

MKTG 749
RESEARCH & ANALYTICS- CAPSTONE
Professor: Patrick Smith

FINAL REPORT V0.3 – DART FLIPCARD INC.

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Background

Dart Flipcard Inc Is a Canadian company based in Montreal, Quebec best known for publishing trading cards and mini lunch boxes based on popular licensed properties. **This company, while active, has not released new card sets since 2002.** (FCI, 2023)

According to their website *“The firm produces published goods and collectibles for the international marketplace. Over the past decade the firm has successfully evolved from producing high quality limited-edition trading cards for the North American hobby market to producing an assortment of products that range from limited-edition specialty collectibles to mass market retail items.”*(Dart Flipcard, N.d)



Image : Adapted from Brittany's Treasure Box (2023) <https://www.ebay.com/itm/185310423600>

Image : Adapted from R and D Games (2023) <https://www.ebay.com/itm/266044176210>

Their products are still easily found on sales and specialized collectibles websites, but at relatively low prices when compared to other similar collectible items. The most famous among them are the albums and trading cards. **This company does not produce most of the items sold; typically, they acquire the materials, such as mini lunch boxes, and print images on them using licensed intellectual property (IP).**

THESE ITEMS INCLUDE:

- Collector cards
- Rockin' Heads™
- Photo cards
- Collectible bears and plush items
- Sticker and sticker books
- Coffee table books
- Mini Lunchbox™

- Promotional products and campaigns
- Tattoos
- Fine art collectibles
- As well as various other published products

TRADING CARDS:

- Titanic Collector Cards
- Diana Lenticular Flipcard- (5 x 7)
- Sailor Moon II Prismatic
- Mr. Bean
- Gilligan's Island
- All New Munsters II
- Sailor Moon
- The Lone Ranger
- Battlestar Galactica
- The FRIGHTENERS
- The Munsters
- Smokey the Bear
- Pepsi Premium
- Hershey's™
- Pepsi-Cola™ Series I and II
- FernGully, The Last Rainforest
- Vietnam Fact Cards - Volume II
- Gulf War Fact Cards (Desert Storm)
- BeetleJuice
- Vietnam Fact Cards



As we can see, **the launching of a collection related to an IP is in a REACTIVE way to the previous launch of those IPs.** For example, the movie hit "Titanic" in 1997 was followed by the launch of cards related to the real ship the next year, not the movie itself. Similarly, the TV series "Beetlejuice" in 1989 preceded the release of cards in 1990 and so on.

The Human Collecting behavior!

Collecting is a physical need:

According to the research by Doctor Muller (2020, collectors are driven not only by initial instigating factors but also by reinforcing contributors that add value and pleasure to the activity. **Scientific evidence supports the notion that the rarity of collectibles can stimulate unique brain responses**, often leading collectors to seek the extraordinary. This behavior may be tied to our evolutionary inclination to explore and assess new experiences for their benefit.



Collecting is considered a biological need for some individuals as it allows them to connect more easily with products, particularly when it helps them find like-minded individuals to engage in these activities. **Approximately 33 to 40 percent of the American population collects one thing or another.** As Muller stated, "**The anticipation of the reward is more exciting to our pleasure center than possessing it.** This explains, in part, why collecting frequently transcends a mere pastime and often becomes a passion. It gives sufficient pleasure that the participant wants to continue it more and more vigorously" (Muller, S. 2020)

A Brief History about collecting:

Evidence of ancient, **mass-produced items collected by humans dates back to 35,000 to 40,000 years ago, indicating that people have assigned value to material possessions due to their emotional or spiritual significance.** Artifacts like the Venus of Hohle Fels and anthropomorphic figures discovered in various burial sites and homes provide examples of such collectibles.

The world's most ancient museum, The Ennigaldi-Nanna, constructed 2,500 years ago, attests to human efforts to preserve items with intrinsic value. Over the course of history, people have recognized the importance of maintaining and conserving objects that hold cultural or personal significance.

In recent times, collecting things has changed. Many collectors gather a variety of items, like special Chinese teacups kept by grandma in closet or now with rooms full of plastic figures from cartoons and movies. **Collecting has always been closely tied to human history, making it one of the oldest and long-lasting hobbies we share.**

Our participants come from diverse backgrounds, and their unique perspectives will give us a broad view of nostalgia and its role in collecting. Their fresh ideas, **free from fixed opinions, will help us learn more about how people from different walks of life see and enjoy collecting things.**



The "Venus of hohle fels " most ancient amulet found. 35.000 to 40.000 years old
Yong, E. (2021, May 3).



The Ennigaldi-Nanna's world most ancient museum. 2.500 years old
Wilkins, A. (2015, December 16).



David Mebane from Knoxville, Tennessee.
Guinness WORLD record of Funko collections
Diaz, E. (2021, May 21).

The real mystery, The Value?

Each time we read about collecting, we can find the word 'value' in there. This is the principal goal of this research: what gives value to these items? Why does carving a rock into an anthropomorphic shape immediately give value to its carrier? Why would someone build an enormous building to protect it? Why spend large amounts of money and time searching for the next piece to add to their collection?



Trading Card Collection:

The Collecting Hype!

During the COVID-19 pandemic, **a surprising resurgence of trading card collecting has taken hold. A nostalgic escape for many, it has offered solace and connection in a time of uncertainty.** Enthusiasts young and old, including celebrities, have embraced this hobby, finding joy not only in valuable cards but also in the lasting friendships it fosters. **The pandemic has rekindled a passion that transcends mere cardboard**, highlighting the importance of life's simple pleasures (Mina, 2021).

It's just paper?

*"The Pokemon Company has released their worldwide sales **and they have sold 9.7 billion Pokemon cards** (an increase of 0.6 billion cards). In addition, the number of card sales has increased by 22.4%, **from 43.2 billion to 52.9 billion. That is good for 18.3% of their lifetime sales sold in their fiscal year of 2022/2023.**"*

-Genshiro (2023)

*"According to MarketDecipher.com, a market research and consultancy firm, **trading cards on eBay grew 1.5 times in 2020, with more than 4 million more cards sold than in 2019. Soccer (1,500% increase) and basketball (370%)** saw the most significant growth among sports cards."*

-Russo, J.(2023)



Image : Jason Brown (2023)" 10 Best Trading Card Games Of 2023" <https://cardgamer.com/games/best-trading-card-games/>

The value of trading cards has skyrocketed in recent years. More people are adding to this hype, not only collectors but also investors seeking to profit from the increases in prices. Additionally, big

companies with powerful intellectual properties (IPs) are launching new collections of cards and other media to be part of this collecting fever.

As an example, **Disney launched a new card game called Lorcana in 2023, and already there are cards with a value of almost €6,000**, showcasing the power of the IPs Disney possesses.



Image : Adapted from giovanni_vault (2023) <https://www.ebay.com/itm/204458107671>

This is the card mentioned above. Despite being a card that is part of a competitive trading card game, it means that the card has value as a playable character in the game. It has been placed inside a plastic and sealed protector to keep it in good condition as a collectible, preventing the card from being used in the game to which it belongs.

This is only 1 of the Best Collectible and Expanding Trading Card Games:

- Disney Lorcana
- Flesh and Blood
- Magic: The Gathering
- KeyForge
- Ashes Reborn
- Summoner Wars Second Edition
- Legend of the Five Rings
- Pokémon TCG
- Marvel Champions Card Game
- Yu-Gi-Oh TCG
- Arkham Horror LCG
- Lord of the Rings LCG
- One Piece
- Cardfight!! Vanguard TCG

Dart's Opportunity.

Business Problem

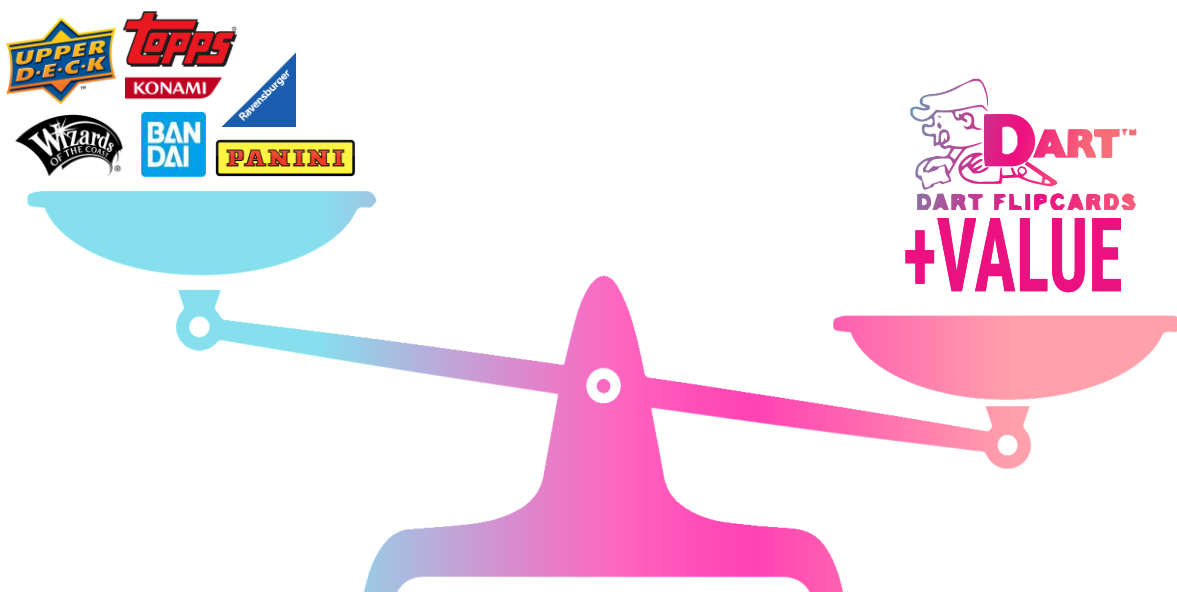
The primary challenge they face is a lack of control over the intellectual property (IP) they aim to use for their products. **They rely on a reactive approach, launching IPs through licensing, waiting on the success of the recently chosen trend, and assuming low costs.** Consequently, they struggle to accurately assess the true value of the IPs and predict the potential market reaction from collectors.

Contrastingly, **major companies that own the IPs directly understand their value and often collaborate with third-party companies to produce such products.** DART FLIPCARD needs to ascertain whether the licensed IPs have sufficient value in the collector's market to create products that resonate with current collectors' preferences.

Business Research Goal

Dart is competing against companies that own high-value IPs, but through excellent research on both collectors and non-collector users, **we can possibly understand what gives value to a specific IP.** This provides Dart Flipcard with the opportunity to gain ground in the market share of collecting items by offering real fans the products they expect, ultimately maintaining or increasing their value over time.

Our most powerful tool in achieving this is data – not only the information gathered in this research but also the open data available on the internet that can be tracked and used for the purpose of this study. Despite Dart being a small company, this information allows it to compete with third-party companies working for major industries. **Dart can strategically choose new IPs available for licensing with promising future value,** thereby minimizing losses to these larger companies.



QUALITATIVE RESEARCH

For this research we need to understand the need of the user and their answer help us to complete the **Golden Circle Model** developed by Simon Sinek that emphasizes starting with "why" before moving to "how" and "what." It encourages organizations to focus on their core beliefs and purpose ("why") rather than just the products or services they offer ("what") and the methods they use ("how"). In our case What people collect? How they collect? Why the collect?



The methodology used for this research will be focus groups

A total of **10 focus groups will be conducted in 4 different locations across Canada** to ensure representation from both collectors and non-collectors **within the postgraduate student population**. To achieve a well-balanced sample, it is advisable to conduct 4 focus groups in the Greater Toronto Area (GTA), considering its large population, and 6 additional groups in Vancouver, Montreal, Calgary, and Ottawa.

Primary objective: To explore the underlying motivations and emotional drivers that lead individuals to collect objects.

Questions:

- *Why do you choose that to collect?*
- *Why have you ever bought an item from a TV show or an old cartoon just because it belongs to that franchise?*
- *When you start collecting?*
- *What is the part that you most enjoy of collecting?*
- *Why are you interested in collecting?*

Secondary objective (1): To employ in-depth interviews and gain rich insights into collectors' experiences, behaviors and narratives surrounding their collections.

Questions:

- *Are you interested in collecting something?*
- *In what are you interested in collecting?*
- *What would you do to give value to a new collectible card?*
- *How do you start collecting?*

Secondary objective (2): To generate a structured understanding of collection types and their needs

Questions:

- *Have you ever bought an item from a TV show or an old cartoon just because it belongs to that franchise?*
- *What item from a TV show or an old cartoon have you ever bought just because it belongs to that franchise?*
- *Do you consider yourself a collector? What this mean to you?*
- *What is your opinion on how value is attributed to these cards?*

Secondary objective (3): To understand the emotions that influence the choice of collectible.

Questions:

- *What kind of movies, cartoons or series do you watched as a kid? Explain*
- *What kind of movies, cartoons or series do you watch now?*
- *What does being a collector mean to you?*

NOTE OF CAUTION

This research was based on the opinions of 11 respondents; thus, the research is qualitative in nature and caution should be exercised when projecting the results to the population as a whole...

Top findings:

- Men are more willing to identify as collectors, while women tend to avoid being labeled this way. It seems that, for them, being called collectors carries a negative connotation.
- Despite being based on sort of IPs woman's products cannot be labelled as collectors' items and they have collectors habit with its.
- Be part of something bigger, connect and be part of a community and gain respect thanks to the pieces from collections.
- As previous research said, Hunting the pieces seems to be the part that collectors enjoy the most, this is maybe why mens are more proud of been collectors
- For guys, when women purchase many units of the same thing, it's considered a collector's habit.
- Have caution must be taken when collecting information from women, avoiding the use of the word 'collection,' as it can affect the answers and potentially introduce bias.

- Rarity of a piece it's a huge part of the projected value that collectors give to a product, in this case just by looking at the price, people assumed that the value came from its features, and they are the ones who begin to attribute value to these.
- Rarity is not a characteristic that products develop over time. It's an expected feature that collectors desire from day one and can be observed during the hunting phase

Roadmap and Report

To see the complete list of insight, recommendations and rationale please read:

- [Appendix F- The Qualitative Roadmap Form \(03 DEC focus group Dart Flipcard \).pdf](#)
- [Appendix G- Qualitative Research Report-AuditMe.pdf](#)

Quantitative Research

Background

After conducting focus group to gain insights from both collectors and non-collectors within the postgraduate student population. The qualitative research phase serves as a foundation, **unraveling the motivations and emotions tied to collecting.**

This exploration sets the stage for the subsequent quantitative research goals, **now that we know that being considered a collector it can have negative feeling**, for this study its important use that term with caution to avoid miss respondents.

The research journey **will progress to the quantitative phase, leveraging the insights gained from qualitative research to develop predictive models and test hypotheses.** The aim is to empower Dart Flipcard to strategically choose IPs with promising future value, enhancing their market position in the evolving world of collecting.

A new Issue: Not rare for collecting

From previous research and by comparing past strategies used by Dart Flipcard, we can immediately identify a new problem in the way they produce cards for collecting. Not only are they a reactive company that produces according to immediate trends or the launch of new Ips.

Upon closer examination of the product, we can pinpoint a small issue that doesn't allow this product to retain value among collectors...

When we look for collecting items, according to the collectors in our focus group, the rarity of the item is the most important characteristic. Dart Flipcard does not emphasize this when launching products. For example, consider the Gilligan's Island 1997 Box. With the purchase of a single display box, people acquire the entire set, diminishing the THRILL OF HUNTING, which is the best phase of collecting items.

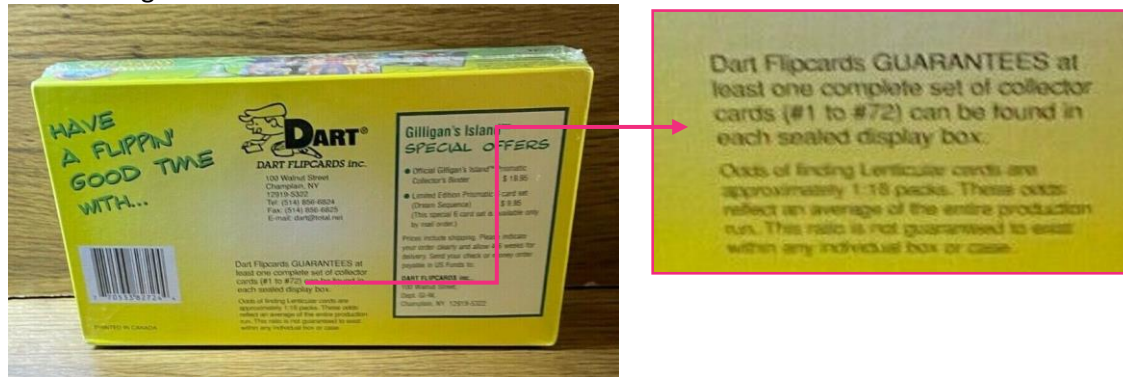


Image by Cape Coral Cards and Collectibles: <https://www.ebay.com/itm/393902257972>

The methodology used for this research will be a Survey crafted and managed using the Qualtrics platform.

Thanks to the information gathered from qualitative research we can identify new possibilities to identify IPs value using the multicultural background of postgraduate students.

Objectives

1. To identify demographic patterns in collecting from postgraduate students.
2. To quantify the prevalence of various motivation factors among collectors.
3. To assess the impact of external factors (e.g., economics, social, personal) on collecting behaviors.
4. To measure the relationship between their motivations and collecting habits.

Hypothesis

H1: "There is no significant difference in emotional attachment to IPs between collectors and non-collectors."

Rationale: Emotional attachment to intellectual properties (IPs) remains consistent across both collectors and non-collectors. The assumption is based on the idea that individuals, regardless of their collecting habits, may form similar emotional connections to certain IPs.

H2: "The age of a specific IP is not a significant factor influencing collectors."

Rationale: By investigating this hypothesis, we aim to uncover whether collectors prioritize other aspects, such as uniqueness or cultural relevance, over the chronological age of IPs.

Methodology

BEFORE START, SOME CONTROL OF RESULTS

As we discover in qualitative research people tend to have problem to identify themselves as collectors or that thing, they buy belong to a collection set of sorts.

To avoid rejection by the respondents when they are identified or when their habits are labeled using these terms, we should not use this terms within the survey, avoiding a bias of the respondents by concealing results to avoid being seen as a collector.

We cannot simply send a survey asking which IPs are the best for collectors, as our goal is to understand global behaviors of different kinds of IP item purchasers, such as:

- **Collectors.** (This include casual collectors, hardcore collectors, niche collectors,...)
- **casual buyers.**
- **IP fans**
- **Investors**

Segmentation and Expected results

By overlapping the common segments used by Envision for collector's incidence (coin/stamp) and non-university students. We can find the minimum expected percentage of collector segments among the respondents.

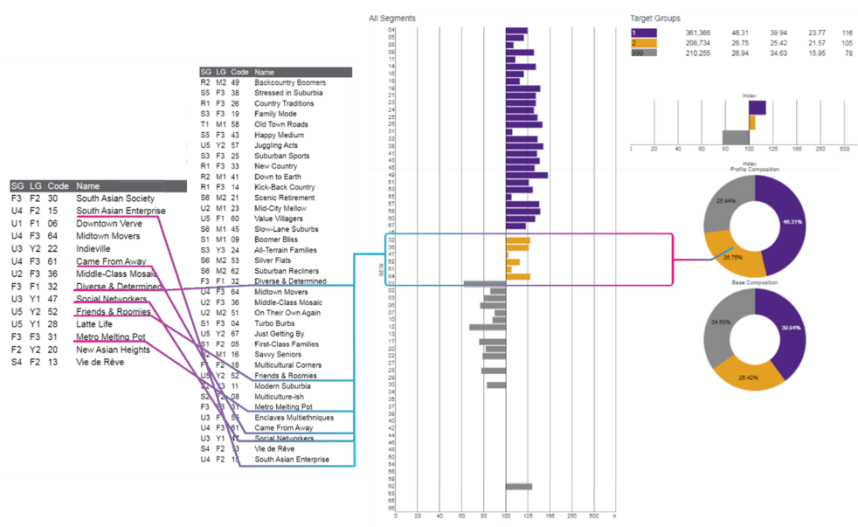


Image: Envision

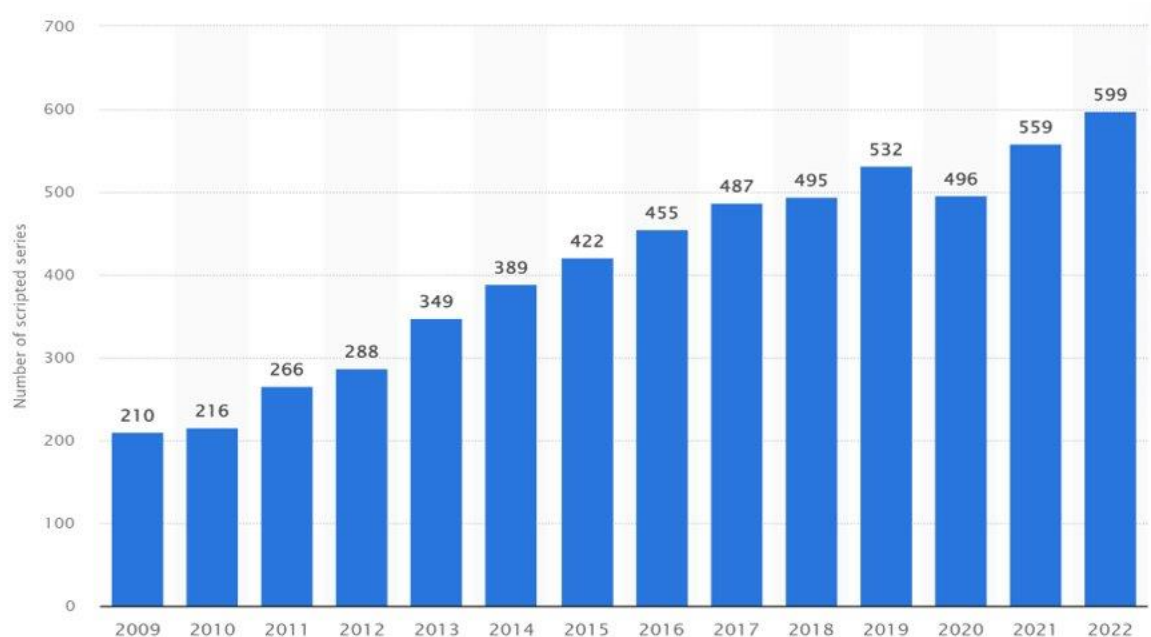
A NEW CHALLENGE

The hardest part is finding a solution for the company to successfully identify IPs that have great value for customers (collectors, casual buyers, IP fans, and investors). To achieve this, it is crucial to find a way to understand customers' perspective, where the value comes from, to decide whether or not to purchase a specific item based on IPs.

TOO MANY OPTIONS

In 2022 a total of 599 new scripted TV series were created just in United States (STATISTA) Now, imagine asking each respondent, who are postgraduate students with a multicultural background, to select or identify the most important ones.

We need to find a method to break down an IP, compare it with individual factors appreciated by a specific sample, and assign it a likeness score.



Number of original scripted TV series in the United States from 2009 to 2022

Graph : Number of scripted TV shows by year U.S. 2009-2022 | Statista. (2023, September 7)

Questions to be answered.

Thanks to the information gathered from qualitative research, we know what people collect, how they collect, and why they collect. Now we are going to use this same method to find the value of the IPs.

- What makes an intellectual property (IP) valuable to both collectors and non-collectors?
- How do these IPs gain value for collectors and non-collectors?
- Why do collectors and non-collectors invest in specific IPs?.

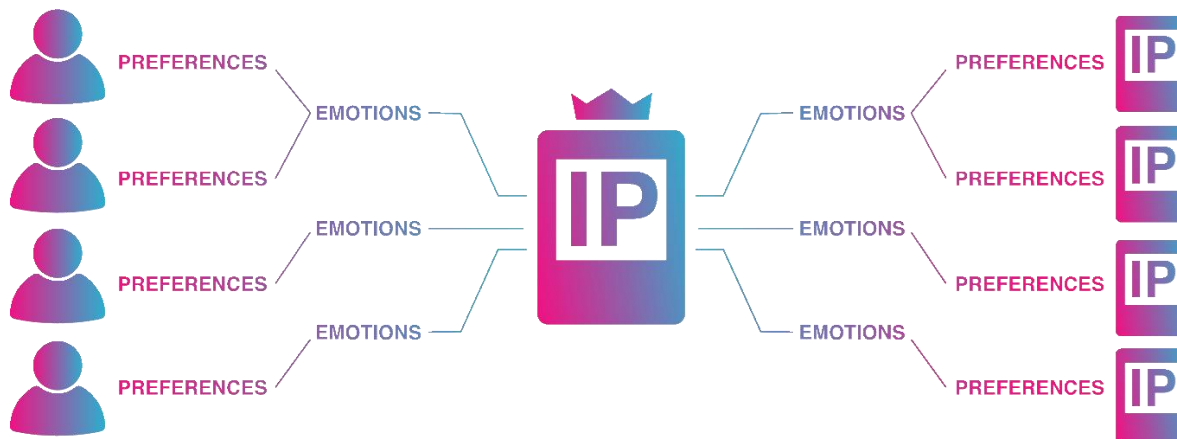
QUANTIFYING THE EMOTIONS...

Understanding and measuring subjective and complex human experiences can be challenging, especially when dealing with a large number of options that vary based on demographics, release dates, ages, and individual factors. However, it's not impossible.

By using a Likert scale to measure respondents' levels of emotional attachment to IPs and providing a list of potential factors that may contribute to emotional attachment, we can group every respondent into clusters of IPs sorted by these same factors. The stronger the relationship, the greater the likelihood of purchasing something related.



Understanding and measuring subjective and complex human experiences can be challenging, especially when dealing with a large number of options that vary based on demographics, release dates, ages, and individual factors. However, it's not



From one side (left) we have the Respondents Cluster, with all their preferences about IP and products related to those, and in the other side(right), the IP cluster with all information like genres and preferences that Respondents can relate to, looking for relationships between those 2 we can maybe find the IP with more value for collectors and non collectors.

Sampling Method

To ensure representation from both collectors and non-collectors within the postgraduate student population. **It is advisable to conduct the survey only in the Greater Toronto Area (GTA) due the short time of this research and the required sample size**

The study used purposive sampling to choose participants who are postgraduate students. This approach made it possible to select individuals with relevant experiences and insights

Purposive sampling, also known as purposeful or judgmental sampling, is a non-random sampling technique where the researcher deliberately selects specific individuals or groups to be part of the study based on certain criteria, characteristics, or qualities.

Sampling size

To ensure representation from both collectors and non-collectors **within the postgraduate student population**. It is advisable to conduct the survey only in the Greater Toronto Area (GTA) due the short time of this research and the required sample size

Population College students GTA 2023	Population Centennial College 2022
Sample size	Sample size
Population size: 780355	Population size: 12785
Margin of error: 5%	Margin of error: 5%
Confidence level: 95%	Confidence level: 95%
Required sample size: 384	Required sample size: 373
Estimated response rate: 20%	Estimated response rate: 20%
Number to invite: 1920	Number to invite: 1865

In order to achieve extrapolation, for both cases, whether it's the centennial college population or the entire non-university student population in GTA, the required sample size is similar. **Approximately 380 completed surveys are needed.**

Sources : 2023 College, CEGEP Or Other Non-University Certificate Or Diploma (ENVISION) /Centennial College | Maclean's Education, n.d.

Survey Design

This survey was designed with 3 main blocks and 2 side blocks for screening and demographic information. According to the responses of people who were skipped from one block to another, **we are able to gather information from collectors and non-collectors and then compare them with each other.**

Block 1 Favorite IP: In this part, respondents select the main source media in which they consume different intellectual properties (IPs) and then write their favorite IP name and why they love it. This allows us to create a relationship between IP and respondents' emotions and understand what they find valuable in that IP.

Block 2 IPs Shopping Habits: Now, respondents share if they buy ANY product related to an IP and why, if they do it regularly, and if that purchase is related to their previously favorite IP.

Block 3 Collecting Habits: For this part, the survey will ask directly about their collecting habits, whether previous or current, what they collect and why they do it, and if they consider themselves collectors or not.

Objectives and Goals

The primary objectives of the survey were to investigate and highlight the nuanced relationship between intellectual property consumption and purchasing habits, specifically focusing on distinctions between collectors and non-collectors.

By shedding light on these distinctions, the research sought to provide valuable insights into the intersections of intellectual property appreciation, consumer choices, and the potential impact on collecting trends.

126 Total Recorded Responses:

38 inconclusive or partial surveys.

21 screened out.

67 Completed Surveys:

37 with collector behavior.

30 with Non-Collector Behavior.

Survey and Report

- [Appendix E-Movies_series_game_preferences-Survey.pdf](#)
- [Appendix H- Quantitative Research Report-AuditMe.pdf](#)

Top findings:

- The format of the media used to consume IPs is important for respondents, for example, audiovisual media have more favoritism against books
- Female respondents do not identify as collectors compared with males.
- Drama and adventure are the genre more popular for collectors
- Both, collectors and non collectors preferred IPS with at least 5 years old over newer IPS
- Collectors prefer Movie theater IPS than non collectors.
- Content diversity, aesthetics and creativity of the media sources are the most compelling aspects for respondents.
- Respondents present the importance of a strong narrative, with a focus on engagement, impact, and quality writing.
- Stunning visual or graphic design scored well, indicating that aesthetics play a significant role in media preferences.
- We can find a strong preference for emotionally driven factors, with excitement, personal connection, and nostalgia playing pivotal roles in IP preferences.
- Respondents also consider collectible value, product quality, and promotional offers, highlighting a balanced approach between emotional connection and utility.
- 36 respondents exhibit actual collector behavior (68%), and we will compare this group with the previous section to understand if there are differences or if they are similar to casual intellectual property consumers
- Respondents have diverse preferences, with strong interests in physical toys, action figures, and printed media. The presence of a significant percentage in the "Digital Items" category suggests a growing interest in digital collectibles, reflecting a shift towards virtual forms of collecting
- The high number of responses in emotional connections and aesthetic appeal underscore the emotional and personal nature of collecting for this group.
- Collectors probably do not care about the investment potential or completionist desire of their pieces; it's more important for them to establish an emotional connection with the piece
- Collectors employ diverse methods, reflecting a mix of planned retail purchases, spontaneous finds, online transactions, and social interactions through trading.

- The significant use of online marketplaces highlights the growing importance of digital platforms in the collector landscape, providing collectors with a wide array of options.
- The results indicate a balance between emotional connection and affordability, with collectors considering both sentimental value and financial feasibility in their purchase decisions.
- The interest in rarity or uniqueness suggests that collectors are drawn to items that stand out and contribute to the distinctiveness of their collections.
- Despite a substantial percentage of respondents not actively collecting anything related to their favorite intellectual property (35%), the remaining respondents (65%), have engaged in collecting to varying degrees. This suggests that a majority of individuals are more likely to buy or collect items related to their favorite IP, emphasizing the prevalent inclination toward ownership or possession of memorabilia associated with beloved intellectual properties.

Analyzing Data

TECHNICAL ISSUE

The survey's design, organized into three distinct blocks, encourages respondents to skip or progress based on their decisions. However, inherent challenges, such as technical issues with the platform or incomplete survey submissions, result in blank spaces across all blocks, indicating missing responses.

Add Filter

▼

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1

of 2

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100

▼

Friends	Nov 17, 2023 9:18 PM	Nov 17, 2023 9:22 PM	IP Address	184.148.77.155	100%
The Office	Nov 15, 2023 8:47 AM	Nov 15, 2023 9:06 AM	IP Address	66.234.32.120	100%
Apex legends	Nov 22, 2023 3:50 PM	Nov 22, 2023 4:00 PM	IP Address	24.114.51.144	96%
Black clover	Nov 20, 2023 9:51 AM	Nov 20, 2023 9:53 AM	IP Address	199.212.27.245	42%
One Piece	Nov 17, 2023 1:07 PM	Nov 17, 2023 1:09 PM	IP Address	199.7.156.246	38%

SAS Enterprise Miner

This software is perfect for this task. Not only will it help us work around those missing files, but it will also assist us in exploring the data to identify clusters within the results and determine if there are different segments, with one of them being the Collectors.

Additionally, by creating a predictive model aimed at identifying whether respondents are collectors or not, we can find survey variables that will help Dart Flipcard understand what defines a collector and their preferences.

BALANCING THE SAMPLE

Having two equal samples in the context of building a predictive model is crucial. A balanced dataset ensures that the model is exposed to an equitable representation of both the target and non-target outcomes, preventing biases and skewed predictions.

Oversampling

Implementing random oversampling. By selectively duplicating instances(7 in total) from the minority class, Non-collectors, I'm striving for a more equitable representation of both Collector and Non-collector categories. Resulting in a more robust and accurate predictive model despite the initial constraints of a small dataset with missing values.

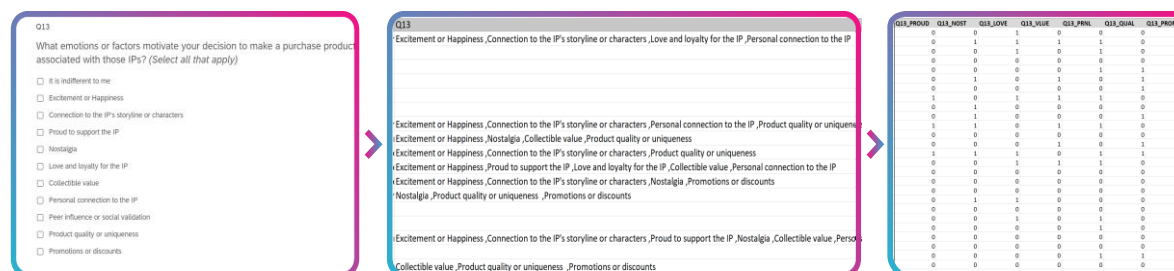
Missing Values For Binary Variable

Since the survey platform issues led to respondents not viewing all blocks, I'm transforming the Unknown data to 0. This simplification aligns with the binary nature of the variables and addresses the challenge of inconsistent response patterns.

By standardizing the representation of missing data as 0, the model can effectively interpret and learn from these instances. This strategy ensures a cohesive treatment of missing values in the context of binary variables.

Encoding, encoding and then...more encoding

We just saw the raw results from the survey, but now we need to find the differences in insight between collectors and non-collectors. But there is a small problem...



The survey incorporates multiple-choice questions that generate answer fields in the form of a list, encompassing all options selected by respondents. Encoding techniques are employed to generate new columns, each representing the individual count per respondent's choices. This methodology extends to demographics questions as well.

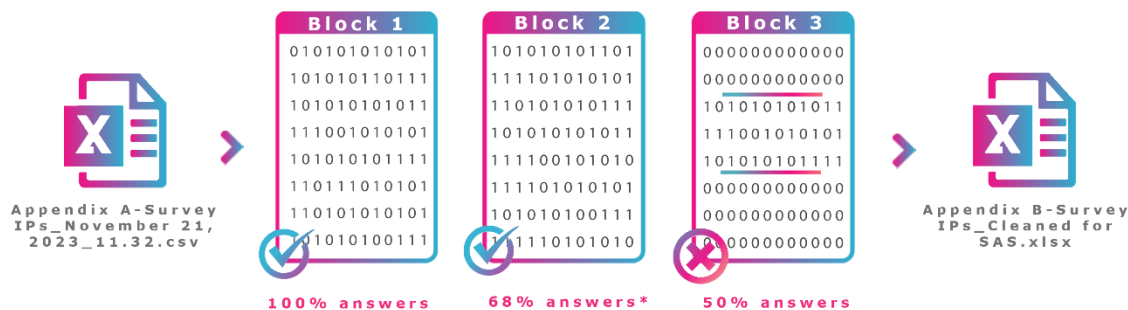
Not only the encoding was used to make easier for SAS work, also to include more value data, for example, the survey just ask for the name of their Favorite IP, then the Release Year, Type of IP and Genres are added to give SAS more variables to work ‘

Favorite Ip #	Favorite IP	Release Year	Year-Range	Range #
1	Titanic	1997	1995-1999	3
2	Jurassic Park	1993	1990-1994	2
3	The Office	2005	2000-2004	4
4	Inglourious Basterds	2009	2005-2009	5
5	The Royal Tenenbaums	2001	2000-2004	4
6	Superman	1978	1975-1979	1
7	Final Fantasy	1987	1985-1989	3
8	Yu-Gi-Oh	1996	1995-1999	4
9	Pokemon	1996	1995-1999	4
10	Naruto	2002	2000-2004	4
3	The Office	2001	2000-2004	4
11	Reality Show	0	0	0
12	Cooking Shows	0	0	0
13	Caballeros del Zodiaco	1986	1985-1989	3
14	League of Legends	2009	2005-2009	5
15	Assassin's Creed Games	2007	2005-2009	5
16	Suits	2011	2010-2014	6
17	Instagram	2010	2010-2014	6
18	Halo	2001	2000-2004	4

Q7-Type of IP	Type of IP-Dram	Type of IP-Sci-Fi	Type of IP-Adver	Type of IP-Action
Movie	1	0	0	0
Movie	0	1	1	1
TV Series	0	0	0	0
Movie	1	0	1	0
Movie	1	0	0	1
Movie	0	1	1	1
Video Game	0	0	1	0
Anime/Series	0	0	0	1
Anime/Series	0	0	1	1
Anime/Series	0	0	1	1
TV Series	0	0	0	0
TV Series/Reality	0	0	0	0
TV Series/Cooking	0	0	0	0
Anime/Series	0	0	1	1
Video Game	0	1	1	1
Video Game	0	0	1	1
TV Series	1	0	0	0
Social Media	0	0	0	0
Video Game	1	0	0	1
Anime/Series	0	0	1	1
TV Series	1	0	0	0
Book	0	0	0	0
TV Series	1	0	0	0
Movie	1	0	0	0
Book	0	0	0	1

Preparing data for SAS

Before introducing the new file into SAS, the block 3 (collectors' habits block) must be eliminated. This will feed the predictive model with 50% of information in blank. We want to know if we can predict if someone is a collector based on their selections related to IP and buying habits for this IP.



*Block 2 has missing information from both segments, as some respondents skipped this question or not shown by platform, However, the distribution of skips is balanced for both segments

The predictive grid

This is a Node based system that prepare the data and automatically run process and show results.
In this case the grid of node look for:

1. 1 Main file
2. 2 Cluster segmentation
3. 3 Predictive models:
 - Decision tree
 - Regression models
 - Neural Network

And one final node for the model comparison
4 and discover which one is better.

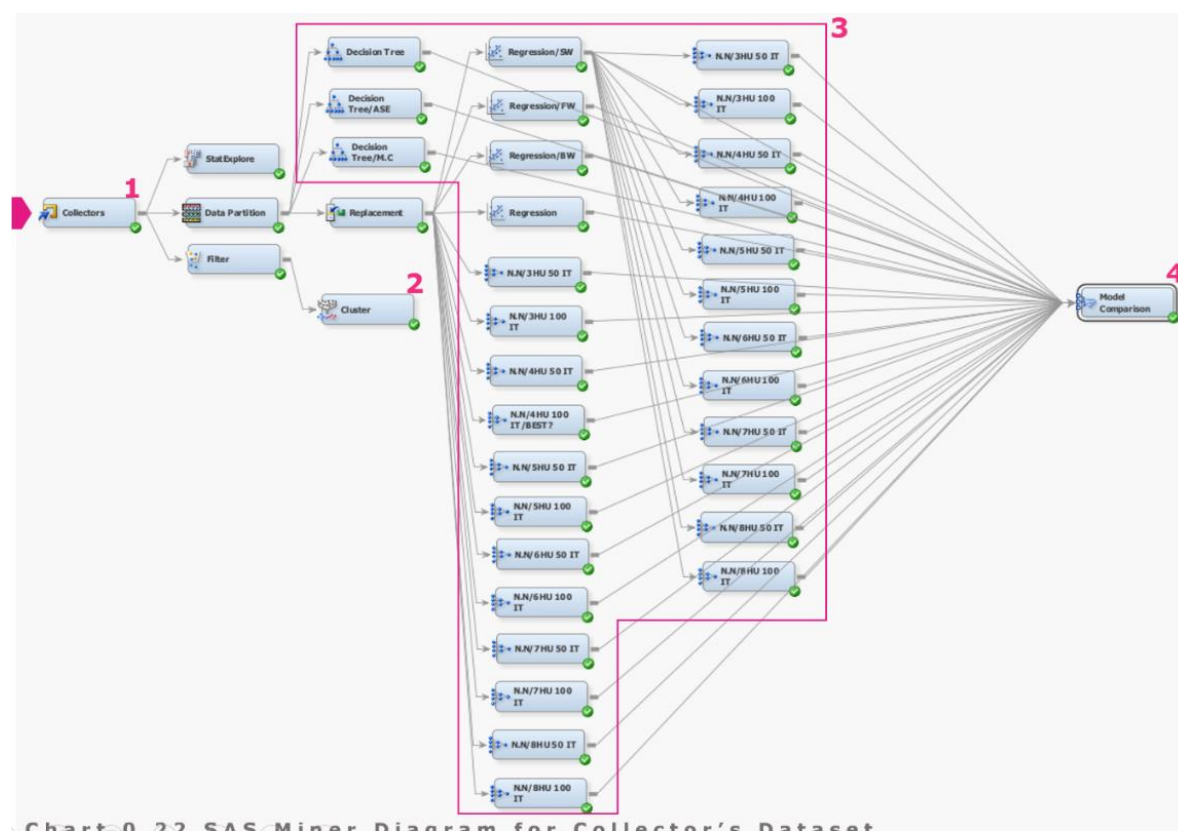
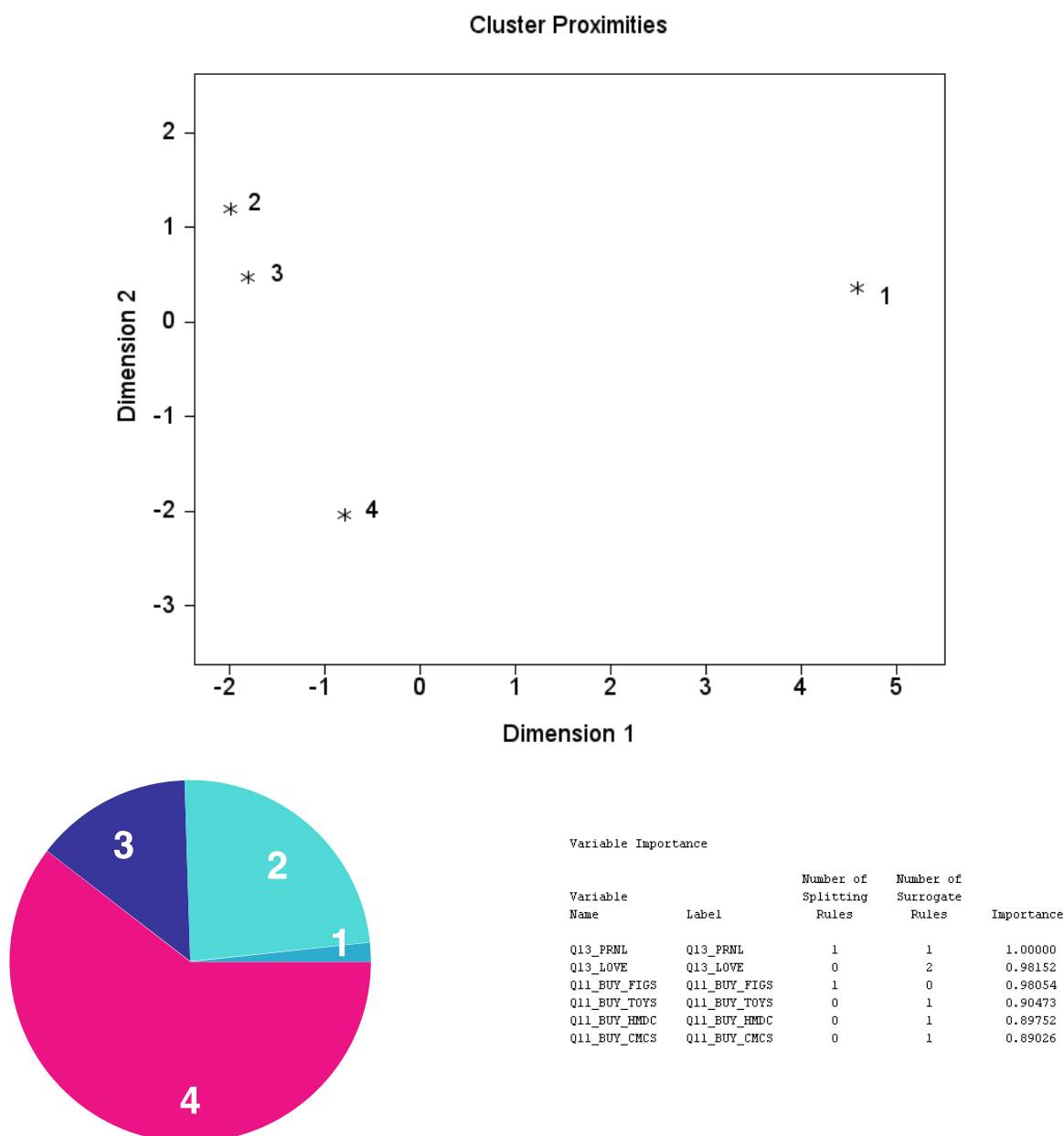


Chart 0.22 SAS Miner Diagram for Collector's Dataset

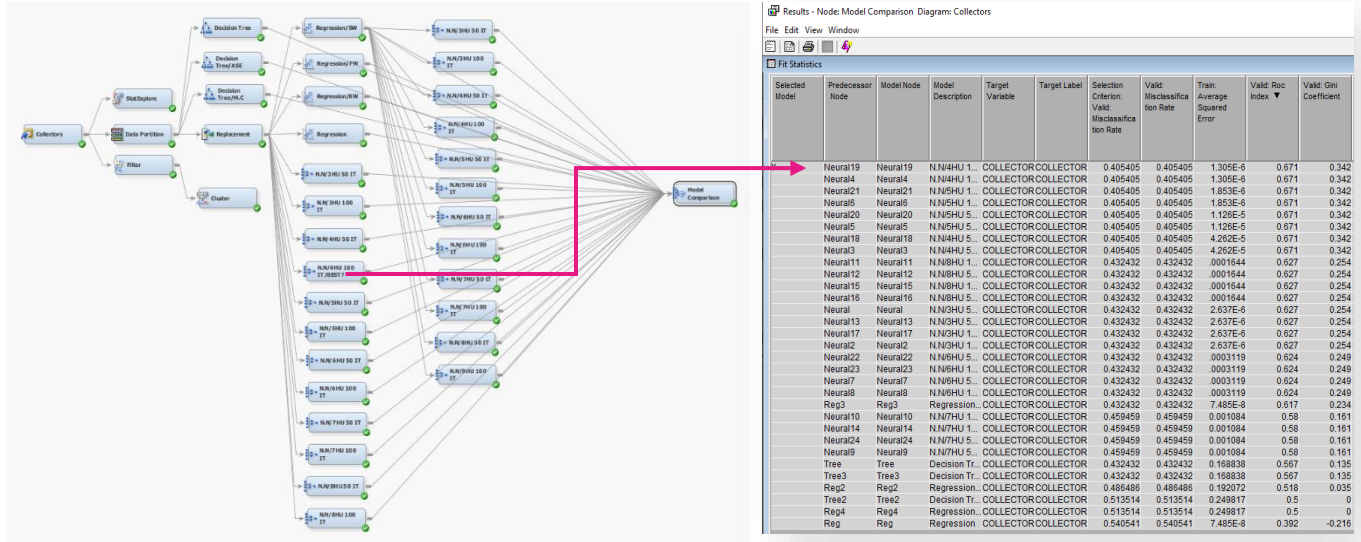
1 step: Clustering

The result was defined into 4 clusters, but it can be simplified to 3 because clusters 2 and 3 are closely related. In cluster 4, we found a significant number of respondents identifying as collectors, highlighting a clear distinction between collectors and non-collectors. In this cluster analysis, the defining variables were personal connection to their favorite IP, love and loyalty to their IP, and buying habits related to figures, toys, comics, and home décor/posters.



In this case the most important variable to cluster, are Personal connections with IPs, Love to that IP and if present Buying habits of different items

2 step: Predicting who is collector



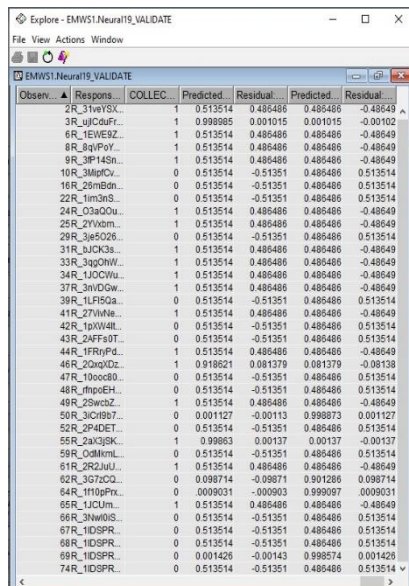
After running all nodes, we use a model comparison node that lists all results, making it easier to find the best model. In this case, the Neural Network present the best results **with the smallest Average Squared Error and Misclassification Rate. However, it had a higher ROC (Receiver Operating Characteristic) of 0.67**, just below the acceptable range for a predictive model. Considering that it's only a small survey, this is a really good result.

Model	Description	Role	False Negati	True Negativ	False Positiv	TruePositive	Accurac	Precisio	Recall	F1 Score
Neural19	N.N/4HU 50 IT	TRAIN	0	18	0	19	1	1	1	1
Neural19	N.N/4HU 50 IT	VALIDATE	0	4	15	18	0.594595	0.545455	1	0.705882
Neural11	N.N/8HU 100 IT	TRAIN	0	18	0	19	1	1	1	1
Neural11	N.N/8HU 100 IT	VALIDATE	0	3	16	18	0.567568	0.529412	1	0.692308
Neural12	N.N/8HU 50 IT	TRAIN	0	18	0	19	1	1	1	1
Neural12	N.N/8HU 50 IT	VALIDATE	0	3	16	18	0.567568	0.529412	1	0.692308
Neural10	N.N/7HU 100 IT	TRAIN	0	18	0	19	1	1	1	1
Neural10	N.N/7HU 100 IT	VALIDATE	1	3	16	17	0.540541	0.515152	0.944444	0.666667
Neural9	N.N/7HU 50 IT	TRAIN	0	18	0	19	1	1	1	1
Neural9	N.N/7HU 50 IT	VALIDATE	1	3	16	17	0.540541	0.515152	0.944444	0.666667
Neural8	N.N/6HU 100 IT	TRAIN	0	18	0	19	1	1	1	1
Neural8	N.N/6HU 100 IT	VALIDATE	0	3	16	18	0.567568	0.529412	1	0.692308
Neural7	N.N/6HU 50 IT	TRAIN	0	18	0	19	1	1	1	1
Neural7	N.N/6HU 50 IT	VALIDATE	0	3	16	18	0.567568	0.529412	1	0.692308
Neural6	N.N/5HU 100 IT	TRAIN	0	18	0	19	1	1	1	1
Neural6	N.N/5HU 100 IT	VALIDATE	0	4	15	18	0.594595	0.545455	1	0.705882
Neural5	N.N/5HU 50 IT	TRAIN	0	18	0	19	1	1	1	1
Neural5	N.N/5HU 50 IT	VALIDATE	0	4	15	18	0.594595	0.545455	1	0.705882
Neural4	N.N/4HU 100 IT	TRAIN	0	18	0	19	1	1	1	1

This model is effective in identifying collectors using information from the survey, achieving an accuracy of around 60% in distinguishing collectors and non-collectors, performing at a 70% success rate in this dataset.

Eureka!

It's possible to predict collecting habits using data through emotions, preferences, and habits of people, leading to the identification of collectors from others



Observed	Responses	COLLEC	Predicted	Residual	Predicted	Residual
2R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
3R_31vYX...	1	0.998985	0.001015	0.001015	-0.001015	
6R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
8R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
9R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
10R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
16R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
22R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
24R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
25R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
29R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
31R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
33R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
34R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
37R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
39R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
41R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
42R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
43R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
44R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
46R_31vYX...	1	0.919621	0.081379	0.081379	-0.081379	
47R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
48R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
49R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
50R_31vYX...	0	0.001127	-0.001127	0.998873	0.001127	
52R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
55R_31vYX...	1	0.998985	0.001015	0.001015	-0.001015	
59R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
61R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
62R_31vYX...	0	0.098714	-0.098714	0.901286	0.098714	
64R_31vYX...	0	0.000031	-0.000031	0.999969	0.000031	
65R_31vYX...	1	0.513514	0.486486	0.486486	-0.486486	
66R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
67R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
68R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	
69R_31vYX...	0	0.001426	-0.001426	0.998574	0.001426	
74R_31vYX...	0	0.513514	-0.513514	0.486486	0.513514	



COLLECTOR	Results	Predicted=1	Residual=1	Predicted=0	Residual=0	Real V Predicted
0	0	0.51351351	-0.5135135	0.48648649	0.51351351	1
0	0	0.00111373	-0.0011137	0.99888627	0.00111373	1
0	0	0.00112879	-0.0011288	0.99887121	0.00112879	1
1	1	0.99862961	0.00137039	0.00137039	-0.0013704	1
0	0	0.00128762	-0.0012876	0.99871238	0.00128762	1
0	0	0.00098851	-0.0009885	0.99901149	0.00098851	1
0	0	0.00077334	-0.0007733	0.99922666	0.00077334	1
0	0	0.51351351	-0.5135135	0.48648649	0.51351351	1
0	0	0.00099668	-0.0009967	0.99900332	0.00099668	1
1	0	0.51351351	0.48648649	0.48648649	-0.4864865	0
0	0	0.09871357	-0.0987136	0.90128643	0.09871357	1
0	0	0.00095579	-0.0009558	0.99904421	0.00095579	1
0	0	0.00090314	-0.0009031	0.99909686	0.00090314	1
1	0	0.51351351	0.48648649	0.48648649	-0.4864865	0
0	0	0.51351351	-0.5135135	0.48648649	0.51351351	1
0	0	0.51351351	-0.5135135	0.48648649	0.51351351	1
0	0	0.51351351	-0.5135135	0.48648649	0.51351351	1
0	0	0.51351351	-0.5135135	0.48648649	0.51351351	1
0	0	0.00142559	-0.0014256	0.99857441	0.00142559	1
0	0	0.00087773	-0.0008777	0.99912227	0.00087773	1
0	0	0.00112742	-0.0011274	0.99887258	0.00112742	1
0	0	0.00128762	-0.0012876	0.99871238	0.00128762	1
0	0	0.00077334	-0.0007733	0.99922666	0.00077334	1
0	0	0.51351351	-0.5135135	0.48648649	0.51351351	1
Number of correct prediction						59
Accuracy of results						79%

Unveiling Opportunities

So, is Dart Flipcard going to receive a survey that predicts collectors by asking them?

No! The goal of this research was to understand which variables contribute value to an Intellectual Property for a collector and to identify **the differences between this group and individuals who do not share collection habits or are unaware of them.** Now, we leverage the collected data from BOTH QUALITATIVE AND QUANTITATIVE research to develop a tangible tool or solution that will contribute to our client's success in the market of collectible items.

Key Findings



M v F

There is **twice the probability** that a male respondent states they have collecting habits compared to female respondents.



The "C" word

Nearly **70%** of respondents with collecting habits deny being collectors when questioned.



Age of IPs

Despite respondents claiming that nostalgia is not a important factor. Approximately **60% to 70%** of respondents indicate that IPs with more than 5 years are their favorites.



Emotions

When asked about factors supporting their IP, **70%** of the answers come from emotional factors.



Predictions

We have identified some crucial variables that allow us to successfully identify collectors with at least a **59%** success rate.

Hypothesis results

Rejected:

Collectors have stronger emotional attachments to their favorite IPs and collected items..

H1: "There is no significant difference in emotional attachment to IPs between collectors and non-collectors."

Rationale: Emotional attachment to intellectual properties (IPs) remains consistent across both collectors and non-collectors. The assumption is based on the idea that individuals, regardless of their collecting habits, may form similar emotional connections to certain IPs.

Rejected:

Collectors and non-collectors tend to choose IPs that have been around for more than 5 years as their favorites.

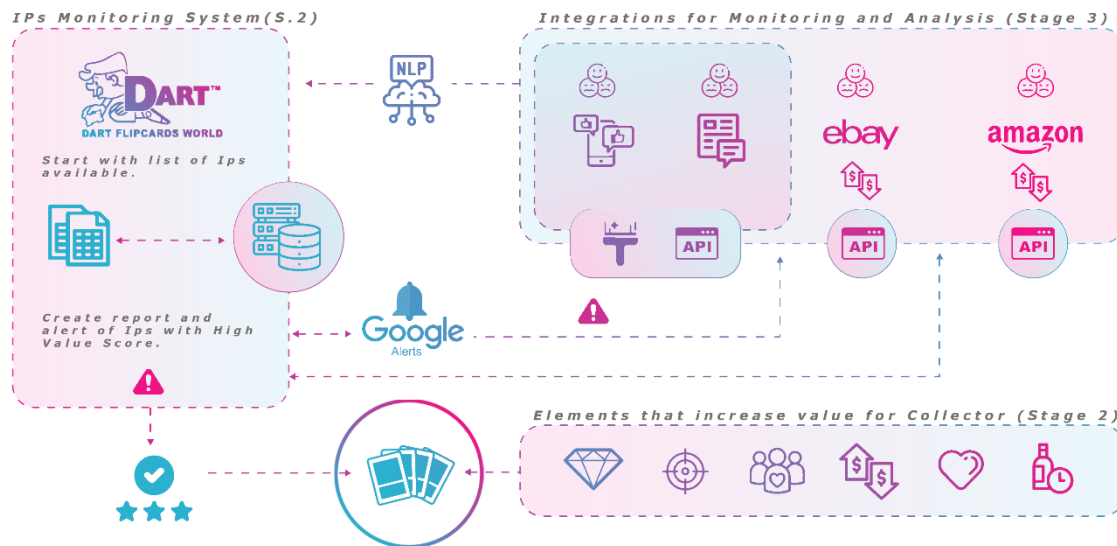
H2: "The age of a specific IP is not a significant factor influencing collectors."

Rationale: By investigating this hypothesis, we aim to uncover whether collectors prioritize other aspects, such as uniqueness or cultural relevance, over the chronological age of IPs

LAUNCHING TACTICS: Recommendations

This is a small investigation that shed light on an ambitious project and laid the groundwork for understanding that it is possible to automate the process of finding valuable IPs. It involves using the relationship of individuals with these IPs through their emotions. However, with such a small sample, the logical step is to repeat the process with the complete sample and enhance the emotional variables necessary for a better study

AUTOMATION PLAN MODEL (STAGE 2+ STAGE 3)



Dart aims to implement a **comprehensive system utilizing APIs from Amazon, eBay, and Social Media to retrieve historical pricing data and collect additional information**, such as customer reviews and comments. Following the **acquisition of textual data, the system will employ natural language processing (NLP) for sentiment analysis**. Furthermore, it will establish a list of available intellectual properties (IP) to license and use Google Alerts to receive notifications when these IPs become trending.

The automated system monitors the IPs, **developing a score based on gathered data through in-depth research that examines words and emotions conveying value for collectors**.

Upon launching reports featuring IPs with potential, **the company must consider the expected values for potential customers, understanding what adds value or meets their expectations** when purchasing these products.

With this model, **Dart Flipcard transitions from being a company with reactive product development to one that predicts and forecasts which IPs are likely to succeed with buyers and collectors**.

Conclusion

In conclusion, this comprehensive study on collector behavior and their preferences regarding intellectual property (IP) has provided valuable insights that can significantly benefit the company involved in licensing IPs for card creation. **By understanding the factors influencing collectors' choices and their connection to specific IPs, the company gains a strategic advantage in identifying which properties hold greater value for enthusiasts.**

This research serves as a crucial early stage in achieving the overarching goal of maximizing the company's potential in the competitive market. Armed with these findings, the company is equipped with the necessary tools to navigate the complex landscape, **effectively compete with larger entities possessing access to important IPs**, and stay on the optimal trajectory to achieve its objectives.

This study not only establishes the feasibility of the project but also lays the foundation for informed decision-making, empowering the company to capitalize on the most lucrative opportunities within the dynamic world of intellectual property licensing.

Appendix

Attachment to this file

- [Appendix A-Survey IPs November 21, 2023 11.32.csv](#)
- [Appendix B-Survey IPs Cleaned for SAS.xlsx](#) or [Preview.csv](#)
- [Appendix C-Survey IPs Exploration collectors vs non collectors.xlsx](#) or [Preview.csv](#)
- [Appendix D-QR to print for Survey IPs.pdf](#)
- [Appendix E-Movies series game preferences-Survey.pdf](#)
- [Appendix F- The Qualitative Roadmap Form \(03 DEC focus group Dart Flipcard \).pdf](#)
- [Appendix G- Qualitative Research Report-AuditMe.pdf](#)
- [Appendix H- Quantitative Research Report-AuditMe-JorgeBarros.pdf](#)
- [Appendix H- Quantitative Research Report-AuditMe.pdf](#)

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