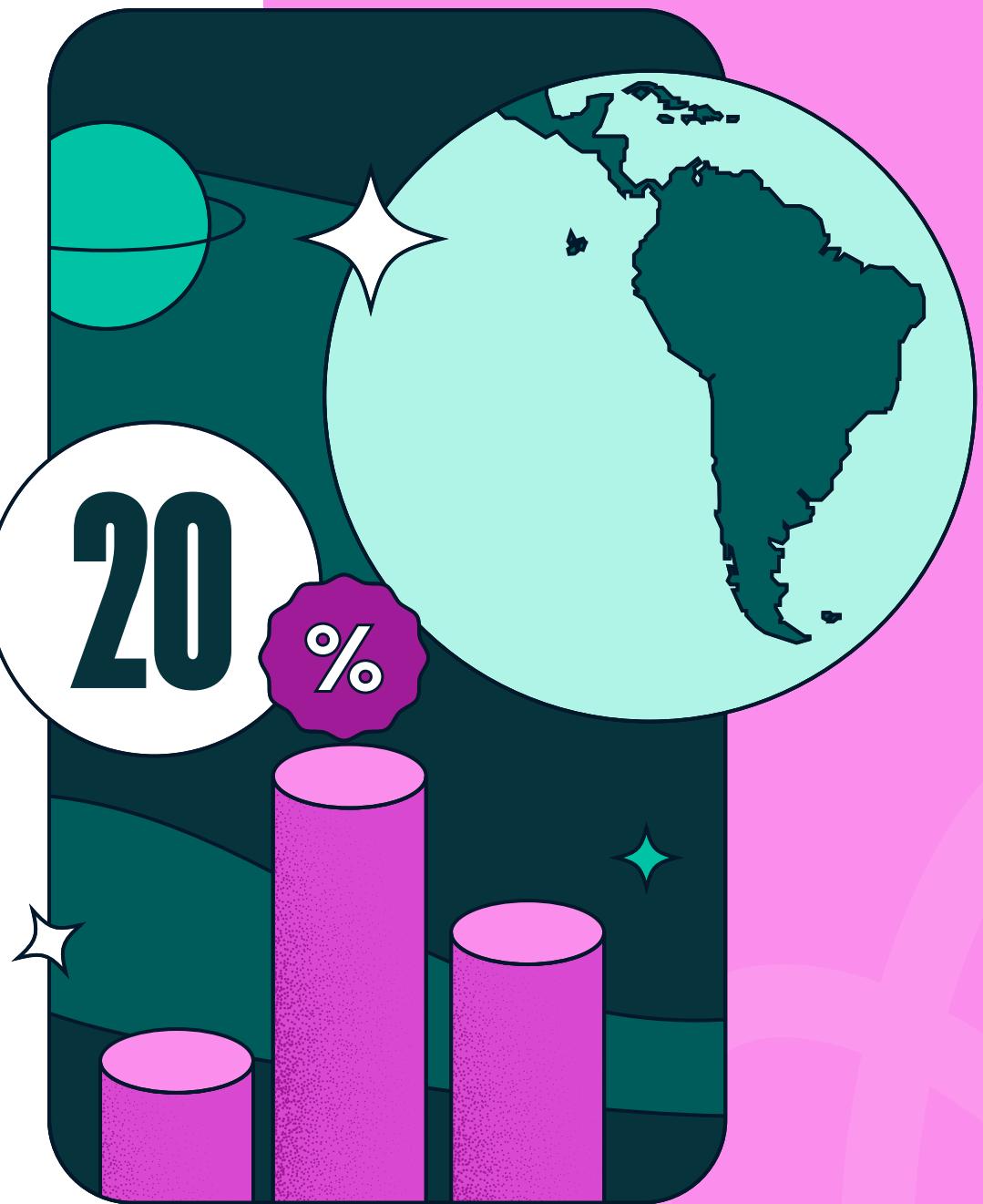
E-commerce app session growth percentages YoY 2021-2022



E-commerce sessions increased in all key regions in 2022. LATAM had the most significant YoY growth at 20%, followed by EMEA at 16%, APAC at 5%, and North America at 1%.

BONUS

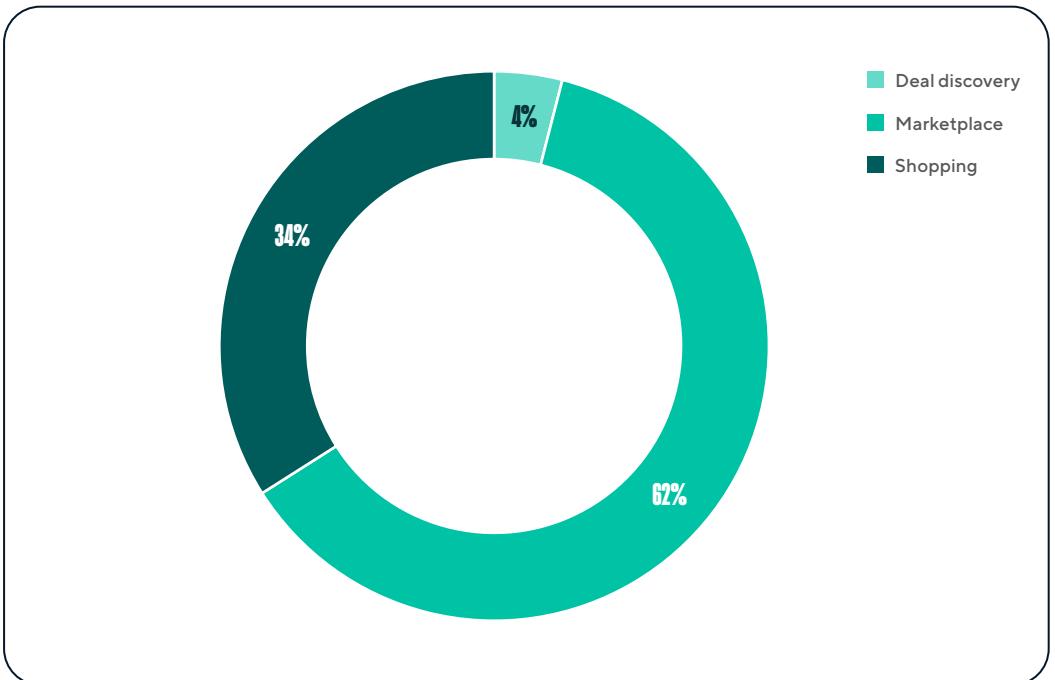
Marketplace app sessions grew 13% YoY in 2022, shopping apps increased by 11%.



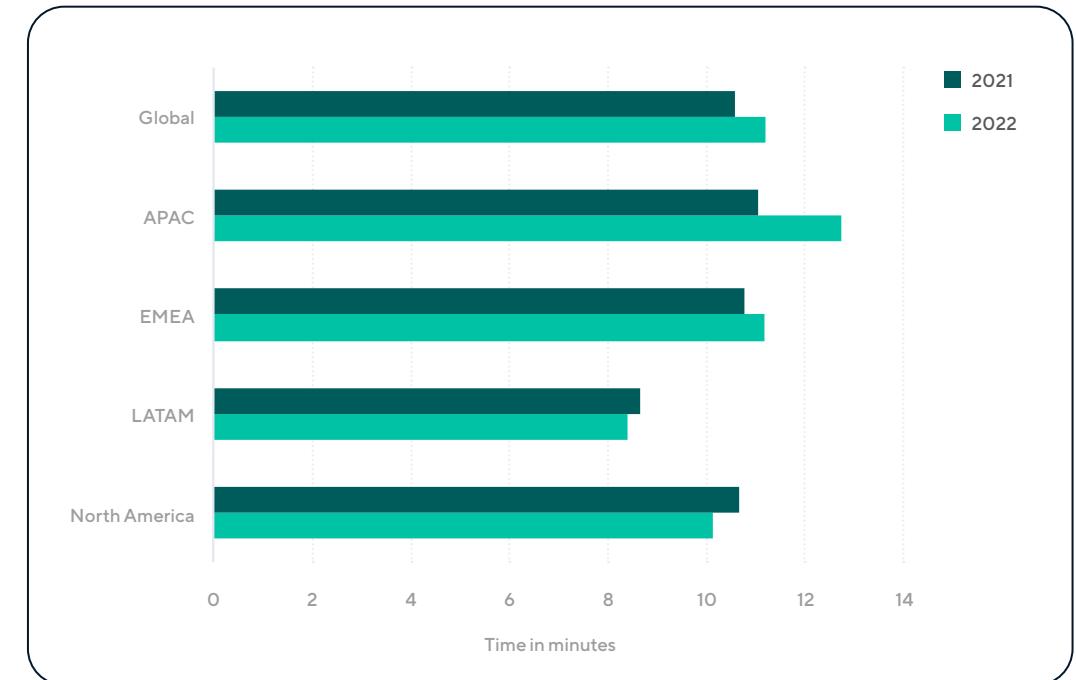
Although shopping apps made up the majority of installs, marketplace apps accounted for the highest share of e-commerce sessions at 62%. Shopping and deal discovery followed at 34% and 4%, respectively.

E-commerce session lengths in 2022 also grew impressively, from 10.57 minutes per session to 11.2 minutes. This is likely linked to the higher share of organic users, who tend to be more engaged. At regional level, APAC and EMEA saw the most notable increase, climbing from 10.04 to 12.73 minutes and from 10.77 to 11.17 minutes, respectively. LATAM and North America, however, decreased slightly.

E-commerce app sessions by vertical 2022 (Global)



E-commerce app session lengths 2021 - 2022



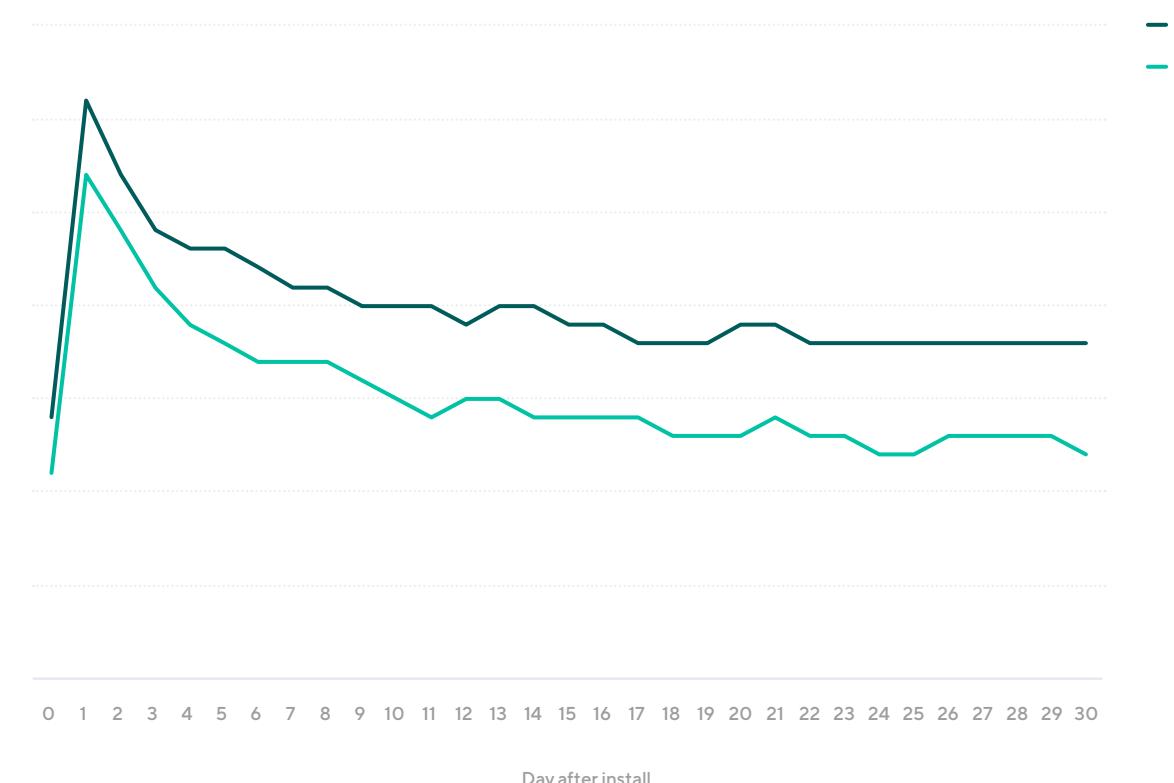


Despite the overall session and engagement increase e-commerce is currently experiencing, sessions per user per day were down in 2022. On Day 1, for example, the total number of sessions per day decreased from 1.71 in 2021 to 1.67 in 2022. By Day 30, the comparison sits at 1.58 to 1.52.

BONUS

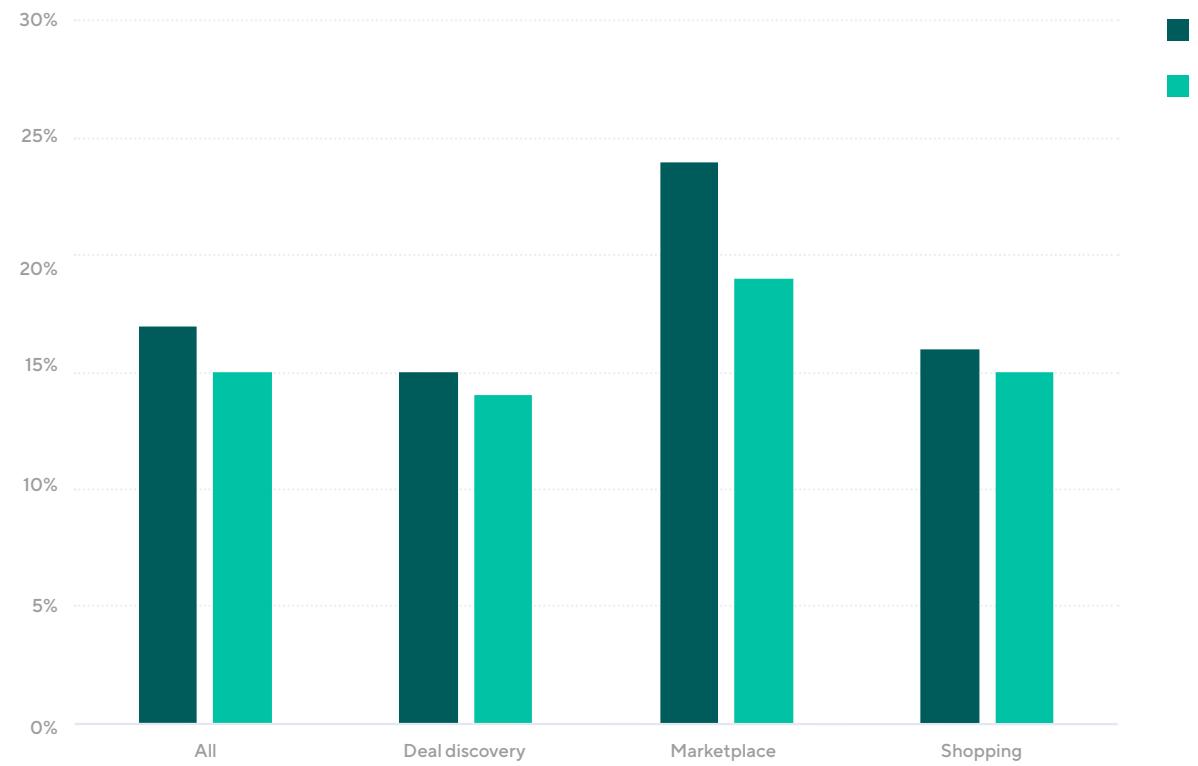
The overall time spent in-app per user per day is also down, decreasing from 10.25 minutes per day to 9.75 minutes per day. In short, sessions and session lengths are up, but because users are having less sessions overall, time spent in-app is down.

E-commerce app sessions per user per day 2021 - 2022 (Global)





E-commerce app stickiness 2021 - 2022 (Global)



Stickiness, much like retention and sessions per user, is unfortunately also trending downward. From 17% in 2021, 2022 dropped to 15%. This trend was seen most severely for marketplace apps, which decreased from 24% to 19%.

BONUS

It's more poignant than ever that marketers focus on retaining the users they bring to their apps. As we work with channel diversification and MMM, ensuring that metrics like stickiness and retention are trending upward is what will keep all the arrows moving in the right direction despite economic challenges in 2023. Another key way to improve on these metrics is to focus on excellent onboarding and highly segmented user experiences. With more users than ever coming to e-commerce apps and spending big while they're there, focusing on keeping them happy and converting them into high LTV customers is crucial.

E-commerce in-app revenue January 2021 - January 2023 (Global)



In good news for the e-commerce vertical, revenue has been trending upward consistently since January 2021. In-app revenue for e-commerce was up 4% YoY in 2022, with November up by a further 28% and December by 24%.

TOP E-COMMERCE TAKEAWAYS:

12%

Global installs were down by 0.6%, but sessions grew by 12%. November was the top month, with installs up by 4% and sessions up by 12%.

11'22

November 2022 was the highest month ever tracked by Adjust for e-commerce in-app revenue.

11.2 min

E-commerce session lengths are growing, up from 10.57 minutes in 2021 to 11.2 minutes in 2022.

BONUS

January 2023 in-app revenue for e-commerce is 17% higher than the 2022 average, and 29% higher than January 2022.

PART 2

Fintech

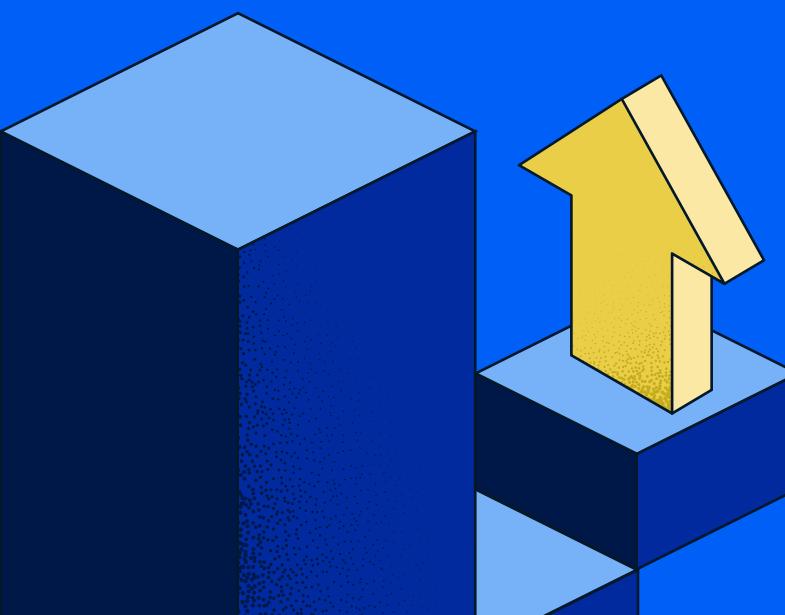
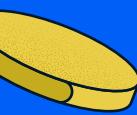
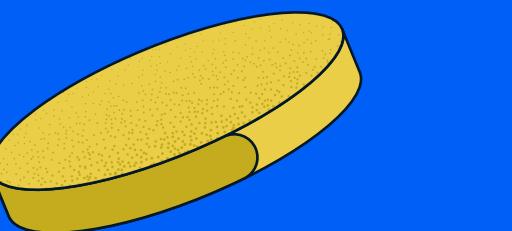
Industry stats, trends, and predictions

10 most downloaded finance apps in 2022

Worldwide

1	 PhonePe 94M	6	 Alipay 59M
2	 PayPal 92M	7	 Nubank 49M
3	 Google Pay 69M	8	 DANA Dompet 42M
4	 Cash App 66M	9	 Airtel Thanks 41M
5	 Paytm 60M	10	 Caixa Tem 38M

 apptopia





Industry stats, trends



Payments made via mobile devices are expected to [exceed \\$2 trillion](#) globally by 2023, with smartphone access, QR codes, digital wallets, and payment apps enabling this growth.



Transaction volumes for contactless mobile payments are predicted to [rise to \\$49 billion in 2023](#), up 92% compared to 2021.



2023 is the first year where more of Gen Z will be adults than adolescents, and they rely heavily on digital for their finances. In 2022 there were [22.7 million BNPL users from Gen Z](#) in the U.S.; by 2026 there will be 35.1 million. Similarly, there were 29.3 million Gen Z mobile banking users in 2022; by 2026 there will be 47.8 million.



In 2023 in the U.S., [48% of smartphone users](#) will use proximity payments; by 2025, this will reach 50.1%.



There are 240 million [active banking app users](#) in North America, 749 million in EMEA, 109 million in LATAM, and 805.1 million in APAC.



What we're keeping an eye on in 2023: Embedded finance and platforms, digital transformation and open banking, crypto maturation and central bank digital currencies (CBDCs), and financialized loyalty programs.

“

In recent years, fintech companies revolutionized retail robo-investing. They did this by democratizing ML and AI, which were once exclusive to large-scale institutional investors. We expect similar advancements in the use of ML tools for marketing optimization. With the right application, ML tools can help find and convert high-value customers.”



Dmitry Yudovsky
Global Head of Data

Installs and finding users

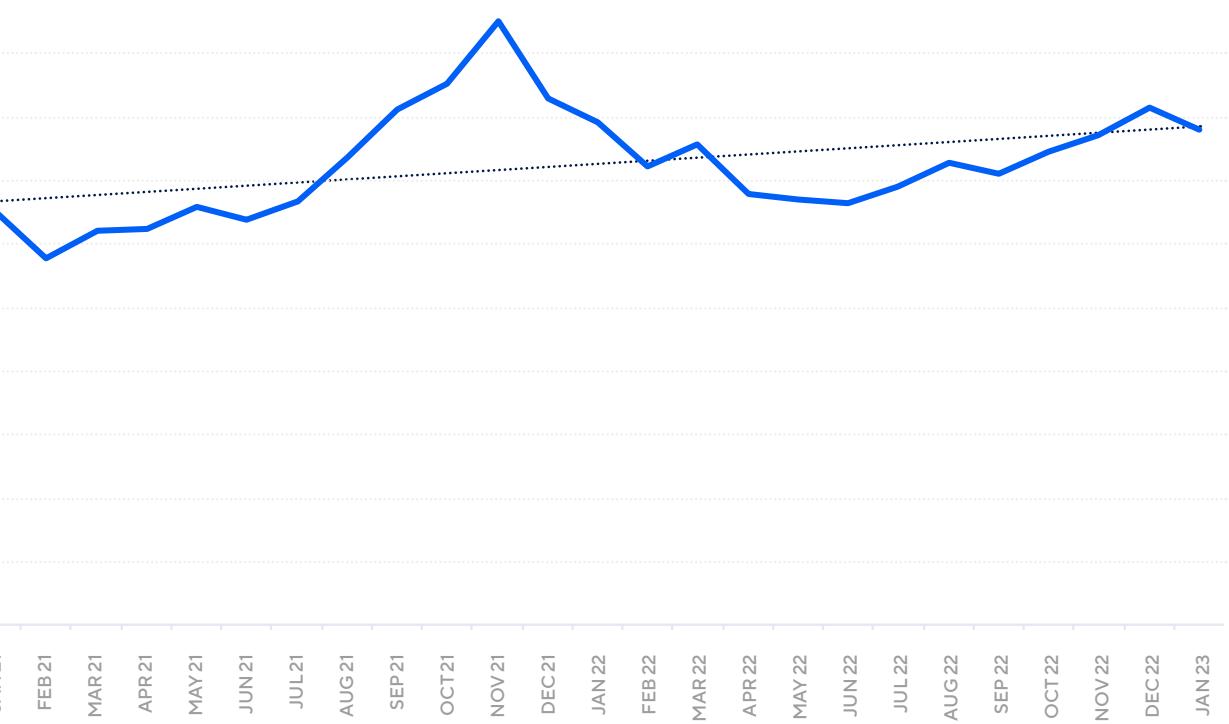
The fintech app vertical faced significant challenges in 2022, from the crypto crash and subsequent winter to the downturn in the stock market and overall economic uncertainty and anxiety around a potential recession. Despite this, installs for fintech apps still grew globally (by 2%), demonstrating the resilience and ever-increasing relevance of mobile financial services and solutions in markets the world over. This growth is also continuing into 2023—January was up 6% YoY and 13% compared to the 2022 average.

BONUS

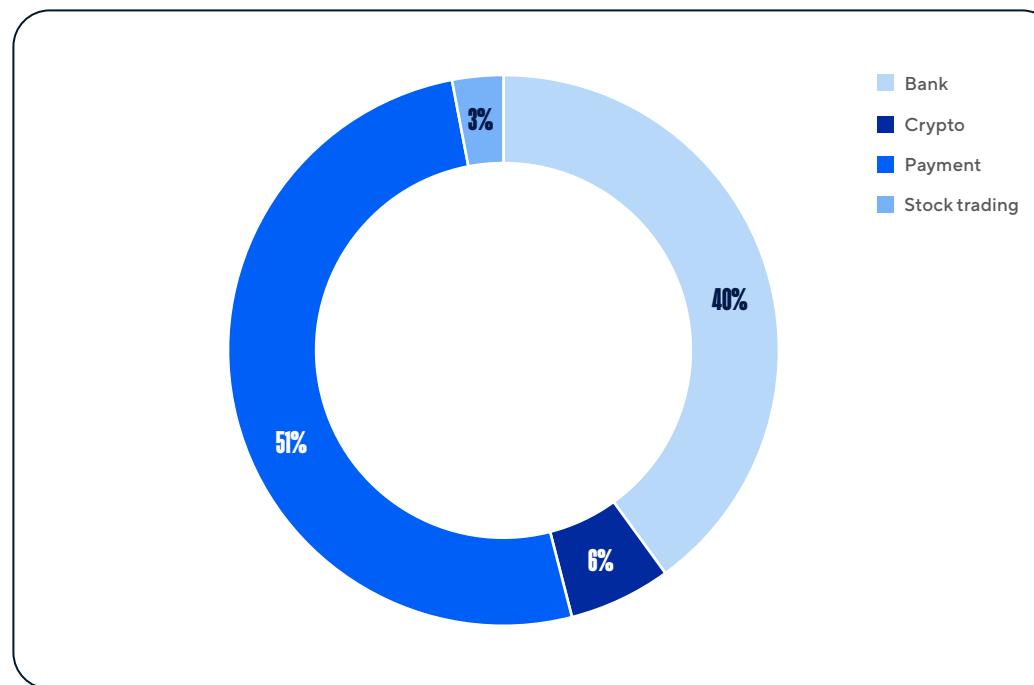
December was the biggest month for fintech app installs in 2022, up 10% compared to the year's average.

The highest growth was seen in EMEA (10%) and LATAM (8%).

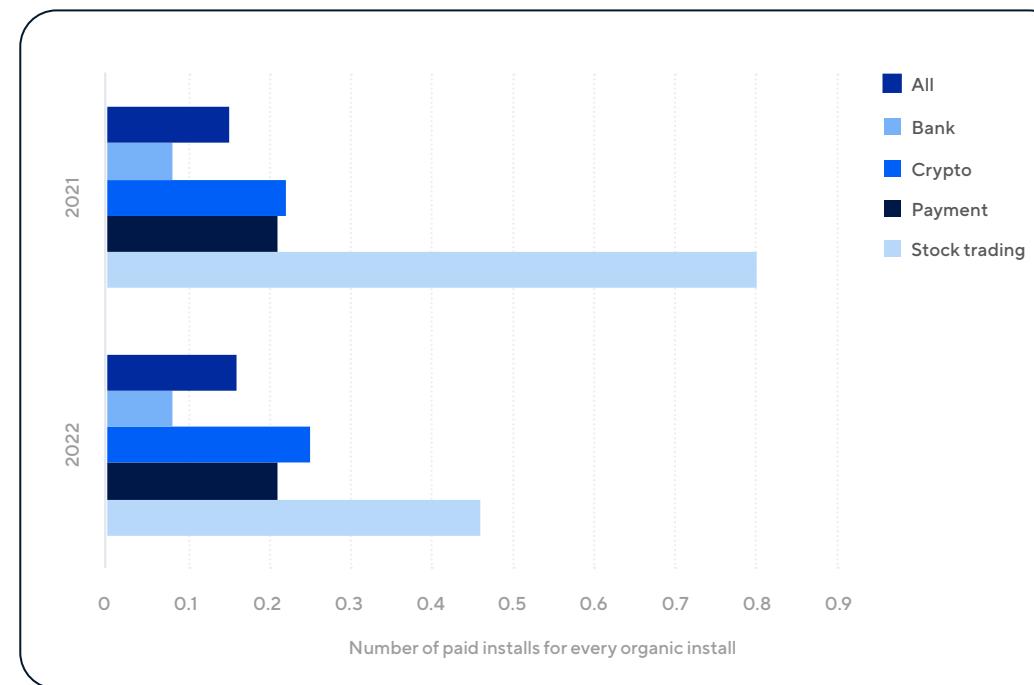
Fintech app install growth January 2021 – January 2023 (Global)



**Fintech app installs by vertical
2022 (Global)**



**Fintech app paid/organic ratio
2021 - 2022 (Global)**



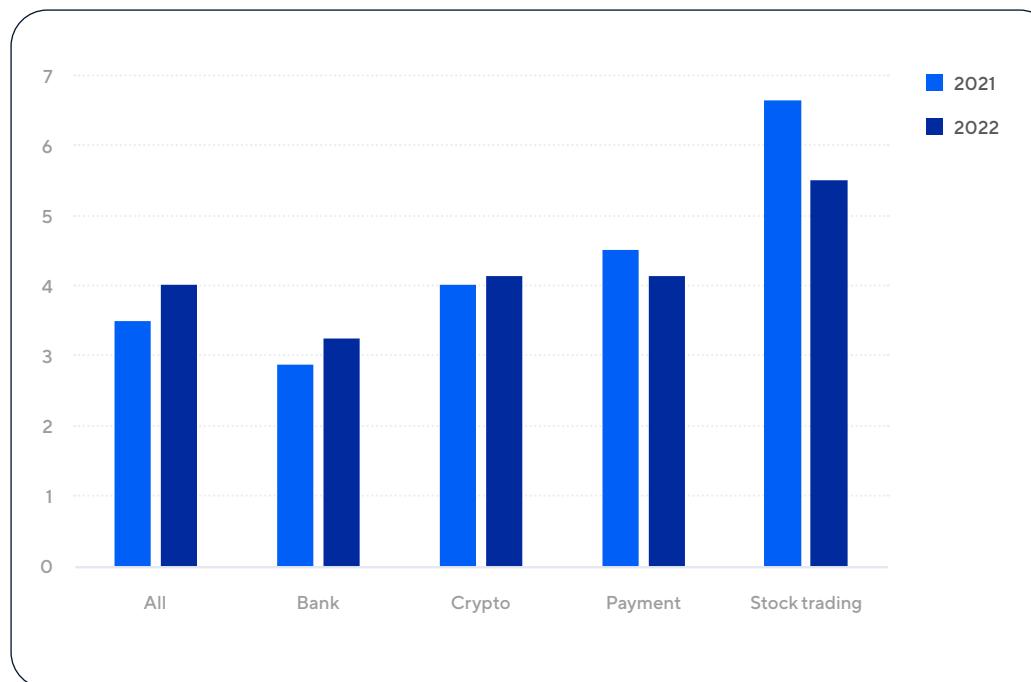
Payment apps accounted for 51% of the install share, banking apps made up 40%, crypto represented 6%, and stock trading came in at 3%.

Looking at paid vs. organic installs, it's interesting to note that fintech's share of paid installs actually increased slightly in 2022, up from a ratio 0.15 in 2021 to 0.16 in 2022. Banking and payment apps both remained the same and stock trading plummeted from 0.8 to 0.46, demonstrating a huge decrease in paid campaigns from this vertical.

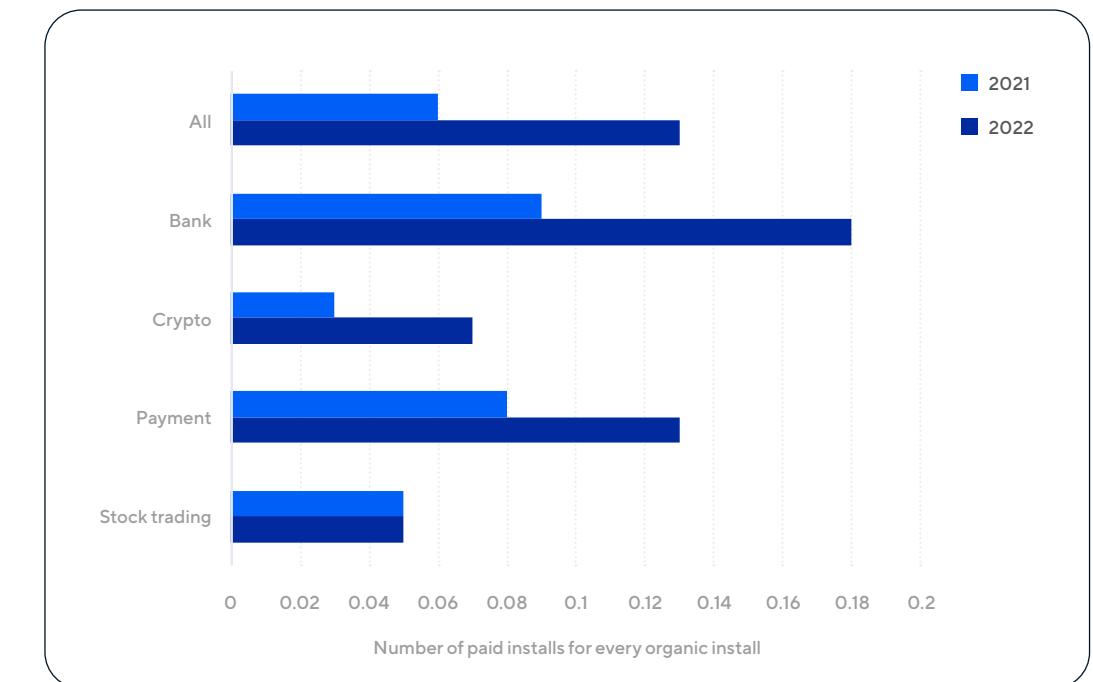
Fintech also demonstrated considerable change regarding the median number of partners each app is working with, which grew from 3.5 to 4 in 2022. Banking apps saw the biggest jump, up from 2.9 to 3.3, while stock trading dropped from 6.6 to 5.5, in line with the vertical's overall decrease in paid user acquisition. Viewed in context of the increased share of paid installs, we can extrapolate that fintech apps are investing significantly in reattribution campaigns, and are benefiting → see in-app revenue below.

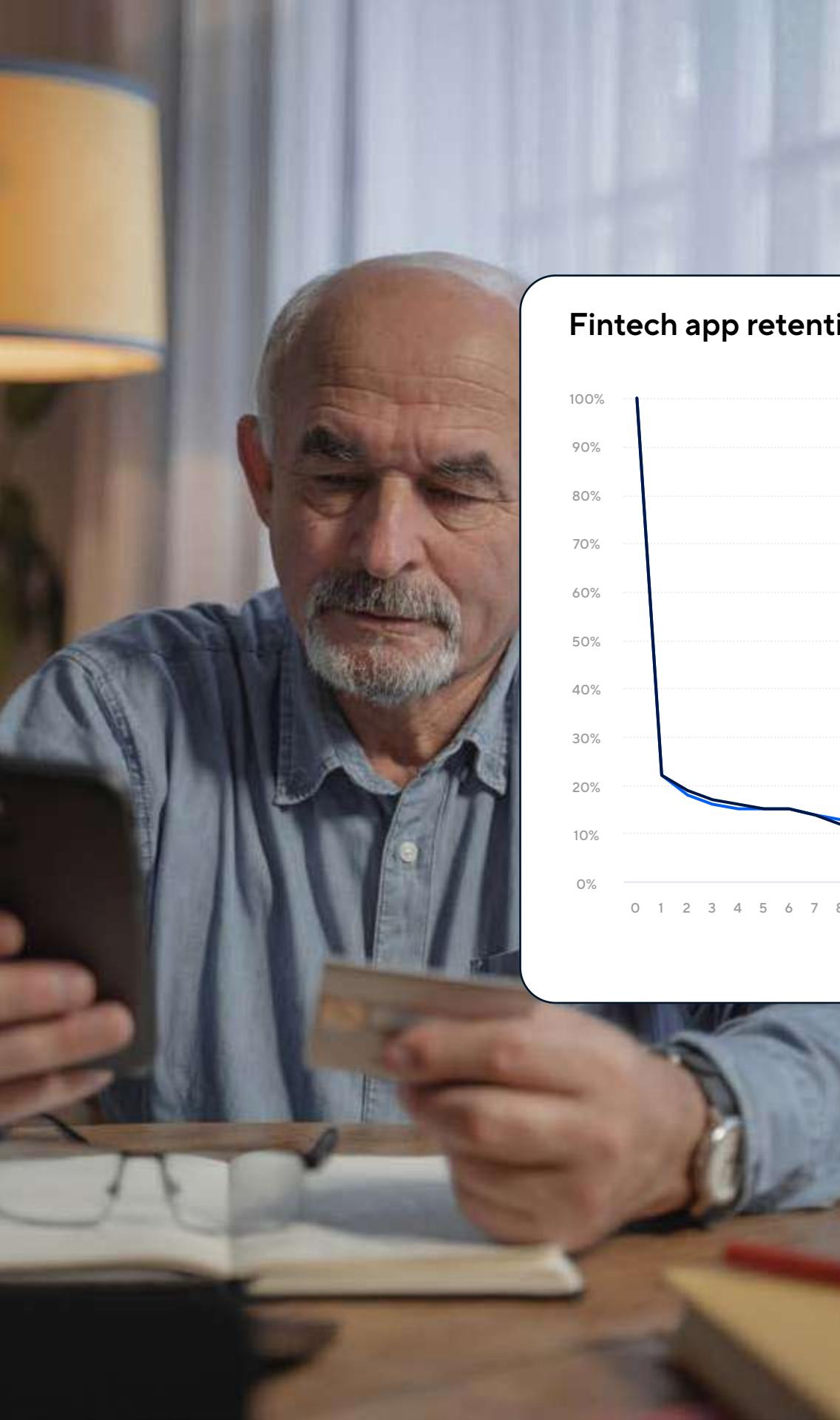
Reattributions boomed for fintech in 2022, up from a ratio of 0.06 to 0.13. The biggest increase was seen for banking apps, which climbed from 0.09 to 0.18, followed by payment, which grew from 0.08 to 0.13.

**Fintech partners per app
2021 - 2022 (Global)**

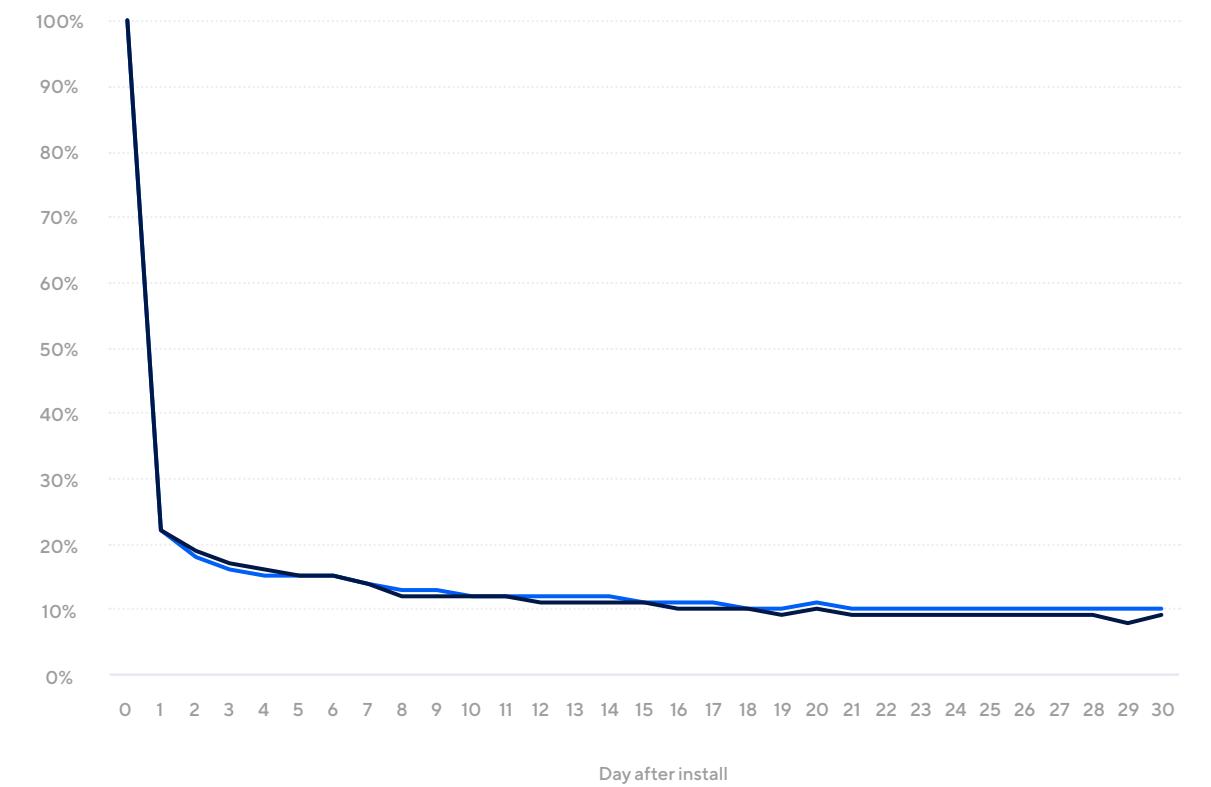


**Fintech app reattribution share
2021 - 2022 (Global)**





Fintech app retention rates 2021 - 2022 (Global)



An increase in the share of paid installs usually correlates to a decrease in retention rates. Unfortunately, this was the case in 2022, *mostly*. Day 1 and Day 7 rates were identical, at 22% and 14%, respectively. Day 3 was actually higher for 2022, at 17% compared to 16%. By Day 14 and Day 30, 2022 was down by one percentage point. This shows that the first week post-install is crucial across the mobile fintech industry when it comes to building user experiences that promote retention and LTV. Think gamification, loyalty programs, and engagement reminders like push notifications.

BONUS

In Q4 2022, crypto apps had the highest Day 1 retention rate (24%), followed by banking apps at 23%, and payment and stock trading apps, both of which were at 20%.



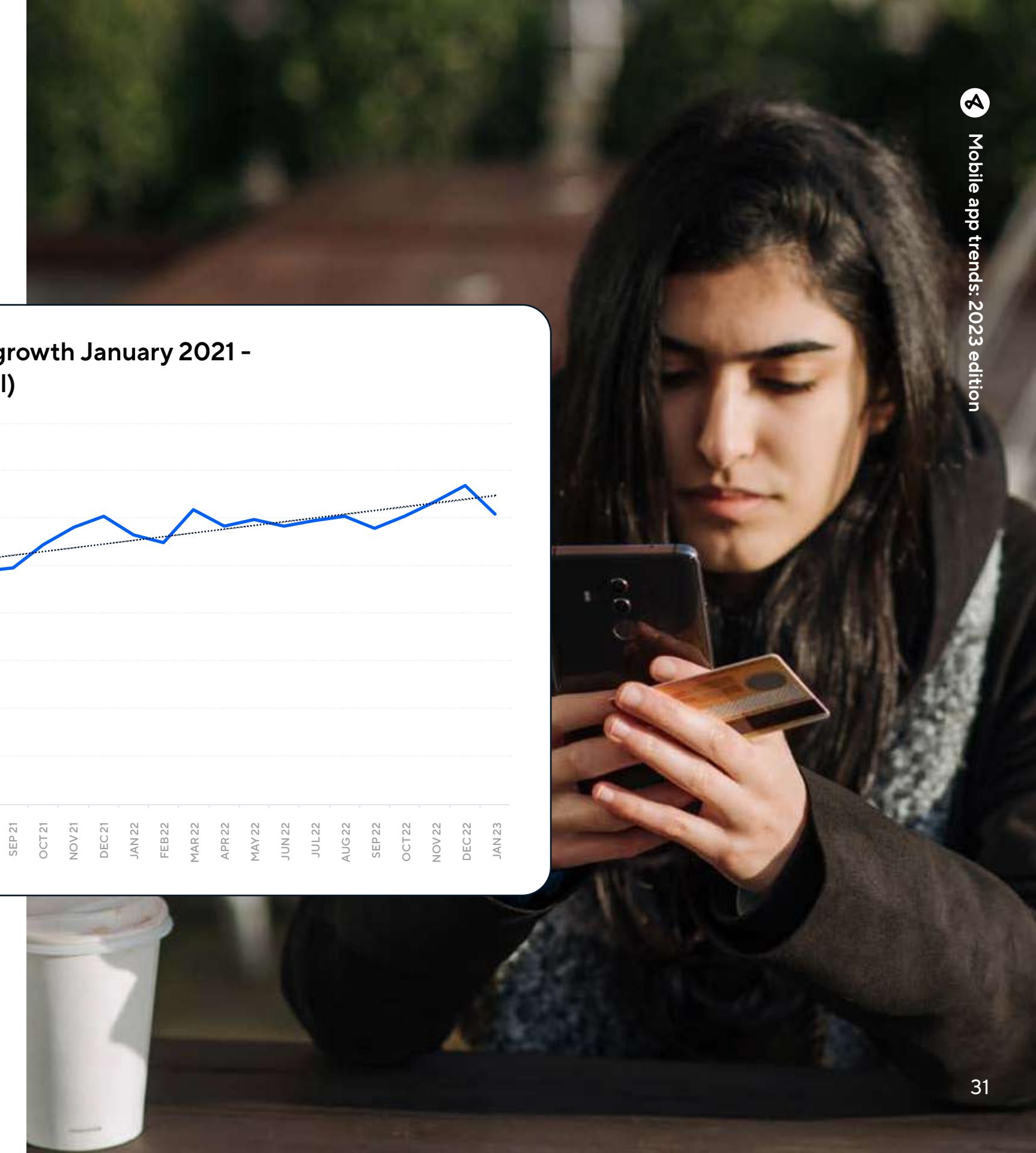
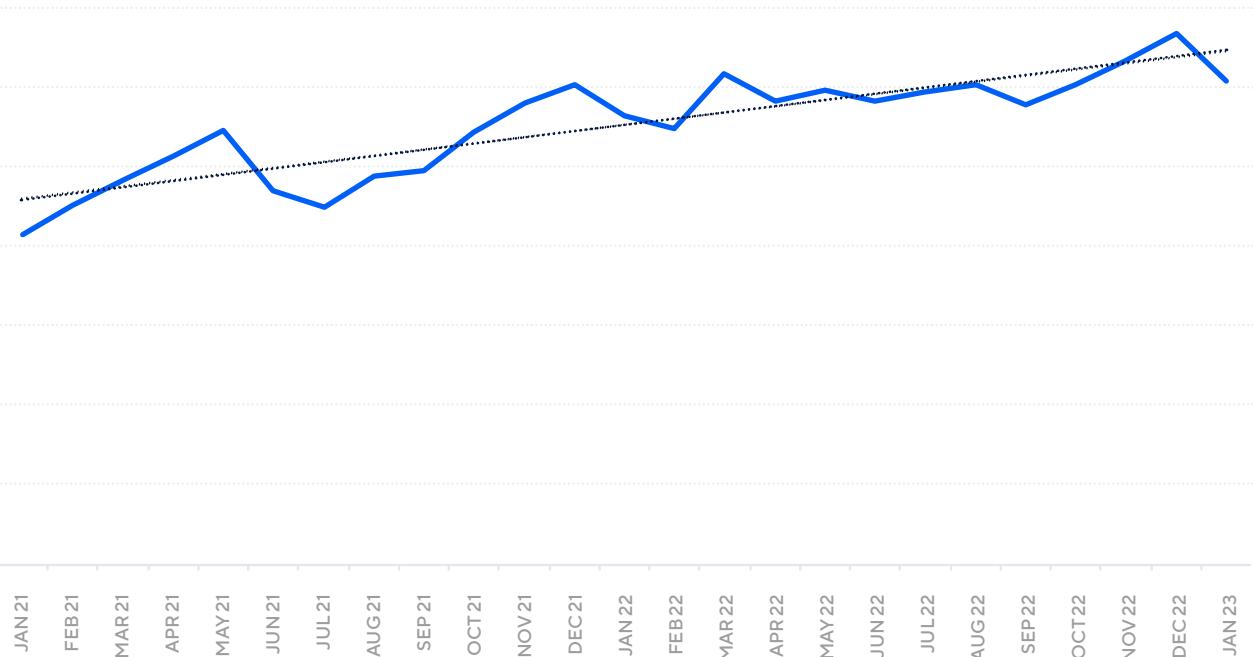
Sessions and user trends

Session growth is where things get even more exciting for fintech apps—and things are looking increasingly optimistic in 2023 so far. Following on from YoY growth of 19% in 2022, sessions in January 2023 are up 7% compared to the 2022 average and 15% compared to January 2022.

BONUS

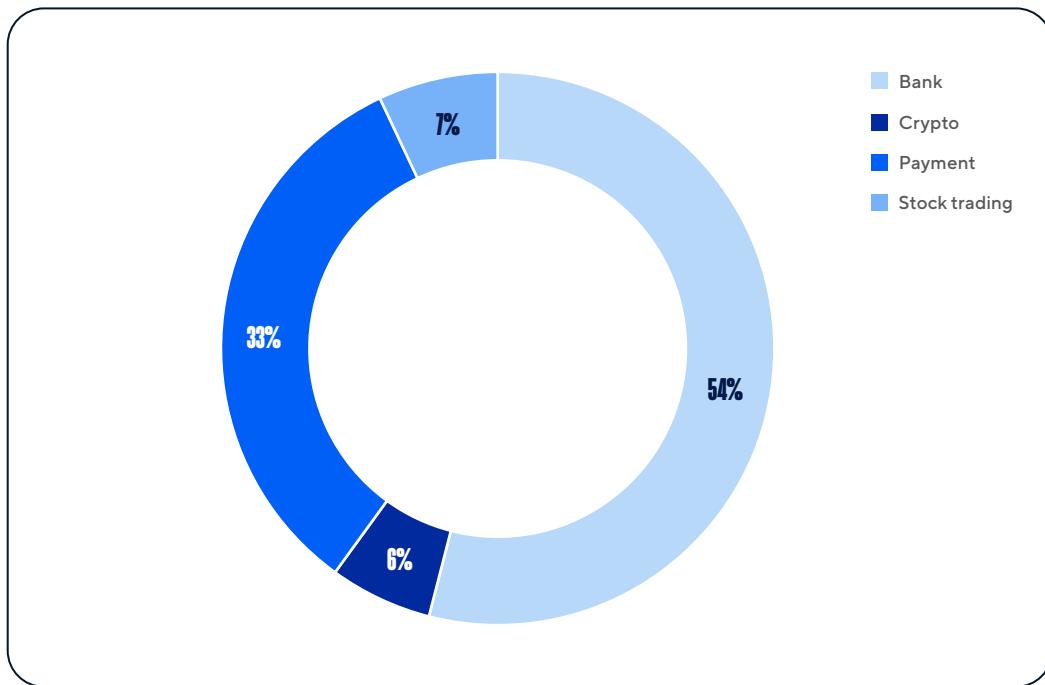
December was the highest charting month for fintech sessions in 2022, at 10% above the year's average.

Fintech app session growth January 2021 - January 2023 (Global)

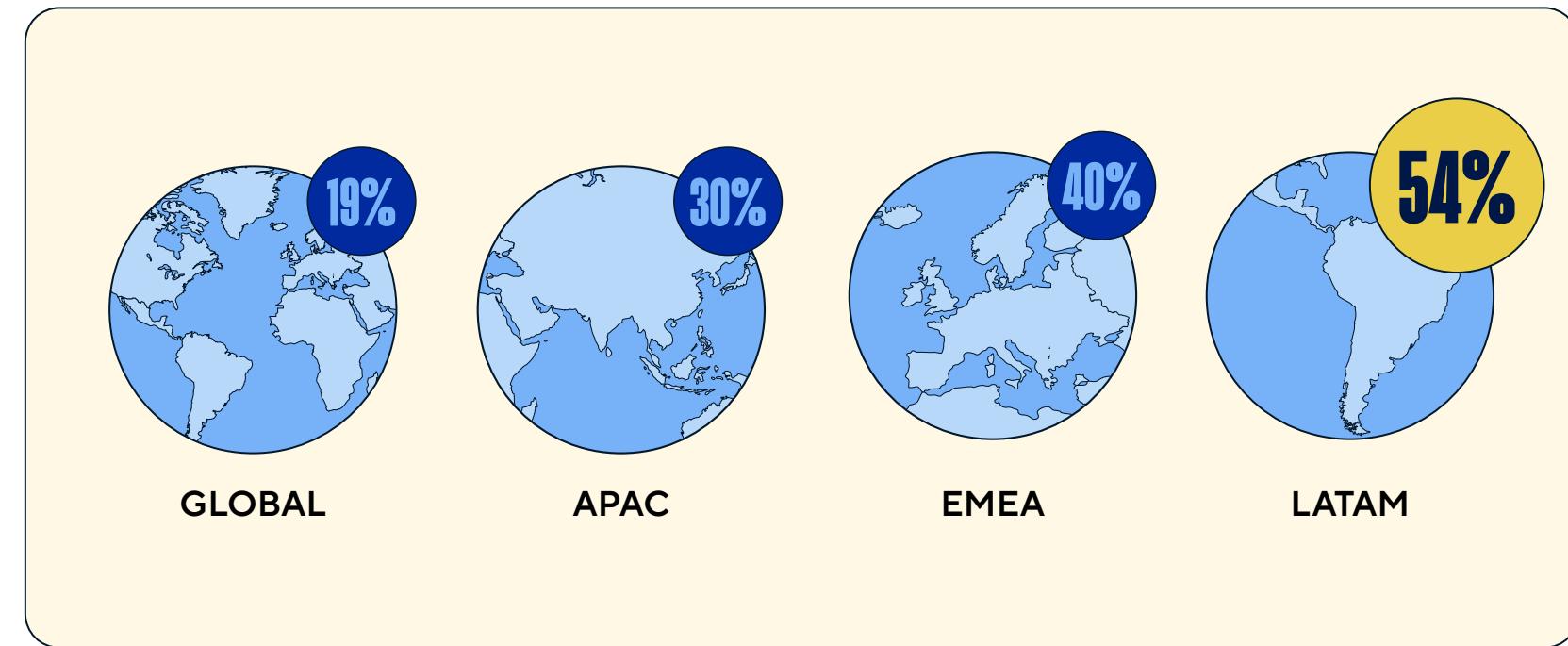




Fintech app sessions by vertical 2022 (Global)



Fintech app session growth percentages YoY 2021 -2022



Of total fintech sessions, banking apps accounted for 54%, payment for 33%, crypto for 6%, and stock trading for 7%—a somewhat different breakdown to the install share, where payment was higher than banking and crypto was higher than stock trading.

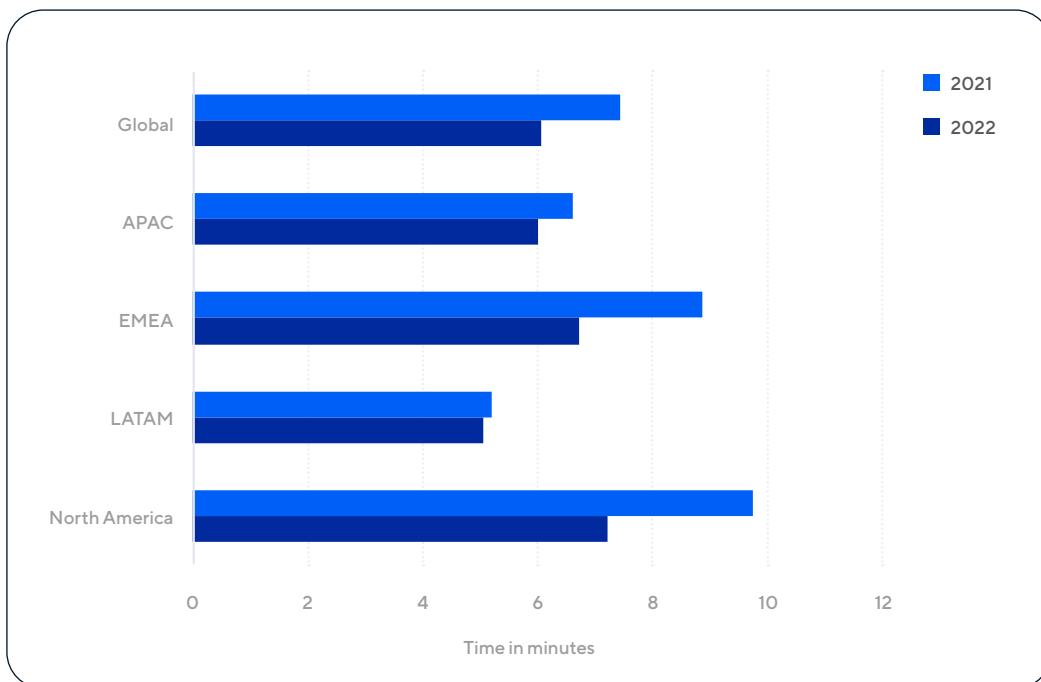
LATAM saw the most fintech growth in 2022, up 54% YoY, followed by EMEA at 40% and APAC at 30%.



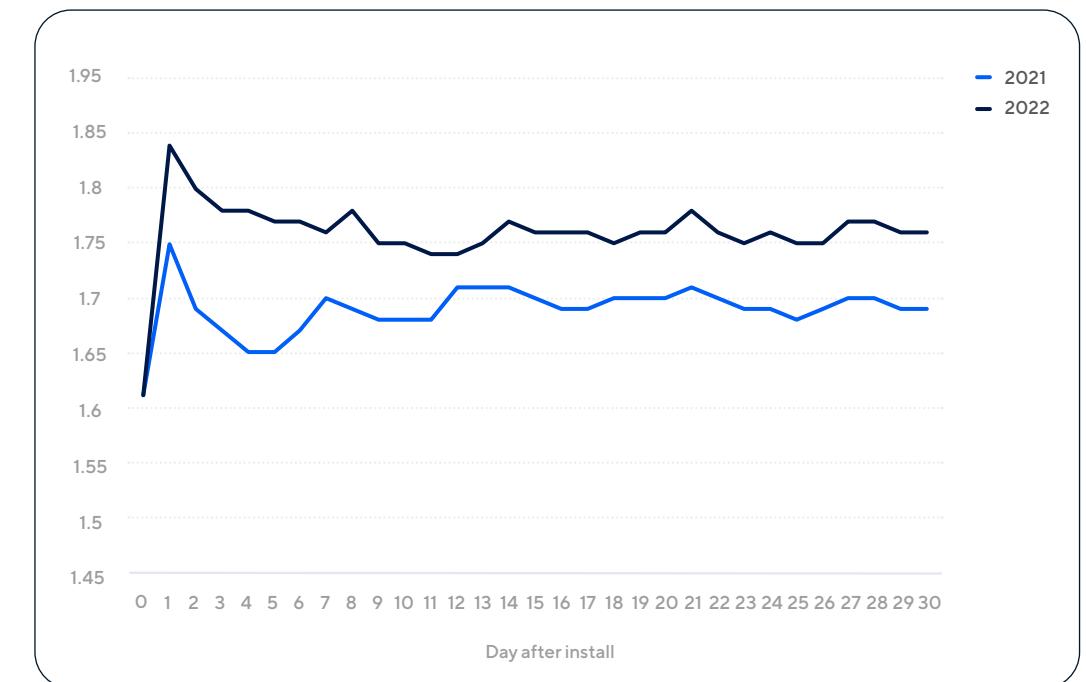
Session lengths for fintech apps declined overall in 2022, down from an average of 7.43 minutes to 6.06 minutes. This can be attributed to the huge downturn in sessions for stock trading and crypto apps, which by design have far higher session lengths than banking and payment apps.

With this in mind, the total number of sessions per user per day increased for fintech apps in 2022—likely for the same reason as the drop in session lengths. Banking and payment apps require much shorter sessions but often result in more sessions per day. The overall number climbed from a Day 1 median of 1.75 sessions in 2021 to 1.84 in 2022, with the increase trend continuing over a 30 day post-install period.

Fintech app session lengths 2021 - 2022



Fintech app sessions per user per day 2021 - 2022 (Global)

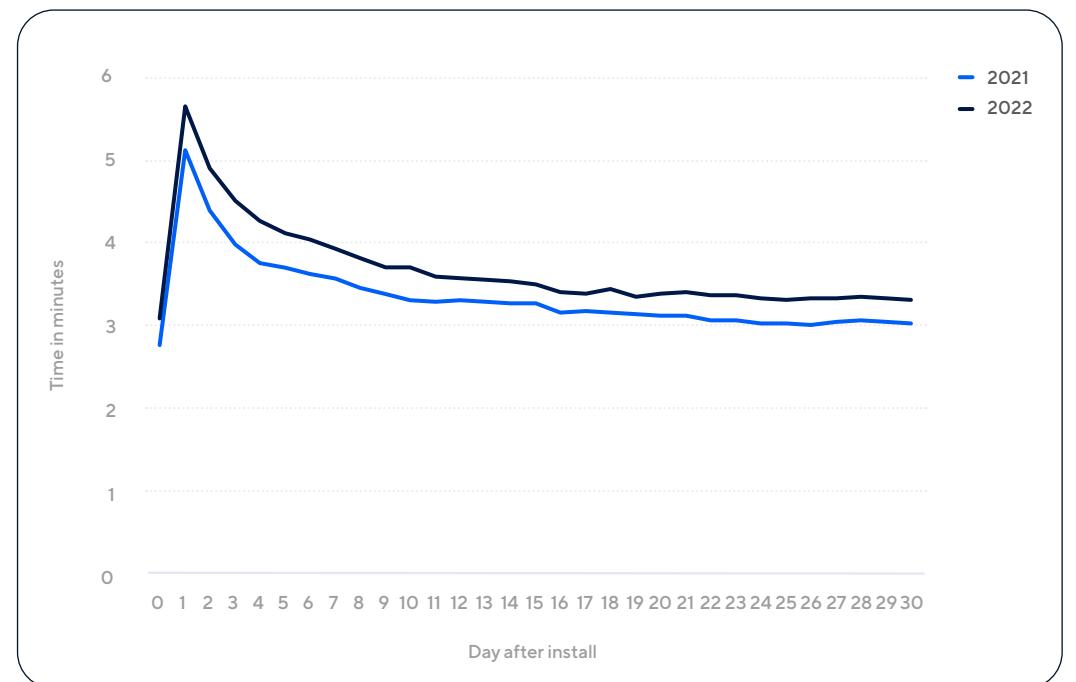


BONUS

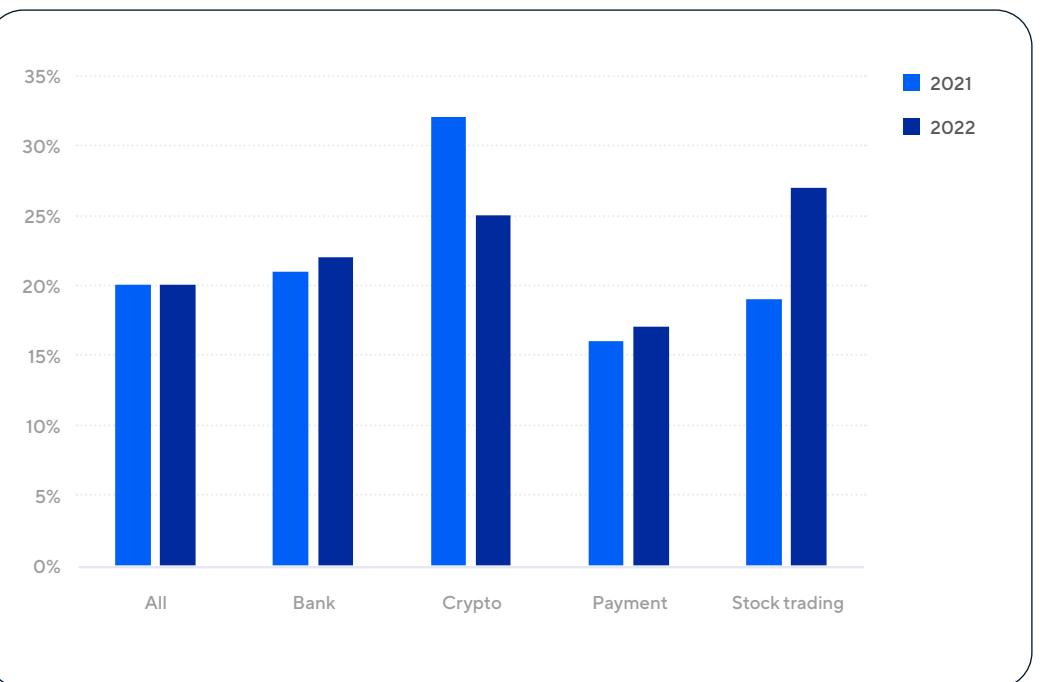
Banking app session lengths increased from 5.1 minutes to 5.29 minutes. Payment app session lengths increased from 5.05 minutes to 5.2 minutes.

Fintech app session lengths in North America were the highest of all regions tracked, with 7.21 minutes per session on average.

Fintech time spent in-app per user per day 2021 - 2022 (Global)

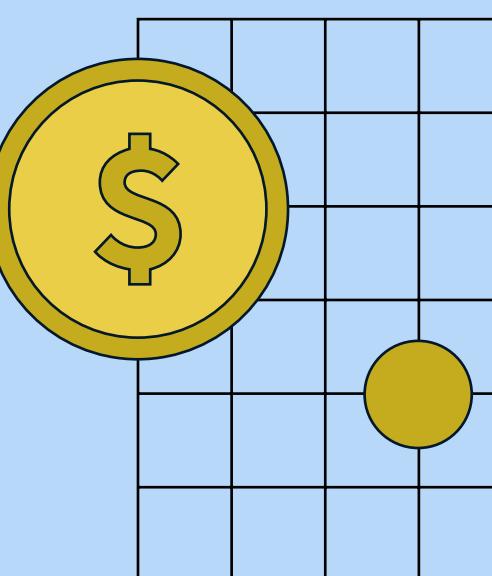


Fintech app stickiness 2021 - 2022 (Global)

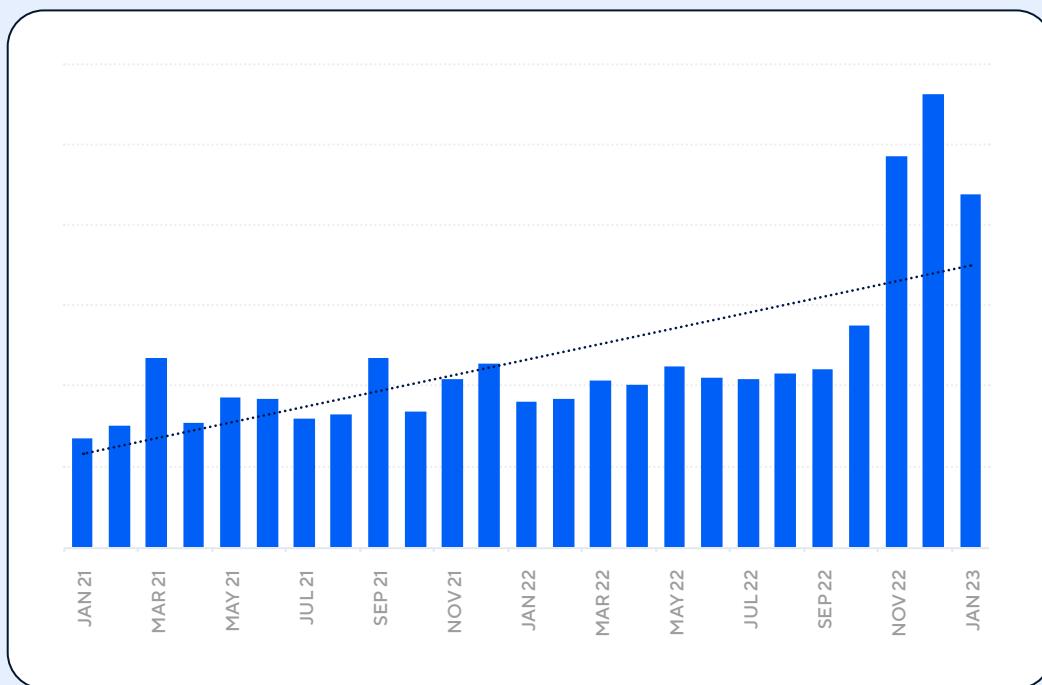


Similarly, the total time spent in-app per user per day increased significantly in 2022, up from 5.13 minutes per session per day on Day 1 to 5.67 minutes per session. More installs, more sessions, more sessions per user per day, and more time spent in-app overall? That's a lot of conversion opportunities and an extremely optimistic position for fintech apps continuing into 2023.

Stickiness remained consistent overall for fintech apps in 2022, with a median of 20%. Stock trading's ratio improved drastically (less installs overall but more engaged users sticking around), growing from 19% to 27%, while crypto dropped from 32% to 25%.



Fintech in-app revenue January 2021 - January 2023 (Global)



Global in-app revenue for fintech apps also grew brilliantly in 2022, up 44% YoY. November and December were the main months driving this impressive upward tick, increasing 83% and 112% compared to the year's average, respectively. The high numbers are continuing into 2023, with January 65% above 2022's average.

TOP FINTECH TAKEAWAYS:

19%

Global sessions for fintech apps grew 19% YoY in 2022, installs increased by 2%.

12 '22

December 2022 was the highest ever month for fintech in-app revenue tracked by Adjust; January 2023 was the third highest.

2022

Sessions per user per day and time spent in-app per user per day both increased in 2022.

PART 3

Gaming

Industry stats, trends, and predictions

10 most downloaded games in 2022

Worldwide

1	 Subway Surfers 304M	6	 8 Ball Pool 120M
2	 Stumble Guys 254M	7	 FIFA Mobile 111M
3	 Roblox 138M	8	 Merge & Fight 110M
4	 Candy Crush Saga 138M	9	 Garena Free Fire 109M
5	 Race Masters 3D 128M	10	 Bridge Race 107M

 apptopia

Industry stats, trends



Global consumer spending on mobile games was [\\$110 billion in 2022](#), a 5% YoY decrease. Predictions indicate that spending will reach [\\$270 billion](#) by 2025.



The top titles for revenue were Honor of Kings, PUBG Mobile, Genshin Impact, Candy Crush Saga, Roblox, Coin Master, Romance of the 3 Kingdoms, Pokémon Go, Fantasy Westworld Journey, and Monster Strike.



China accounted for the most consumer spend on mobile games at \$42.4 billion, followed by the U.S. (\$24.02 billion), Japan (\$13.1 billion), South Korea (\$5.28 billion), and Germany (\$2.47 billion).



Mobile [ad spend is projected to hit \\$362 billion in 2023](#), representing continued growth for the past four years, but with a forecast of only 7.5% YoY growth—starkly lower than 2020's 26.3%.



Despite the download slowdown, sports games including [FIFA Mobile](#) and [Soccer Super Star](#) grew 137% and 112%, respectively, and battle royale party gaming app Stumble Guys grew by 140.4 million installs globally, making it the fastest growing app of 2022.



What we're keeping an eye on in 2023: HTML5 gaming, gaming installs from short form video/video-sharing platforms, mobile gaming on streaming platforms, the continued increase in games developed by women, and the concurrent closing of the gaming gender-gap.

“

“Despite the turmoil within the mobile games industry, there are still bountiful opportunities for sophisticated, data-driven marketers to massively grow their games. Attribution is the foundational buying signal which (when combined intelligently with SKAN data and post-install data) has enabled us to continue to invest heavily and drive massive returns in a time of uncertainty.”



**Xander Agosta
Director of Marketing**

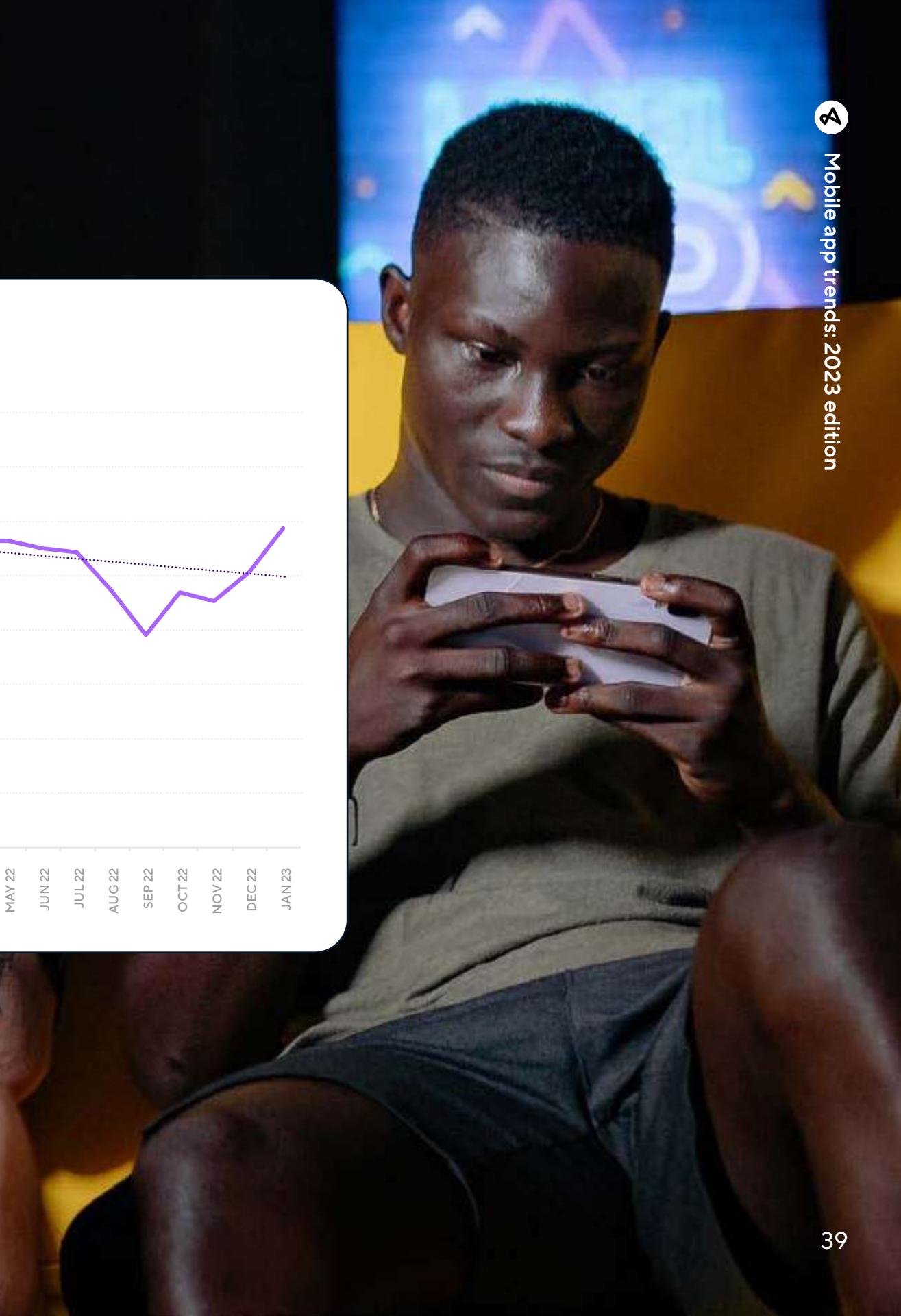
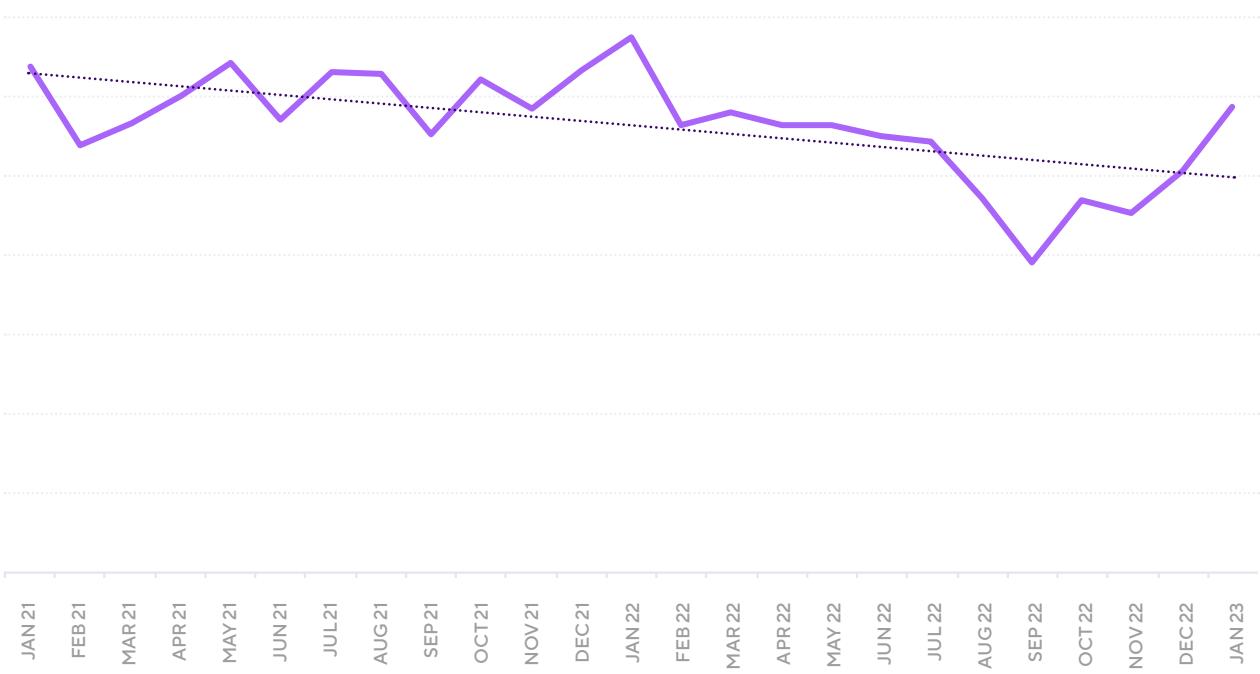
Installs and finding users

Gaming's story for 2022 was not as optimistic as it was for some other verticals. In fact, it was its worst year in history.

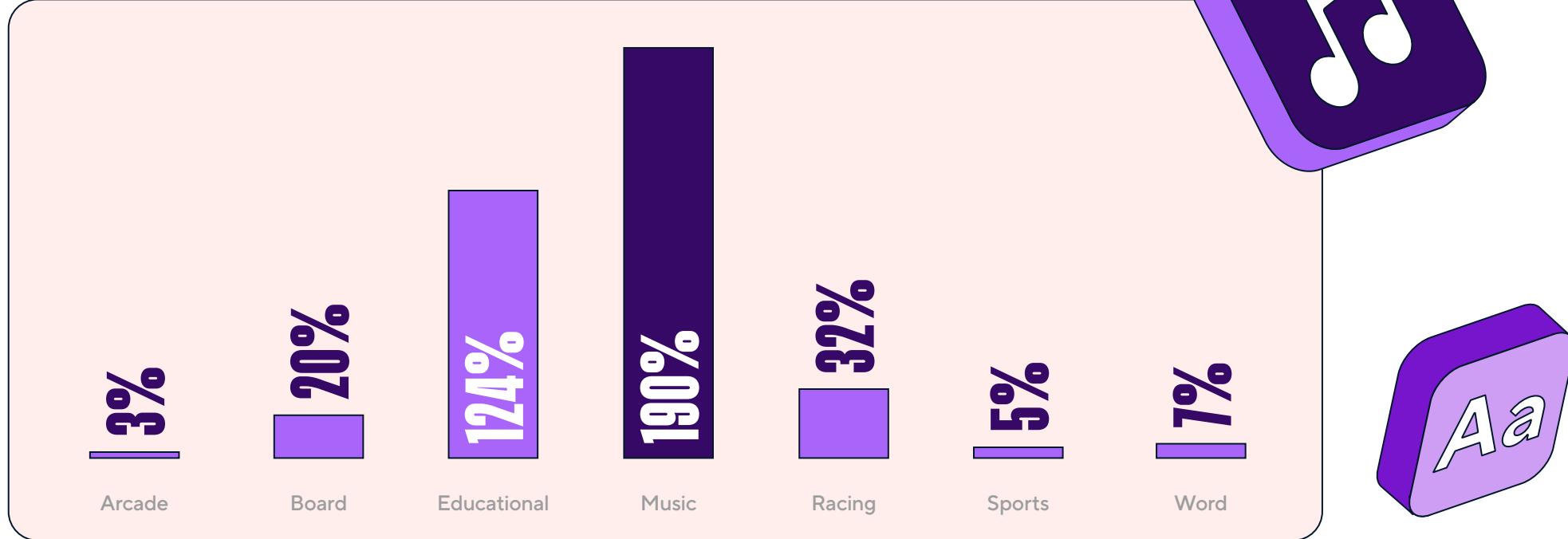
Adjust data shows that installs declined overall by 12% YoY—North America declined the most at -20% and LATAM saw the smallest impact at -6%. A multitude of cultural and economic factors globally contributed to the downward slide, which turned the vertical that has long been the mobile-app king somewhat on its head.

This disturbance appears to be temporary, however, as we are seeing a very positive turnaround moving into 2023, with installs up 23% in January compared to Q4 of 2022, and 10% higher than the overall 2022 average.

Gaming app install growth January 2021 – January 2023 (Global)



Gaming app install growth percentages YoY 2021 - 2022 (Global)



Many gaming sub verticals actually grew in 2022, with music and educational games both up by over 100% YoY, racing games up by 20%, word games by 7%, sports games by 5%, and arcade games by 3%.



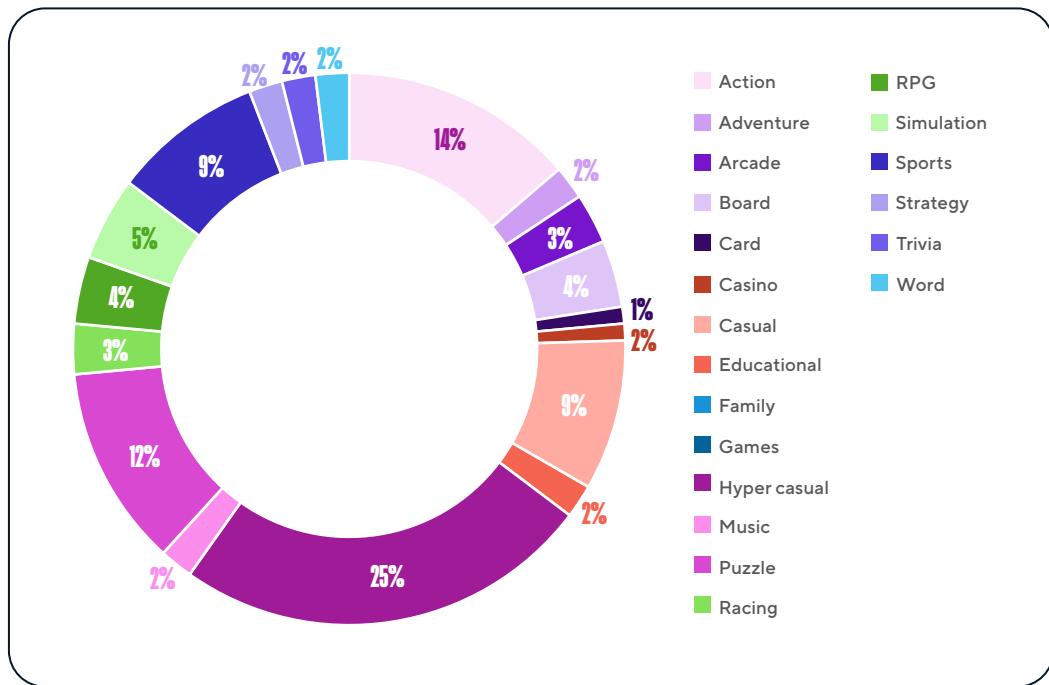
"While overall mobile gaming app growth and engagement were down globally in 2022, installs for the word games category increased by 7% with the top games such as Wordscapes, Wordscapes Search, and Wordle!"

John Lee
Head of Product

peoplefun

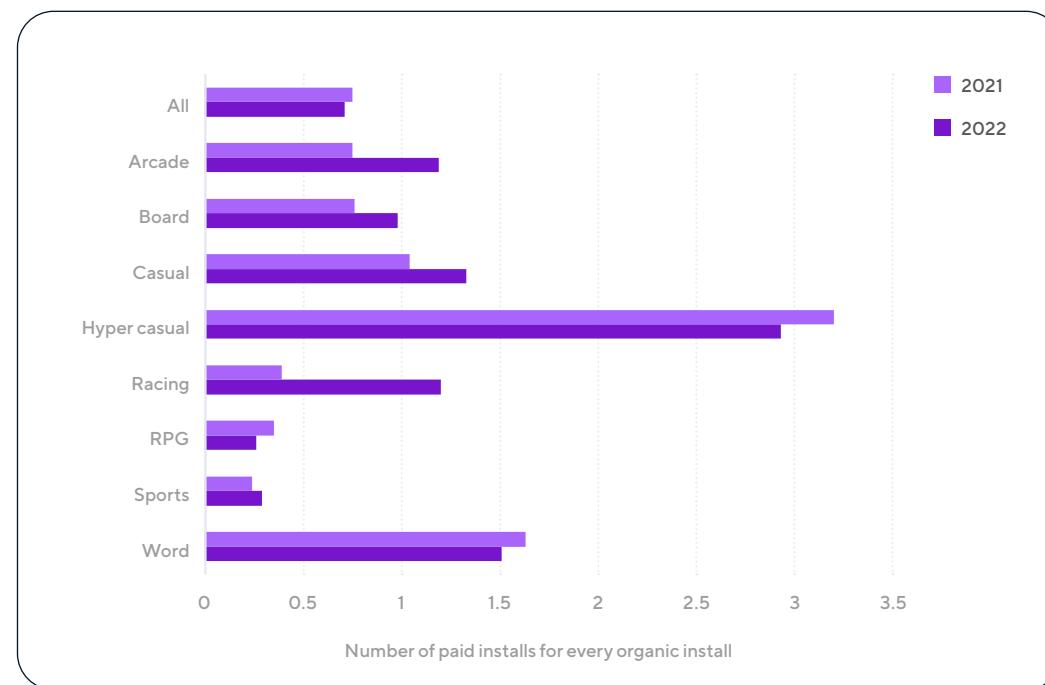


Gaming app installs by vertical 2022 (Global)



As usual, hyper casual games accounted for the highest percentage of installs among gaming apps at 25%, though it's worth noting that this is down slightly compared to 2020 and 2021, when it accounted for 27% of installs. Action came in second at 14%, followed by puzzle games at 12%, and sports and casual games, which both accounted for 9%.

Gaming app paid/organic ratio 2021 - 2022 (Global)



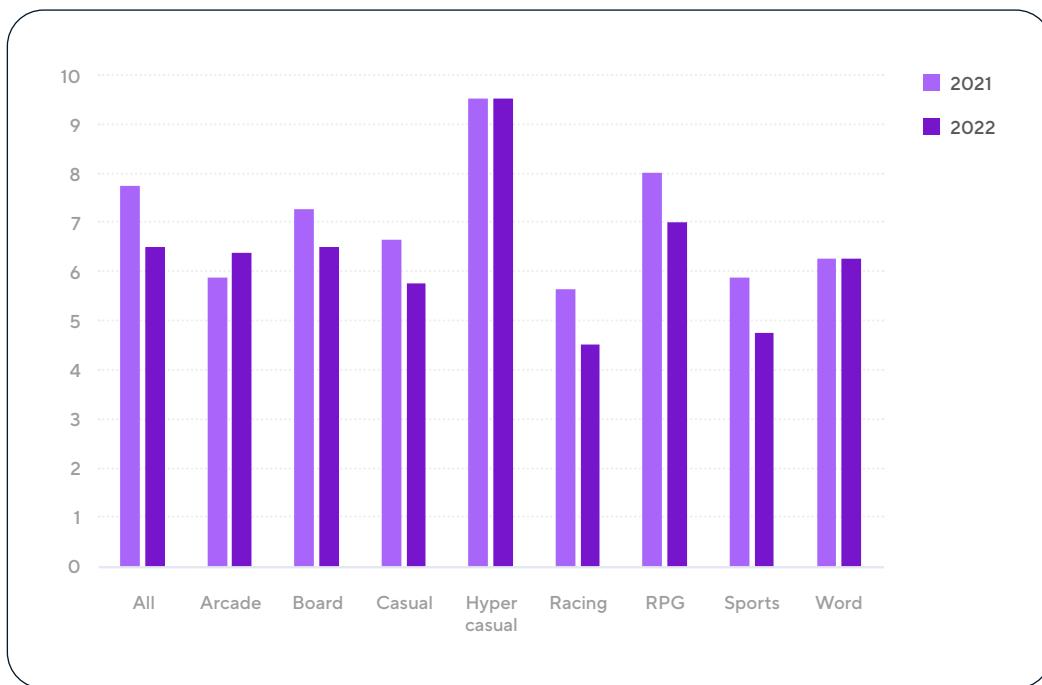
The paid vs. organic ratio for gaming apps overall in 2022 decreased slightly, from 0.75 to 0.71, likely because of the decrease in paid campaigns due to increased user acquisition costs—particularly in the latter half of the year. Even hyper casual, which relies heavily on high turnover paid user acquisition campaigns, saw a considerable drop, down from 3.2 to 2.93.

BONUS

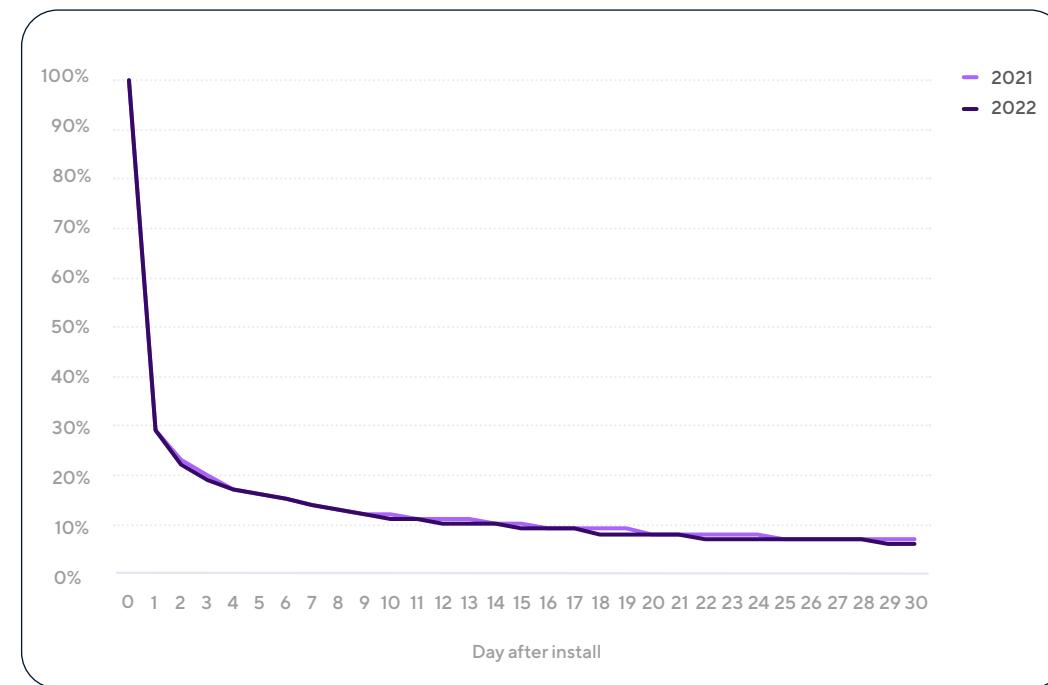
After hyper casual games, word games had the second highest share of paid users in 2022 at 1.53 for every organic user.



Gaming partners per app 2021 - 2022 (Global)



Gaming app retention rates 2021 - 2022 (Global)



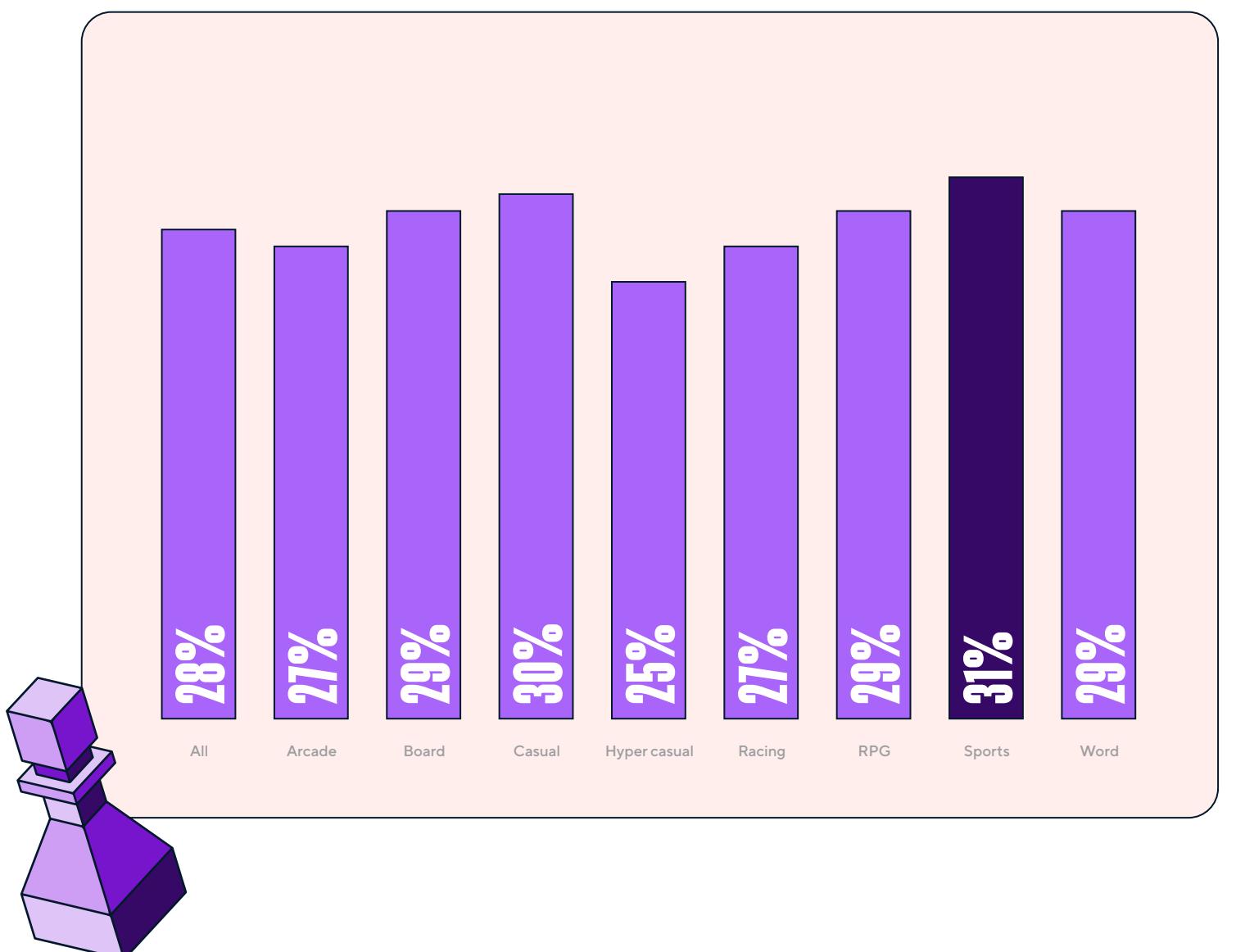
In line with the degrowth trend for the gaming vertical and reduced spend on UA in 2022, gaming apps worked with fewer partners overall, decreasing from a median of 7.8 to 6.5. Hyper casual apps remained consistent with 2021, however, sticking to a median 9.5 partners. Arcade was the only category to increase its number of partners, climbing from 5.9 to 6.4.

Although the number of users coming to gaming apps dropped, retention rates remained consistent for Day 1 at 29%. By Day 3, a percentage point was lost—giving us 19% in 2022 compared to 20% in 2021, which is mirrored on Day 30 at 6% and 7% for the two years, respectively.

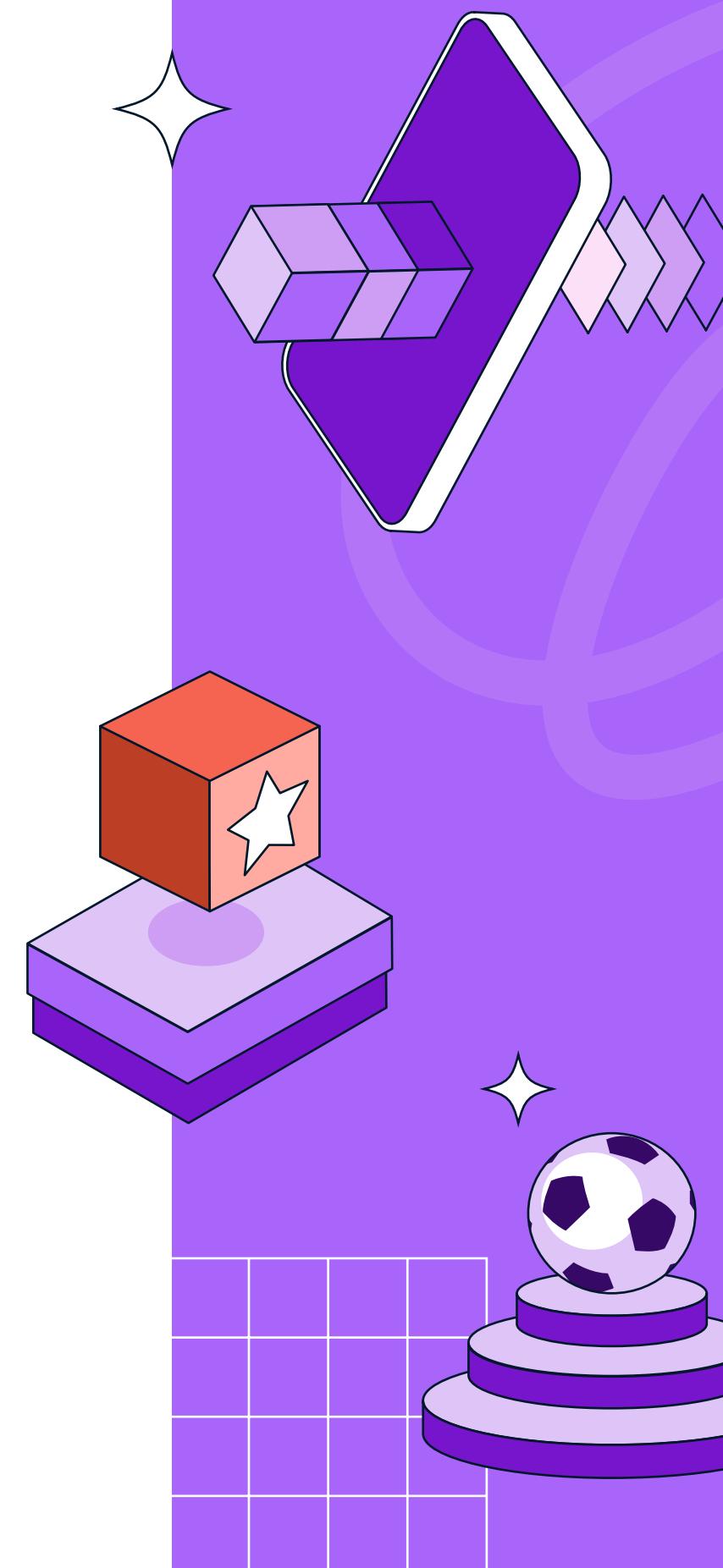
BONUS

Reattributions were also low for gaming apps in 2022, down from a share of 0.05 to 0.04. Role playing games, however, increased their reattribution share from 0.11 to 0.12.

Gaming app D1 retention rates by vertical Q4 2022 (Global)



Sports games had the highest Day 1 retention rate in Q4 of 2022 at 31%, followed by casual games and board games at 30%, RPG and word games at 29%, and racing and arcade games at 27%. Hyper casual was the lowest at 25%, indicating that cross-promotional efforts should start as soon as a user opens the app.

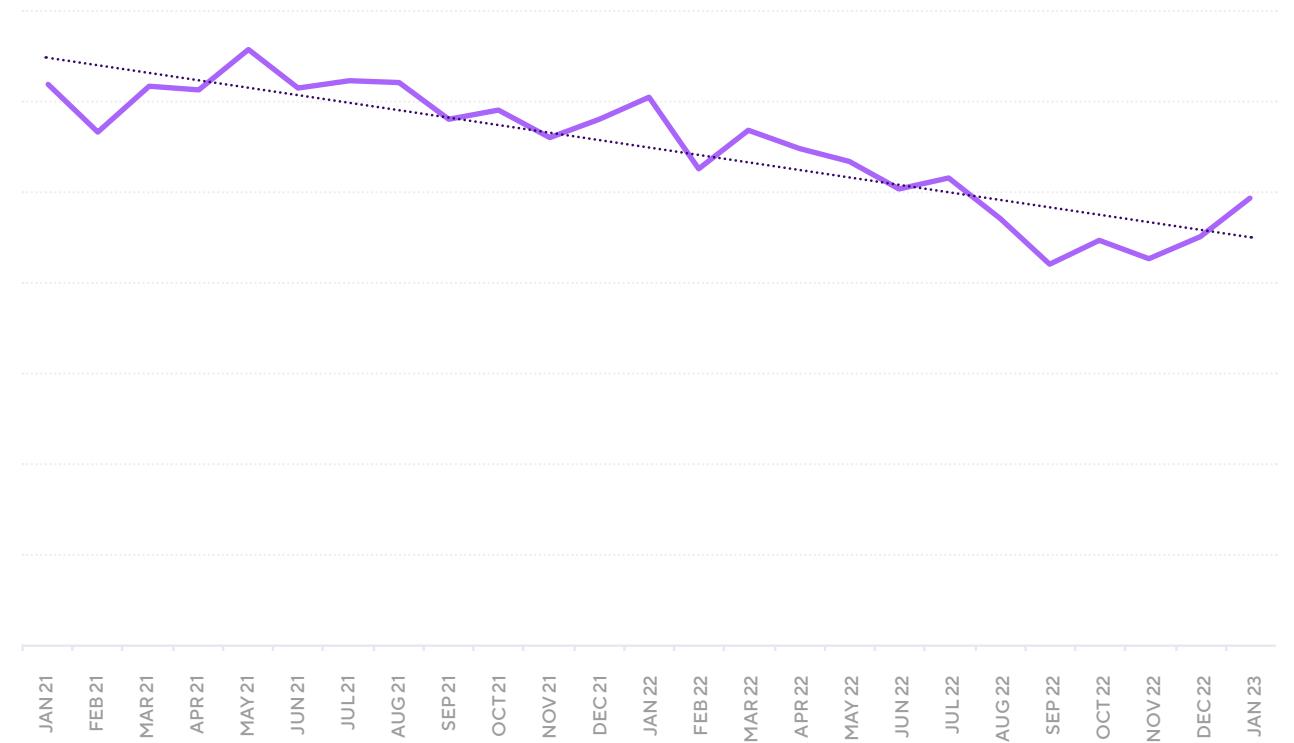


Sessions and user trends

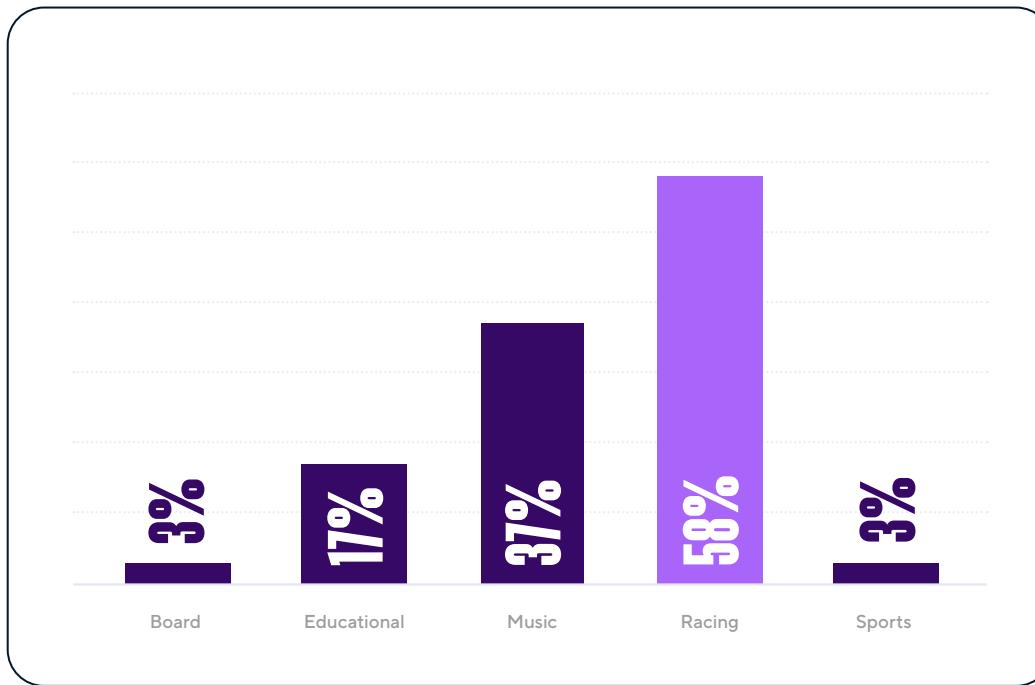
Gaming sessions in 2022 were unfortunately even worse than installs, with YoY degrowth of 17%. The downward slope continued throughout the year, with September to December representing the vertical's rock bottom. However, things are looking positive in 2023 so far, with sessions bouncing back by 11% compared to Q4 2022.

The biggest decline in gaming sessions was seen in North America at -25%, while the least pronounced decrease was LATAM at -12%.

Gaming app session growth January 2021 - January 2023 (Global)

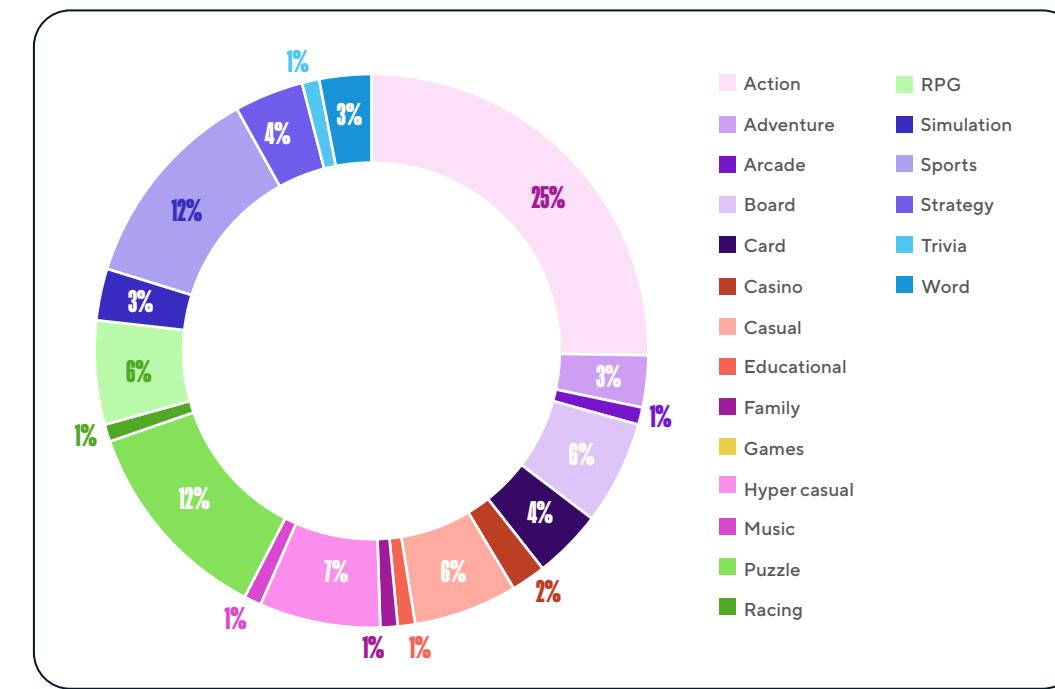


Gaming app session growth percentages YoY 2021 - 2022 (Global)



Much like with installs, however, there were a few gaming categories that grew against the odds. Racing games saw a 58% increase in sessions YoY in 2022, followed by music at 37%, educational at 17%, and sports and board games both at 3%.

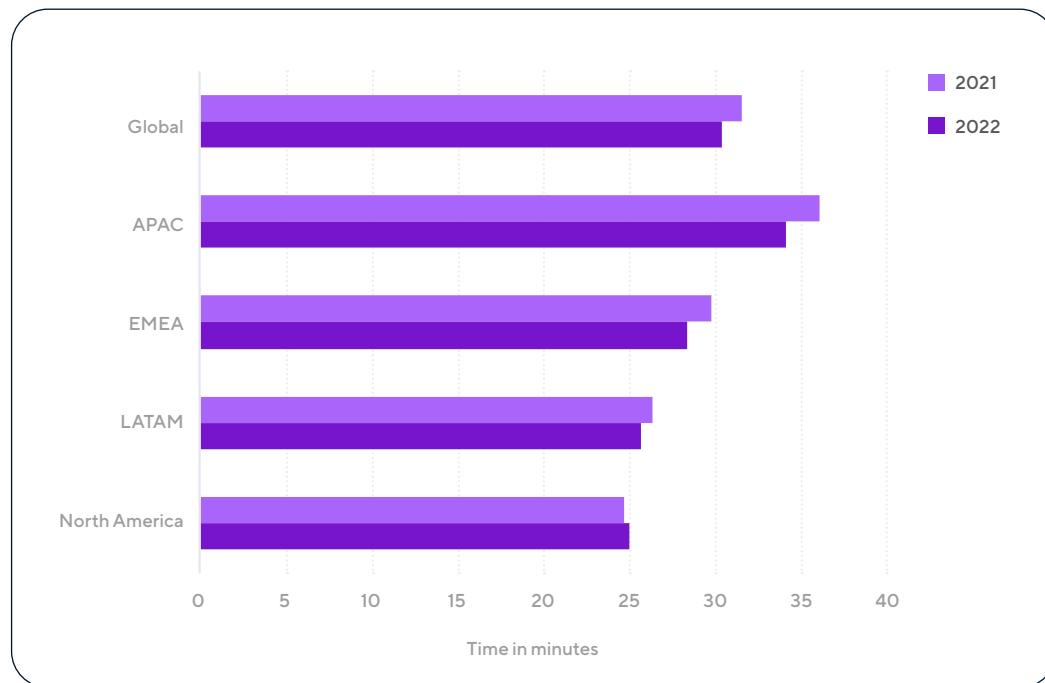
Gaming app sessions by vertical 2022 (Global)



Action games accounted for 25% of the total number of gaming app sessions, compared to 14% of installs, demonstrating how sticky the subvertical is. Conversely, hyper casual made up just 7% of sessions compared to its lion's share of installs, reinforcing its high turnover rate and power in consistently driving installs. Puzzle and sports were the second biggest categories for sessions, both making up 12% of the total.

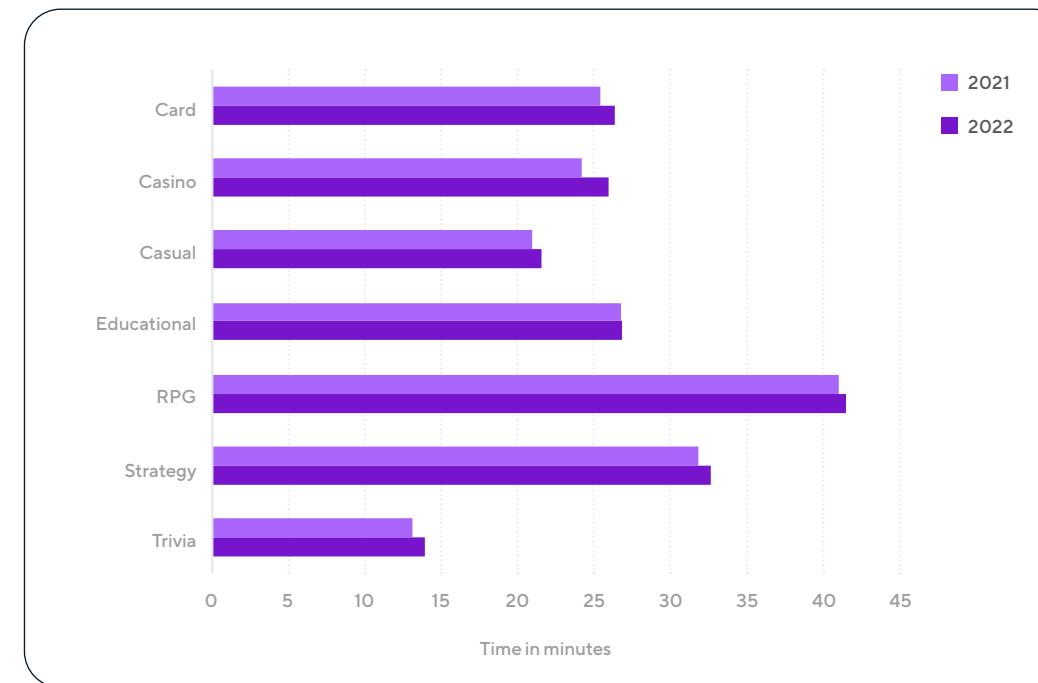


Gaming app session lengths 2021 - 2022



Session lengths for games were also down overall, decreasing from an average of 31.5 minutes to 30.33 minutes. In North America, however, there was a small increase from 24.65 minutes to 24.99 minutes. **The average session length in January 2023 shows an upward tick, climbing back to 30.96 minutes.**

Gaming app session lengths by vertical 2021 - 2022 (Global)



When breaking the numbers down by subvertical, we uncover multiple categories where session lengths in 2022 increased. RPG session lengths increased from 41.03 minutes to 41.49 minutes, casino games jumped from 24.19 minutes to 25.95 minutes, and card games climbed from 25.41 minutes to 26.33 minutes.

BONUS

APAC represented the longest session lengths for gaming apps in 2022, at 34.08 minutes.

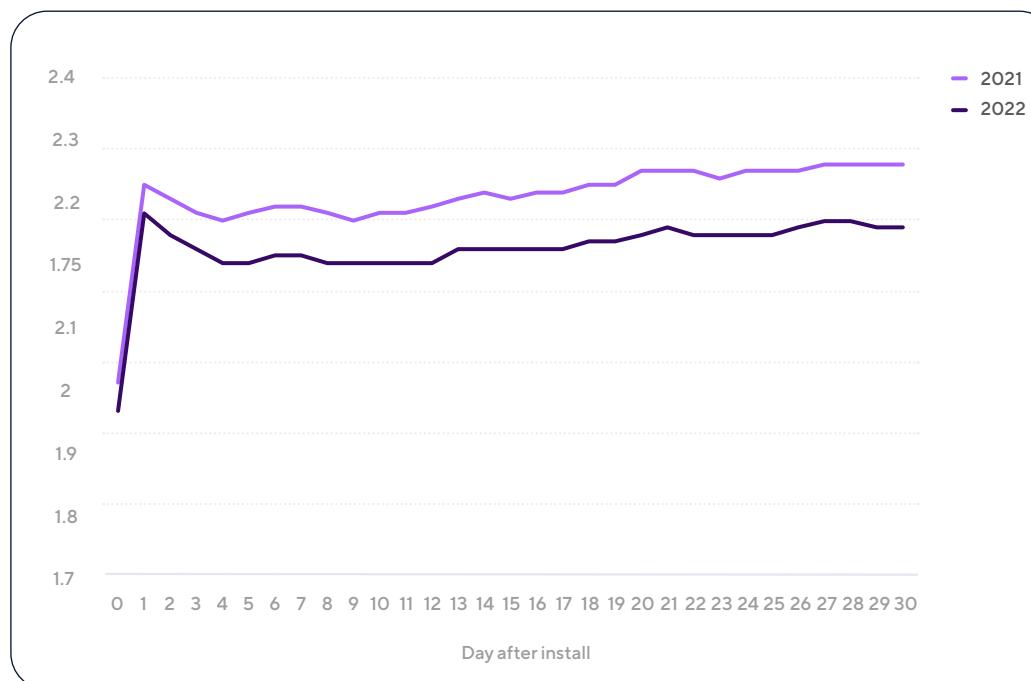
Sessions per user per day followed an almost identical trajectory in 2022 as in 2021, with a drop off after Day 1 followed by a slow increase from Day 3 through to Day 30. Unfortunately, the benchmark for 2022 was lower. Day 1 sessions per user dropped from 2.25 to 2.21 and Day 30 finished out at 2.19 for 2022, compared to 2021's 2.28.

To no surprise at this stage, stickiness witnessed a considerable decrease in 2022, sliding down from a median of 22% to 20%. In better news, hyper casual was able to maintain its 8% benchmark, and RPG actually saw an upward tick from 29% to 30%.

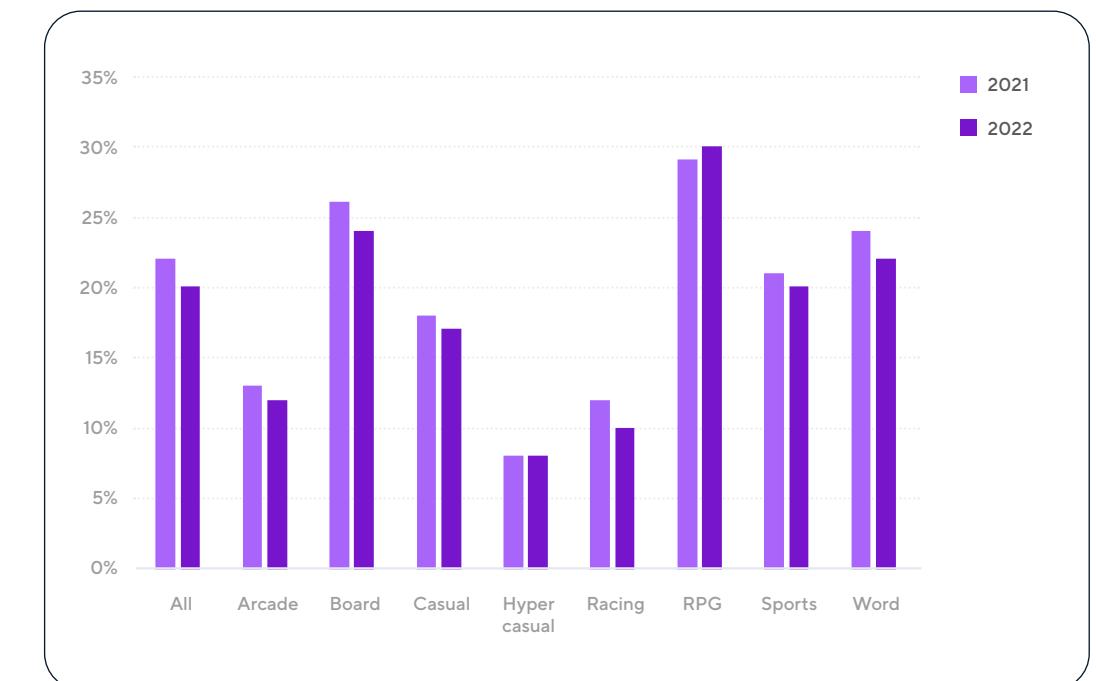
BONUS

Time spent in-app per user per day also dropped in 2022, decreasing from 52.18 minutes to 51.02 minutes.

**Gaming app sessions per user per day
2021 - 2022 (Global)**

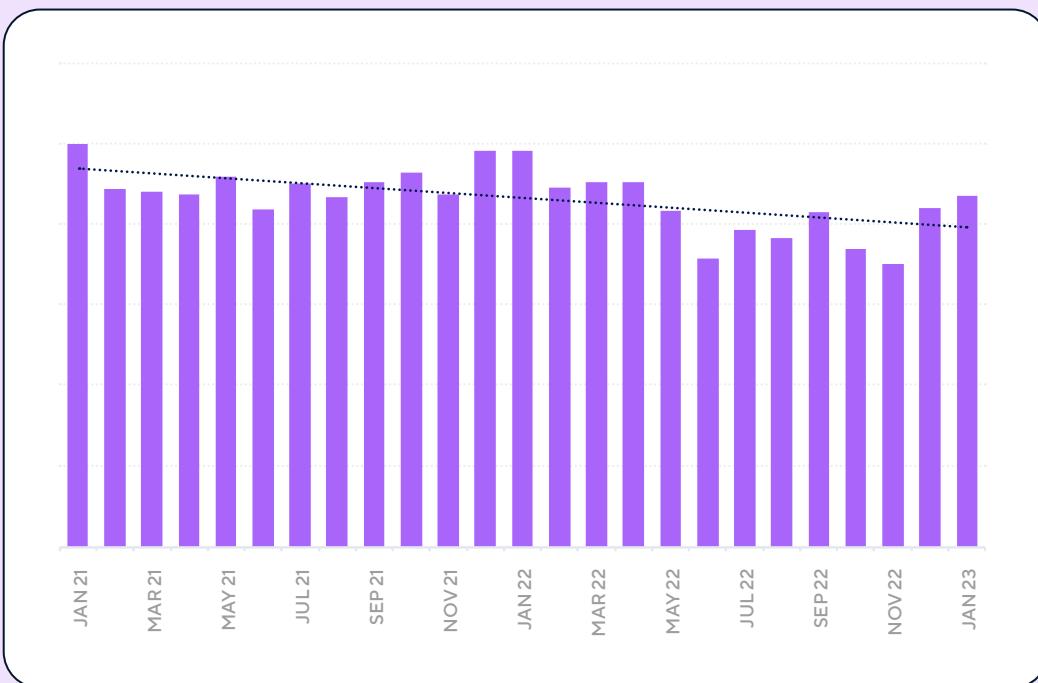


**Gaming app stickiness
2021 - 2022 (Global)**



Gaming in-app revenue

January 2021 - January 2023 2022 (Global)



In-app revenue for gaming apps dropped 9% overall in 2022. Considering the decrease in paid installs, the drop in sessions, decline in session lengths, and downward creep of retention rates and stickiness, this number could have been a lot worse, and we are optimistic about the direction gaming app performance is heading in 2023. In-app revenue for January 2023 was 6% higher than the 2022 average and 14% higher than the Q4 2022 average—a growth trend we expect to see continuing.

TOP GAMING TAKEAWAYS:

100%

Installs decreased overall for gaming apps but YoY growth of over 100% was charted for music and education, followed by racing, word, sports, and arcade games.

58%

Similarly, sessions dropped significantly overall, but racing grew by 58%, followed by music, education, sports, and board games.

11%

The numbers are looking very optimistic so far in 2023, with installs up 10% compared to the 2022 average, sessions up 11%, and in-app revenue up 6%.

CONCLUSION

Accelerate your app's growth in 2023 and beyond

Mobile app advertising, and most sharply the mobile app gaming sector, is facing its most challenging moment ever. With 2022 the first year since the conception of the mobile marketing industry where a slowdown in growth was charted, there are a multitude of factors leading to advertisers and developers making different and difficult decisions around how they run campaigns, analyze their data, and ultimately drive growth.

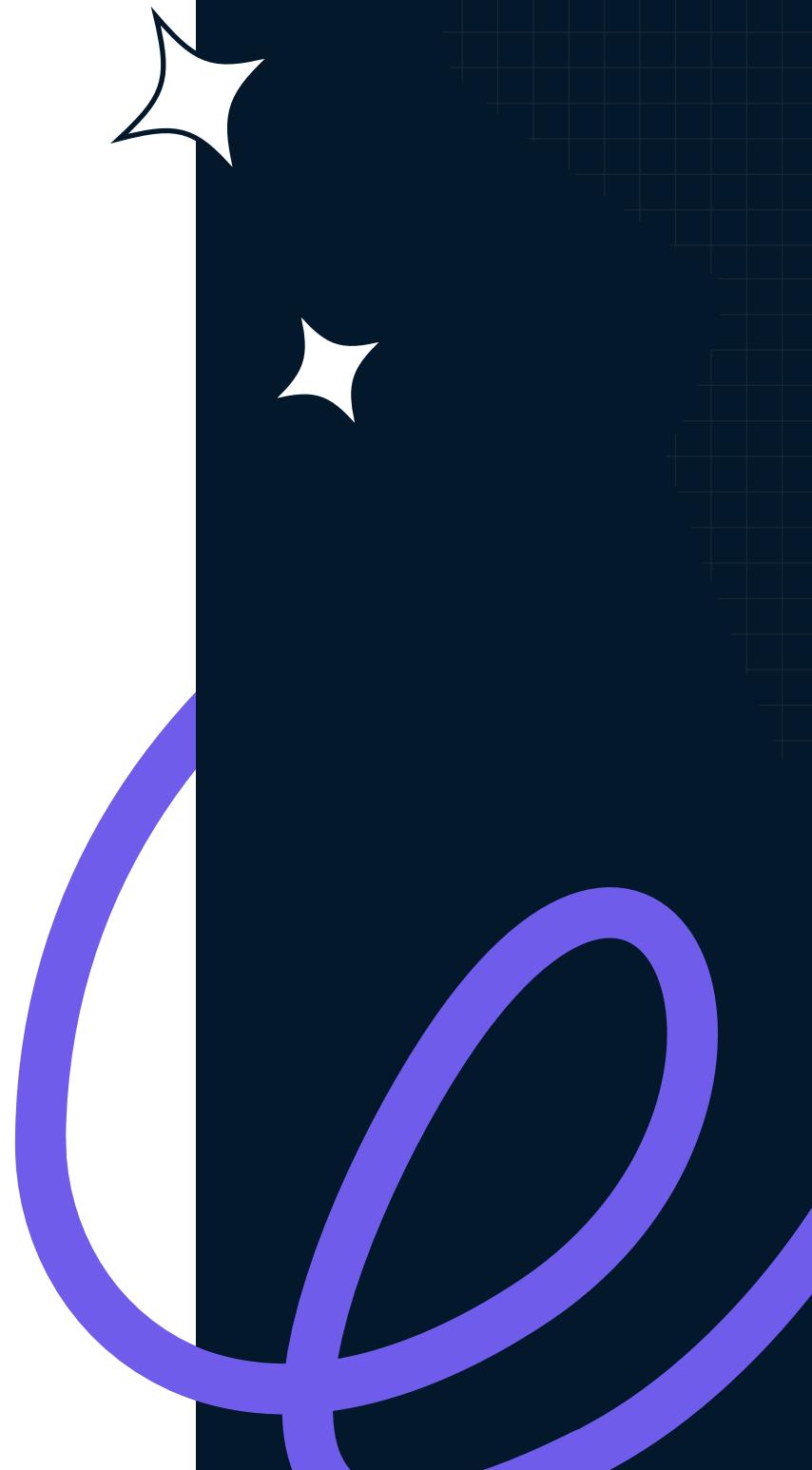
The numbers and trends we've explored in this ebook demonstrate, however, that despite the challenges and crises that have hit the industry and the world at large over the past years, mobile is able to consistently persevere and adapt to the diverse and ever-developing needs of users. Change will continue to shape our industry and as ever, Adjust will tackle and embrace any and all

challenges hand-in-hand with our clients and partners as we work together to provide users with world-class app experiences. Our numbers also indicate that a turnaround is already well underway, with 2023 looking extremely optimistic so far.

That being said, marketers and developers need measurement and analytics tools that provide visibility and insights to grow their apps across platforms. Adjust's analytics suite is an end-to-end solution purpose built for optimizing ad performance, maximizing returns, and helping you to measure and scale your app marketing efforts. Now more than ever, it's essential to determine which campaigns are driving ROI, which channels are delivering high LTV users, and which segments are performing best. We empower clients to unlock success on iOS and in the

ever more complex data-privacy space, with automated solutions that help you work smarter. From improving UA to driving retention rates up, Adjust's analytics suite has the solutions you need for fast, impactful, and strategic growth.

Success in 2023 will be defined by those who are able to cut through the noise to stand out from the competition and turn the numbers around—but this requires the right strategy and the right tools. Request a demo today.





ABOUT ADJUST

Adjust is trusted by marketers around the world to measure and grow their apps across platforms, from mobile to CTV and beyond. Adjust works with companies at every stage of the app marketing journey, from fast-growing digital brands to brick-and-mortar companies launching their first apps. Adjust's powerful measurement and analytics suite provides visibility, insights and essential tools that drive better results. Adjust is owned by AppLovin (Nasdaq: APP), and is headquartered in Berlin, Germany.

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