

Seasonal Trends and Consumer Behavior in Nintendo Game Sales: Analysis and Forecasts for 2025-2026

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Abstract. As the approaching of feeling economy, video games have becoming one of the key medium of psychological and social engagement. The study mainly contributes to find out the relationship between the sales of different types of games and seasons and the motivations behind the trends, and do the forecasting for future trend, while also providing suggestion for sales strategies. The paper uses sales data, during 2022 to 2024, from Nintendo stores in Zhejiang Province(47, 962 records). The research uses basic Excel tools and Python to organizing data and Error-Trend-Seasonal model (ETS) in R Studio to predict the future seasonal trends. The result draws that there is the relationship between game type sales and seasonal changes. Consumers preferences are shifting as the seasons change. In addition, I also find out there usually is a peak in first quarter (Q1), with action, action-adventure, and adventure games remaining dominant.

Keywords: Game, Game Store, Time Series Forecasting, Season, Game History

1. Introduction

When society enters a world at a quicker speed, individuals are increasingly dependent on "feeling products," which offer more emotional value and mental support. Consequently, the gaming industry has experienced rapid expansion. Nintendo stands as one of the leading entities in the global video game sector. Its gaming products consistently achieve strong sales worldwide and maintain significant market appeal. To assess the drivers of its success, multiple factors should be considered, including psychological, cultural, social, and identity-related dimensions. A number of things should be taken into account. The purpose of this paper is to identify and synthesize how different seasons impact the dynamics of game sales. The paper examines historical sales data to uncover patterns and determine if the season influences game sales. The findings can serve as a reference for stakeholders to formulate business strategies and optimize the operation of gaming stores. Furthermore, this paper provides forecasts for the sales performance of different game genres over the next two years. In line with these objectives, the study addresses two key research questions: First, do the seasons differ significantly from one another? Second, how do various game genres do during various seasons? In light of these, the study put out two hypotheses: H1: Winter game sales will surpass those of other seasons. H2: Springtime sports events will be higher than other events.

2. Literature review

To establish a comprehensive historical context for Nintendo's game sales and distribution strategies, a review of existing literature and corporate records was conducted

2.1. Early history: origins and transformation (1889-1970s)

Nintendo was founded in 1889 by Fusajiro Yamauchi in Kyoto, Japan [1]. Unlike its current focus, the corporation initially specialized in the selling of Hanafuda, a traditional handcrafted Japanese playing card. Nintendo soon established itself as a market leader due to its high quality. Following Fusajiro Yamauchi's death, his grandson Hiroshi Yamauchi assumed command. The corporation was looking for a means to modernize and expand under the leadership of Hiroshi Yamauchi. It started diversifying into other industries, including toy manufacturing, instant rice production, love hotels, and taxi services. The business changed its name to "Nintendo Co., Ltd." in 1963 [2]. Although most of these diversification efforts failed to achieve sustained success, this period is widely recognized as a critical turning point in Nintendo's history. Japan experienced a technological boom in the 1970s. During this period, Nintendo started to enter the gaming and electronics industries. Through partnerships with North American firms, Nintendo made its entry into the home entertainment market, successfully launching home video game consoles such as TV Gaming and TV Game 15. Despite having a small range of titles, it settled a strong basis for the gaming industry's future development. Additionally, Nintendo began to concentrate more on building connections with the global gaming and technology industries. A strategic move that paved the way for its future global success

2.2. Innovation, challenges and revival (2000s- 2020s)

In the early 2000s, Nintendo released the Game Boy Advance and GameCube. The GameCube faced intense competition from Sony's PlayStation 2 and Microsoft's Xbox, primarily due to its lack of a built-in DVD player and limited third-party game support. To address this challenge, Nintendo shifted its focus to the Nintendo DS, a dual-screen handheld with touch controls. This device introduced casual gamers to a new style of interactive gameplay. Building on this success, Nintendo launched the Wii in 2006, which revolutionized home gaming through its motion-sensing technology. The Wii became a massive commercial success. It appealed to families and non-gamers alike. Games like Wii played a central role in expanding wider audiences, ultimately driving global sales of over 100 million units. Subsequently, in 2012, Nintendo released the Wii U, a console that failed to replicate the Wii's success. The Wii U suffered from long loading times, confusing marketing strategies, and insufficient third-party game support. It sold only 13 million, making it one of the least successful products. Nevertheless, this failure prompted Nintendo to reassess its strategy and learn from its mistakes which further promoted development. It released other popular games later, like Super Mario Run, Pokémon Go, and Pokémon Café [3,4]. In 2017, Nintendo released the Nintendo Switch. It cracked the game industry. By 2020, global sales of the Nintendo Switch had exceeded 68 million units, with the COVID-19 pandemic further boosting its popularity.

3. Current

Table 1. Top-selling nintendo games by season and year (2022-2024)

Year	Season	Highest sells Game	Amount	Game type
2022	Season 1	Ring Fit Adventure	252	Simulation games
		Pokémon Legends: Arceus	298	Role-playing game
		The Legend of Zelda: Breath of the Wild	112	Action-adventure games
	Season 2	Kirby and the Forgotten Land	97	Action-adventure games
		Nintendo Switch™ Sports	153	Sports games
		The Legend of Zelda: Breath of the Wild	144	Action-adventure games
	Season 3	The Legend of Zelda: Breath of the Wild	165	Action-adventure games
		The Legend of Zelda: Breath of the Wild	113	Action-adventure games
		The Legend of Zelda: Breath of the Wild	125	Action-adventure games
		The Legend of Zelda: Breath of the Wild	57	Action-adventure games
	Season 4	Pokémon Scarlet & Violet	83	Role-playing games
		Pokémon Scarlet & Violet	77	Role-playing games
The Legend of Zelda: Breath of the Wild		175	Action-adventure games	
2023	Season 1	The Legend of Zelda: Breath of the Wild	69	Action-adventure games
		It Takes Two	72	Adventure games
		The Legend of Zelda: Breath of the Wild	74	Action-adventure games
	Season 2	The Legend of Zelda: Tears of the Kingdom	533	Action-adventure games
		The Legend of Zelda: Tears of the Kingdom	359	Action-adventure games
		The Legend of Zelda: Tears of the Kingdom	234	Action-adventure games
Season 3	The Legend of Zelda: Tears of the Kingdom	153	Action-adventure games	
	The Legend of Zelda: Tears of the Kingdom	61	Action-adventure games	
2024	Season 4	New Super Mario Bros. U	34	Action games
		Super Mario Bros. Wonder	106	Action games
		Super Mario Bros. Wonder	130	Action games
		Super Mario Bros. Wonder	113	Action games
	Season 1	Super Mario Bros. Wonder	168	Action games
		Super Mario Bros. Wonder	67	Action games
		Super Mario Bros. Wonder	56	Action games
	Season 2	It takes two	68	Adventure games
		It takes two	75	Adventure games
		It takes two	98	Adventure games
		It takes two	88	Adventure games
		It takes two	58	Adventure games
Season 3	Super Mario Party Jamboree	67	Puzzle games	
	Super Mario Party Jamboree	51	Puzzle games	
	Super Mario Party Jamboree	67	Puzzle games	

3.1. Description and consumer behavioral factor analysis

Drawing on a study published in *Science Letters* (Vol. 11, No. 9, 2021, pp. 2323–2330), this paper defines the key factors influencing consumer behavior as psychological, social, individual, and cultural factors.

3.2. Season 1 (January-March)

There are mainly games related to action, like action games (e.g. *Super Mario Bros. Wonder*), and action-adventure games (e.g. *Zelda* series games) In 2022, role-playing games and simulation games also demonstrated strong market demand [5].

Season 1 coincides with the New Year holiday period, during which consumers often engage in an atmosphere featuring vibrant decorations, social gatherings, and commercial activities. This celebratory and high-arousal atmosphere tends to drive sales of action, action-adventure, and role-playing games as their fast-paced gameplay, dramatic story lines and emotionally intense experiences, which match the emotional state that consumers may experience during the holidays. Moreover, people often assume more introspective or individualistic roles due to the cold weather and more solitary routines. Consequently, players may be more likely to identify with game characters who engage in solo exploration, conquest, or achievement. Furthermore, consumers may be more cautious with their budgets. Individuals with limited financial flexibility may prioritize purchasing games with long playtime or high replay value.

3.3. Season 2 (April-June)

Cooperative and social game genres become more popular in Season 2. Sales rankings are dominated by action-adventure games like *Kirby and the Forgotten Land* and sports games like *Nintendo Switch Sports*. Sports and cooperative adventure games become more appealing because of the spring holidays and the nice weather, which promotes more social interaction and physical activity. To sum up, Sport game, action, and action-adventure games.

The arrival of spring and accompanying warmer weather in Season 2 encourages outdoor activities and social interactions. Games that emphasize social cooperation and physical engagement—such as sports and cooperative adventure titles—align with the public’s psychological state during this period. Additionally, the season also cover the beginning of school and work recover, which means people start to get higher pressure, especially for students. As a result, the sense of achievement and emotional arousal provided by action and sports games offers psychological comfort and an effective way to utilize fragmented time.

3.4. Season 3 (July-September)

In Season 3, cooperative adventure games like *It Takes Two* continue to gain popularity while action-adventure games remain dominant in the market. During the extended summer break, players—especially students—have ample time to immerse themselves in multiplayer and story-driven games

In Season 3, the extended summer break allows for deeper immersion in games, particularly for students and younger adults who have ample free time. During this period, players often adopt the role of “leisure seekers” or “emotional explorers” Players are more inclined to seek story-rich, emotionally driven games that offer long-term engagement and psychological satisfaction. Titles like *It Takes Two*—known for their emotional narratives and immersive cooperative mechanics—

dominate sales during this season. Moreover, long holidays give players more time. Consumers have developed familiarity and skill with these genres, leading to increased confidence and enjoyment. As players become more skilled in fast-paced gameplay mechanics and complex controls, they are more likely to seek out similar games that build on their existing knowledge.

3.5. Season 4 (October-November)

Season 4 sees a surge in party-oriented and family-friendly games. Alongside long-running franchises (e.g., Pokémon Scarlet & Violet), puzzle games (e.g., Super Mario Party Jamboree) emerge as bestsellers. In conclusion, puzzle games, RPGs, and action-adventure games are popular in this season.

Cold weather in Season 4 encourages more family time, as people tend to spend more time at home. In this context, the sense of satisfaction derived from family-oriented and party-oriented games often drives repeat purchases. Additionally, the early holiday preparations drives increased engagement with party, puzzle, role-playing, and family-friendly games.

4. Methodology

To forecast Nintendo's sales data between 2025-2026, this study processed sales data from all Nintendo stores in Zhejiang Province (China) spanning 2022 to 2024. The dataset included a total of 47,962 records [6].

First, Python (in a Jupyter Notebook environment) was used to preprocess the data. This tool automated the labeling of each game into nine main categories: “Action Game,” “Action-Adventure Game,” “Adventure Game,” “Role-Playing Game,” “Simulation Game,” “Strategy Game,” “Sports Game,” “Puzzle Game,” and “Idle Game.” Non-game products were excluded from the dataset during this stage

Subsequently, the Error-Trend-Seasonal (ETS) model—implemented in R Studio—was employed to generate forecasts. This model was selected for its ability to capture seasonal patterns and dynamically adjust to historical data

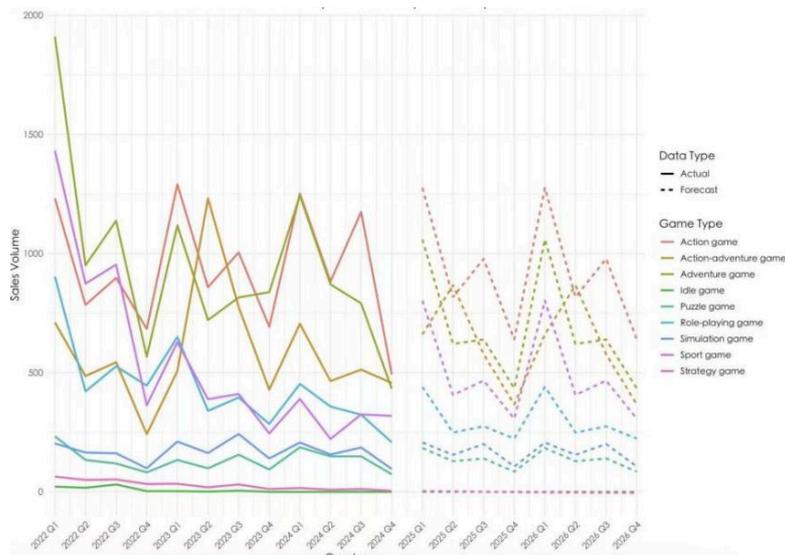


Figure 1. ETS model forecast of nintendo game sales by genre (2022-2026)

According to the ETS forecast, from a macro perspective, seasonal sales peaks will occur in Q1 of both 2025 and 2026. The seasonal minimum sales will happen in Q4 (in Figure 1).

Action, action-adventure games, and action adventure games will remain the dominant genres, consistent with historical trends. Meanwhile, role-playing games, simulation games and puzzle games are stable. Additionally, strategy games and idle games are forecasted to remain in low sales volume.

5. Suggestion

Given the continued dominance of action games, action-adventure games, and adventure games, Nintendo should prioritize optimizing sales strategies for these genres. For example, game cards of these genres could be placed in prominent locations (e.g., the center of the store) to attract consumer attention. Moreover, sales staff could also guide consumers to try these types of games for free, especially for those who show their confusion about their preference. In light of the consistent Q1 sales peaks, store managers should enhance their sales strategies during this season to capitalize on increased consumer demand.

6. Conclusion

This study confirms that seasons exert a tangible influence on the dynamics of the gaming industry. Sales fluctuations reflect not only economic indicators but also societal trends and consumer motivations. During warmer seasons (Q2 and Q3), individuals tend to be more outgoing, socially active, and goal-oriented. This psychological state leads them to prefer cooperative games or games with energetic themes, such as sports games and action-adventure games. In contrast, during the cooler months (Q1–Q4), consumers are more likely to purchase games that promote self-reflection, comfort, and emotional bonding, such as action, puzzle, and role-playing games. Additionally, game sales often peak in Q1. These seasonal rhymes demonstrate how the seasons would influence customer behaviour when it comes to game buying. Understanding this relationship enables stakeholders in the gaming industry to develop more effective sales strategies, particularly for the Nintendo store in Zhejiang province. The findings also support the forecasting of future sales and assist retailers in formulating comprehensive pre-sales plans.

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