Playstore Efficiency Report 2019

by GREENSPECTOR

Performance, Sobriety, Inclusion...
More than 1,000 applications measured

Edito

It is not uncommon for us to be annoyed, disappointed at not getting an instant response to an immediate demand. Yet, what a magic to be able to bring the «service» or «content» that we need anytime, anywhere on an object that we carry with us all the time. For that, no magic nevertheless, the important thing is to respect some rules of design and to bring a «new look on the User Experience in mobility». How many applications do not take into account constrained contexts and «spend» without counting the risk of being faulty, non-performing at the slightest loss of resources (network, mobile)? How many applications overload network and smartphone without knowing the context of the request? It is often the same applications that are denounced on smartphones as battery drainers or those, which track too much your routes and data even to slow down user uses and degrade the experience. Quite often they are the same ones that empty the batteries of our smartphones and cause the premature change of the device.

The study carried out evaluates the capacity of an application to have a «Responsible» interaction Performance that can be synthesized by 5 key values: Sobriety, Discretion, Performance, Inclusion and Ecology. Although it is difficult to make a direct link, the benefits for the applications of blinds can be summed up directly in these indicators that the Business Owner / or e-commerce manager knows well: acquisition rate, retention rate, rate of activation, turnover, branding, ...

This study is the first ever done on the applications of the store and allows to better understand the interaction that can have the user, as demanding as can be a m-consumer, with the mobile application which also became the showcase of the « service shop and products' companies.

Thierry LEBOUCQ
GREENSPECTOR Chairman

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Highlights

For this new study, the GREENSPECTOR laboratory has chosen and tested a sample of more than 1000 applications in Android thanks to its different measurement tools.

Each application has taken 100 control points to determine a global Ecoscore out of 100, the GREENSPECTOR App Mark which is the result of 5 measured criteria: sobriety, performance, Discretion, ecology and inclusion. This way to design applications will cause a significant impact, both in terms of ecological footprint and smartphone autonomy or user experience.

Mobile apps contribute a minimum of **6% of digital CO_2 emissions**

Carbon footprint: on average the applications have an impact of 0.75 g CO_2eq (CO_2 equivalent). For a projection of use of 3 hours per day by 5 billion mobile users, **92 million tons CO_2eq** are expected. Knowing that it takes into account neither the installation of the application nor the functional path to use the application, this minimized estimate shows that mobile applications represent at least 6% of digital CO_2 emissions. In the sample, 90% of mobile applications have a low impact (less than 1 g CO_2eq per unit of measure). However, the average of the sample is pulled up by 1% of the applications that have an impact higher than 10 g CO_2eq per unit of measure, especially in the category of the games.

trackers, analytics and **permissions are ubiquitous** (**44%** of applications have more than 5 trackers)

User impact and privacy: Trackers, analytics and other permissions are ubiquitous: on average 44% of applications have more than 5 trackers and **73% require more than 10 permissions**. In the addition to the problems posed in terms of the security of personal data and their exploitation, these tools have a major impact on the energy consumption and resources of the mobile phone, leading to an additional environmental cost.

Software / mobile obsolescence: in this GREENSPECTOR survey, only 70% of the applications on the store are compatible with all versions of Android. **A quarter of Google Play Store apps exclude 10% of older mobile devices**. The inclusion rate of the average market for applications, meaning the percentage of applications compatible with the device / operating system park on Android, is 95.8%. Conversely in 4.2% of cases, applications will not be compatible with the global smartphone fleet.

¼ of the Google Play Store apps **exclude 10% of the oldest device**

Other findings:

50% of applications **keep processing** after the application closes

It should be noted that **more than 50% of measured applications continue to process or send data after the application closes**. These are voluntary mailings (data backup on external servers, for example) or sometimes involuntary (non-controlled libraries in particular). An often useless overconsumption could jeopardize these applications. Manufacturers sensitive to this consumption in the background are less and less guilty by denouncing those who drain the batteries and impact their reputation in autonomy. Being denounced as an "Energy-sucking" application is a risk for the image of the brand. Especially since it is a reality; some highly used and **greedy applications can reduce the autonomy of the batteries to less than 3 hours**.

This unparalleled study of mobile applications the widely-held intuitions:

- The most discreet applications with few trackers and permissions are also the most inclusive applications with potential to broaden targets or a larger market by promoting more universal access to contents and services, that helps reduce the Digital Divide.

- The size of the application has no impact on its performance or on its energy consumption. On the other hand, these increase with frequent updates.

- The most powerful applications in terms of display time are generally the most ecological. But as soon as an application asks to use all the resources of a smartphone to be more efficient in display speed, it increases the energy demand and creates energy consumption and decreases the resources of the smartphone.

GREENSPECTOR App Mark Ranking

Sobriety

Performance

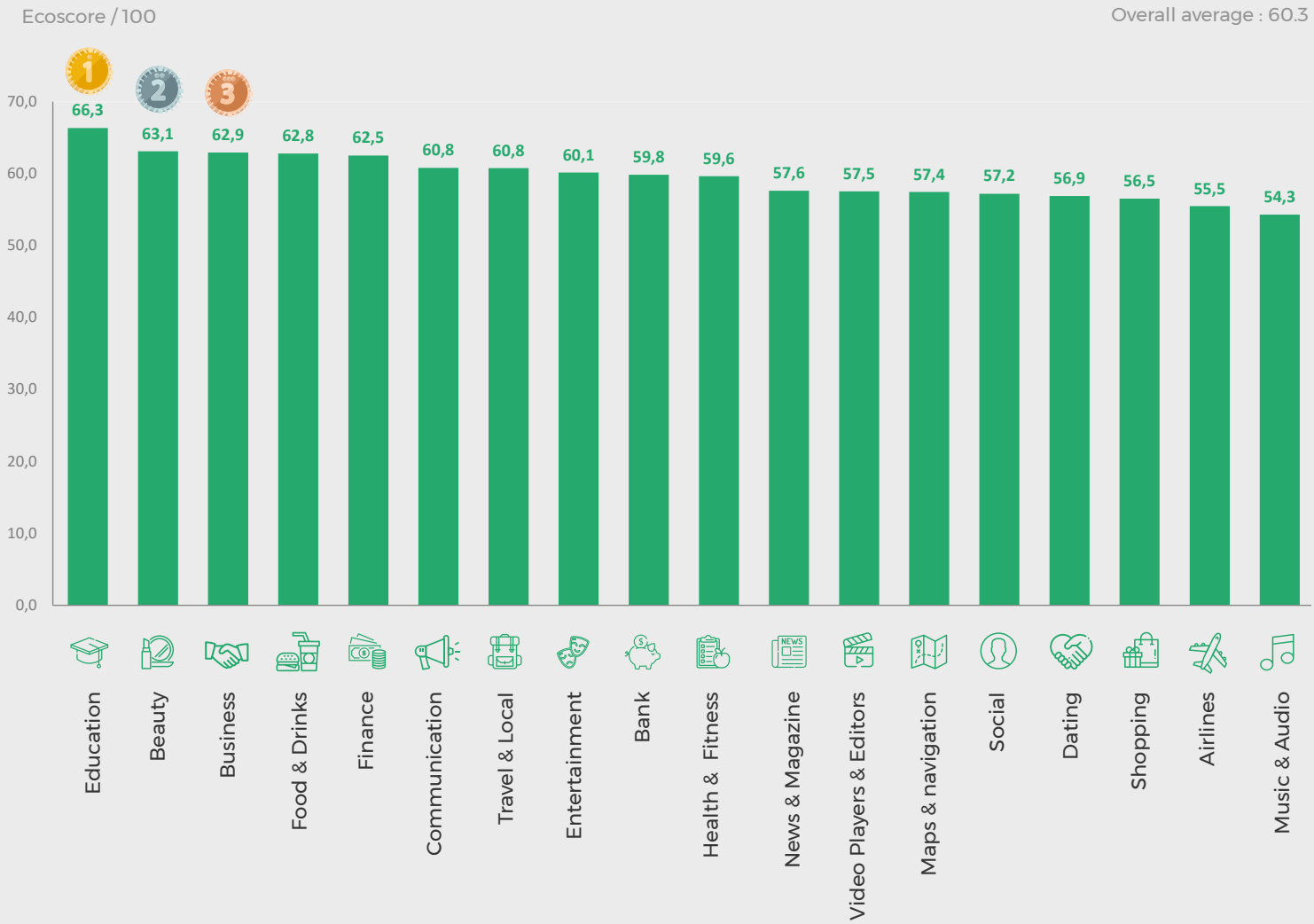
Ecology

Discretion

Inclusion

GREENSPECTOR App Mark

Main categories ranking*



* This selection is representative of the Google Play Store main categories. Only 18/40 are represented here.

The top three categories are: Education, Beauty and Business. The difference between the 1st category and the last category of this classification is 25%. 18 applications are above the 60.3 average. The difference between the Education and Beauty category is 5%.

Even though they are averages, it is interesting to note that the applications of the best categories already incorporate a responsible, efficiency and performance approach. Conversely, music & audio applications are more greedy and take the risk of penalizing the use of their platform.

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GREENSPECTOR App Mark Details

Sobriety

Performance

Ecology

Discretion

Inclusion

Sobriety

The 10 Best Categories

The application is installed? Well done. It must now be left! If it is denounced by the device as too consuming, or if the user has the impression that we empty his battery without his knowledge, the end is near. Autonomy is a key element in the choice of a smartphone but also in the choice of applications. It is the same for the place taken into memory, where the mobile data consumption that also weigh down the applications and user devices ...

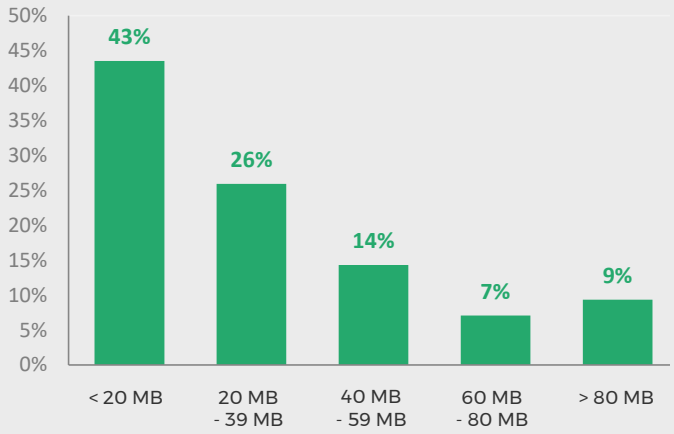
This axis is all the more interesting to master that sobriety is the key to success. By working on this aspect, it is the performance and the inclusion especially in constraint of resources, power on the smartphone or network which will benefit from it.

Ranking

1. **Medical**
2. **Finance**
3. **Auto & Vehicles**
4. Events
5. Food & Drinks
6. Books & Reference
7. City App
8. News & Magazine
9. Health & Fitness
10. Travel & Local

Overall average:: 64.8

APKs size



Graph reading: 43% of applications have an APK size of less than 20 MB.

The difference between the best category (Medicine) and the worst (Simulation) is 45%. The gap between the Medicine and Finance categories is 3%.

On average, an application weighs 36 MB. 43% of applications are still less than 20 MB. The size of games APK is often more important, 9% of applications have a size of over 80 MB.

These categories are distinguished by the small size of APK, their low power consumption and their consumption in the background (standby). The battery of the user will be less impacted, the risk of slow and unnecessary congestion servers will be reduced.

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Performance

The 10 Best Categories

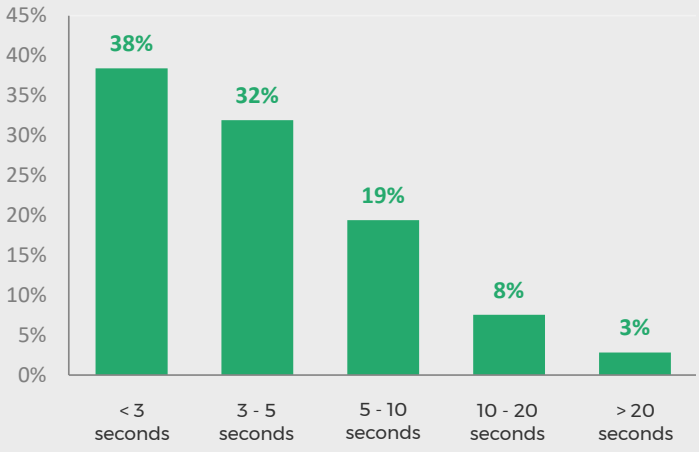
You already know, it's about applications like the web, speed is paramount. A few seconds too much, and the user gives up. Needless to blame the poor quality of its network connection or a well-cluttered device, low-tech or old-tech ... He sees only the result. This is all the more true as mobility is often synonymous with discomfort of use with nevertheless a demand for instantaneous content and services on the part of the user. Conversely, if your application is fast in 2G, then you are sure to do better than your competitors in all situations. However, beware of the solutions envisaged: the performance «at any price» is likely to degrade sobriety.

Ranking

1. **Books & Reference**
2. **Productivity**
3. **Food & Drinks**
4. Personalization
5. Beauty
6. Tools
7. Strategy
8. Medical
9. Finance
10. Communication

Overall average: 54.1

Performance Wi-Fi



Graph reading: 38% of applications launch in less than 3 seconds

The difference between the best category (Books & Reference) and the worst (Paris Sports) is 43%. More than half of the categories (20) are above the ecocore average of 54.1.

These categories are distinguished by their quick launch in first installation and Wi-Fi. If the first launch is slow, it is possible that users do not go further. The inclusion criterion will therefore not be Discretioned either.

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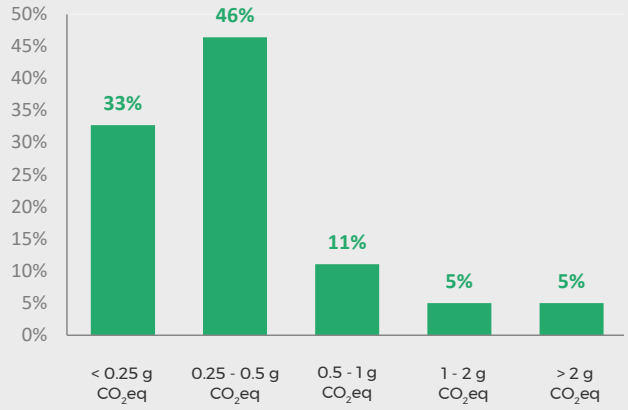
Ecology

The 10 Best Categories

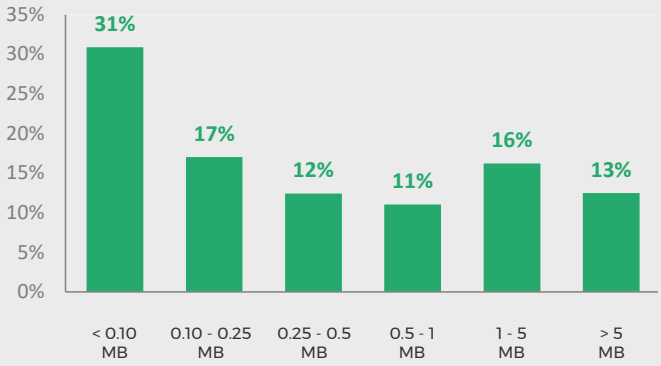
The public has become aware that digital has real environmental impacts on the whole chain (Datacenter, network and device).
A more ecological application, it is an application that will consume less electricity, will not cause an anticipated battery change and will not push the premature renewal of smartphones, in short an application that will emit less gas effect of greenhouse, to extract less natural resources and to poison less soils ... Optimizing data and energy consumption will therefore have a reduced environmental impact and this is all the more interesting in overall projection when the usage time and the number of users are important.

CO_2eq Impact



Graph reading: 33% of applications have a CO2 impact of less than 0.25 g CO2eq

Exchanged Data



Graph reading: 31% of applications have a volume of data exchanged less than 0.10 MB.Mo.

The gap between the best category (Productivity) and the worst category (Sports Betting) is 86%.

90% of mobile applications have a small impact (less than 1 g CO_2eq per measurement unit), but the panel average of 0.75 g CO_2eq is pulled up by 1% of applications that have a greater impact of at least 10 g CO2eq per unit of measurement.

Admittedly, the applications are not comparable in their use but there is a considerable difference between the least impacting and the most impacting, with a ratio of 295!

Ranking

1. **Productivity**
2. **Finance**
3. **Business**
4. Personalization
5. Bank
6. House & Home
7. Communication
8. Social
9. Tools
10. Simulation

Overall average:: 66.5

Discretion

The 10 Best Categories

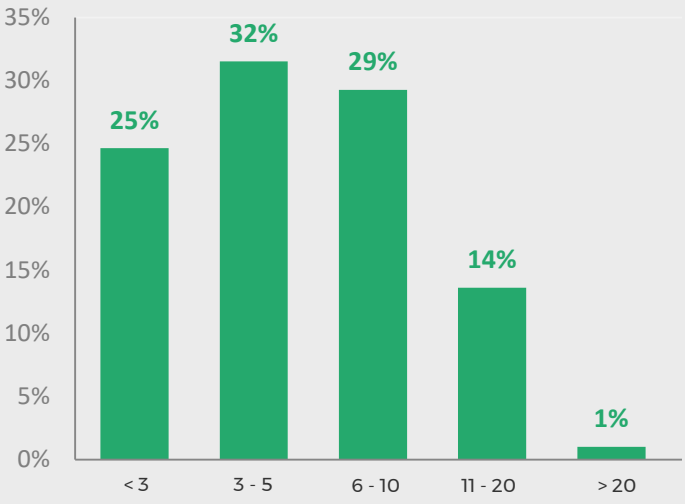
The Discretion of the privacy of the user is a factor of adhesion to the application. The user needs to be confident about this data. He does not want to feel «spied on». Do you really need to ask for all these permissions? Are these analytics, tracking, RUM, and notification SDKs all essential? If you're not sure, say that every SDK removed is a step towards a lighter, more reliable and faster application. The misuse of trackers and permissions also seriously affects the consumption of resources and battery. On some application paths, it costs more than 50% of performance and resource consumption. In addition, these external services must be maintained and are often a source of unpleasant surprises when changing the version.

Ranking

1. **Education**
2. **Arcade**
3. **Book & reference**
4. Action
5. Medical
6. Simulation
7. Casual
8. Beauty
9. Sport bets
10. Entertainment

Overall average: 61.7

Trackers & Analytics



Reading the graph: 25% of applications have a number of trackers and analytics less than 3.

The difference between the best category (Education) and the worst category (Personalization) is 82%. Only 16 applications are above the 61.7 average.

About 43% of applications have more than 6 trackers and analytics.

These top 10 categories are distinguished by their low requests for permissions and trackers, thus reducing resource consumption and reducing bugs.

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Inclusion

The 10 Best Categories

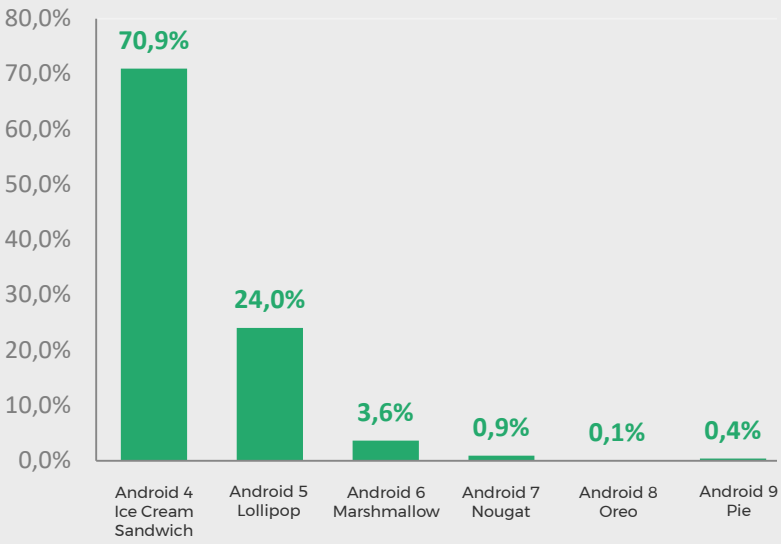
You make marketing, communication, SEO efforts to attract new users. But are you sure not to exclude part of your target? An application that is too demanding - in terms of the Android or iOS version, disk space, network bandwidth, memory (etc.) - is an application that will struggle to find its place on users' devices and in their contexts often constrained by 'use. In non-competitive sectors, excluding a population from its content and services will fuel the feeling of digital divide, in competitive sectors it can represent a business loss.

Ranking

1. **Arcade**
2. **Simulation**
3. **Casual**
4. Strategy
5. Action
6. Education
7. Book & reference
8. Personalization
9. Parenting
10. Medical

Overall average: 55.9

MinSDK



Graphical reading: 70.9% of applications are compatible with Android version 4 Ice Cream Sandwich or higher while 0.4% recquire Android 9 Pie.

The gap between the best category (Arcade) and the worst (Paris Sports) is 52%. Only 13 applications are above the average of 55.9.

70% of Google Play Store apps are compatible with 100% of Android versions. Nevertheless, 24% of applications currently exclude more than 10% of the market. The inclusion rate of the average market for applications, ie the percentage of applications compatible with the hardware pool or OS on Android, without taking into account the rate of installation and use of applications is 95.8 %.

These first categories are distinguished by their 3G performance and their use in degraded network conditions. They are more likely to run on old generation OSs and smartphones. This makes them more accessible to a larger number, thus Discretioning user inclusiveness.

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Most consuming apps...

Discretion: Top 10 with the most trackers & analytics

Application	Category	Trackers Quantity
TextMe: Text Free, Call Free, Second Phone Number	Social	28
hi5 - meet, chat and flirt	Dating	26
LCI Actualités - Info live & Replay	Videos Players & Editors	26
Juice Jam - Puzzle Game and Free Match 3 Games	Casual	25
Sugar Smash: Book of Life - Free Match 3 Games	Casual	24
ASKfm - Ask Me Anonymous Questions	Social	23
Closer - Actu People & News TV	News & Magazine	22
GEEV: The Zero Waste Solution	Lifestyle	22
AlloCine	Entertainment	21
Eurosport	Videos Players & Editors	21

Sobriety: Top 10 Biggest APKs (Off-Games)

Application	Category	APK Size
Home Design 3D	House & Home	133,0
TomTom GPS Navigation	Maps & navigation	118,0
WeChat	Communication	102,0
YouNow: Live Stream Video Chat - Go Live!	Social	98,4
NAVER	Book & reference	96,9
Oney France	Bank	96,5
Coyote: Alerts, GPS & traffic	Maps & navigation	96,4
tripwolf - Travel Guide & Map	Travel & Local	95,0
GoPro	Videos Players & Editors	93,1
Amazon Alexa	Productivity	92,1

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GREENSPECTOR App Mark Catgories details

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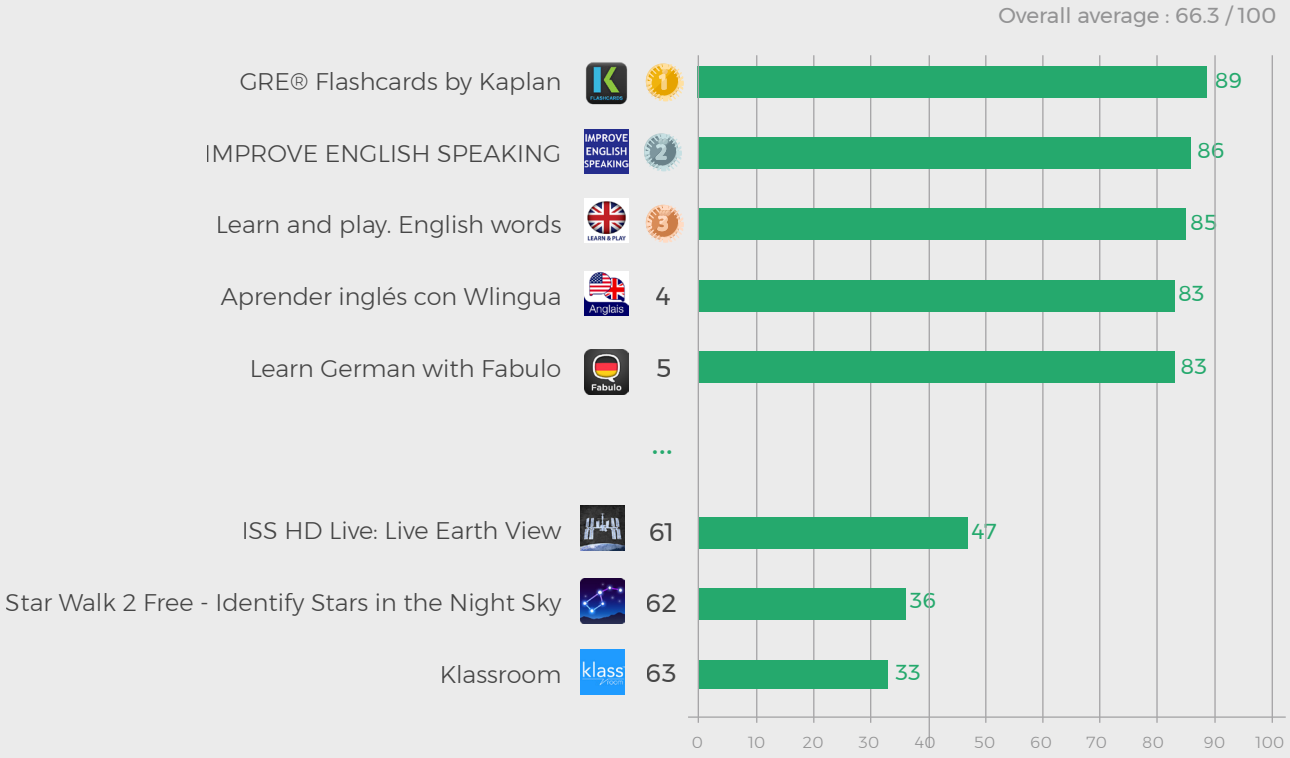
Education

PLAYSTORE CATEGORY

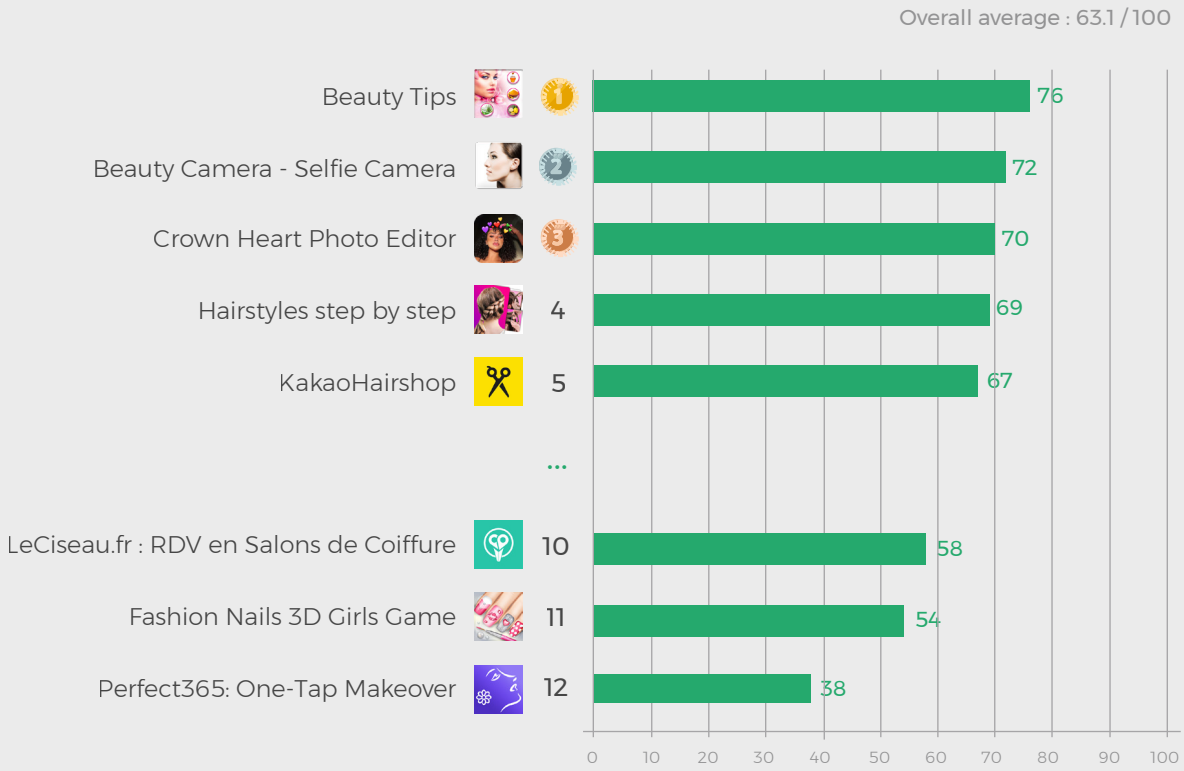


The category Education is the most provided of our sample, it is also the best classified. It is overall above average in all categories. Up to 13.8 more points for the Discretion axis, thus having fewer trackers and permissions.

The first of this category GRE® Flashcards by Kaplan is particularly distinguished on the axes Discretion and Ecology where it obtains a maximum score (1 single tracker and a low impact of 0.2 gCO_2eq). In contrast, the Klassroom application ranks last in the Education category, with notably poor results on my Inclusion and Performance axes (more than 20 seconds when opening the application on all Performance tests).

GREENSPECTOR App Mark
Beauty

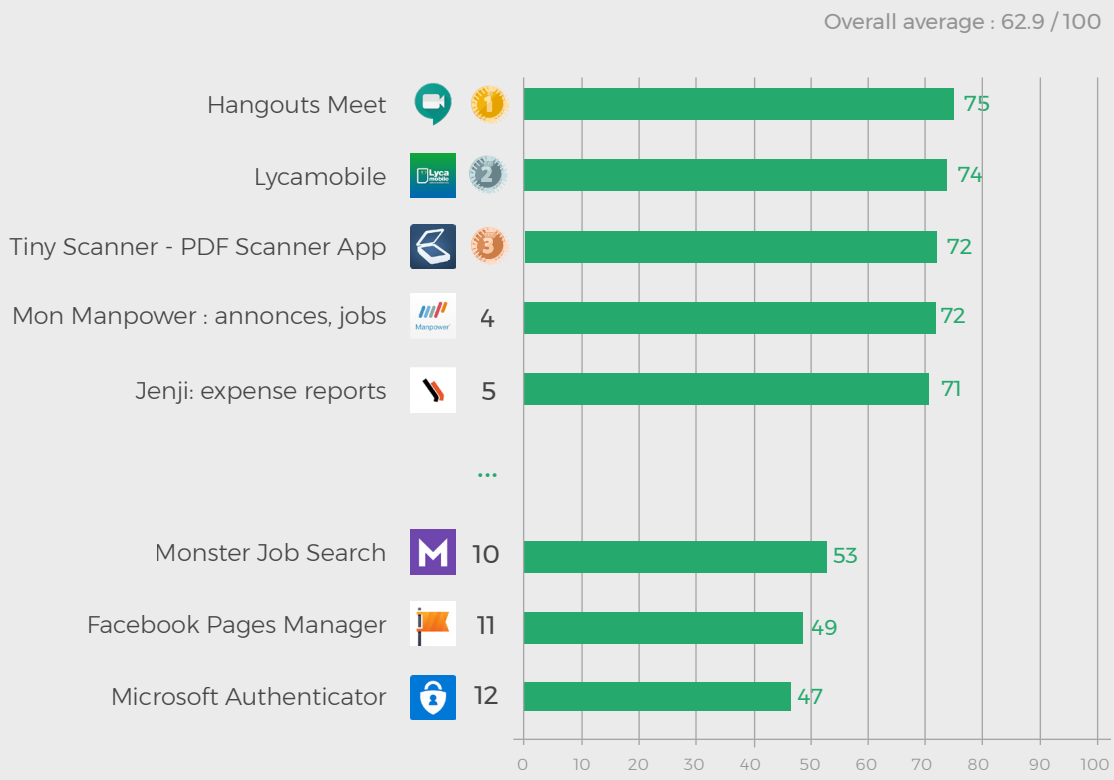
PLAYSTORE CATEGORY



The Beauty category is above the average in terms of Performance (+ 5.1 points) nevertheless on the Ecology part, its environmental impact is greater than 3.1 points.

The first of this category BeautyTips stands out especially on the axes Discretion and Sobriety. In contrast, the Perfect365 application ranks last in the Beauty category with notably poor results on Discretion (with a draw) and Sobriety.

GREENSPECTOR App Mark
Business
PLAYSTORE CATEGORY



The Business category is very well placed Ecology with a score above the average of 13.1 points. Side of the coin, Inclusion side, there is progress to be made with an average score of 7.6 points lower than the rest of the panel.

The first of this Hangouts category stands out especially on the Ecology axis where it gets a maximum score (0 tracker and a low impact of 0.2 gCO_2eq). Conversely, the Microsoft Authenticator application ranks last in the Business category, with poor results on the Ecology axis (0/100).

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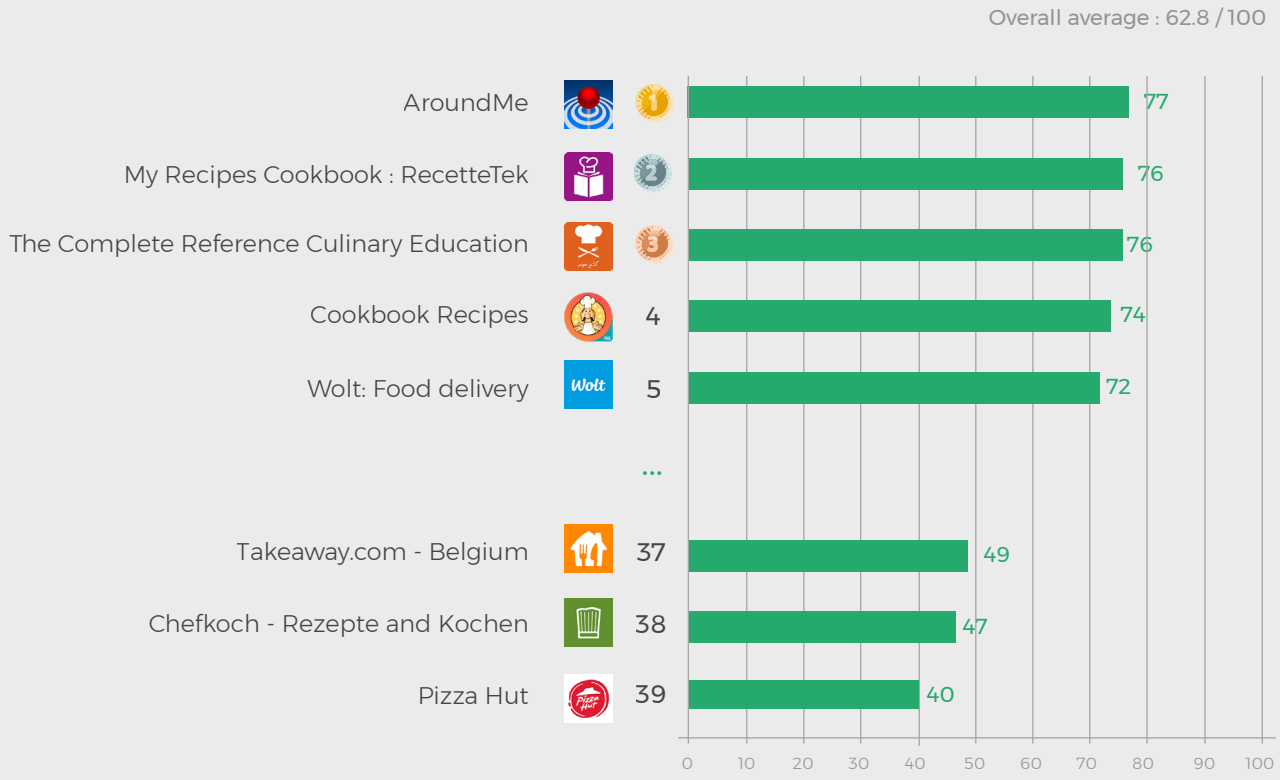
Food & Drinks

PLAYSTORE CATEGORY



The Food & Beverage category has a very good average score. It stands out above all on the Performance aspect with a higher average of 7.6 points. She loses points because of the latest application: Pizza Hut. Indeed, this application is bad in Inclusion and Performance (25/100). It also has a large number of trackers and permissions that impact the user's privacy. The category is also one with the lowest sizes APKs (-15 points compared to the average).

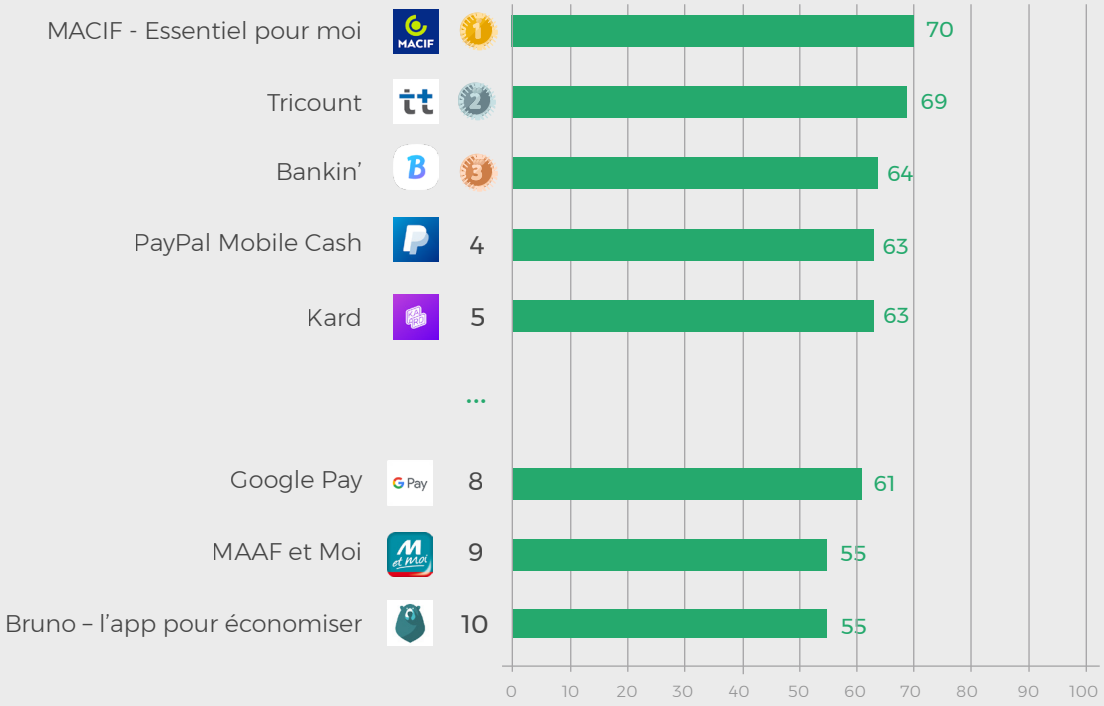
The first, AroundMe stands out especially on the axis Ecology and good grades on the other axes (75/100).

GREENSPECTOR App Mark

Finance

PLAYSTORE CATEGORY

Overall average : 62.5 / 100



The Finance category is generally good at the level of the Ecology aspect (+14.5 points compared to the average) nevertheless loses points on the Inclusion side. It is also one of the categories with the lowest APKs sizes, 17.3 points below average.

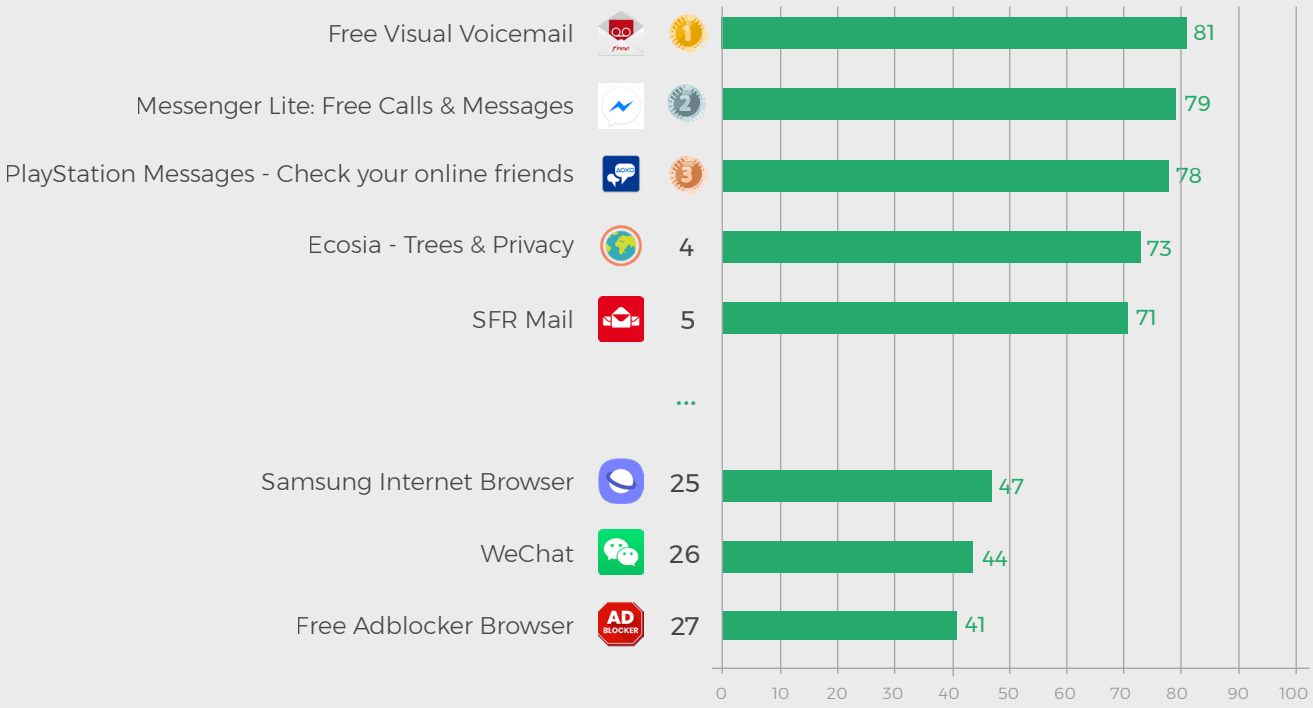
The first of this category MACIF stands out especially on the Ecology axis. Conversely, the MAAF application ranks last in the Finance category with notably very low results on the Discretion axis (37/100).

GREENSPECTOR App Mark

Communication

PLAYSTORE CATEGORY

Overall average : 60.8 / 100



If the Communication category is distinguished by its good scores on the axis Ecology, it loses, it is nevertheless ranked lower on the part Discretion (-8.9 points compared to the average).

The first of this category Free Visual Voicemail stands out especially on the Ecology axis where it obtains a maximum score (0 tracker and a low impact of 0.2 gCO_2eq). Conversely, the Free Adblock Browser application ranks last in the Communication category with a weak ecoscore on the Discretion section (25/100) with a score of 36 trackers and permissions ...

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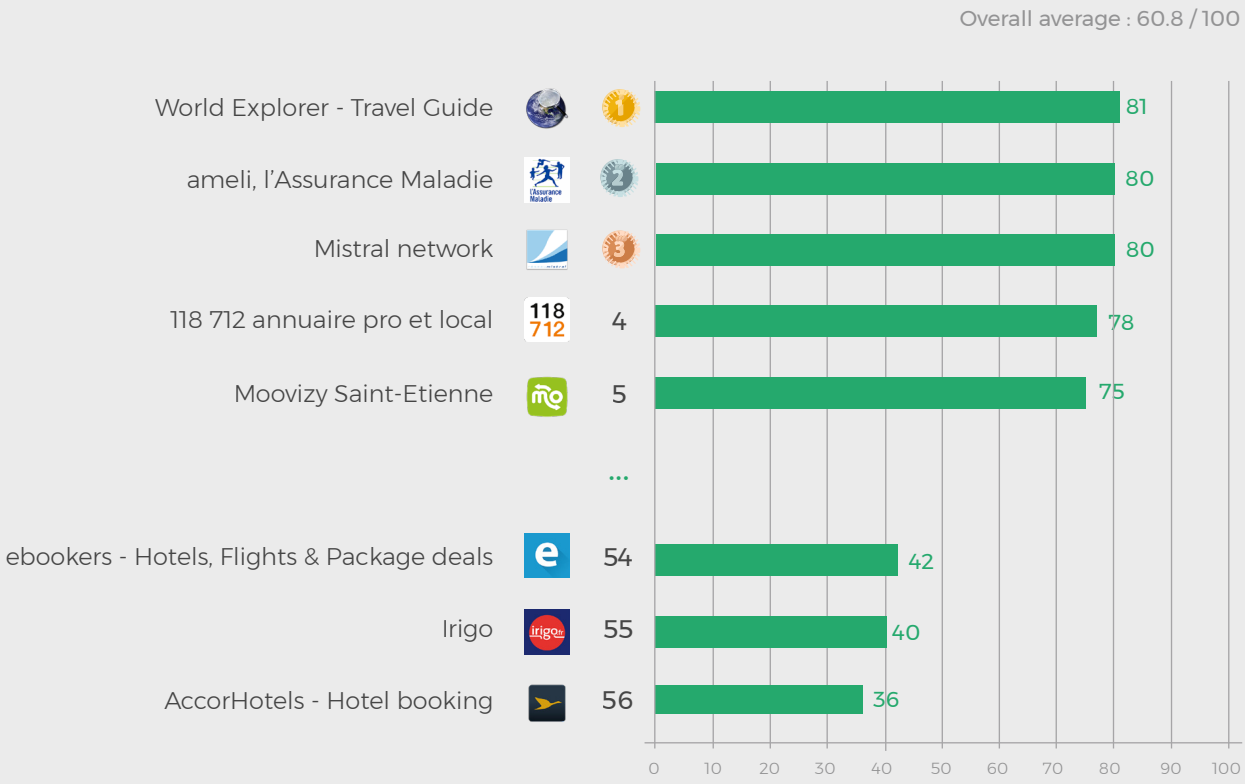
GREENSPECTOR App Mark

Travel & Local

PLAYSTORE CATEGORY



The Travel and Local News category is the third richest in our sample (with 56 apps). The category stands out on the size of the APK with 11 points less than the average.

The first of this category World Explorer stands out especially on the axes Discretion and Ecology where it gets a maximum score. On the other hand, the AccorHotels application ranks last in the category with notably poor results on the Discrétion (12/100) and Performance (12/100) axes..

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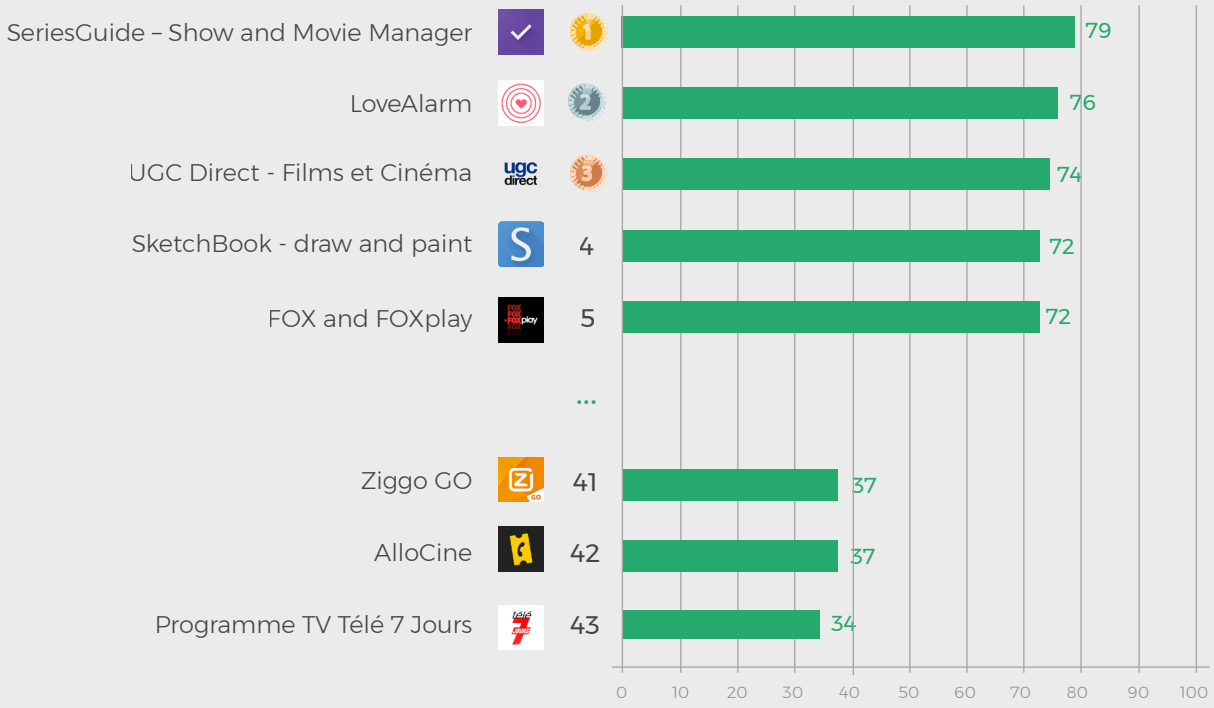
GREENSPECTOR App Mark

Entertainment

PLAYSTORE CATEGORY

Overall average : 60.1 / 100



The first of this SeriesGuide category stands out especially on the Ecology axis (low impact CO_2eq). Conversely, the TV 7 Days TV application ranks last with notably poor Ecology results with a very strong impact in Greenhouse Gases of 5.53 g CO_2eq ...

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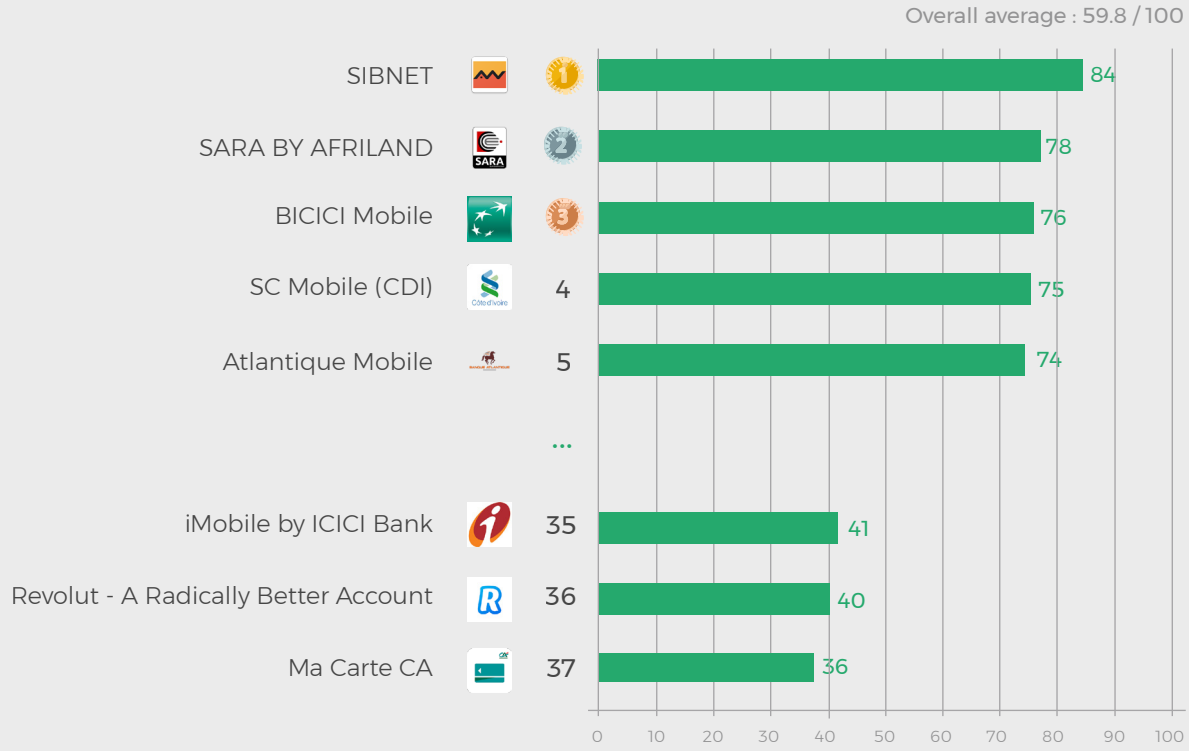
Bank PLAYSTORE CATEGORY



The Bank category is well placed on the Ecology side but very average on the other axes. The My CA Card application drops the level because of its scores in Inclusion and Performance (score at 0). SIBNET distinguishes itself with the first place of the banks with perfect Ecoscores on Discretion and Ecology.

Amazing in this ranking, the top 5 are also African banks. Probably the consideration of resource criteria that come to cover less efficient network or hardware constraints while keeping a good user experience. From constraint, born frugality. Well done !

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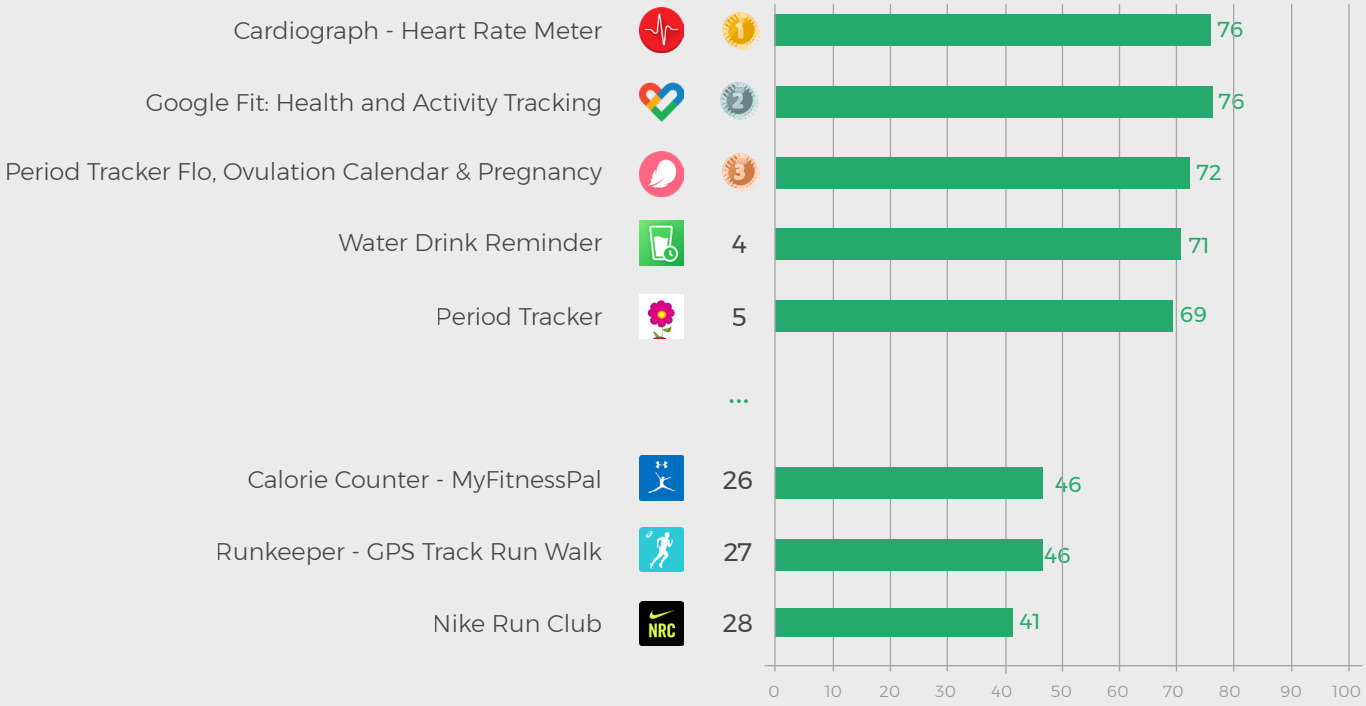
GREENSPECTOR App Mark

Health & Fitness

PLAYSTORE CATEGORY

Overall average : 59.6 / 100



The Health & Fitness category stands out on Sobriety with a score above the average of the other categories of +5.4 points. Nevertheless, on the Discretion side, it loses 5.4 points compared to other measured applications.

The first application, Cardiograph, is good in Inclusion (87/100) but loses Ecology points.

The latest app in this category: Nike Run Club gets a low score low side Discretion (12/100)

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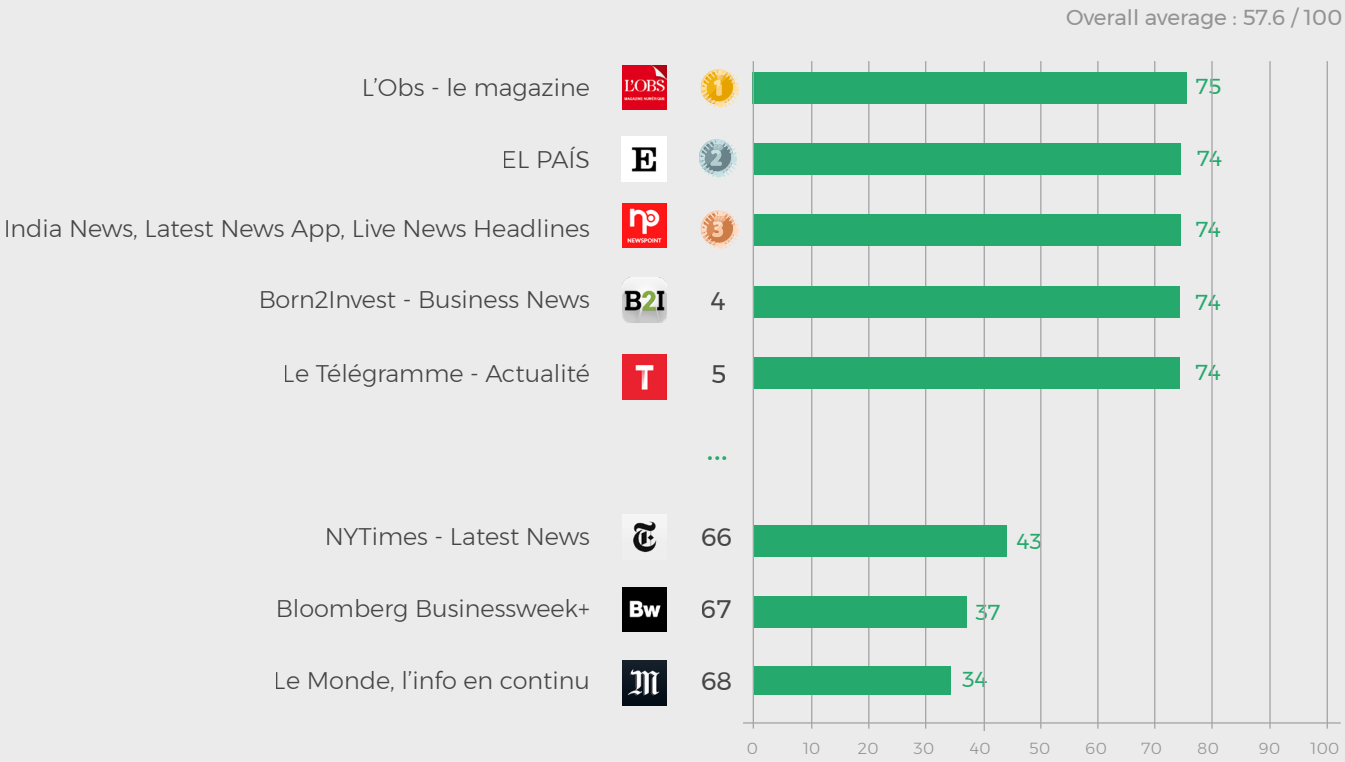
News & Magazine

PLAYSTORE CATEGORY



The News & Magazine category is the second richest in our sample. It is particularly weak in Ecology with a difference of 10.9 points compared to the average. In positive, the category is distinguished by the small size of its APK.

The first in this category The Obs, French newspaper, is characterized by low CO_2eq consumption, which gives it a good score on the axis Ecology. Conversely, the application Le Monde, ranks last in the category with notably poor results in Discretion, Performance and Inclusion.

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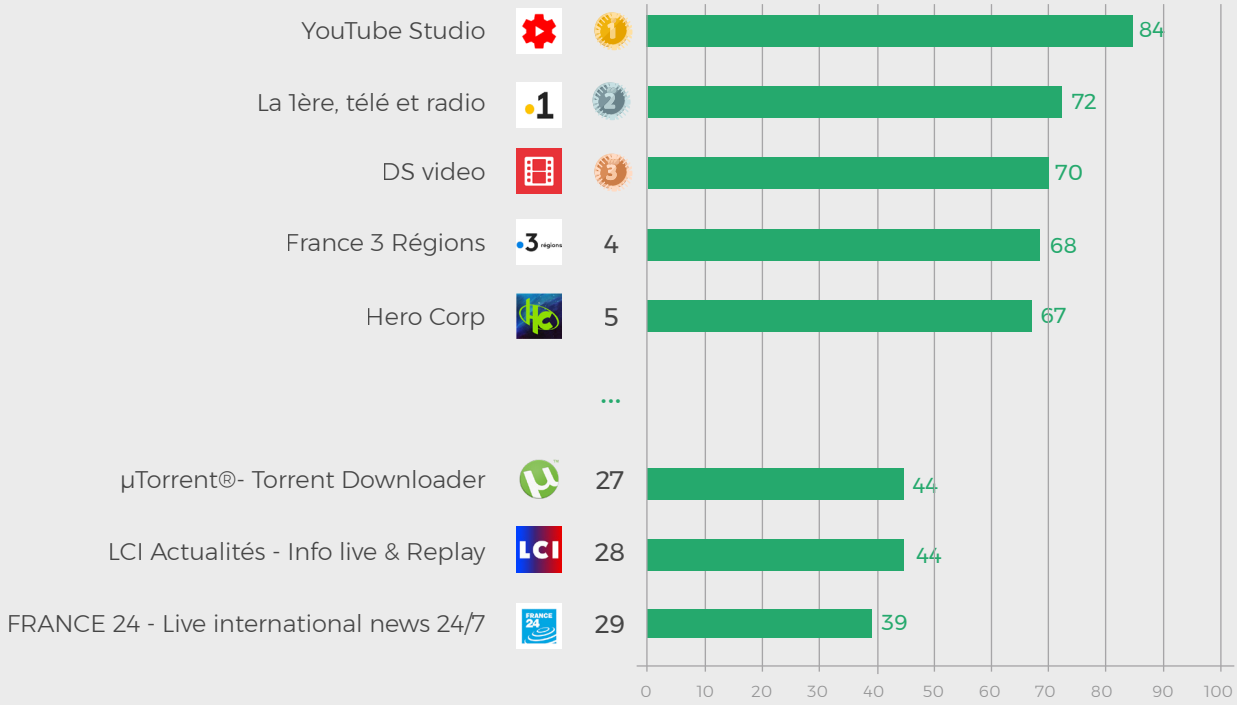
GREENSPECTOR App Mark PLAYSTORE CATEGORY

Video players & editors

Overall average : 57.5 / 100



The category Video Players & Publishers has weak points on Performance and Ecology, it makes up for the subsistence and size section of the APKs.

The first of this category Youtube Studio stands out especially on the axes Discretion and Ecology where it gets a maximum score (0 tracker and a low impact of 0.2 g CO_2eq). Conversely, the France 24 application ranks last with a zero result in Ecology and low in Performance (25/100).

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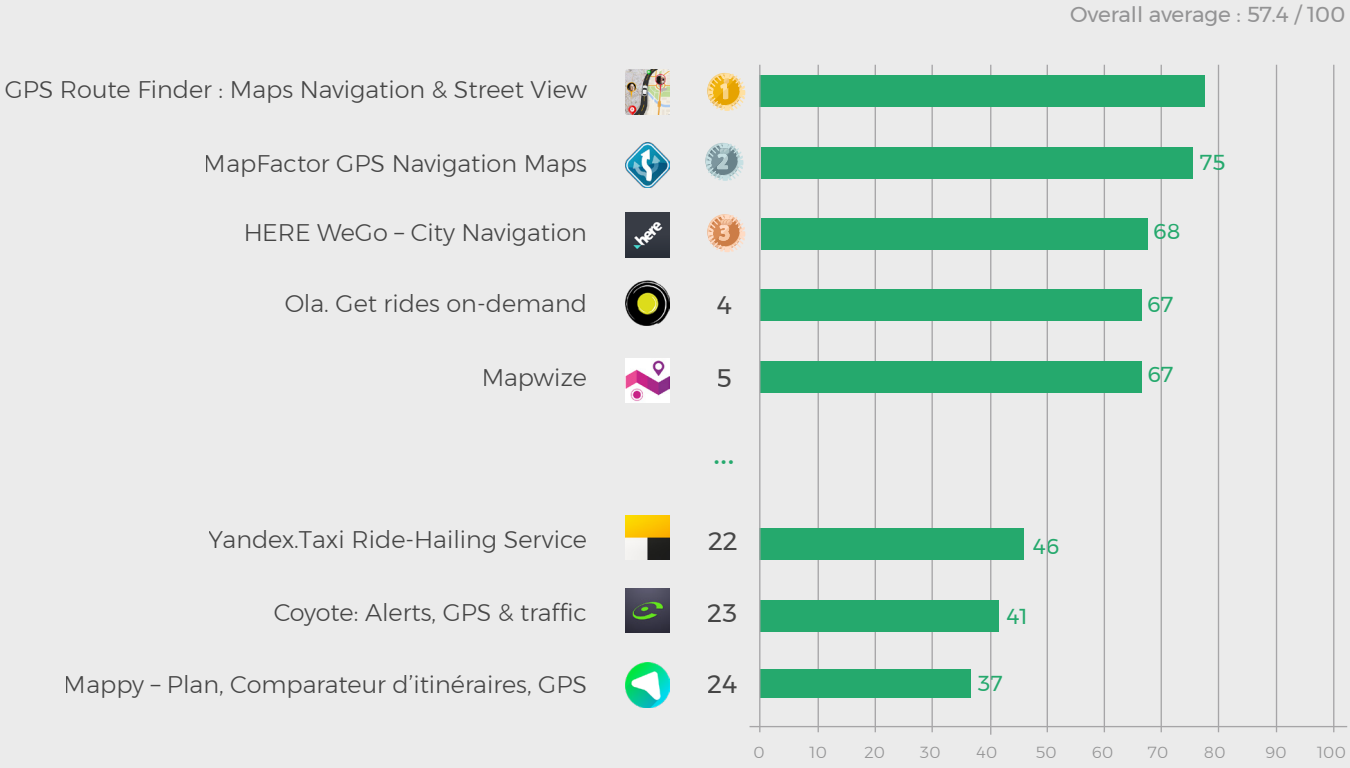
Maps & navigation

PLAYSTORE CATEGORY



The Plans & Navigation category is one of the largest APKs categories (+9.1 points compared to the average, with an average APK of 45.5. It is also 10 points below average for Discretion.

The first application of this category is GPS Route Finder, with a maximum score in Ecology. Conversely, the Mappy application has a zero score in Performance (load times greater than 20 seconds, whatever the quality of the network).

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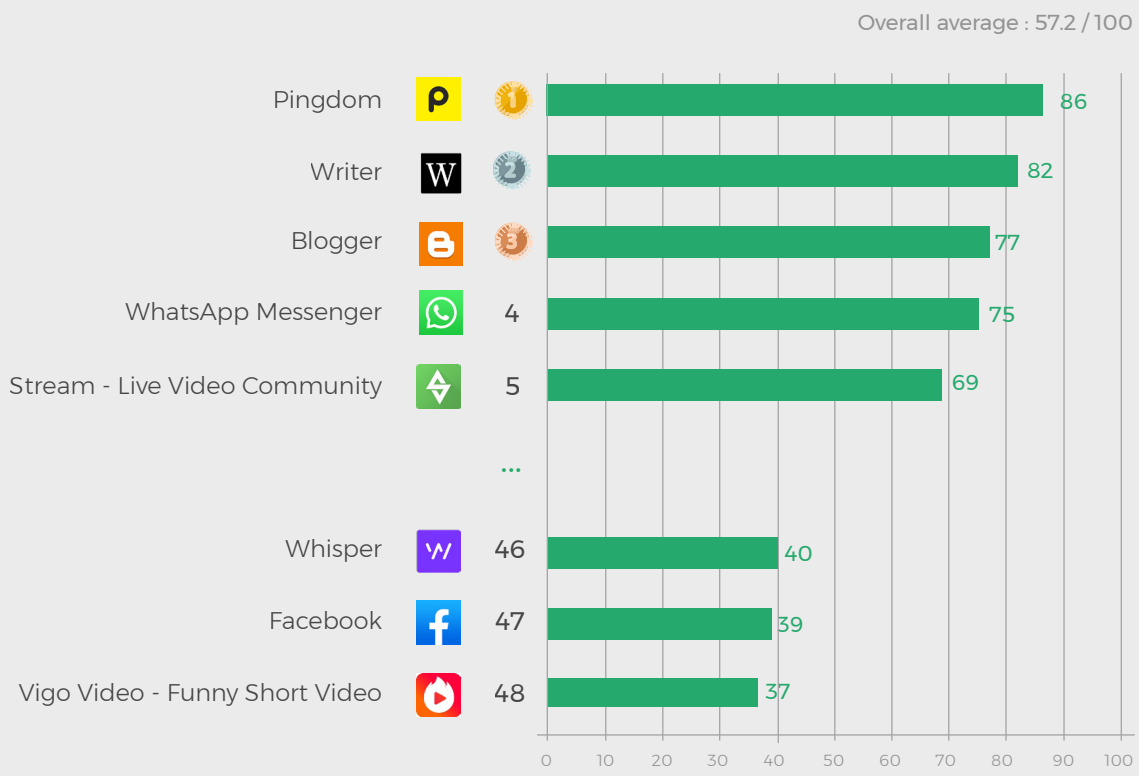
Social

PLAYSTORE CATEGORY



The Social Networks category is penultimate in term of Discretion, with a large number of trackers and permissions for its applications. It is also lower in terms of CO_2eq impact.

The Pingdom app is the best in this category with a maximum score on Ecology and well positioned in Discretion and Performance. The worst, Vigo Video is placed with a score of 25/100 on 3 of the 5 axes and an environmental impact too high: 2.18 g CO_2eq.

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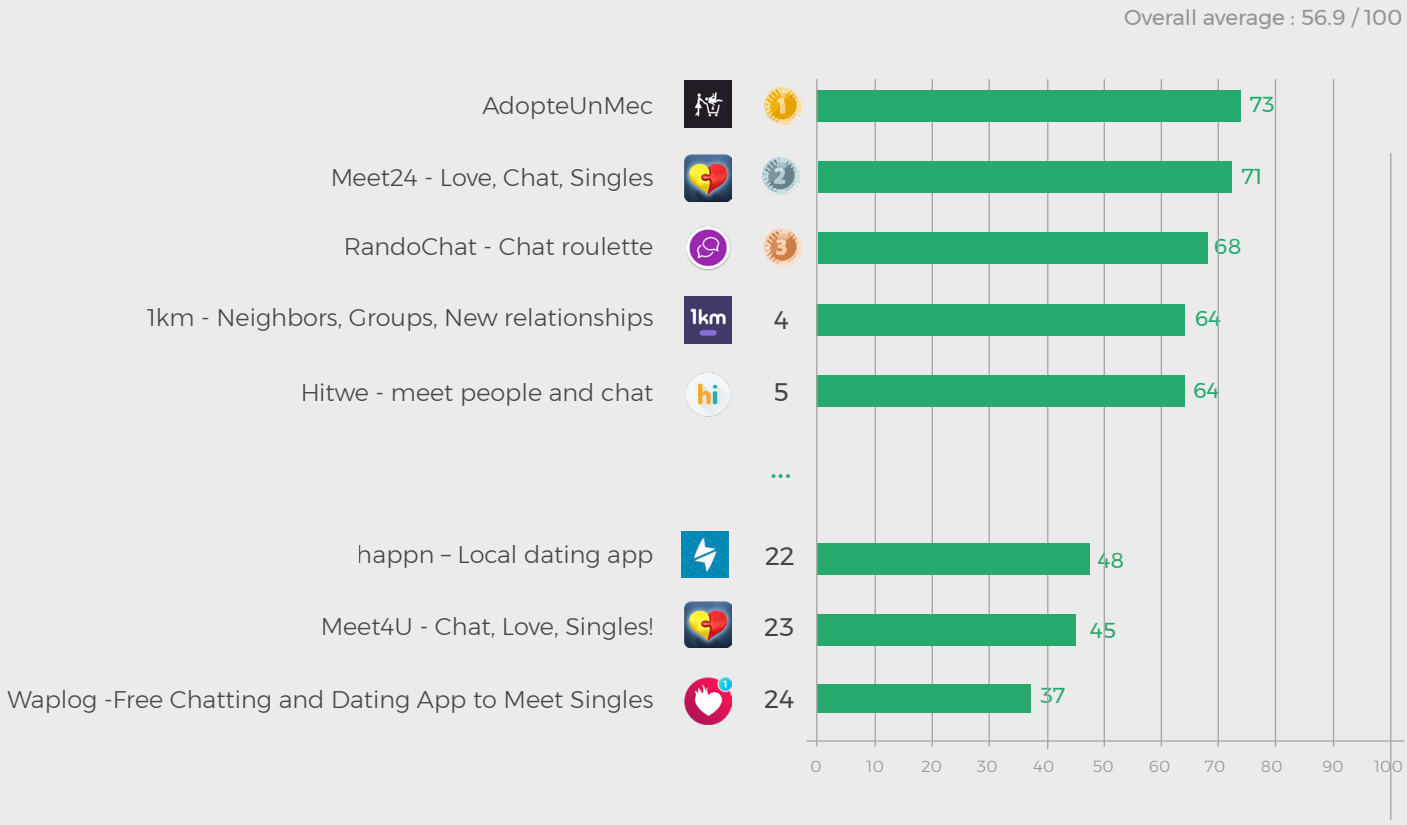
Dating PLAYSTORE CATEGORY



The Dating category is also one of the smallest sizes of APKs, however, Discretion side, it is the worst of our ranking with 12 trackers, 6 more than the average.

The best app is AdopteUnMec with maximum score in Ecology and good scores for other indicators. The latest Waplog app closes the march with low scores in Ecology (12/100) and Discretion (25/100)

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Shopping

PLAYSTORE CATEGORY

The Shopping category also has a good number of apps, and an average APK size of 17.7 MB. It stands out on the environmental impact side by being below average (6.2 points).

The Lazada applicaton, the last of this category is the most impacting with 377 CO_2eq. She thus obtains a null score in Ecology. As for the first of this category, Cora, she gets the highest score on the Discretion axis.

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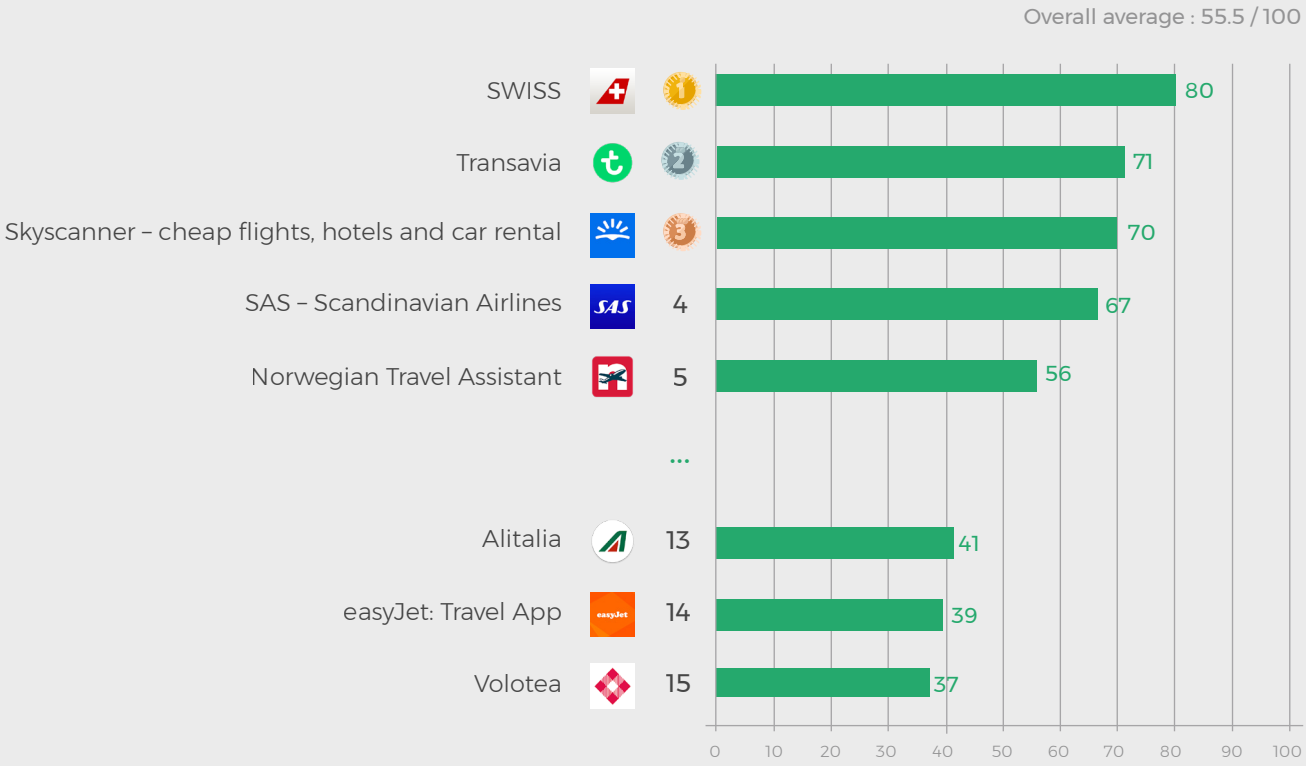
Airlines

PLAYSTORE CATEGORY



The Airlines category has a higher average APK size (38 MB). It is globally bad on all indicators and loses points including Inclusion (9 points below average).

The SWISS app, first, is distinguished by its maximum score in Discretion. The Volotea application, last of this ranking is weak side Inclusion and Performance (more than 14 seconds loading).

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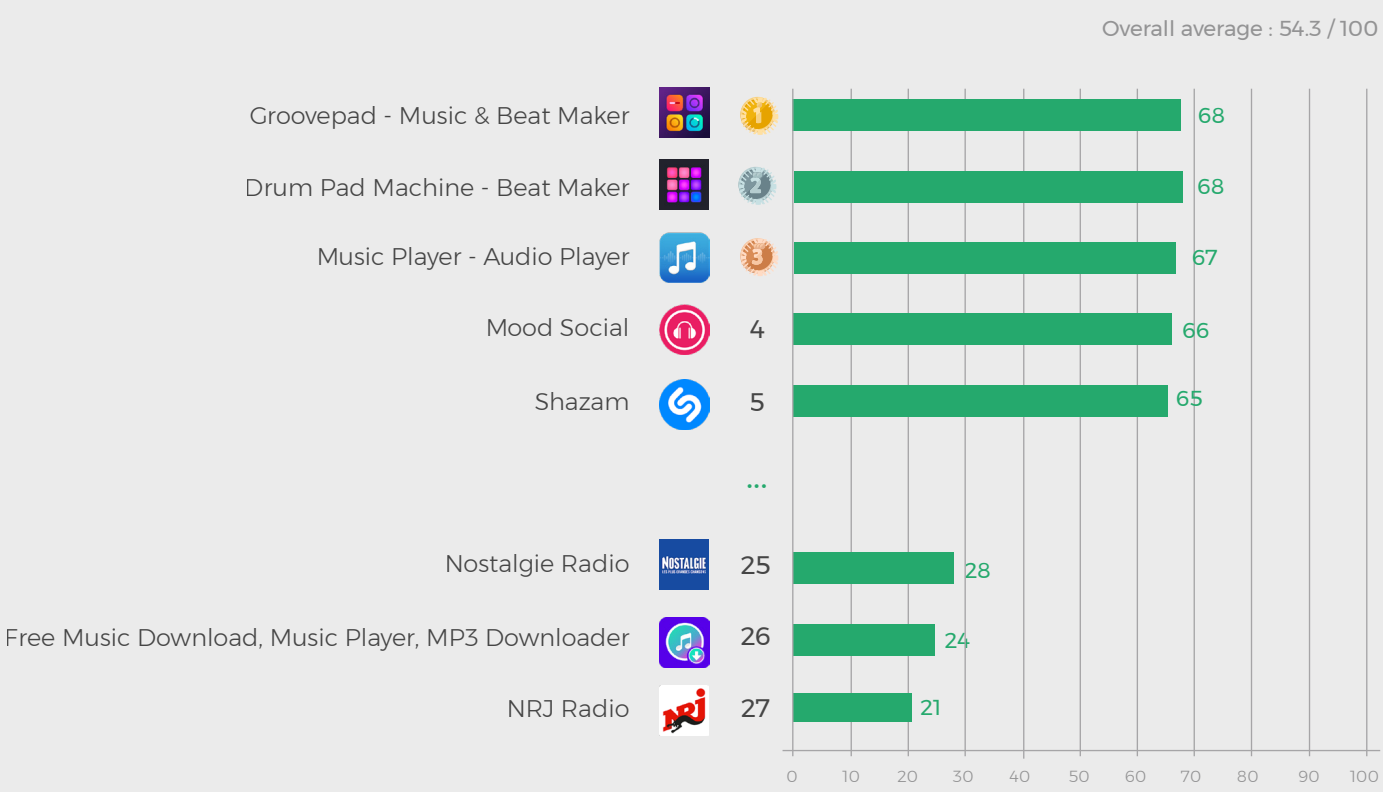
Music & Audio

PLAYSTORE CATEGORY



The Music & Audio category is the worst of the selection. Overall, it is below average on all indicators, particularly Discretion (9.9 points) and Performance (8.2 points).

The first in this category GrovePad has a low environmental impact which earned him the highest score in Ecology. Several applications drop the level of the category, marked by a bad Performance and a long load (up to 23 seconds for some). The last, NRJ Radio is lagging side Discretion and Performance (12/100).

Annexes

Methodology

For this new study, the GREENSPECTOR laboratory has tested more than 1000 applications in Android thanks to its different measurement tools. Each application has undergone 100 control points to determine a global Ecoscore out of 100, the GREENSPECTOR App Mark which is the result of 5 measured criteria: sobriety, performance, discretion, ecology and inclusion.

The Playstore Observatory regularly measures and automatically checks the following points:

- The information indicated on the Playstore (version, size of the application ...)

- The structure of the application (permissions, tracer integration ...)

- The resource behavior of the application (energy consumption, data exchanged, memory occupied ...)

Each metric is rated and allows you to get a grade.

In all, 100 checkpoints are made. 2 scores out of 100 are thus obtained:

- Ecoscore business: a rating that takes into account 5 criteria (sobriety, inclusivity, performance, discretion, impact on the environment)

- The technical ecoscore: a notation that takes into account the behavior of the application during technical tests (8 steps)

These two ecoscores are complementary and allow to have a double reading of the efficiency of the application.

In order to note the applications, we have automated many actions that allow us to measure several metrics:

- Retrieving information displayed by the playstore
- Download the application
- Static analysis of the application binary
- Installing the application on a Huawei P Smart phone
- Launch of a benchmark test suite on the phone

About the technical ecoscore:

8 actions and technical steps, but representative of the user's use, are carried out on the phone:

- Launch the application after the first installation. This step is important because it is the first experience of the user. Even if it is done only once, it can be blocked for the user and the continuation of the experiment.

- Second launch which will be representative of the classic launches of the application.

- Inactivity of the application, application in foreground (idle foreground). The user is indeed often in this situation: visualization of the application, waiting time ...

- Background application (idle background): the user does not need the application immediately, but the application may continue to perform processing.

- Pivoting the screen: is the application well designed and does not reload all the elements or does not create memory leak when tilting the screen?

- State after closing the application: is the application closed and does not stay in memory?

- Application loading in 3G: can the application be used in degraded network conditions?

- Inactivity of the application in 3G: does the application have the same behavior in inactivity in 3G or 2G?

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Methodology

About the ecoscore profession:

The ecoscore profession takes into account 5 criteria of notation, presented in this study. We therefore present below, the points to Discretion, covering the needs of users in terms of experience of use.

Inclusion

- The application must be usable in [degraded network conditions

- The application should not require a recent OS version like Android to be used. Some users do not follow updates, either voluntarily or because of their platform that does not allow them.

- The application must comply with the accessibility rules and must not exclude users with disabilities.

- The app must work well on old generation phones as well as on newer and latest models. This criterion will be degraded if you do not Discretion that of sobriety.

Sobriety

- The application must limit its energy consumption so as not to empty the battery of the user. Moreover in case of excessive consumption, the system will notify the application as consumer to the user.

- The application must limit its resource consumption (number of CPUs, memory occupied, data exchanged) to avoid slowness or pollution of other applicatios (for example because of the memory leak).

- The application must limit its network consumption in order not to involve any load on the data centers and thus avoid the additional costs related to the unnecessary congestion of the servers.

Performance

- The first launch of the application must be fast: without this, it is possible that your users do not go further, the inclusion criterion will not be Discretioned either.

- The loading times of the application must be acceptable in all network situations.

Discretion

- The application requires little or no permission. Do you really need to consult the list of contacts of your user? It's all the more important to optimize this since the more permissions there are, the more the application will consume resources. This will therefore negatively influence the performance criterion.

- The application integrates little or no tracer. The integration of a large amount of tracker will imply a higher resource consumption but can also cause bugs. This observation is even more true that the connection will be degraded.

Ecology

- The application must Discretion the criterion of sobriety, the CO2 impact linked to the use will be lower as well as the pressure of the resources on the components of the equipment of the user (battery wear, loss of performance). As a result, the user will be less likely to renew his equipment, which reduces the risk of obsolescence.

Number of applications measured, by category, from the Google Play Store

Category name	Quantity
Action	46
Arcade	41
Auto & Vehicles	9
Bank	37
Beauty	12
Books & Reference	18
Business	31
Casual	67
City Apps	12
Communication	27
Dating	23
Education	66
Entertainment	43
Events	9
Finance	10
Flashlight	8
Flights	15
Food & Drink	39
Health & Fitness	28
House & Home	17
Lifestyle	28
Maps & Navigation	23
Medical	17
Music & Audio	27
News & Magazine	69
Parenting	10
Personalization	9
Photography	19
Productivity	27
Shopping	40
Simulation	48
Social	46
Sport Bets	6
Sports	14
Strategy	30
Tools	16
Travel & Local Apps	56
Video Players & Editors	29
Weather	25

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You want to know the ranking of your application? Learn more about the GREENSPECTOR App Mark offer? Contact us!

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