

Top Songs — Public Scoring Methodology (v1.0)

People's Top Songs is a transparent, fan-powered ranking system for music: how ranked Top 10 lists, verified activity, playlist support, and revocable fan connections become a public chart.

Version 1.0 — July 2026

"Every fan has a voice. Verified effort and community trust make some voices travel farther."

See the live chart at bandruption.fun/en/top-songs.

Quick Reference

The core rule

`Song vote = Rank points × Vote multiplier`

`Free fan multiplier: 1`

`Superfan multiplier: 1 + √Fan Score + Verified Follows + Playlist Proof`

How your Top 10 changes the chart

Every eligible fan keeps one ranked Top 10. The song in first place begins with 10 rank points; the song in tenth begins with 1. A free fan uses a multiplier of 1. An active Superfan or higher activates additional influence earned from verified activity, verified Bandruption followers, and song-specific playlist proof.

A subscription by itself does not add chart points. With no Fan Score, no verified followers, and no playlist proof, a new Superfan has the same multiplier as a free fan: 1.

All calculations use full precision. Public displays may round to two decimal places.

Rank points

Position	Points	Position	Points
1	10	6	5
2	9	7	4
3	8	8	3
4	7	9	2
5	6	10	1

The simplest way to matter. Make a Top 10. Every eligible fan contributes directly. Put a song higher and it receives more rank points from your list.

Worked scenarios

All follows and playlist placements below are fully verified and fully vested; integrity eligibility $E = 1$.

Scenario	Rank	FS $\rightarrow \sqrt{FS}$	Follows F	Playlist P	Multiplier	Song vote
Free fan	1	0	0	0	1	10
Free fan	5	0	0	0	1	6
New Superfan	1	0	0	0	1	10
Active Superfan	1	25 $\rightarrow$ 5	0	0	6	60
Community builder	1	25 $\rightarrow$ 5	20	0	26	260
Established Superfan	1	100 $\rightarrow$ 10	100	2	113	1,130
Same Superfan	5	100 $\rightarrow$ 10	100	2	113	678
Same Superfan	10	100 $\rightarrow$ 10	100	2	113	113

Large-community behavior

The formula remains linear in verified followers. The examples below hold rank at #1, Fan Score at 100 (10 activity units), and playlist proof at 2 services.

Full verified followers	Multiplier	Song vote at #1	Change from one more follower
1,000	1,013	10,130	+10 points
10,000	10,013	100,130	+10 points
100,000	100,013	1,000,130	+10 points
1,000,000	1,000,013	10,000,130	+10 points

What one additional verified follower does. For a Superfan, every fully vested verified follower adds exactly one unit to F. That raises each song on the Superfan's list by its rank points: +10 for the #1 song, +9 for #2, down to +1 for #10. The follower does not inherit or multiply the Superfan's Fan Score or playlist proof.

No fixed follower ceiling. F grows linearly and has no product-set cap or asymptote. Ten verified followers add ten units; 10,000 add 10,000. At any moment, the practical maximum is the number of other qualified Bandraption accounts, because each account can follow a given Superfan only once. That maximum grows with the community.

Half-vested examples

Evidence	Vesting rule	Current unit	Effect on a #1 song
New verified follow, 15 days old	$15 \div 30$	0.50	+5 points
Verified follow, 30+ days old	$30 \div 30$	1.00	+10 points
Song in owned playlist for 3.5 days	$3.5 \div 7$	0.50	+5 points
Song in owned playlist for 7+ days	$7 \div 7$	1.00	+10 points

Community amplification

Following is a revocable network endorsement, not a one-person delegation budget. A direct vote and a network follow are separate actions. The system intentionally lets one real fan strengthen multiple real fan communities.

A fan may follow any number of Superfans. The fan's support is not divided among them. If the fan follows ten Superfans, each of those ten Superfans can receive one verified follower unit after qualification and vesting.

A follow amplifies the Superfan's entire Top 10, not only the song the two fans have in common. This creates accountability: a fan can inspect the public list, keep following while it represents their taste, and unfollow when it no longer does. An unfollow removes its follower unit at the next score calculation. In the example

above, the fan's own #1 placement adds 10 points and ten fully vested follows add another 100 points across ten Superfan ballots. This is intentional: the chart measures organized, verified fandom as well as direct ranked preference.

How to increase your impact

Every path is visible, earned, revocable, or independently verifiable.

Action	What changes	Grounded chart effect
Rank a song higher	Rank points	Moving #5 to #1 changes the base from 6 to 10.
Activate Superfan or higher	S switches from 0 to 1	Activates earned and community inputs; subscription alone adds no points.
Raise Fan Score	$\sqrt{\text{FS}}$ activity units	Fan Score 25 gives 5 units; 100 gives 10; 400 gives 20.
Earn a verified follower	F starts increasing, reaching 1 after 30 days	Each full unit adds the song's rank points to every song on your list.
Follow a Superfan	Their F increases after you qualify and the follow vests	You can follow any number of Superfans; your support is not divided.
Keep the song in a supported, user-controlled playlist	P increases after 7-day vesting	One full service unit adds the song's rank points to that song.

What never buys chart power

- Buying, holding, or spending BANDS.
- Paying for a tier above Superfan; higher tiers do not receive an extra chart multiplier.
- Raw follower counts from X, Instagram, Facebook, TikTok, or another external platform.
- Adding the same song to several playlists on the same streaming service.
- Artist payments, bounties, or affiliate rewards that require a Top 10 placement, a rank, a vote, or following a named voter.
- Unverified accounts, automated follows, concealed multi-account control, or purchased followers.

The public promise

No product purchase can buy a guaranteed chart position. Money can support the platform or fund legitimate fan work, but chart influence must come from a ranked choice, verified activity, verified community support, or verified playlist evidence.

Abstract

People's Top Songs is a transparent music ranking generated from fans' ranked Top 10 songlists. Every eligible fan begins with the same direct ballot: first place contributes 10 points, second contributes 9, and tenth contributes 1. An active Superfan or higher can activate additional influence earned through a visible Fan Score, verified Bandruption followers, and song-specific playlist proof. Free fans remain full participants and can also strengthen Superfans by following any number of public Top 10 lists they support.

The model is neither a passive stream counter nor strict one-person-one-vote governance. It is a public measure of deliberate preference, verified music-support activity, and organized fan community. Its central social mechanism is revocable network endorsement: a qualifying follow adds one unit to the followed Superfan, vests over time, amplifies that Superfan's entire Top 10, and disappears when withdrawn. There is no hard follower ceiling.

The methodology separates platform payment from chart placement. Superfan status operates as an on/off switch for earned influence, not as a purchased block of votes. BANDS — Bandruption's closed-loop platform currency — never enters the score. Artist-funded bounties and affiliate rewards may recognize genuine promotional work, but they may not be conditioned on ranking a song, casting a vote, or following a named voter.

This paper specifies the calculation, Fan Score registry, follower and playlist vesting, chart windows, integrity controls, privacy approach, technical feasibility of connected-platform verification, and public change process for Version 1.0.

1. Purpose and Scope

1.1 What the chart is designed to measure

Most music metrics answer a useful but narrower question: how often was something played, viewed, purchased, or followed? People's Top Songs asks a different question: which songs are fans willing to place in a scarce Top 10, and how much verified community activity stands behind those choices?

The distinction matters because passive counters can be manipulated. In a 2024 criminal case, the U.S. Department of Justice alleged that automated accounts generated billions of streams across hundreds of thousands of AI-generated songs and more than \$10 million in royalties. The case is an extreme example, but it illustrates why a public fan-engagement chart should not rely on raw consumption alone. [\[2\]](#)

Bandruption therefore combines four observable signals: ranked choice, verified support activity, revocable in-platform following, and user-authorized playlist evidence. The live chart is published on Bandruption's People's Top Songs page. [\[1\]](#)

1.2 What the chart is not

- It is not a royalty statement, streaming chart, sales chart, or replacement for those measures.
- It is not a claim that all voters have equal influence. Every fan has an equal baseline ballot, while additional influence is openly earned or entrusted.
- It is not strict liquid democracy. Follows are not conserved delegations: one fan may follow and strengthen many Superfans.
- It is not a marketplace for chart positions. No purchase produces a guaranteed score or placement.
- It is not based on tokens or external ledger records. The system uses ordinary platform accounts, auditable databases, and BANDS as a closed-loop platform currency outside the chart formula.

1.3 Why a Top 10

A Top 10 makes attention scarce. A fan cannot include every song they mildly enjoy; they must choose ten and order them. The 10-to-1 rank schedule preserves a simple interpretation: a higher placement is a stronger expression of preference, but every listed song receives a positive contribution.

2. Design Principles

Universal baseline. Every eligible account can publish one Top 10. Free participation is not symbolic; it contributes the complete 10-to-1 ballot.

Transparent amplification. Every positive input appears in a public formula and in the voter's personal score breakdown.

Earned activity. Concert attendance, qualified referrals, sustained playlist curation, completed bounties, affiliate results, and connected accounts can build Fan Score.

Revocable community trust. Fans may follow any number of Superfans. Each qualified follow can strengthen the entire public Top 10 and can be withdrawn.

No hard follower ceiling. Legitimate communities always retain room to grow. Anti-abuse controls verify the units rather than declaring that genuine supporters stop counting.

Additive, legible signals. Fan activity, following, and playlist proof add separate units. They do not multiply one another into opaque cross-effects.

Payment separation. A subscription activates earned inputs; BANDS and other purchases do not enter the score.

Integrity without punishing ordinary newcomers. The direct ballot remains intact for eligible new fans. New high-impact signals vest over time, and suspicious activity is withheld for review rather than quietly half-weighted.

Privacy by design. Connected services are accessed only with user authorization and the minimum practical scopes. External social graphs are not treated as portable voting rolls.

2.1 Representative inspiration, without pretending to be an election

Liquid-democracy research studies systems in which voters may vote directly or delegate voting weight to others. That literature is useful because it highlights both the value of revocable representation and the danger of concentrated influence. [\[3\]](#) [\[4\]](#)

People's Top Songs borrows the ideas of visible representatives, revocability, and public accountability, but uses a different rule: a fan's direct Top 10 remains theirs, while each follow is an additional network endorsement. Because one fan can endorse many Superfans, the system should be described as open community amplification rather than strict vote delegation.

3. Formal Scoring Specification

Authoritative Version 1.0 equation:

$$\text{Vote}(u,s) = (11 - p(u,s)) \times [1 + S(u) \times (\sqrt{FS(u)} + F(u) + P(u,s))] \times E(u,s)$$

3.1 Variables

Symbol	Definition	Version 1.0 rule
u, s	User and song	One eligible Top 10 per user; one placement per song.
$p(u,s)$	Rank position	Integer 1 through 10.
$11 - p$	Rank points	10 for #1, 9 for #2, ..., 1 for #10.
$S(u)$	Superfan activation switch	1 when an active Superfan-or-higher entitlement is in force; otherwise 0.
$FS(u)$	Fan Score	Visible total from the Version 1.0 point registry.
$\sqrt{FS(u)}$	Fan Activity Units	Exact non-negative square root of Fan Score.
$F(u)$	Verified Follower Units	Sum of all qualifying Bandruption follows after 30-day linear vesting. No hard cap.
$P(u,s)$	Playlist Proof Units	Sum of supported services where the song is verified in a user-controlled playlist after 7-day linear vesting; max one unit per service.
$E(u,s)$	Integrity eligibility	1 when the contribution is eligible; 0 when excluded. Pending reviews are withheld until resolved.

3.2 Individual vote

$$\begin{aligned}
 R(u, s) &= 11 - p(u, s) \\
 M(u, s) &= 1 + S(u) \times [\sqrt{FS(u)} + F(u) + P(u, s)] \\
 \text{Vote}(u, s) &= R(u, s) \times M(u, s) \times E(u, s)
 \end{aligned}$$

If $S = 0$, the bracketed earned inputs are inactive and $M = 1$. If $S = 1$, those inputs become active. The baseline 1 remains in both cases.

3.3 Verified follower units

$$F(u) = \sum_j Q(j) \times \min[1, \text{days_following}(j, u) \div 30]$$

The sum runs across every fan j who follows user u inside Bandruption. $Q(j)$ equals 1 when the follower meets the published qualification standard and 0 otherwise. There is no division by the number of Superfans the follower supports, and there is no lifetime following limit. An unfollow sets that relationship's contribution to 0 at the next calculation.

3.4 Playlist proof units

$$P(u,s) = \sum_k C(u,s,k) \times \min[1, \text{days_verified}(u,s,k) \div 7]$$

The sum runs across supported streaming services k . C equals 1 when Bandraption can verify, with user authorization, that song s is in a playlist controlled by user u on service k ; otherwise it equals 0. Several playlists on the same service still produce only one service unit for that song.

3.5 Song totals and time windows

$$\begin{aligned}\text{LiveScore}(s,t) &= \sum_u \text{Vote}(u,s,t) \\ \text{PeriodScore}(s,w) &= (1 / |w|) \times \sum_{\{t \in w\}} \text{LiveScore}(s,t)\end{aligned}$$

The live score is the sum of all eligible current contributions at snapshot time t . Bandraption records hourly snapshots. A Today, Week, Month, or Year view uses the arithmetic mean of the hourly live scores in that window, with missing or not-yet-present hours contributing zero. This rewards sustained support through repeated presence in the window rather than through a separate age multiplier.

3.6 Rounding and tie-breakers

- Calculations use full precision. The public interface may display two decimals.
- First tie-breaker: more unique eligible fans ranking the song in the selected window.
- Second tie-breaker: more eligible #1 placements in the selected window.
- Third tie-breaker: the song that first attained the tied score ranks higher.
- Track identity uses service IDs and, where available, ISRC and release metadata. Distinct live, remastered, or alternate recordings remain separate unless Bandraption publicly merges them as the same canonical recording.

4. Mathematical Behavior

4.1 Follower influence is linear, unbounded, and easy to audit

Holding rank, Fan Score, playlist proof, subscription status, and eligibility constant, an additional fully vested follower changes a Superfan's vote by exactly the rank points of that song:

$$\Delta \text{Vote for one additional full follower} = 11 - \text{rank}$$

The #1 song rises by 10; #5 rises by 6; #10 rises by 1. Because F is a direct sum, it has no product-set ceiling and no asymptote. At a given moment, one Superfan can receive at most one follow from each other qualified Bandraption account, so the practical maximum is the size of the qualified community. Growth remains possible as that community grows. (Illustrative charts in the published whitepaper end at 1,000 followers only for readability; the line continues without a fixed maximum.)

4.2 Fan activity grows forever, but does not grow linearly

Fan Score is transformed with a square root. This is a concave function: it remains unbounded, but additional points have diminishing marginal effect. Four times the Fan Score produces twice the activity units. This preserves an incentive to continue valuable work while reducing the risk that a long-tenured or highly transactional user overwhelms the chart through one input alone.

Examples: 25 Fan Score → 5 activity units; 100 → 10; 400 → 20; 10,000 → 100.

4.3 Why the signals are additive

A fully multiplicative formula makes every follower inherit every personal activity and playlist factor. That creates cross-amplification: raising one input increases the value of all other inputs. The result becomes difficult for fans to predict and can explode even when all underlying units are real. (The published whitepaper shows a multiplicative variant only as a mathematical comparison; it is not used by Version 1.0.)

The additive formula preserves the intended force multiplication while keeping each unit legible: a follower is one follower unit, a verified service is one playlist unit, and activity is a separate square-root contribution.

4.4 Why there is no separate list-age or track-holding bonus

Sustained support matters through period snapshots and evidence vesting. A song that remains in many Top 10s for a full week contributes across the full weekly window. A new release can still compete immediately in the live chart. This avoids an additional tenure multiplier that would systematically entrench older lists, older accounts, and older songs.

4.5 Why ordinary new fans keep their full baseline ballot

A blanket discount on every new account would also discount genuine new fans at the moment the platform most wants them to participate. Version 1.0 instead places friction on the high-impact inputs: follower units vest for 30 days, playlist proof vests for 7, and suspicious contributions can be held for review. The direct 10-to-1 ballot remains available to every eligible fan.

5. Fan Score

5.1 Public point registry

Fan Score is an auditable sum of Fan Points. The point value and eligibility conditions must be visible before a fan performs an action. Connection points remain only while the connection remains active; reversible transactions lose their points after refund, chargeback, cancellation, or fraud reversal.

Verified action	Fan Points	Qualification	Repeat rule
Connect a supported social account	+1 each	OAuth/account control verified	Maximum 4 active connection points.
Connect a supported streaming service	+1 each	User authorization and token valid	Maximum 4 active connection points.
Qualified fan referral	+5	Referred account is 30+ days old, qualifies as a real account, and completes a Top 10	Once per referred person. Self-referrals excluded.
Verified concert attendance	+10	Ticket scan, venue/artist confirmation, or equivalent proof	Once per fan per event.
Sustained playlist support	+1	Unique song-service pair verified for 30 consecutive days	Maximum 10 grants in any rolling 30 days.
Completed artist bounty	+1 / +3 / +5 / +10 / +20	Published effort band, objective completion evidence, and platform integrity checks	Once per bounty claim. Chart-conditioned bounties prohibited.
Completed affiliate order	+2	Unique non-refunded purchaser and completed order	Once per purchaser-artist pair in a rolling 90 days. Self-dealing excluded.
Other verified artist-support work	Published effort band	Must map to the same five bounty bands before work begins	Subject to the campaign's public rules and platform approval.

5.2 Fan Score rules

- Fan Score is non-negative. Removed or reversed actions subtract the same points they originally added.

- One real-world event cannot be re-labeled into several point grants unless the public campaign rules identify genuinely separate work.
- A user cannot earn referral or affiliate points from themselves, accounts they control, refunded orders, or circular transactions.
- Playlist proof may contribute one song-specific P unit after 7 days and one small general Fan Point after 30 days. This is deliberate: current support helps that song, while sustained curation builds general reputation.
- BANDS rewards and Fan Points are separate. The amount of BANDS purchased, held, or spent never becomes Fan Score.
- For a bounty, Fan Points are determined by the published effort band and verified work — never by the BANDS reward, cash value, artist budget, or subscription tier.
- Any new Fan Score action category must be published with its points, verification rule, reversal rule, and effective date before it can affect the chart.

5.3 Why use the visible raw Fan Score, then take its square root

Fans should be able to inspect the ledger that created their score and reproduce the activity input themselves. Keeping the ledger additive makes it easy to audit; applying the square root only at the chart layer provides the diminishing-return protection without obscuring individual actions.

6. Verified Bandruption Following

6.1 The central community mechanism

A Verified Bandruption Follow is an explicit in-platform relationship between two fan accounts. It is both social and consequential: after qualification and vesting, it adds one follower unit to the followed Superfan's multiplier. Free fans, Superfans, and higher-tier fans may all create qualifying follows. A fan may follow any number of Superfans.

The follow strengthens the entire Top 10. That is a feature, not an accident. A fan is endorsing the public taste-maker, not purchasing a vote for only one track. Public lists and immediate unfollowing make that endorsement accountable.

6.2 Minimum qualification for a full follower unit

- The follower controls a Bandruption account with verified contact information and secure authentication.
- The account has existed for at least 7 days and has completed a Top 10.
- At least one accepted assurance signal is present: an authorized social account, authorized streaming account, verified event attendance, or an approved alternative identity review.
- The follower is not suspended, duplicated, automated, or materially linked to concealed account farming.
- The follow was explicitly initiated by the follower, is not a self-follow, and remains active.

- The relationship begins accruing after qualification and vests linearly over 30 days. At day 15 it contributes 0.5; at day 30 it contributes 1.0.

6.3 Unlimited following, controlled velocity

Version 1.0 imposes no lifetime limit and does not divide a fan's support among the accounts they follow. A real fan may connect broadly across a genre, city, scene, or artist community. Bandraption may rate-limit the speed of new follow creation and review abnormal mass-following patterns, but a legitimate fan can continue adding connections over time.

6.4 Why external social followers are not the chart unit

External platforms can sometimes provide a follower count, a follower list, or both, but access varies by platform, account type, permission, commercial tier, privacy setting, and policy. Raw external counts also include people who have never joined Bandraption and have never consented to influence this chart.

Version 1.0 therefore counts only explicit Bandraption follows. A connected X, Instagram, Facebook, or TikTok account may support identity assurance, discovery, or fraud analysis, but an external follower does not become a chart unit until that person joins Bandraption and creates the in-platform follow.

6.5 Relationship to fluid representation

The revocable and visible relationship resembles fluid representation, but the weights are not conserved. Research on liquid democracy shows both the appeal of delegation and the need to monitor concentration. [3] [4] Bandraption's policy choice is explicit: a fan may strengthen several representatives at once because connection and community formation are themselves part of the product. The consequence is also explicit: one fan can create more than one unit of network influence by forming more than one qualified relationship.

7. Playlist Proof

7.1 What qualifies

- The fan has authorized Bandraption to access the relevant service through the service's official authentication flow.
- The song appears in a playlist owned or meaningfully controlled by the fan. Merely following an editorial or third-party playlist does not qualify.
- The song is matched to the Bandraption track using platform IDs and, when available, ISRC and release metadata.
- The song-service pair vests linearly over 7 consecutive verified days.
- A service contributes at most one unit for the song, no matter how many playlists contain it.

- Removal, lost authorization, or a failed re-check sets the service contribution to zero at the next verification cycle.

7.2 Why playlist proof is song-specific

A playlist placement is evidence about one song, not the fan's entire ballot. It therefore enters $P(u,s)$, not $F(u)$, and gives no direct bonus to the other nine songs. A small Fan Point after 30 days can recognize long-term curation, but the immediate chart effect stays attached to the verified song.

7.3 Supported-service policy

A service is enabled only after Bandraption can use an official, user-authorized interface to verify user-controlled playlist contents with acceptable reliability and privacy. Unsupported services contribute zero rather than relying on screenshots, passwords, scraping, or self-attestation.

8. Integrity and Anti-Gaming

8.1 The threat model

Any system that turns accounts or relationships into influence must expect attempts to create many false identities, buy follows, coordinate concealed account farms, recycle transactions, or automate activity. Computer-security literature calls the use of many fabricated identities a Sybil attack. [5]

Research on social networks also shows that connection patterns, target choices, and the responses of legitimate users can help identify fake accounts early, but no single graph test is sufficient in every environment. [6]

8.2 Defense in depth

Account security. Verified contact information, secure authentication, device/session protection, and account recovery controls.

Progressive identity assurance. Low-impact participation requires low friction. Accounts that accumulate material chart influence face stronger automated and, when warranted, human review. NIST's digital-identity guidance likewise frames proofing and fraud controls as risk-based assurance rather than one universal burden. [7]

Time. Seven-day account minimum, 30-day follow vesting, 7-day playlist vesting, and hourly chart snapshots reduce the value of last-minute account bursts.

Graph analysis. Shared devices, abnormal IP concentration, synchronized follows, reciprocal rings, repeated target patterns, and clusters of otherwise inactive accounts are reviewed.

Economic and transaction checks. Self-referrals, self-purchases, circular orders, refunds, chargebacks, and bounty collusion do not earn Fan Points.

Rate and velocity controls. The platform can slow abnormal creation of accounts, lists, follows, and repeated edits without setting a permanent lifetime ceiling.

Human review and appeals. High-impact or ambiguous cases can be held, reviewed, explained to the affected user, and appealed.

8.3 Eligibility instead of opaque authenticity discounts

Version 1.0 does not secretly assign every voter a hidden percentage between "real" and "fake." Positive score inputs are public. Integrity status is categorical: eligible contributions count; ineligible contributions do not; pending contributions are withheld while reviewed. Sensitive detection thresholds remain confidential where disclosure would make evasion easier, but the affected user receives a reason category and an appeal path.

8.4 Legitimate campaigns are welcome

A burst of real fans organizing around a new release, tour, or performance is not manipulation. It is the behavior the chart is designed to reveal. Enforcement targets fabricated identities, automation, undisclosed control, purchased follows, transaction recycling, and deceptive evidence — not enthusiastic coordination by genuine people.

9. Technical Feasibility of Connected Platforms

This capability review is current as of July 16, 2026. Official APIs, access tiers, scopes, review requirements, quotas, and product policies can change. Bandruption treats unsupported or unavailable evidence as zero and does not scrape private accounts or request user passwords.

Platform	Official capability	Version 1.0 use	Important limitation
X	User lookup can return public metrics and verification-related fields; Follows endpoints can retrieve follower and following lists. [8] [9]	Account-control proof and optional fraud corroboration. Explicit Bandruption follows remain authoritative.	Access, cost, quotas, protected accounts, and policy can limit coverage.
Instagram	Instagram Graph API exposes account fields for supported professional-account flows, including follower-related metrics in applicable contexts. [18]	Identity/reputation signal only.	A general portable list of every personal follower is not reliably available for consumer chart matching.
Facebook	Graph API can expose Page data; user_friends is permission-limited. [19] [20]	Identity/reputation signal and possible app-using relationship corroboration.	Personal friend/follower graphs are restricted; not a complete voting roll.
TikTok	Authorized User Info can return follower_count and related stats. Full followers/following research access is limited to qualifying research programs. [16] [17]	Account-control proof and optional count-level risk signal.	Commercial apps should not assume access to full follower lists.
Spotify	OAuth endpoint lists current-user playlists; playlist-item endpoints expose contents with appropriate scopes. [10] [11]	Verify songs in owned or genuinely controlled playlists.	The playlist list includes followed playlists; Bandruption must check ownership/control. Policy and development-mode limits apply.
Apple Music	MusicKit and Apple Music API support user authorization and library-playlist access through Apple's token model. [12] [13]	Verify songs in user-created library playlists where authorization and service access permit.	Requires Apple authorization, token handling, and user/library availability.
YouTube / YouTube Music	YouTube Data API can list playlists owned by the authenticated user and their playlist items. [14] [15]	Verify music videos/tracks in user-owned YouTube playlists.	There is no general separate YouTube Music personal-library API represented by these

Platform	Official capability	Version 1.0 use	Important limitation
			endpoints; matching music recordings requires care.
Other services	Enabled only when an official, user-authorized API can verify controlled playlist contents.	One unit per supported service and song.	Screenshots, scraping, and passwords do not qualify.

Official documentation: X [\[8\]](#) [\[9\]](#), Spotify [\[10\]](#) [\[11\]](#), Apple Music [\[12\]](#) [\[13\]](#), YouTube [\[14\]](#) [\[15\]](#), TikTok [\[16\]](#) [\[17\]](#), Meta [\[18\]](#) [\[19\]](#) [\[20\]](#)

9.1 Technical conclusions

- Playlist verification is technically feasible for Spotify, Apple Music, and user-owned YouTube playlists, subject to authorization, ownership checks, quotas, platform review, and changing policies.
- X provides the strongest documented path among the named social platforms for retrieving both user metrics and follow lists, but Bandruption should still use its own explicit follow graph as the chart source of truth.
- TikTok can provide authorized follower counts, while access to full public follower/following lists is positioned within restricted Research Tools rather than a general commercial display flow.
- Instagram and Facebook can provide useful account or Page signals in approved contexts, but should not be treated as complete personal-follower registries.
- The safest architecture is therefore: external accounts help verify control and evidence; internal Bandruption actions create the actual chart units.

10. Subscriptions, BANDS, and Payment Separation

10.1 The Superfan switch

Superfan or higher changes S from 0 to 1. It activates Fan Activity Units, Verified Follower Units, and Playlist Proof Units. It does not add a fixed paid bonus. A new Superfan with $FS = 0$, $F = 0$, and $P = 0$ still has multiplier 1.

Higher paid tiers inherit the same activation but do not receive an additional chart multiplier. This prevents chart power from scaling with subscription price.

10.2 BANDS

BANDS is Bandruption's closed-loop platform currency. BANDS may be used for eligible platform services, rewards, campaigns, or other published uses. It is not a voting token and is not part of the People's Top Songs

equation.

- Purchasing BANDS adds 0 to Fan Score.
- Holding BANDS adds 0 to Verified Follower Units.
- Spending BANDS adds 0 to Playlist Proof Units.
- Receiving a BANDS bounty reward does not itself add Fan Points; only the independently verified eligible work can do so.
- BANDS cannot be converted into guaranteed chart placement.

10.3 Artist campaigns and bounties

Artists may reward legitimate fan work such as distributing approved content, staffing an event, creating approved fan media, making attributable affiliate sales, or completing other objective tasks. The chart must remain independent of the reward purchase.

Prohibited condition. No bounty, payment, discount, affiliate rate, BANDS reward, or other benefit may require a fan to place a song in their Top 10, choose a particular rank, cast a chart vote, keep a song ranked for a stated duration, or follow a named voter.

Sponsored placements or advertisements, if offered, must be labeled and displayed outside the organic People's Top Songs ranking. This paper describes product methodology, not a legal opinion about any jurisdiction-specific promotion or payola rule.

11. Transparency, Versioning, and Appeals

11.1 Fan-visible calculation

Each voter should be able to open a score breakdown for every ranked song and see: rank points, Superfan activation, Fan Score, square-root activity units, verified follower units, playlist-proof units, integrity status, and final vote. Each song page should show the aggregate contribution from direct baseline, activity, following, and playlist proof.

11.2 Public test vectors

Bandruption will maintain fixed examples like those in Appendix A. A production release passes only if the scoring service reproduces those expected values. Machine-readable test vectors may be published alongside the human-readable methodology.

11.3 Version changes

- Every methodology release receives a version number and effective date.

- Formula or point-registry changes are announced publicly before they affect ordinary chart calculations. A target notice period of 30 days applies to non-security changes.
- Urgent fraud or security controls may change without advance disclosure when notice would create immediate risk; their public rationale is disclosed afterward when safe.
- Historical chart snapshots retain the methodology version used at the time. A later formula does not silently rewrite history.
- No individual artist, fan, label, advertiser, or subscriber receives a private scoring formula.

11.4 Appeals and corrections

A user whose contribution, follower qualification, Fan Points, or playlist proof is removed receives a reason category and may appeal. Confirmed errors are corrected, and withheld contributions may be restored retroactively to the affected snapshots where technically practicable. Material chart corrections are logged publicly.

12. Privacy and Data Minimization

12.1 Minimum necessary access

Bandruption uses official OAuth, MusicKit, or equivalent authorization flows and requests only the scopes needed for the disclosed verification. The platform does not ask fans to provide streaming or social-media passwords.

12.2 Evidence, not surveillance

- For playlist proof, retain the minimum identifiers and timestamps needed to establish that a song-service pair qualified; avoid retaining a fan's complete listening history when not necessary.
- For social verification, retain account identifiers, authorization status, and necessary risk signals; do not treat private messages or unrelated content as chart inputs.
- Fans can revoke a connection. When authorization disappears, future evidence from that service stops counting after the next verification cycle.
- Public chart breakdowns expose score components, not private account credentials or private playlist contents.
- Data-retention periods, deletion rights, and cross-border processing are governed by Bandruption's published privacy policy and applicable law.

12.3 Risk-based assurance

The identity burden should be proportional to potential impact. A free fan casting a baseline ballot should not face the same process as an account controlling a material share of a global chart. NIST's current digital-identity guidance emphasizes risk management, fraud mitigation, privacy, and multiple assurance levels; Version 1.0 follows that general model without claiming government identity certification. [\[7\]](#)

13. Limitations and Research Agenda

13.1 Known limitations

- This is not one-person-one-vote. A fan's direct ballot is equal at baseline, but verified activity and network endorsement create additional influence.
- Unlimited following means one real fan can strengthen many Superfans. This is intentional, but it can create popularity feedback loops and must be monitored.
- A follow amplifies ten songs, including songs the follower may not personally rank. Public lists and revocability are the accountability mechanism.
- No verification system can prove perfect uniqueness or eliminate every coordinated fake account. Defense in depth reduces risk rather than making an absolute guarantee.
- Connected-platform evidence depends on third-party policies, scopes, review, quotas, and availability.
- Square-root Fan Score and vesting periods are design choices that require empirical calibration with real chart behavior.
- Early charts with few voters will be volatile and may be dominated by a small number of legitimate participants. Public voter counts are essential context.

13.2 Metrics Bandruption should publish or monitor

- Share of total chart score attributable to baseline, Fan Score, following, and playlist proof.
- Concentration of influence among the top 1%, 5%, and 10% of voters, plus Gini or Herfindahl-style concentration measures.
- Number and age distribution of qualified followers; follow creation and unfollow velocity.
- Number of artists and songs entering the Top 100 for the first time.
- False-positive rate, appeal volume, reversal rate, and time to resolution.
- Fraction of playlist checks that fail because of expired authorization, ownership ambiguity, or track-matching errors.
- Sensitivity tests showing how rankings would change if each positive input were removed.

13.3 How Version 1.0 should evolve

The first response to suspicious concentration should be stronger assurance, longer vesting for risky relationships, better graph analysis, rate controls, and clearer discovery surfaces — not an arbitrary hard cap on genuine followers. If evidence later shows that linear community amplification consistently prevents healthy chart diversity, any mathematical adjustment must be proposed publicly, tested against historical snapshots, and released as a new version.

Possible research variants include different concave transforms for Fan Score, risk-tiered follower vesting, genre or regional charts, diversity-aware discovery modules outside the organic score, and separate "direct preference" and "community momentum" views. None of these variants changes Version 1.0 unless formally adopted.

Conclusion

People's Top Songs turns a fan's music identity into a public, reproducible signal. Every fan begins with a complete ranked ballot. Superfans can activate additional weight that comes from visible activity, real people choosing to follow them, and verified support for individual songs across connected playlists.

The model deliberately leaves room for communities to grow without a follower ceiling. It protects that openness by making each follow explicit, qualified, time-vested, revocable, and subject to layered anti-fraud controls. It also keeps the mathematics legible: signals add; they do not secretly multiply one another.

The result is not a passive popularity counter and not a sale of chart positions. It is an evolving measure of organized, verifiable fandom — one in which fans can see how they matter, artists can see where committed support exists, and every participant can audit the rules.

Version 1.0 in one sentence. Every fan gets a 10-to-1 Top 10 ballot; Superfan status activates an uncapped but verifiable combination of square-root Fan Score, linear Bandruption followers, and song-specific playlist proof — while BANDS and other purchases remain outside the score.

Appendix A: Public Test Cases

These examples are **normative** calculation checks for Version 1.0.

Test	Inputs	Expected result
A1. Free fan at #1	$p=1, S=0, E=1$	$\text{Vote} = 10 \times [1 + 0] \times 1 = 10$
A2. Superfan switch alone	$p=1, S=1, FS=0, F=0, P=0, E=1$	$\text{Vote} = 10 \times [1 + (0+0+0)] = 10$
A3. Fan Score 25	$p=1, S=1, FS=25, F=0, P=0$	$\sqrt{25}=5; \text{Vote} = 10 \times (1+5) = 60$
A4. 20 verified followers	$p=1, S=1, FS=25, F=20, P=0$	$\text{Vote} = 10 \times (1+5+20) = 260$
A5. 100 followers and two services	$p=1, S=1, FS=100, F=100, P=2$	$\sqrt{100}=10; \text{Vote} = 10 \times (1+10+100+2) = 1,130$
A6. Same account at #5	$p=5$, same inputs as A5	Rank points=6; $\text{Vote} = 6 \times 113 = 678$
A7. Follow halfway vested	$p=1, FS=25$; 20 full follows plus one 15-day follow	$F=20.5; \text{Vote} = 10 \times (1+5+20.5) = 265$
A8. Playlist halfway vested	$p=1, FS=0, F=0$; song verified 3.5 days on one service	$P=0.5; \text{Vote} = 10 \times 1.5 = 15$
A9. Integrity exclusion	Any otherwise valid inputs, $E=0$	$\text{Vote} = 0$
A10. Free fan follows ten Superfans	Follower is free but qualified; each follow is fully vested	The free fan adds 1 to F for each followed Superfan. If all ten rank the same song #1, network lift = $10 \times 10 = 100$ points.
A11. Period average	A song has hourly live scores of 0, 100, 100, and 200 across a four-hour window	$\text{PeriodScore} = (0 + 100 + 100 + 200) \div 4 = 100$. A late burst affects only the snapshots after it occurs.
A12. One follower, ten songs	One full verified follower on a Superfan's complete Top 10	The list rises by $10 + 9 + \dots + 1 = 55$ total points across all ten songs. The distribution is visible: the strongest increase goes to the song the Superfan ranks first.

Glossary

BANDS. Bandruption's closed-loop platform currency. It has no direct role in the People's Top Songs score.

Baseline ballot. The 10-to-1 ranked contribution available to every eligible fan.

Fan Activity Units. The square root of the visible Fan Score.

Fan Point. A unit awarded under the published Fan Score registry for a verified eligible action.

Fan Score (FS). The visible sum of active and retained Fan Points.

Integrity eligibility (E). A categorical input: 1 when a contribution is eligible and 0 when excluded.

Live score. The sum of all eligible current votes at a snapshot time.

Network endorsement. The social and chart effect created by following a Superfan inside Bandruption.

Period score. The arithmetic mean of hourly live scores over the selected time window.

Playlist Proof Unit (P). A vested service-level unit showing that a ranked song is present in a user-controlled playlist.

Rank points. 11 minus the list position: 10 points at #1 through 1 point at #10.

Superfan activation switch (S). The value 1 for an active Superfan-or-higher account and 0 otherwise.

Verified Bandruption Follow. An explicit in-platform follow from a qualified account, vesting linearly over 30 days and revocable by unfollowing.

Verified Follower Units (F). The sum of all qualifying, vested Bandruption follows received by a Superfan.

References

Platform capabilities are subject to current terms, permissions, review, quotas, and change.

1. Bandruption, *People's Top Songs* — bandruption.fun/en/top-songs
2. U.S. Department of Justice, *North Carolina Musician Charged With Music Streaming Fraud Aided by Artificial Intelligence* (Sept. 4, 2024) — [justice.gov](https://www.justice.gov)
3. Gözl, Kahng, Mackenzie & Procaccia, *The Fluid Mechanics of Liquid Democracy* — arxiv.org/abs/1808.01906
4. Berinsky et al., *Tracking Truth with Liquid Democracy* — arxiv.org/abs/2107.11868
5. John R. Douceur, *The Sybil Attack* — microsoft.com/en-us/research
6. Breuer, Eilat & Weinsberg, *Friend or Faux: Graph-Based Early Detection of Fake Accounts on Social Networks* — arxiv.org/abs/2004.04834
7. NIST SP 800-63, Revision 4, *Digital Identity Guidelines* — pages.nist.gov/800-63-4
8. X API: Get User by ID — docs.x.com
9. X API: Follows — docs.x.com

10. Spotify Web API: Get Current User's Playlists — developer.spotify.com
 11. Spotify Web API: Get Playlist Items — developer.spotify.com
 12. Apple Music API: Get All Library Playlists — developer.apple.com
 13. MusicKit: Requesting User Authorization for Apple Music — developer.apple.com
 14. YouTube Data API: Playlists.list — developers.google.com
 15. YouTube Data API: PlaylistItems.list — developers.google.com
 16. TikTok API v2: Get User Info — developers.tiktok.com
 17. TikTok Research Tools — developers.tiktok.com
 18. Meta Instagram Graph API: IG User — developers.facebook.com
 19. Meta Graph API: User Friends — developers.facebook.com
 20. Meta Graph API: Page — developers.facebook.com
-