APPENDIX

INTRODUCTION

This appendix will primarily include examples from the game, Genshin Impact (henceforth "GI"), to expound upon statements made in the paper proper, though it may refer to other games when GI is not applicable. The reason for using GI as an example is predicated both on its scale[475] and its appeal to a more general audience.[476] Consequently, the author has obtained a certain level of expertise for the game, both in terms of theoretical understanding and game experience.

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[475] *GI Impact Remains 3rd Highest-Grossing Mobile Game Globally Since Its Launch, with $3.7 Billion in Revenue*, WN (Sept. 29, 2022), https://wnhub.io/news/analytics/item-220 [perma.cc/JWC3-7FHE].

[476] *See* Andrea Knezovic, *Genshin Impact Advertising Strategy Explained*, UDONIS (June 4, 2024), https://www.blog.udonis.co/mobile-marketing/mobile-games/genshin-impact-advertising [perma.cc/VBP4-K8XL].

Above is a record of the author's recent results in the hardest difficulty mode in the game. In fact, the author has maintained 36 stars (the highest possible amount) in this mode since the launch of game outside of the first few cycles, all while the author was too busy running the game's community site, which should have been the job of the company.

For even more additional supporting information, here are the author's results in the commensurate gameplay from the testing versions of

the game prior to release. There are no other records of anyone receiving a perfect number of stars in the picture, not to mention the author getting the highest number of stars in the proceeding test. Furthermore, there was no ability to spend money on these test servers, so it was the most equitable concerning resources available to players.

Thus, it is not a stretch (and indeed is the most rational explanation) to say that the author is the best player to ever play the game. There are other reasons to support this claim, but those cannot be stated without deanonymizing the author. The author would also like to note that due to the nature of the location and availability of game information, source citation may be difficult to provide or from less rigorous sources in some cases, so statements in this appendix should be taken with a note of caution.

Equipment System

GI actually has both of these systems baked into one even though it already is a gacha game. Characters in GI have two types of equipment: weapons and artifacts.[477] Artifacts cannot be acquired through the wish (loot box equivalent) system, but are generally instead acquired through the

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[477] *See, e.g.*, *Weapon*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Weapon [perma.cc/3942-NW54]; *Artifact*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Artifact [perma.cc/2TW7-AQWB].

expenditure of resin.[478] Resin naturally regenerates at 180 per day, but a player may expend up to 800 primogems (equivalent to approximately $11.75 USD, as $1 purchases 68 primogems in the United States in the lowest purchase denominator) to receive up to an additional 360 resin, with it becoming progressively more expensive as the more resin is replenished.[479] Artifacts will randomly drop from between two different sets, among five different pieces (three of these pieces having between five and twelve different specifications), along with a set of four out of ten total possible alterations.[480] These alterations also randomly change on enhancement up to five times total times among the four of them.[481] As such, players can indirectly pay for extra entries for more artifacts, which can be enhanced for random progression.[482]

[478] *See How to Get the Best Artifacts*, IGN, https://www.ign.com/wikis/genshin-impact/How_to_Get_the_Best_Artifacts [https://perma.cc/CX9U-7CDE].

[479] *Original Resin*, *supra* note 174.

[480] *Artifact*, *supra* note 477; *Artifact/Stats*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Artifact/Stats [https://perma.cc/6CQU-D8RH] (last access Jan. 16, 2025).

[481] *See Artifact: Minor Affix*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Artifact/Stats#Minor_Affix [perma.cc/2ZHT-DE68] (last accessed Jan. 16, 2025).

[482] *Original Resin*, *supra* note 174.

In-Game Purchases
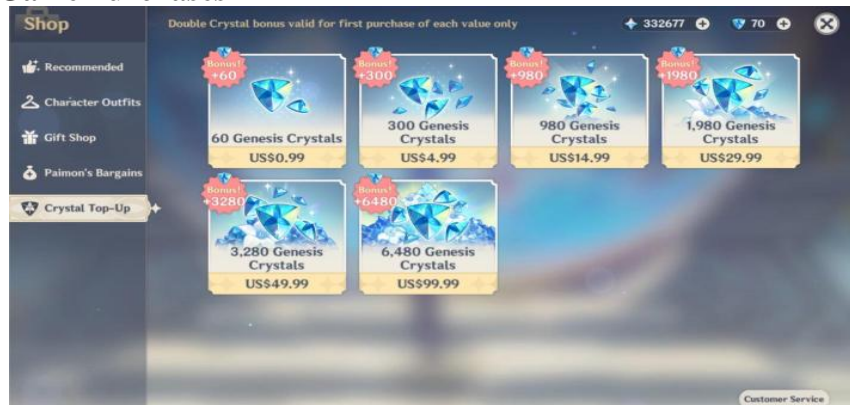
GI is a free-to-play game, and all monetization is done through optionally purchased genesis crystals.[483] These crystals can be used to purchase a very select small number of items directly, but otherwise have no use than being converted through a 1:1 ratio into primogems, which are used in the wish system and can also be earned with a limit through normal gameplay.[484]

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[483] *Monetization*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Monetization [perma.cc/3NVE-2SKE]; *Gensis Crystal*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Genesis_Crystal [perma.cc/B8TP-VVGQ].

[484] *See Genesis Crystal*, *supra* note 483; *Primogen*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Primogem [perma.cc/B33L-FES6].

Limited Trial Setting
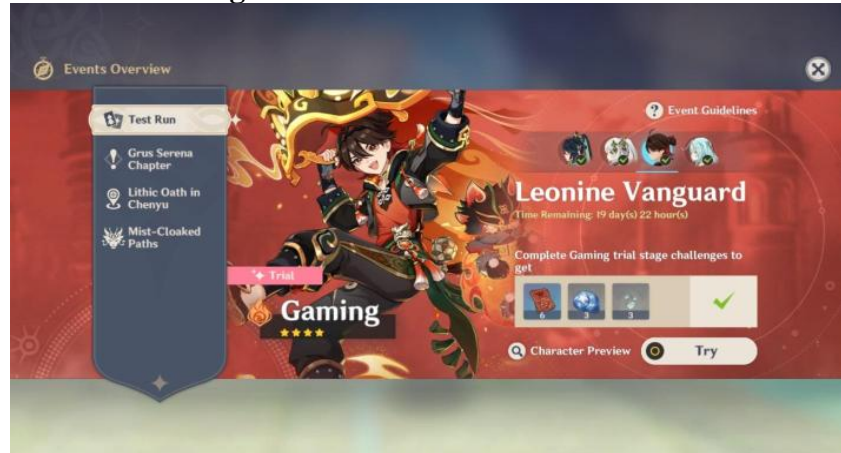
GI makes available trial usage of all featured characters on the current banner in the wish system (outside of permanently available characters).[485] While not all features for the character are unlocked, and are limited to a controlled setting, users can experience them as much as they choose to in this system and get a general feel of their functionality.[486]

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[485] *Test Run – Character Trial* Event, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Test_Run_-_Character_Trial_Event [perma.cc/S5N8-T6AS].

[486] *Id.*

Loot Box Details
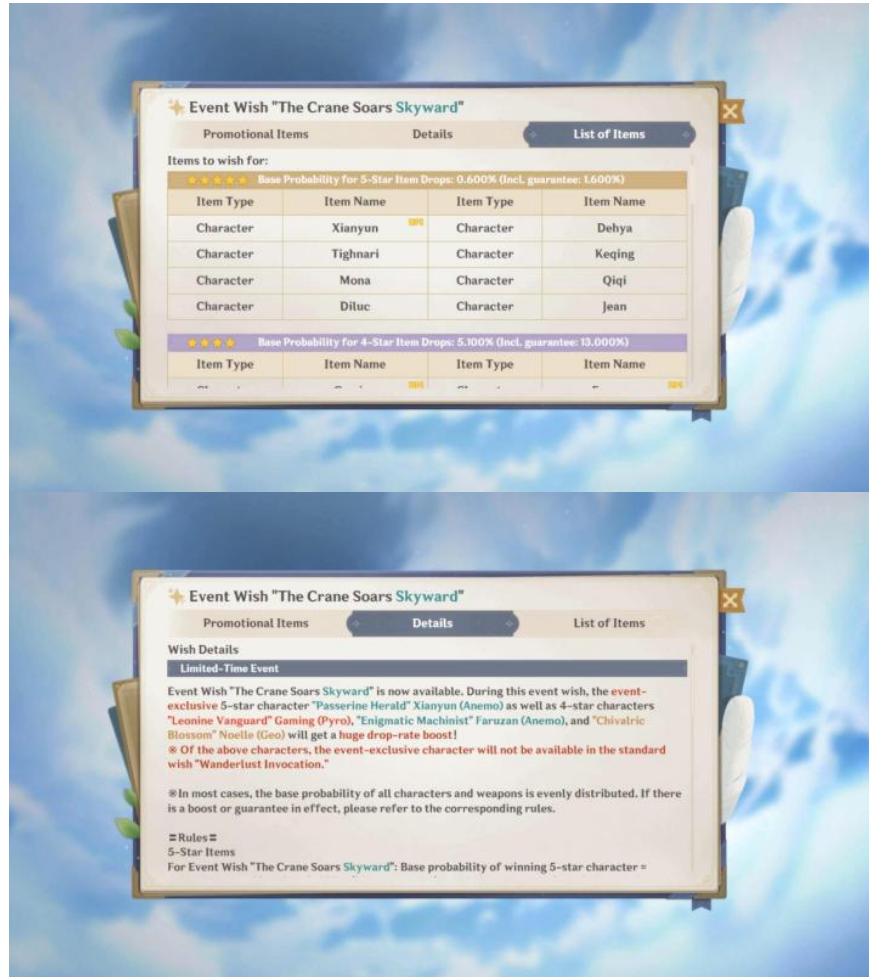
      GI has a 0.6% rate to acquire a five-star character of highest rarity (lowest probability), but has a consolidated rate of 1.6% for such a character.[487] The discrepancy is because there is a system in place where if 89 boxes have been opened by the user without the user having acquired a

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[487] *Genshin Probability Deep Dive*, GACHAGUIDE, https://gachaguide.com/genshin_probabilities_deep_dive [perma.cc/RE7U-H8BU] (last accessed Jan. 16, 2025).

five-star character, the 90th box is guaranteed to be a five-star character and cannot be anything else.[488]

Single Purchase vs. Free-to-play Gacha

   GI as a whole serves as an illustrative example.[489] GI was often compared to "Legend of Zelda: Breath of the Wild" ("Zelda") due to their open-world map similarities.[490] Zelda is considered a popular game, accruing approximately twenty-nine million units in sales by end of 2022.[491] Assuming that all of those sales were at the 60 dollar price tag, that is typical of console games, the game would have grossed over 1.5 billion dollars in revenue.[492] On the other hand, GI has grossed at least four billion dollars[493] in estimated revenue by the end of 2022, despite its map size (which is still in development) still not having reached the size of Zelda's.[494] Not to

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[488] Genshin Impact Walkthrough Team, *Pity System in Banners Explained | Wish Guarantee Guide*, GAME8, https://game8.co/games/Genshin-Impact/archives/305937 [perma.cc/MND6-XS6C] (Nov. 19, 2024, 8:54 PM).

[489] Ty Schalter, *How 'Genshin Impact' Content Creators Handle a Multi-Generational Audience*, VICE (July 26, 2021, 9:00 AM), https://www.vice.com/en/article/how-genshin-impact-content-creators-handle-a-multi-generational-audience/ [perma.cc/284R-YQW5].

[490] *See* Mogrut, *Genshin Impact vs. Zelda: Breath of the Wild – A Tale of Two Open Worlds*, THEORY GAMING (Sept. 10, 2023), https://theoryofgaming.net/gaming/genshin-impact-vs-zelda-breath-of-the-wild/ [perma.cc/3UDJ-8MCB].

[491] *Lifetime Unit Sales Generated by the Legend of Zelda: Breath of the Wild on Nintendo Switch Worldwide as of September 2024*, STATISTA (Nov. 2024), https://www.statista.com/statistics/1248052/zelda-botw-unit-sales/ [perma.cc/6YZD-ZDQ9].

[492] *See id.*

[493] Aaron Astle, *Genshin Impact Makes It to $4 Billion Revenue as PUBG Mobile Reaches $9 Billion*, POCKETGAMER.BIZ (Dec. 7, 2022), https://www.pocketgamer.biz/news/80376/GI-impact-makes-it-to-4-billion-revenue-as-pubg-mobilereaches-9-billion/ [perma.cc/TCF9-P4BZ].

[494] Matthew Paxton, *Genshin Impact Map Size*, HYPERNIA (Nov. 3, 2022), https://hypernia.com/genshin-impact/map-size/ [perma.cc/QD57-Z6AU].

mention, GI took over 100 million dollars to develop[495] and requires over 200 million dollars annually to maintain.[496] At the start, GI's map was even smaller, and the game had a much smaller character roster.[497] How many people would have justified paying for the game upfront when alternatives like Zelda existed? Would it have been able to recoup its development costs, and gain enough for development of expanded areas for later sales? Perhaps, but it is unlikely.[498]

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[495] Landon Wright, *Genshin Impact Developer Says It Cost $100 Million to Create; $200 Million Cost Per Year Expected for Continued Development*, GAMING BOLT (Feb. 23, 2021), https://gamingbolt.com/genshin-impact-developer-says-it-cost-100-million-to-create-200-million-cost-per-year-expected-for-continued-development [perma.cc/8RN9-RF9H].

[496] *Id.*

[497] *See* Nicki Si et. al, *All Genshin Impact Characters, Listed by Order of Release Date (5.2)*, PRO GAME GUIDES (Nov. 26, 2024, 11:04 AM), https://progameguides.com/genshin-impact/all-genshin-impact-characters-listed-by-order-of-release-date/ [perma.cc/95F3-DWUD] (showing that each date and version indicates a time the character roster was expanded).

[498] Jonathan Bolding, *Grossing Over $100m, Genshin Impact Recoups Development Costs in Two Weeks*, PCGAMER (Oct. 11, 2020), https://www.pcgamer.com/grossing-over-dollar100m-genshin-impact-recoups-development-costs-in-two-weeks/ [perma.cc/72ZT-GFDA].

Functionally Useless Loot Box Items

In GI, the player opens boxes[499] and receives either a character or weapon (of varying rarities for both).[500] The worst possible (highest frequency) outcome is a three-star weapon, which only has 2 uses: equipped to a character or sacrificed to boost other weapons, up to a point.[501] Almost all users will saturate both usages after a few months, so every subsequent received one is practically useless. (These weapons also take up a limited number of inventory slots so they may actually be technically detrimental, but the author thinks this is likely never to be a major concern).[502]

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[499] Andrew E. Freedman, *What Are Loot Boxes? Gaming's Big Controversy Explained*, TOM'S GUIDE (Aug. 9, 2019), https://www.tomsguide.com/us/what-are-loot-boxes-microtransactions,news-26161.html [perma.cc/NH39-62DS] (explaining there is not actually any opening of boxes, but it is functionally equivalent).

[500] *Id.*

[501] *Genshin Impact Gacha System: Wish Gacha Draws, Rates, Banners, Pity and More Explained*, RPG SITE (Oct. 7, 2020), https://www.rpgsite.net/feature/10312-genshin-impact-gacha-system-wish-gacha-draws-rates-banners-pity-and-more-explained [perma.cc/NT74-KYT9].

[502] *See Weapons*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Inventory#Weapons [perma.cc/N6LR-85DP].

Guaranteed Loot Box Items

      GI bundles each loot box item with one of two special currencies, stardust or starglittter, that the user can use to buy all manners of useful (and useless) things from a certain shop.[503] There are unlikely to be any players who cannot put this currency to any use whatsoever. That being said, even with the most generous conversion, the most value the user can purchase with the lowest guaranteed amount of those currencies is around 47 cents.[504]

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[503] *Character Event Wishes*, *supra* note 167.

[504] Each wish gives at minimum 15 stardust. 75 stardust can be exchanged for 1 wish in limited quantities. Each wish costs approximately $2.35. *Id.*

Convoluted Pity System
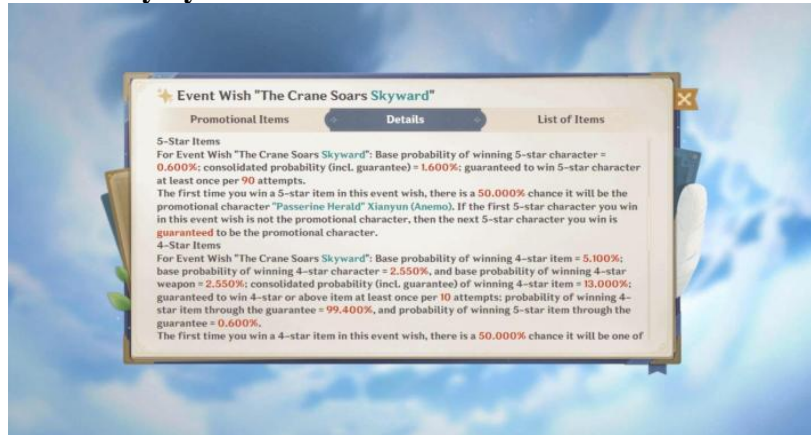
GI's 90th box guarantee only has a 50% chance to contain the five-star character the user wishes.[505] The other half of the time, it will give them a five-star character randomly from a fixed pool of seven alternatives.[506] If you do not receive the five-star character you wish, the subsequent five-star character will be the one you desire, putting the actual maximum pity at 180 boxes.[507]

Additionally, outside of a few specific system exceptions, GI does not have a guaranteed system for any of its four-star characters and weapons (mid-level rarity and percentage).[508] The user is guaranteed to get one out of three possible characters every twenty boxes, but never any specific one of those three possible characters.[509] A similar system without specific guarantee used to be in place for five-star weapons (highest rarity as well).[510] So it was not just limited to lower rarity items, for which

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[505] *Id.*

[506] *Id.*

[507] *Id.*

[508] *Character Event Wishes*, *supra* note 167.

[509] *Id.*

probability is less of an issue due to a higher number of received items from gameplay.[511]

Undisclosed Mechanism

GI's rate detail states that there is a 0.6% probability of a five-star character per box, with a 1.6% consolidated probability due to the ninety-box pity.[512] An astute mathematician may point out that a 0.6% probability on the first eighty-nine boxes, with a 100% probability on box ninety, does not result in a 1.6% cumulative probability. They would be correct, since from observational data in practice, it has been discovered that after the seventy-fifth box, the probability of obtaining a five-star character increases to approximately a third, until the user has acquired a five-star character.[513] While this may make the math work out so the actualized rate for a five-star character is 1.6%, nowhere in the game is this information disclosed.[514]

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[510] *Id.*

[511] *See Weapon Event Wish: Epitomized Path*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Weapon_Event_Wish#Epitomized_Path [perma.cc/5H9A-6Q3Z]; *Weapon Event Wish: Change History*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Weapon_Event_Wish#Change_History [perma.cc/34JS-U45L]; Vineet Kumar Naik, *Genshin Impact Weapon Banner Pity and Epitomized Path Guide: 5-Star Weapon Drop Rates Explained, SPORTSKEEDA*, https://www.sportskeeda.com/esports/genshin-impact-weapon-banner-pity-epitomized-path-guide-5-star-weapon-drop-rates-explained [https://perma.cc/N8Y3-ZED6] (Sep. 3, 2024).

[512] *Character Event Wishes*, *supra* note 167.

[513] *Id.*

[514] *Id.*

Loot Box Opening History

GI only retains records of wishes in the past year.[515] In another one of their games, Tears of Themis (henceforth "ToT"), this is even more limited to the past **7 days**.[516]

Example of Direct Company Intervention Targeting Specific User

The author was told directly by a company employee that he was blacklisted from winning a certain subset of contests, which then became all contests; to which he would have no idea about without primary source information due to random variability. And while this is likely purely due to random chance, it is oddly coincidental that his outcomes in the wish system went from being a statistical anomaly of bad luck (lower than 0.01%) to approximately average after he stopped using their social media to criticize their behavior.

Prohibition of Exchange

GI is an example of a relatively closed ecosystem for a video game. The user can only purchase certain items from the game developer with real

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[515] *Id.*

[516] *Vision History*, TEARS OF THEMIS WIKI, https://tot.wiki/wiki/Shadows_of_Themis#Vision_History [perma.cc/P3LW-JWFZ] (last updated Nov. 23, 2024).

money.[517] Nothing in the video game can be traded with other players or withdrawn from the game itself.[518]

Frontloaded Premium Currency

GI frontloads primogems acquisition as they can be earned in relatively large quantities through story and exploration.[519] However, once that is exhausted, they are then locked behind time-sensitive events and repetition content, or through large-scale content updates that add to the initial acquisition amount of new players who start in the future.[520]

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[517] *Genshin | Microtransactions Guide – In Game Purchases List*, GAMEWITH, https://gamewith.net/genshin-impact/article/show/22406 [perma.cc/P4PJ-LR7C] (Nov. 26, 2024, 10:11 PM) [hereinafter *Microtransactions Guide*].

[518] Tatiana Burgos, *Can You Trade in Genshin Impact With Other Players?*, PLAYBITE (Mar. 22, 2024), https://www.playbite.com/can-you-trade-in-genshin-impact-with-other-players/#:~:text=Unfortunately%2C%20you%20cannot%20trade%20directly,balanced%20and%20fair%20for%20everyone [perma.cc/237N-MCSL].

[519] Silvanaa, *7 Ways You Can Get Primos! :)*, HOYOLAB (Jan. 7, 2022), https://www.hoyolab.com/article/1892969 [perma.cc/32VG-TLHY].

[520] Cedric Pabriga et al., *How to Get and Farm Primogems*, IGN, https://www.ign.com/wikis/genshin-impact/How_to_Get_and_Farm_Primogems [perma.cc/BR7Z-JYND] (Dec. 10, 2021).

Monthly Subscription

The most efficient source of primogems is the monthly card in GI, which nets 3000 primogems for $5, in comparison to the 340 one would get for spending in the lowest denominator.[521] The caveat is that the player must log in every day to receive this amount.[522]

Premium Currency Acquisition and Use

In GI (outside of special offers), the most monetarily efficient purchase of the currency used to buy loot boxes, Primogems, is approximately one-hundred dollars for an amount that can purchase approximately fifty loot boxes, or around two dollars per box.[523] That being said, an individual can obtain approximately 100,000 primogems a year (160 opens a box),[524] which converted to GI's 6 week patch windows, means they can receive approximately 72.5 boxes worth of primogems

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[521] *Microtransactions Guide*, *supra* note 517.

[522] *Microtransactions Guide*, *supra* note 517.

[523] *Genshin | Genesis Crystals Guide – Price, Uses, & Bonuses*, GAMEWITH, https://gamewith.net/genshin-impact/article/show/22404 [perma.cc/6SRU-P3GR] (Nov. 26, 2024, 6:09 PM).

[524] The Keebster, *Definitely a Normal Amount of F2P Primogems (1 Year),* YOUTUBE (Sept. 27, 2021), https://www.youtube.com/watch?v=8UEtROqHJSM [perma.cc/K279-KBWP].

(11,600) per patch.[525] The average amount of primogems required to obtain a desired five-star character, is around 15,000, and historically there have been slightly more than one five-star character per patch.[526] Thus, on average, a player can expect to obtain somewhere between two-thirds and three-fourths of all released five-star characters in the timeframe they play, over a sufficiently large period of time, without any monetary expenditure.[527] Of course, this comes with the caveat that fluctuations are common in the short run[528] and that the prior analysis was more of a ceiling than the floor.

Wish banners in GI are only available for 3 weeks, after which players must wait months to years before the content within them becomes available again.[529] New characters in GI are not necessarily inherently more powerful than all other available characters, but newly released content is

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[525] Bruno Yonezawa, *Genshin Impact 4.8 Leaks: How Many Primogems Are Available in the Next Update*, SCREEN RANT (June 21, 2024), https://screenrant.com/genshin-impact-48-leaks-how-many-primogems-amount/ [perma.cc/8PR3-7JAU].

[526] Nahda Nabiilah, *Genshin Impact: How Much Each 5-Star Constellation Costs (in Cash and Primogems)*, GAME RANT (Jan. 31, 2022), https://gamerant.com/genshin-impact-how-much-five-star-constellation-costs-cash-primogems/ [perma.cc/48Z3-Y9SL].

[527] Which, the author believes is decent among gacha games. Very few gacha games allow you to obtain all major gameplay altering items for free, and the author estimates the average is somewhere between a half and two-thirds. Necro Necron, *As an F2P Player, How Many 5-Star Characters Can You Get? Doesn't Matter If You Win or Lose Within 1 Year*, HoYoLAB, https://www.hoyolab.com/article/26150065 [perma.cc/5TLW-7LAP].

[528] The author would know. He took over 100,000 primogems to get his first four desired five-star characters, when the expected value is 60,000. Betrayed Gerger, *How Many 5-Stars Can a F2P Have? (Except MC)*, HoYoLAB (July 24, 2021), https://www.hoyolab.com/article/595951 [perma.cc/FAJ9-CZM4].

[529] *Wish/Featured: 5-Star Characters*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Wish/Featured#5-Star_Characters [perma.cc/BZS7-BF8G] (explaining that the longest gap between availability of limited 5-star characters was 27 cycles or 567 days; some general characters have been unavailable even longer) (last accessed Jan. 16, 2025).

often tailored to their strengths.[530] Not to mention that GI has released 5*
characters (the higher rarity for characters) that have made 4* (the lower
rarity for characters) ones or even other 5*'s almost functionally
obsolete.[531]

Inefficiency of Play

It takes approximately five minutes every day of performing in-
game activities in GI for the equivalent of around 88 cents in premium
currency, which comes out to around $10.50 an hour.[532] That is hardly
above the federal minimum wage, and certainly lower than the amount the
author's law school pays its research assistants. The author may claim he is
being rationale because he derives other utility from these actions[533], but
even if he is not, this may not be something where the government should
intervene? And that is in the best-case scenario, since other manners of
earning premium currency take longer, if available at all.

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[530] *See,* e.g., Genshin Impact Walkthrough Team, *5.2 Tier List and the Best Characters as
of November 2024*, GAME8, https://game8.co/games/Genshin-Impact/archives/297465
[perma.cc/Z9BH-XJVN] (Nov. 20, 2024, 7:36 AM).

[531] *See* Genshin Impact Walkthrough Team, *New and Upcoming Playable Characters
(Version 5.2)*, GAME8, https://game8.co/games/Genshin-Impact/archives/307054
[perma.cc/CQ8E-TJHR] (Nov. 26, 2024, 1:09 AM); *What's the Main Difference Between
a 4* and 5* Character? Genshin Impact*, GAMEFAQS,
https://gamefaqs.gamespot.com/boards/270518-genshin-impact/79019354
[perma.cc/SNV9-43JQ] (last accessed Jan. 16, 2025).

[532] *See* William Parks, *Genshin Impact: How to Get Realm Currency*, GAME RANT,
https://gamerant.com/genshin-impact-get-realm-currency-accumulation-rate-jar-of-
riches/ [perma.cc/HS38-63KU] (Dec. 21, 2021); *Convert and Swap Realm REALM to
United States Dollar USD*, COINBASE,
https://www.coinbase.com/converter/realm/usd#:~:text=How%20much%20is%201%20R
ealm,Realm%20is%20worth%20about%20%240.000889 [perma.cc/L3JB-ZXJT]. (last
accessed Jan. 16, 2025).

[533] *See Minimum Wage*, U.S. DEP'T LABOR,
https://www.dol.gov/general/topic/wages/minimumwage [perma.cc/9QGP-BNPE] (last
accessed Sept. 15, 2024) (reporting federal minimum wage is $7.25 per hour).

Lack of Direct Item Acquisition

Outside of a few specific cases, GI does not have the feature to farm specific characters or weapons at all.[534] ToT gives the player the ability to farm specific units, but additionally allows the acquisition of duplicate copies of most units without monetary expenditure, so long as the player owns the initial copy.[535] Another one of miHoYo's games, "Honkai Impact 3rd" (henceforth "HK3") allows players to directly farm almost all units after a certain length of time has passed since their initial release.[536] Note that HK3 was released the earliest and GI the latest, showing that these anti-frustration mechanics for gamers have been decreasing with time for this company and may be indicative of how the game industry may be moving in the future in general.[537]

Challenging In-game Content

GI does not have direct competition but does have a challenge mode called "Spiral Abyss" where between 10-15% of a free user's yearly

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[534] *See Character: How to Obtain*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Character#How_to_Obtain [perma.cc/7M7B-3M9M]. (last accessed Jan. 16, 2025).

[535] Nicki Si, *How to Farm S-Chips in Tears of Themis*, PRO GAME GUIDES (Mar. 17, 2022, 11:53 AM), https://progameguides.com/tears-of-themis/how-to-farm-s-chips-in-tears-of-themis/ [perma.cc/23GD-HAZA]; *see* Oscar L. Schmidt, *Tears of Themis Beginner's Guide: Tips, Tricks & Strategies to Win Battles and Make Your Cards Stronger*, LEVEL WINNER, https://www.levelwinner.com/tears-of-themis-beginners-guide-tips-tricks-strategies/ [perma.cc/VJ5C-VRJH] (Aug. 10, 2021).

[536] *See* Rafaela NG, *Honkai Impact 3rd Best Ways to Get Crystals [Top 5 Ways]*, GAMERS DECIDE, https://www.gamersdecide.com/articles/honkai-impact-3rd-best-ways-to-get-crystals [perma.cc/PGH5-CV34] (Oct. 1, 2022).

[537] *miHoYo Is a Chinese Development Studio Known for Creating Genshin Impact.*, MIHOYO, https://www.giantbomb.com/mihoyo/3010-13479/developed/ [perma.cc/2ELU-TLKG]; *see* FaridRLz, *Is It Ok from miHoYo to Profit on Player Frustration?*, HOYOLAB (Feb. 26, 2021), https://www.hoyolab.com/article/214256 [perma.cc/X6YP-DFPL] (last accessed Jan. 16, 2025).

primogems are attained.[538] While a veteran player is unlikely to have difficulty fully clearing the challenge mode (as the author has personally cleared spiral abyss with thirty-six stars every cycle for the past few years in spite of his crippling carpal tunnel and bottom decile reaction time), new players may find it challenging. This content is always catered towards newly released characters, thus encouraging players to wish for them.

In HK3, there is a direct leaderboard on their equivalent game mode, with placement determining an individual's awards that include the premium currency to open loot boxes (and other rare and important items).[539] Players cannot view anything except the characters and equipment used to clear there, obfuscating player skill and creating a link between spending and results.[540]

Company Influence on Third Party Content

MiHoYo has a broad ranging content creator program which awards users with primogems for producing content for their games.[541] In addition, they have additional programs that literally give creators **fungible currency** for hitting targets such as total streaming time or video production amount.[542] They also often limit promotive events only to creators that make

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[538] *See Spiral Abyss*, Genshin Impact Wiki, https://genshin-impact.fandom.com/wiki/Spiral_Abyss [perma.cc/XPP6-55K9] (last accessed Jan. 16, 2025).

[539] *See, e.g.*, r/honkaiimpact3, *First Time Getting on a Honkai Leaderboard!*, Reddit, https://www.reddit.com/r/honkaiimpact3/comments/wtza3e/first_time_getting_on_a_hon kai_leaderboard/ [perma.cc/2EY5-XCGX].

[540] *See generally How Effective Is Obfuscation?*, Stack Overflow, https://stackoverflow.com/questions/551892/how-effective-is-obfuscation [perma.cc/LVG2-GT3M] (last updated Apr. 13, 2023) (last accessed Jan. 16, 2025).

[541] *See Genshin Impact Creator Program*, Genshin Impact, https://act.hoyoverse.com/puzzle/hk4e/e0923twitch_603/index.html [perma.cc/K6U8-2TUT] (last accessed Jan. 16, 2025).

[542] *See Genshin Impact Partner Program on Twitch*, Genshin Impact, https://act.hoyoverse.com/puzzle/hk4e/e0713twitch_530/index.html?mhy_auth_required =true [perma.cc/9CBH-DKVE] (last accessed Jan. 16, 2025).

content for their games, not to mention they give some creators on their social media site access to moderation powers which they are free to abuse to further themselves.[543] It would be an understatement to say that miHoYo has quite a sway on the actions of creators, even if there is not a formal relationship between the two.[544]

Influence of Individual Skill on Gameplay

As mentioned previously, the author had nearly all of the best performance measures in all of the pre-release versions of GI, where monetary expenditure was not possible. In spite of having below average luck in his loot box draws then as well, the author ended up having an over 25% greater performance measure than the next closest player to the best of his knowledge, with increasing this measure being harder the higher the value was. To the best of his knowledge, even when compared to the Chinese server, which had longer time to play and the ability to spend money, there were only a single digit number of examples of users outperforming the author, specifically those other individuals who spent thousands of dollars.

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[543] *See, e.g.*, Christine Miller, *Genshin Impact Making Changes to Content Creator Test Server*, GAME RANT (Mar. 18, 2024), https://gamerant.com/genshin-impact-content-creator-test-server/#:~:text=Genshin%20Impact%20content%20creators%20can,for%20both%20creators%20and%20players [perma.cc/5KJH-CDGV] (last accessed Jan. 16, 2025).

[544] *Streamer Partner Program*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Streamer_Partner_Program [perma.cc/95RB-BKJ5] (last accessed Jan. 16, 2025).

As an example from an unrelated game franchise, the author also had the highest rank in the closed test of "Cardfight Online." Again, spending was prohibited and acquisition of cards used in such decks were random.[545] Furthermore, the author placed in the top 100 of the related Cardfight Vanguard Zero Japanese server, while winning over 80% of his matches and spending no money to acquire more powerful cards in a game where spending was enabled.

This is all to say that skill can have a relatively large impact or be the major deciding factor for results in a game, especially when monetary expenditure has no effect on gameplay. Of course, this varies depending on the game, and analysis of whether a particular video game can qualify as a skill-based game is contextually dependent. [546]

Theoretical Maximum Cost

A player in GI maxes out a character at seven copies[547] and a weapon at five copies.[548] Given that there are two different characters per featured banner and two different featured banners per gameplay cycle, that means the largest expenditure a user could make, is every 42 days for those 4 new characters and their corresponding weapons.[549] Assuming an individual had

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[545] *See, e.g.*, *Fighters Gacha*, CARDFIGHT!! VANGUARD WIKI, https://cardfight.fandom.com/wiki/Fighters_Gacha [perma.cc/KRW7-Y649] (last accessed Jan. 16, 2025).

[546] *See What Are Skill-Based Games, and What Is Their Risk of Gaming Fraud?*, INCOGNIA, https://www.incognia.com/the-authentication-reference/what-are-skill-based-games-and-what-is-their-risk-of-gaming-fraud [perma.cc/88WC-4UG3] (last accessed Jan. 16, 2025).

[547] *Constellation*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Constellation [perma.cc/P7VQ-G3EG] (last accessed Jan. 16, 2025).

[548] *Weapon*, *supra* note 477.

[549] Harjrudin Krdzic, *Genshin Impact Confirms Version 5.0 Banner Characters & Re-Runs*, GAME RANT (Aug. 16, 2024), https://gamerant.com/genshin-impact-version-50-banner-characters-reruns/ [perma.cc/JXH5-K8V9] (last accessed Jan. 16, 2025).

the worst luck possible, which is theoretically unlikely, they would take approximately $15,000 dollars to acquire everything.[550] Expensive? Yes. Unlimited expenditure? No.

Ease of Spending Money

For comparative purposes, the ability to access the wish system in GI occurs shortly after the prologue.[551] This is extremely early, given that this occurs at an even lower level than the commission system[552] which requires several hours of play and is the main daily mechanism to obtain free premium currency to use in the wish system.[553]

Items in Same Rarity Level are not Equal

In GI, the relevant items would be the featured banner character or weapon.[554] Even though there are other units of the same rarity in these banners, these are not the item desired by the user. Thus, any guarantee would have to ensure a certain amount of the former, not the specific rarity in totality.[555]

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[550] *Refinement Rank*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Refinement_Rank [perma.cc/QBC4-2YSK].

[551] *See Wish*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Wish [perma.cc/ZP4J-9V3L].

[552] *Commission: Requirements*, GENSHIN IMPACT WIKI, https://genshin-impact.fandom.com/wiki/Commission#Requirements [perma.cc/F7EX-MGD3] (last accessed Jan. 16, 2025).

[553] Zackerie Fairfax, *Genshin Impact: How to Earn Primogems*, SCREEN RANT (Oct. 4, 2020), https://screenrant.com/genshin-impact-earn-primogems-guide/ [perma.cc/75K9-N9FL] (last accessed Jan. 16, 2025).

[554] Bruno Yonezawa, *How the New Genshin Impact 5.0 Character & Weapon Banner Rates Work*, SCREEN RANT (Aug. 24, 2024), https://screenrant.com/genshin-impact-50-characters-weapons-banner-rates-update/ [perma.cc/VG66-3UXD] (last accessed Jan. 16, 2025)

[555] *See generally* Ethan Ham, *Rarity and Power: Balance in Collectible Object Games*, GAME STUDIES (Apr. 2010), https://gamestudies.org/1001/articles/ham [perma.cc/SX5S-NAED].