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Market Entry Strategy Analysis for the US Disc Golf Equipment Industry

Case company Liito

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This thesis investigates the market entry opportunities for Liito, a startup company developing a sports tracking device for disc golf, into the US market. The study focuses on three key research questions regarding the US market. These questions pertain to the legal framework, the competitive landscape, and the behavioral differences between American and Finnish disc golfers. To answer these questions, a literature review on the subject was conducted, which was then compared to research using a combination of qualitative and quantitative methods. The quantitative method included an online survey of American and Finnish disc golfers, while the qualitative method included an interview with artificial intelligence. The questionnaire received 776 responses in total.

The findings show that the US market offers significant opportunities due to its mature market, but exportation and the legislative framework are complex and require significant efforts to penetrate. Notable similarities and differences can be found in the demographic, preference, and behavioral characteristics of US and Finnish respondents. The three main differences between US and Finnish respondents were: organizational role, age structure, preferred disc acquiring avenues. The findings also provide solid proof of consumers' interest in Liito's product and its top features. The results also included naming and identifying direct and indirect competitors.

The study does recognize the research's limitations as well as the US complex legal framework. Collaboration with legal experts may be required to provide a more comprehensive understanding of the regulatory environment and potential challenges.

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1 Introduction

1.1 Background

According to PDGA, the Professional Disc Golf Association, golf and disc golf are played similarly. Rather than utilizing a ball and clubs, players make use of a Frisbee® or flying disc. In disc golf, the objective is to finish each hole with the fewest number of throws, or strokes, as the game was formalized in the 1970s. (PDGA 2023.)

From a tee area, a golf disc is thrown at a target, or the "hole." The target for disc golf can be any of several objects; the most popular being a raised metal basket. A player must start every throw they make down the fairway from the same location as their last throw. The fairways' surrounding bushes, trees, and topographical variations present the player with difficult challenges. At last, the hole is over when the "putt" hits the basket. (PDGA 2023.)

According to Business Research Insights (2022) Disc golf, also known as frisbee golf, is a recreational sport activity that has gained a surge of popularity during the past few years. It is an outdoor sport centred on nature. The game is played on a course that has nine or eighteen baskets (holes). Players in the game toss a flying disc toward a target, and the other regulations are the same as in traditional golf. The disc that is thrown is composed of polypropylene plastic. The worldwide disc golf market was worth USD 205.7 million in 2022, expected to rise into USD 538.5 million by 2028, at a CAGR of 17.4% over the forecast period. (Business Research Insights 2022.)

The market for disc golf is growing because of its rising popularity. According to an article on Market Watch (2023) it is necessary to increase disc golf's global appeal. Disc golf has grown quickly, yet it still has little worldwide impact. More than 85% of the disc golf courses in the globe are now found in the United States, Finland, Canada, and Sweden. Many individuals in developing nations such as the Middle East, Africa, South America, and Southeast Asia have never

even heard of disc golf, despite it being extremely popular in Europe and in the US. There are undoubtedly geographical variations in the popularity of disc golf, which presents obstacles to the sport's continued development in underdeveloped areas. (Market Watch 2023.)

1.2 Motivation and Aim of the thesis

Liito is a new start-up company that is entering the disc golf sports tracking industry. The company's founding members are three BBA students, of which the author of this thesis is one.

The mission of the company is to be able to supply tools for the sport and its players in order to further develop what disc golf may be and what technology can do to improve the sport. The most crucial aspect is to increase the user performance in a way that the user can comprehend and improve their own play.

This thesis aims to assist Liito and any newly established company in understanding what is required to enter the disc golf and sports tracking sector in the United States of America. The startup company Liito is creating a device that records and analyses data from the user's disc golf performance and shows this information to the user in a performance-enhancing manner.

The research in this thesis is significant to Liito because the company requires valuable insights and tips on how to export its product into the US market, as well as information on how the US consumers differ from Finnish consumers, in this case disc golfers. Information about consumer behaviour, in particular preferred features, is critical when developing a product from a prototype to a fully functional end product for consumers.

1.3 Comparison to other theses and novelty value

Three distinct thesis papers on the subject were compared to gain a better understanding of the disc golf market, particularly in the United States. The search was done on Theseus and consisted of keywords such as "United States, disc golf, entry strategy, market entry, distribution strategy"

Because the goal of this study is to assess the disc golf and sports tracking markets in the United States, Hyttinen's (2015) thesis, which provided a US disc golf market analysis, provides a solid platform for this. This thesis is a complete examination of the disc golf rivalry and market position, as well as a deep dive into the market's attractiveness and why it has suddenly attracted a significant number of competitors. The main findings are that the US market is complicated and that it would be advisable for the firm under consideration to locate and make use of various internationalization-related support services. (Hyttinen 2015.)

Analysing the thesis titled *Entry Plan for the Finnish Disc Golf Market – Case Study: Above Ground Level Discs* by Kiviharju & Sotiriou (2021) was done to familiarize the author with the disc golf manufacturing and exporting landscape in the United States. Kiviharju and Sotiriou provide insightful comparisons between the Finnish and US disc golf industries in this thesis. Furthermore, there is a wealth of information on the US disc golf brands and the differences in business practices between US and Finnish producers. The main conclusions of this thesis were that indirect export and strategic alliances were two export strategies from the United States to Finland. These strategies could be useful also from Finland to US (Kiviharju & Sotiriou 2021.)

In the study *The Distribution Process* Nguyen (2020) covers how distribution is managed from various angles, as well as the pros and cons of various techniques. This research is quite detailed and exact in terms of distribution strategies and their components. Nguyen's work also reflects distribution strategies in a small organization, taking into account the scale of operations and applying it properly in a plan. The main finding of this thesis was that the

company in question was recommended to use both indirect and direct distribution in different areas of its business to gather benefits from both strategies. (Nguyen 2020.)

These studies have demonstrated thorough committed research on the areas they addressed and have covered the foundations of disc golf and distribution quite effectively. When it comes to this thesis, the research will focus on the sports tracking industry and what it entails. The case study and analysis of the US disc golf market was completed in 2015; however, the disc golf market has developed swiftly and evolved significantly since then. There is a cause for this study to reexamine various areas of the market, particularly from the standpoint of sports tracking.

1.4 Research Questions

The purpose of the thesis is to determine how the startup company should enter the US market, what the direct and indirect competition in the industry is, who buys disc golf accessories, and what the product's perception is.

The thesis aims at answering the following questions:

1. What is the impact of legislation and distribution when entering the US market, and what are the ramifications for companies in the disc golf equipment industry?
2. What are the primary elements of the competitive landscape of the sports tracking market in the US regarding disc golf?
3. What are the demographic, preference, and behavioural variables that distinguish the American and Finnish disc enthusiasts, and how do these differences impact their disc sports choices and participation?

1.5 Structure

This thesis is divided into five major sections: an introduction, a literature review, research methods, results, and finally discussions and conclusions. The literature review that follows the introduction lays the groundwork for the research and a knowledge base of the subject. The chapter "Research Methods" goes into detail about how new information was gathered, including methods, analysis, and implementation. Furthermore, the chapter examines the research's ethics, validity, and reliability, as well as its timeline. The Results chapter is divided into quantitative and qualitative results and concludes with a summary of the research findings. Lastly, in the final chapter, there is discussion and conclusion about what the research accomplished along with final remarks.

2 Literature review

When presented in the appropriate context, a literature review is a type of academic writing that demonstrates the writer's comprehension and familiarity with the academic literature on a certain issue. Since a literature review also involves a critical assessment of the sources, it differs from a literature report. It is a method for both composing and evaluating the literature. (The University of Edinburgh 2023.)

This literature research will concentrate on understanding the current state of the following topics: choosing a market entry strategy, the competitive situation in the target market, understanding consumer behaviour, and defining legislation logistics, and distribution elements.

The search terms used in this literature review were keywords related to the research questions. The following keywords were used for research question 1: US market, market entry, disc golf, sports tracking, legislation, and distribution. The following keywords were used to search for research question number 2:

The United States, competition, competitive landscape, competitive elements, competitive players, frisbee golf market, disc golf market. Finally, the keywords for the third research question were: American disc golfers, The US disc golf market, consumer behaviour, disc golf preferences, disc golf buying behaviour.

This literature review's sources came from a wide range of credible academic publications. The disc golf related sources were primarily from respected industry sources, and the academic sources were primarily compiled from university research, indicating that the sources' reputation is strong. The legal data was obtained from official government websites, and it was up to date and accurate on the date it was collected.

The findings of this literature review are organized into themes that correspond to the research questions. The themes in the following chapters are organized into categories that attempt to open the three research questions and lay the groundwork for them. Market entry strategy and legislation, logistics, and distribution are both related to research question 1. The chapter titled "competitive analysis" presents the findings centred on the competitive theme and is related to research question 2. Lastly, the chapter "Consumer behaviour among disc golf enthusiasts" addresses the third research question.

2.1 Market entry strategy

We will examine the traditional strategies for international expansion in this section. Two entrance strategies were selected for discussion. Exporting is a type of international marketing that focuses on the sale of domestically produced goods to foreign markets. Typically, exporting is the initial step in full-scale worldwide marketing and overseas market access (Doyle 2011). Secondly comes strategic alliance, which is an arrangement whereby two or more businesses participate in a joint activity (Law 2009).

Most companies start their worldwide growth with exporting, as it is frequently the easiest approach to access a global market. Exporting is the process of

selling goods and services that are acquired from one's native nation to another country. Companies that use this entry strategy benefit from lower startup costs when establishing operations in a new nation. Conversely, businesses need a plan for marketing and selling their goods in the new nation, and this is typically achieved through partnerships with regional distributors or businesses.

(LibreTexts 2020.)

Another strategy to enter a new market is to establish a strategic collaboration with a local partner. A strategic alliance is a written agreement between two or more companies that states the parties will collaborate in a particular way for a set period of time in order to achieve a shared objective. To determine whether the alliance model is the best fit for the organization, it must determine what value the partner could provide to the project in terms of both tangible and intangible characteristics. There are advantages to partnering with a local firm as they are more likely than an outsider to be acquainted with the local market, culture, and business practices. (LibreTexts 2020.)

Aulet (2013) outlines a beneficial concept regarding market entry when discussing cores in his book *Disciplined Entrepreneurship*. "Determining your core is a very situation-specific exercise. It requires great thought and there may be multiple options for a Core." Lowest cost option core is often used, though, this is more of an entrance strategy for businesses looking to compete on a different front. According to Aulet for instance, Honda initially offered cheap automobiles, scooters, motorbikes, lawnmowers, and weed cutters when it first entered the US market. Eventually, though, their low prices changed. Their primary skill was actually creating excellent motors; the low price was only an attempt to break into a new market. In this book and especially in this part of the book, Aulet hands out very specific pieces of experience and knowledge about the subject. Aulet also provides concrete examples to help with reader comprehension. (Aulet 2013, 112-114.)

The strategies for the US expansion that have been addressed, in summary, highlight the significance of careful thought and strategic preparation. Strategic alliances place a strong emphasis on working with regional partners to have a

better grasp of overseas markets. To effectively enter the market, Liito must identify their fundamental skills, which is where Aulet's concept of the "core" comes in. When taken as a whole, these observations show how complex international expansion can be and how important it is for Liito to be flexible and take a strategic approach when negotiating the opportunities and obstacles that arise in new markets.

2.2 Competitive analysis

In this topic, we will first look at the type of competition that exists and then we will delve deeper into the direct and indirect competition that Liito may face locally and internationally.

Any way the customer can solve the same problem that Liito can is considered competition. Similar products and services are direct competitors. Indirect competition is the use of a different product or service to solve the same problem for the same target market. (Needham 2017.)

What factors influence a customer's decision to select one solution over another? The price could be lower. The service could be swifter, personalized, or more convenient. The quality can be a better, longer lasting product or more aesthetically pleasing. (Needham 2017.)

The following paragraph will examine the UDisc survey results provided by Hill (2023) on disc golfers' preferences for their favourite disc manufacturers.

According to a UDisc study, 33% of respondents preferred Innova Discs in 2021, but that percentage dropped to 27% in 2022. Though a large portion of that may be ascribed to the increasing preference of Discmania (up 2%) and Latitude 64 (up 3%), other businesses such as Clash Discs (0.3% favored) and Thought Space Athletics (up 0.5%) are contributing to the decline. UDisc claims that Innova continues to have a sizable lead over Discraft, which was selected by 19% of respondents, as the top brand in disc golf. Hill describes "However, it

wouldn't surprise us if Innova quickly made a splash on the European market.” (Hill 2023.)

We can now move on to the competition that is closer to what Liito is aiming at, now that we have looked at the most prominent disc manufacturers and their statistics. GameProofer, TechDisc, and Ace Trace are examples. All three of these are technology providers are attempting to solve problems similar to those being addressed by Liito. Ace Trace and GameProofer both have tracking chips, and Ace Trace creates a flight path for the user. Ace Trace was discovered through a keyword search, while GameProofer and TechDisc were discovered during Liito's research and development process. All of these are covered in greater detail in the following three paragraphs.

The patent-pending GameProofer is a next-generation smart chip that combines several sensors into a single printed circuit board, or PCB. According to GameProofer their chip is small in size and weighs only a couple of grams. The user will receive pre-processed, easy-to-read data and analytics from the device in real time via the mobile application, which is under development says GameProofer. They explain that the chip and the data it provides will be seen in a variety of sports in the near future, even in those where it was previously impossible, such as disc golf. (GameProofer 2023.)

TechDisc is a device inserted under a disc golf disc that collects data. Insert the throw metrics or the flight numbers of the disc. TechDisc Simulates the flight path with data from sensors that it uses. TechDisc connects to a device and throw data will be uploaded automatically to it. TechDisc measures three forces: velocity, spin, and wobble, as well as three angles: nose, launch, and hyzer. (TechDisc 2023)

According to Ace Trace (2023), this company supplies an app that creates flight paths of golf shots. With the ease of a mobile app, Ace Trace tracks golf shots. By drawing a trace on a phone, Ace Trace transforms golf videos into colourful highlights. The user does not need to run complicated video editors on a computer to use Ace Trace. It only takes a minute on the phone. Instead of

using a tripod, users can hold the phone in their hand. Finally, according to Ace Trace, the flightpath will remain constant even if the mobile device moves during video capture. (Ace Trace 2023.)

In conclusion, a variety of environments are revealed when competition is examined inside the framework of Liito's market. It is essential to comprehend elements impacting client selections as well as direct and indirect competition. The results of the UDisc poll show how disc golfers' choices are dynamic and how their brand loyalty is altering.

While Liito targets a particular market niche, a further examination of rivals like Ace Trace, TechDisc, and GameProofer reveals technology vendors tackling related issues. Every rival has something special to offer; examples include Ace Trace's easy-to-use golf shot monitoring app, TechDisc's data-driven disc golf strategy, and GameProofer's cutting-edge smart chip for multiple sports.

2.3 Consumer behaviour amongst disc golf enthusiasts

In this chapter, we will first examine a university definition of consumer behaviour before delving into a blog post by Smellie (2019) that examines a survey conducted by Infinite Discs in 2018. Finally, we will revisit the UDisc survey, this time focusing on purchasing behaviour.

Personal and organizational customers are the two categories of consumers that may be identified, according to a study from University of Pretoria. Personal consumers purchase products and services for their personal use, the use of their homes, or as gifts for other people. Personal consumers purchase for ultimate consumption as a result. In contrast, organizational consumers—which include government agencies, educational institutions, and corporate and non-profit organizations—purchase goods and services in order to operate a company. (University of Pretoria 2009.)

Consumer behaviour, according to a University of Pretoria (2009) research, is the study of how people decide to allocate their available resources such as time and finances concerning consumption commodities. It entails investigating what, why, where, when, and frequency of people's purchases in addition to their behaviour with the items they do make. It also includes everything a consumer does to search for, get, utilize, evaluate, and reject products and services that they believe will meet their needs.

Examining a 2019 questionnaire study conducted for Infinite Discs in the United States, Smellie (2019) states the following: "People are playing lots of disc golf which means they are buying lots of discs. So it seems like a perfect time to take a look back at our disc golf buying habits from 2018." Figure 1 shows how many discs an average disc golfer had in 2018.

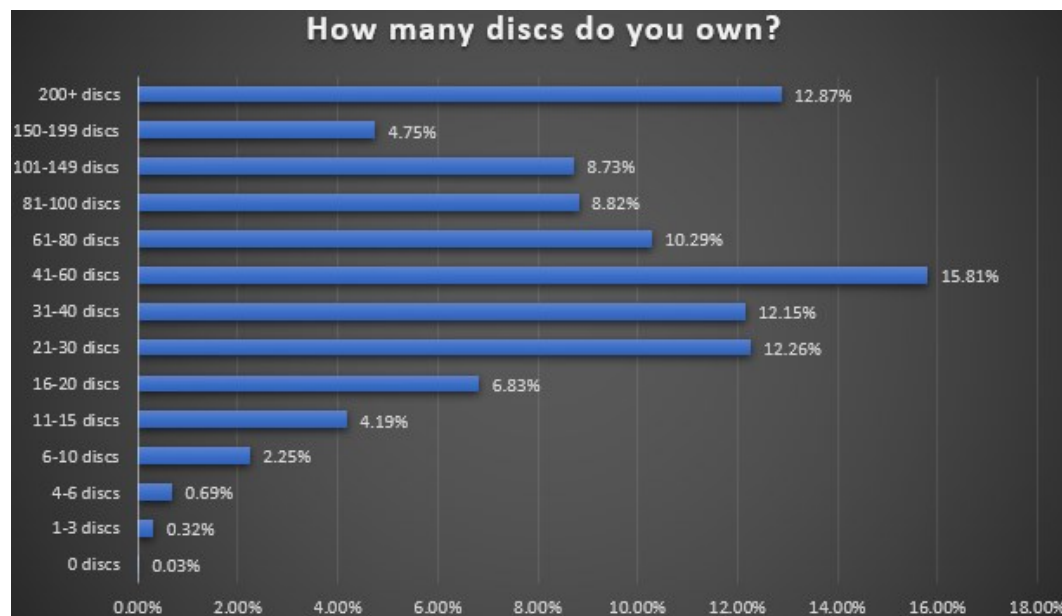


Figure 1. How many discs do you own? (Smellie 2019).

The most common response was 41-60 discs, and the chart shows that nearly 3/4 of respondents own more than 30 discs, which is more than a typical disc golf bag or cart can hold (Smellie 2019). Figure 2 shows how many discs were purchased by disc golfers in 2018.

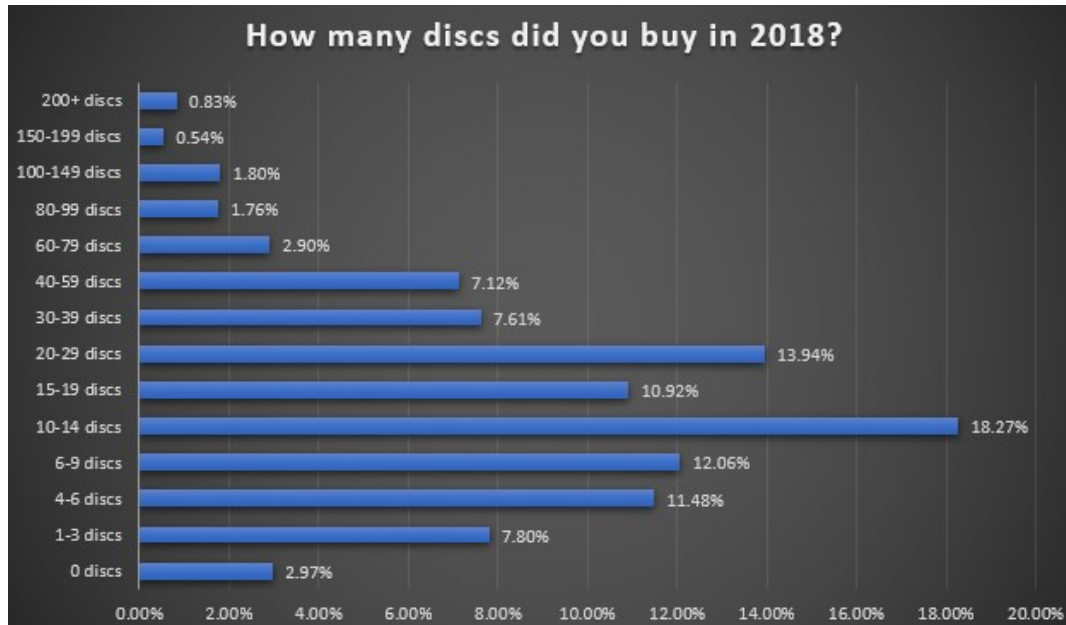


Figure 2. How many discs did you buy in 2018? (Smellie 2019).

Given that slightly more than half of respondents purchased at least 10 discs in 2018, the community's approximate median lies between 10 and 14 discs. According to Smellie, knowledgeable disc golfers who have essentially established a comfort zone in the sport no longer feel as driven to purchase additional discs. The seasoned disc golfer will, however, become more active in the disc golf replacement market if they play more regularly and become more competitive. (Smellie 2019.) Figure 3 depicts where disc golfers obtained their discs in 2018.

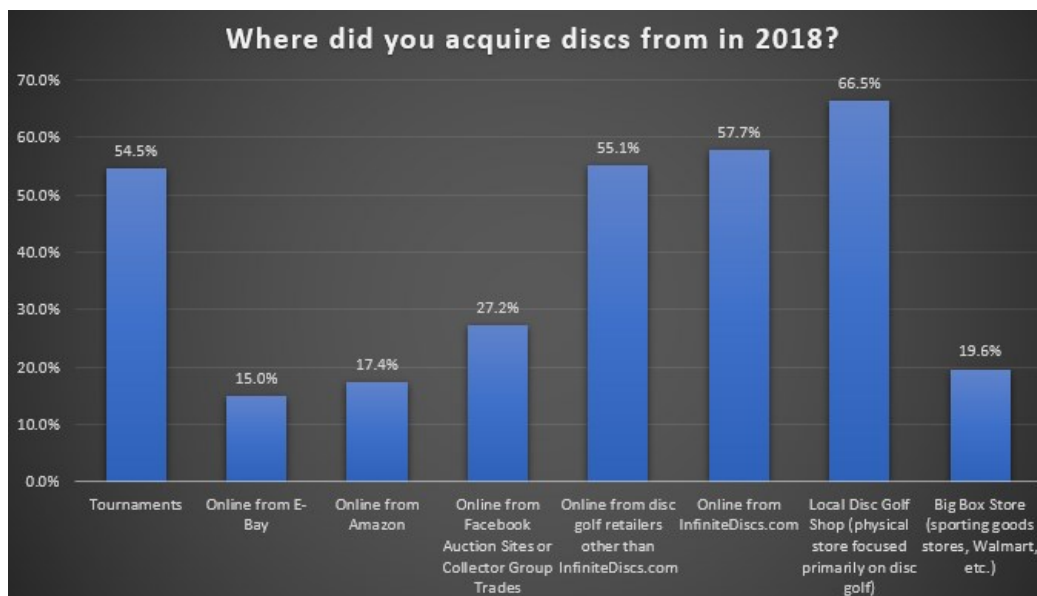


Figure 3. Where did you acquire discs from in 2018? (Smellie 2019).

Based on the responses the primary source for purchasing new disc golf discs is the internet. The survey results also showed that local disc golf shops that specialize in disc golf equipment sales were the most chosen option. However, why would the majority of poll respondents still purchase discs from local shops in a world when internet sellers have forced physical stores to close? This brings up a peculiarity about disc golf: it is helpful to view and feel a disc before purchasing one. (Smellie 2019.)

More than half of respondents to UDisc's annual poll said they played disc golf more than once a week. The precise number is 56%. There is a high chance of selection bias here since the poll was held on the Udisc app, and players who play more than once a week are undoubtedly more likely to search for courses and monitor their scores. (Hill 2023.)

When buying a disc, 53% of players base their decision on the disc's claimed flying qualities, and 44% make their choice based on feelings. Players could pick up to three reasons for their purchases in this multiple choice question (the third most common response was "other"). Merely 12% of participants expressed their inclination to buy a disc due to the sale's support of a

professional athlete, while 10% were influenced by a professional's recommendation. (Hill 2023.)

Merely 7% of disc golf players only carry one brand, and 62% bag four or more. Also, 1% of participants have acquired ten or more brands. (Hill 2023.)

In conclusion, these sources on consumer behaviour in the context of disc golf provides a strong basis for understanding players' purchasing decisions. As Smellie's blog article discusses, the Infinite Discs poll provides insight into the purchasing habits of the disc golf community by highlighting the importance of in-person interactions when making decisions and the importance of local disc shops. The UDisc poll offers useful data on disc selection preferences, player frequency, and the impact of personal sentiment and flying qualities, among other things. The inclination towards online shopping, even in the presence of local disc stores, emphasizes how distinct the disc golf industry is.

2.4 Legislation, Logistics and distribution

This chapter focuses on the first research question and examines the Finnish side of exporting legislative elements before moving on to what the requirements are on the US side of the soil. Finally, we will look at Arnold's (2000) information about distributors and some local distribution tips.

Exporting is the act of transferring products from the EU. Before the items are taken away from Finland, they must be approved for export, which means the exporter must file an export declaration with Customs. Services and intangible assets are exempt from customs clearance requirements. The exporter requires a release decision together with an exit certification. Value-added tax is not applied to products sold to nations outside of the EU. The seller's records must provide evidence to the Tax Administration that the products were exported to a nation outside the European Union. The most often used accepted method of confirming a transaction without value-added tax is the release decision, accompanied by the Customs Certification of Exit. (Tulli 2023.)

After briefly reviewing the Finnish customs information, we will proceed to the information about the US Customs and Border Protection.

The importer of document, who is the owner, client, or licensed customs agent nominated by the owner, client, or consignee, shall file entry paperwork for the goods with the port director at the goods' port of entry upon the shipment's arrival in the United States. The cargo must reach the port of entry, CBP must approve the delivery of the goods, and the estimated tariffs must be paid before the items may be legally entered. The planning of the items' release and inspection is under the purview of the record importer. (U.S. Customs and Border Protection 2006.)

Permission to Consume Entering products is divided into two steps: (1) filing the documentation needed to determine if the item may be released from CBP custody; and (2) filing the documentation including the information required for duty assessment and statistics. These two processes can be finished electronically with the Automated Broker Interface (ABI) application of the Automated Commercial System (ACS). (U.S. Customs and Border Protection 2006.)

According to the U.S. Customs and Border Protection (2006) "Entry documentation must be filed at a place designated by the port director within 15 calendar days of the day a shipment arrives at a U.S. port of entry. These files consist of:

- Entry Manifest (CBP Form 7533) or Application and Special Permit for Immediate Delivery (CBP Form 3461) or other form of merchandise release required by the port director, Evidence of right to make entry,
- Commercial invoice or a pro forma invoice when the commercial invoice cannot be produced,
- Packing lists, if appropriate,
- Other documents necessary to determine merchandise admissibility."

Based on the information gathered from previous sources, it is critical to contact distributors relevant to the company's operation when entering a foreign market with the intention of using distribution. Found on their official website, the PDGA provides a helpful list of Disc Golf Manufacturers & Distributors along with contact details. In addition, there is a way to filter contact information by nation, and plenty of the connections are in the United States. (PDGA 2023.)

The US offices of Business Finland additionally provide assistance and advice in locating local networks and consultants in the intended nation. The services are intended for businesses looking to expand and reinvent themselves on global marketplaces. (Business Finland 2023.)

Based on the information from the sources, we can assume that the company's ability to search for distributors who can expand markets rather than those with a small number of obvious client connections will be important when entering the market. The long-term objectives of the multinational should guide the selection of distributors and the conditions of the partnerships. The distributors' provision of comprehensive market and financial performance data is a requirement for the business to succeed. The quality of information a multinational gathers from the market has a significant impact on its capacity to take advantage of its competitive advantages in a growing market. (Arnold 2000.)

It is advisable to treat local distributors as long-term partners rather than as short-term means of entering a market. The company must set up the partnerships so that distributors become marketing partners prepared to make investments in the long-term growth of the market. Giving a distributor national exclusivity is one conventional method of accomplishing this, but once entrance is established, conflicts of interest may develop and render the deal unproductive. Making a contract with substantial rewards for meaningful objectives, such as new product sales or client acquisition, is a more efficient way to solve the problem. (Arnold 2000.)

To summarise, the exportation process from Finland to the United States entails meticulous compliance with regulatory standards, filing of documentation, and cooperation with multiple parties. VAT exemptions, entry procedures, and the critical role distributors play in breaking into international markets are important factors to consider. According to Arnold (2000), choosing distributors should be based on long-term goals, deep customer relationships, and forming alliances that promote steady market expansion. All things considered, strategic planning, following the law, and building trusting relationships with distributors are necessary for Liito's effective foreign business operations and long-term success in the US market.

2.5 Summary

In reference to the literature review, the assortment of references demonstrated a good groundwork for the export of commodities to the United States. The Infinite Discs survey results were significant and directly answered some behavioural features regarding research question 3. Furthermore, the data collected indicated significant potential as well as details on the favourable times and avenues to market the disc golf accessory goods, discovered in the survey done by Infinite Discs (Smellie 2019). Research question 2 about competition was successful, revealing a new potential competitor and revealing data about disc provider preferences. Both the direct and indirect competition areas have a strong group of competitors. Despite their small numbers, they appear to be rather profound in the industry.

Based on the findings of research question 1 about distribution, we can assume that entering the market should entail researching and communicating with various disc golf distributors, as well as thoroughly valuing and competitively bidding the various distributors. In particular, one should see the distributors as long-term partners rather than just a means of entering the market and assessing their industry expertise and data.

In order to have a stronger foothold in the market later on, it is crucial to consider upon entering the market what the company hopes to provide as a competitive advantage, why, and if it will remain that way or change over time.

Despite all of the useful information provided by the sources, further research is still necessary because a portion of the study does not directly relate to the company's product category. When it comes to the goods, information about logistics and legislation is universal. Nevertheless, data about sales and disc collecting, as well as information about disc golf, are not directly tied to the sports tracking and disc golf accessory fields. While the data provided is useful for sales and marketing purposes, more data collection is encouraged to provide specific responses to the research objectives of this thesis.

3 Research methods

This chapter will explain how the new information will be obtained and then compared to previous knowledge of the subjects. The central idea is to answer the first two research questions about legislation, distribution, and competition using a single qualitative method. The quantitative method is then used to answer the final research question about consumer behaviour.

The characteristics of the participants, the information or evidence to be collected, and the amount of time there is to collect and analyze the data are all important factors to take into account when selecting research methodologies. It is important to consider the research questions and the indicators while developing the approach, and make sure it gathers the data that is needed regarding the research questions. Recognizing prejudice is also a key factor when analysing the results. (University of Plymouth 2023.)

A questionnaire from prospective disc golf players and an interview with AI was used to gather more information about the topic and address the research questions. The purpose of the interview is to learn more about exporting disc

golf products to the US. The objective of the questionnaire is to collect information from American disc golf players and compare it to information gathered from Finnish users. The following methods employ qualitative as well as quantitative approaches.

Figure 4 summarizes the key concepts of the methods.

Research question	Method	Data source
What is the impact of legislation and distribution when entering the US market, and what are the ramifications for companies in the disc golf equipment industry?	Qualitative semi structured interview.	AI, ChatGPT
What are the primary elements of the competitive landscape of the sports tracking market in the US regarding disc golf?	Qualitative semi structured interview.	AI, ChatGPT
What are the demographic, preference, and behavioural variables that distinguish the American and Finnish disc enthusiasts, and how do these differences impact their disc sports choices and participation?	Quantitative questionnaire.	Disc golf enthusiasts and hobbyists.

Table 1. Research methods

3.1 Methods

The research questions “What is the impact of legislation and distribution when entering the US market, and what are the ramifications for companies in the disc golf equipment industry?” and “What are the primary elements of the competitive landscape of the sports tracking market in the US regarding disc golf?” were answered with a semi-structured interview, which is a qualitative method. The intention was to interview human contacts, but that method failed, as will be explained further in the thesis, which is why artificial intelligence was used as a source for this method.

The question “What are the demographic, preference, and behavioural variables that distinguish the American and Finnish disc enthusiasts, and how do these differences impact their disc sports choices and participation?” was answered with an online survey, which is a quantitative method. This method was sourced by Finnish and American disc golfers. The comparative statistics method was used for the analysis.

These methods were chosen because they best demonstrated what information and from where it could be obtained to benefit the startup company. A new company can benefit greatly from field knowledge and expertise from someone who has been in the targeted market for a longer period. The commissioning company was interested in the perception of a new technology product, so a potential consumer of such a product was chosen as the source. The best fit for the consumer data collection was an online survey due to its efficiency.

3.2 Interview

3.2.1 Interview questions

Artificial intelligence was employed to build structure and recommend questions for the study when conducting the interview questions. Because the AI could not

fully understand the context, it gave some recommendations, and the questions were adjusted and made appropriate for the study. In this case, however, it provided a strong narrative structure for the questions and was employed correctly.

AI can be a useful tool for providing perspective. AI is a great tool when utilized correctly, yet human thinking and creativity are still required when creating any type of material. The prompt was put together in Finnish, and the study's corrected and finalized questions were written in English. The following prompt was used: *"Recommend me interview questions for a semi-structured interview. The research questions to be answered in this interview are: 'What is the impact of legislation and distribution when entering the US market, and what are the consequences for companies in the frisbee golf equipment industry?' and 'What are the main elements of competition in the US frisbee golf market?'"*

The following questions address the impact of legislation and distribution in the US market for disc golf equipment:

- Can you provide insights into the current legal and regulatory framework in the US market as it relates to the disc golf industry?
- How have recent legislative changes affected the distribution of disc golf equipment in the United States?
- What challenges or opportunities do companies encounter when navigating the regulatory landscape in the US market?
- Can you describe any specific instances where changes in legislation had a significant impact on a company's entry or operation in the US market?
- How do distribution strategies and channels differ between the US market and other markets for disc golf equipment?

These questions address the ramifications for disc golf companies:

- What are some key considerations for companies looking to enter or expand their presence in the US disc golf equipment market?
- Can you share examples of companies that successfully adapted to the US market's legislative and distribution challenges? What strategies did they employ?
- How do these legislative and distribution challenges affect pricing, product availability, and consumer behaviour in the US disc golf equipment industry?
- Are there any specific market segments or product categories within the disc golf equipment industry that are more susceptible to legislative impact in the US market?

Finally, the questions regarding the competitive landscape of market in the US for disc golf:

- Who are the major players in the disc golf segment in the US, and what are their key strengths and weaknesses?
- What innovations or technologies have emerged in disc golf in the US market?
- How do the US consumers perceive the importance of innovative features in their disc golf equipment choices?
- Are there any notable trends or shifts in consumer preferences for disc golf equipment?
- What strategies do companies employ to gain a competitive edge in the disc golf equipment market in the US?

The majority of the questions were implemented in order to address areas that were not addressed in the literature review. The importance of the questions here was to fill the gaps left by the literature review in terms of the research questions. For example, the literature review did not provide clear answers to any disc golf equipment-related legislative questions. Furthermore, inquiries

about trends and competitive behaviour in the US disc golf market were only answered in general terms, rather than in detail about the US scene.

3.2.2 Interviewee

The initial plan was to contact experts in the field of disc golf. Two disc golf company representatives from companies that operate in both Finland and the US were contacted. The interview questions were sent to these contacts, but neither party was able to answer them, even anonymously, because they were too close to the company's strategic values, which are private. Because this method could not be used with these contacts, it was decided to interview artificial intelligence with these questions, because the purpose of this thesis was to answer these specific research questions, and the integrity of these questions could not be compromised. ChatGPT-3.5 is the interviewee for this interview.

3.2.3 Practical implementation of the interview

The implementation of the interview requires a user account on the OpenAI-hosted artificial intelligence website, which then allows the user to ask questions and type prompts on the website, after which the AI writes a text response to the prompts. At the time of the interview, the version of this AI called ChatGPT was 3.5. ChatGPT was asked questions using the following method: first prompt: "initial question" and a second prompt: "why?". With this method, we get an answer for each question as well as reasoning for the answer.

As an example, consider the following prompt: first question: "Who are the major players in the disc golf segment in the US, and what are their key strengths and weaknesses?" followed by the question "why?" Following that,

ChatGPT may have been asked to summarize these responses with the question "Can I receive a summary of the last answer?"

3.2.4 Data analysis

Thematic analysis is an exact process that breaks down and organizes rich data from qualitative research by assigning pertinent codes to individual observations and quotes, so making it simpler to find major themes. A code is a term or phrase that is used to identify a certain section of text. Coding is the process of giving text segments the appropriate codes. The procedure is broken down into three easy phases in the accompanying image. (Rosala 2022.)

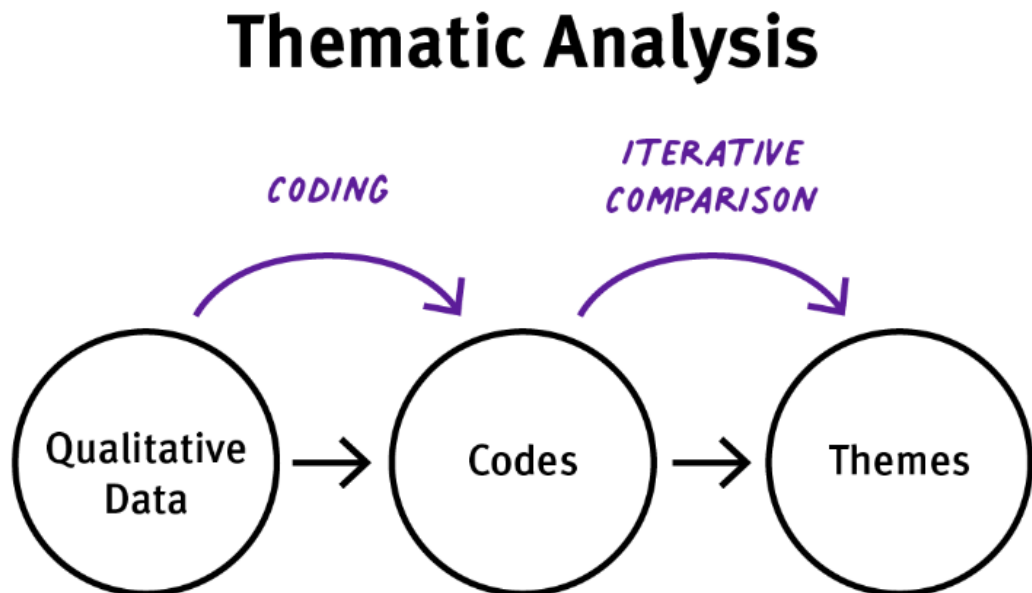


Figure 4. Thematic analysis (Rosala 2022).

Based on the information provided by Rosala (2022) a thematic approach was employed in the analysis of this interview. It was critical to determine what material was repetitive in the answers, because it indicates significance linked

between the research questions 1 and 2. Furthermore, what information was irrelevant and did not directly address the questions, as well as which parts of the answers were most relevant to the research questions. To make it easier to identify these factors, the responses were processed into statements that answered the questions asked.

The responses to each question were compiled into a document for thematic analysis. ChatGPT was then asked to generate thematic codes for the two research questions that would be explored through the interview. ChatGPT was instructed to use the created codes to review and summarize the information from all of the responses; this summary was then described, written into the thesis, and analysed.

3.3 Survey on accessories for disc golf

3.3.1 Survey questions

The questionnaire developed for this thesis titled “Survey on accessories for disc golf” is based on one developed for Finnish disc golfers. In early 2023, Liito developed a questionnaire for Finnish disc golfers as part of the company's start-up process. This is why the questions in the US survey are derived from the Finnish survey rather than the research questions; this was not a problem because the overlap for the research question 3 was significant nonetheless. The survey questions are available in text format below and in full in Appendix 2.

- Which state are you from?
- How old are you?
- How many years have you been playing disc golf?
- Which level are you playing at?
- Do you have a PDGA number?
- How often do you play Disc golf?
- How many Disc golf discs do you currently own?
- How much money would you estimate is in the total value of your disc golf discs?
- How often have you lost a Disc golf disc while playing?
- Do you own any accessories that can be attached to the discs?
- Which app do you use to keep track of the score during the round?
- How interested are you in the accessories that can be attached to your Disc golf discs?
- What features do you think the attachable disc accessory should have? Choose the three most important ones.
- Do you have a smartphone or smartwatch that you could use with an attachable disc accessory?
- What type of attachment mechanism would you like to see on the accessory to fit different types of Disc golf discs?
- If there were different versions or packages of the attachable disc accessory, what features would you like to see in the different versions?
- Where do you usually follow Disc golf news and product announcements?
- How would you prefer to receive information about new disc golf products and accessories?
- Would you be interested in testing attachable disc accessories and giving feedback to developers in the future?
- Do you want to participate in a prize draw for a chance to win a gift card? If yes, please add your email address in the "Other" field. *Email addresses will only be used for the prize draw*

The two questionnaires must be easily comparable, which is why they contain exactly the same questions; this improves the effect of the analyses in providing a clear image of the differences. As said previously, the US questionnaire contained the identical questions as the Finnish one, with the exception that the US one begins with a question regarding the respondent's state of residence. Twenty multiple-choice and open-ended questions are included in both of the online questionnaires. The questionnaire's structure is straightforward: it is divided into two parts: the first is about demographics and disc golf behaviour, and the second is about disc golf accessories.

The survey questions directly address the research question about disc golfer customer behaviour. While the data presented in the literature review was adequate, it is important to compare data from Finnish and American disc golfers. This provides more clear details about the behaviour that the results of the literature review do not. The survey analysis also provides a better understanding of the current situation for the startup company, as the Infinite Disc survey was conducted in 2018, and the disc golf market has seen significant changes over the last five years.

3.3.2 Target group

In this chapter, we will define a target group, as well as the ideal target group for which the survey was designed and where those respondents were attempted to reach. It should be noted that there were some respondents who answered the survey who were not part of the intended group.

Target group or target audience is a chosen portion of the general public that is the main target audience for a text, message, or product. In marketing, segmentation is typically based on psychographics, lifestyles, geographic factors, and/or demographic characteristics. (Oxford Reference 2023.)

The ideal target audience for this survey was made up of enthusiastic American disc golfers and fans who actively participate in and interact with different online groups centred on the game. This choice was based on the close nature of these groups and the activities that take place in these unique communities. Disc golf is a major part of the lives of the Americans of this target group; they are not casual players. These people participate actively in online forums dedicated to disc golf and in Facebook groups specifically dedicated to the sport. Some of them have played for years, and some have just started, but most of them view the sport as a lifestyle rather than a casual hobby. They frequently participate in conversations, provide their insights, and consult with other disc golfers. From novices who are keen to learn to seasoned players with years of expertise, the target group includes players at all skill levels. This target group's members are passionate about disc golf and frequently plan and join weekly competitions, putting contests, and other activities. People come from a variety of demographics, including age groups and residence. In conclusion, the target audience consists of a committed and varied group of disc golfers and fans who utilize online forums to interact, spread the word about their passion for the game, and deepen their knowledge of the sport.

The survey was first shared in four different disc golf groups on Facebook which were Michigan Disc Golf Alliance (2023), SoCal Disc Golf Meetup (2023), Orlando Disc Golf Inc. (2023), and Disc golf discussion (2023). The survey was conducted in these groups for two days, but it did not receive the necessary quantity of responses, so it was distributed to eighteen additional Facebook groups. The list of these is as follows:

- Atlanta Disc Golf (2023)
- Charlotte Area Disc Golf (2023)
- Emporia Disc Golf 2023 (2023)
- 804 Disc Golf (2023)
- Charleston Disc Golf Community (2023)
- Illinois Disc Golf (2023)
- Northern Michigan Disc Golf (2023)
- Minnesota Disc Golf Leagues (2023)

- Disc golf of North Louisiana (2023)
- Oak Grove Disc Golf Community (2023)
- Colorado Springs Disc Golf Scene (2023)
- North Alabama Disc Golf (2023)
- Lewisville Disc Golf (2023)
- MICHIGAN DISC GOLF EMPIRE (MDGE) (2023)
- Los Angeles Disc Golf (2023)
- Dayton Disc Golf (2023)
- We Are Disc Golf (2023)
- Disc Golf Fanatics (2023)

On top of these sixteen groups, it was also shared in the r/discgolf (2023) subreddit.

3.3.3 Practical implementation of the survey

The survey was created using Google Forms. The survey was designed specifically for active disc golf community members from the United States to visit. It appeared to be more difficult to locate and access these locations online because these Facebook groups tend to be quite private. The survey was received mostly negatively, but also some group admins welcomed it and responses were given. It was at this point important to have the introduction of the posts as friendly and open as it could be. To encourage participation, the survey included a prize draw for a gift card to Another Round Disc Golf, a US based disc golf-specific online store. The gift card had a value of \$20 USD. The gift card was drawn using a random number generator from the respondents who gave permission to access their email addresses, and it was then emailed to the winner. (Another Round Disc Golf 2023.)

3.3.4 Data analysis

This survey's analysis method is a comparative analysis. This analytical method was chosen since the results must clearly reveal similarities and differences. The goal of comparative analysis is to identify commonalities and contrasts between the units of analysis. Comparative studies sometimes include an explanation and defence of the similarities and differences in conditions or outcomes across large-scale social entities, usually regions, countries, communities, and cultures. (Drobnič 2023.)

According to Drobnič (2023), when comparing results, it is important to distinguish between those that are clearly opposite and those that show significant similarity and patterns. The analysis in this thesis is between American and Finnish disc golfers' responses regarding, for example, disc buying behaviour, skill level, and number of years active in the sport.

3.4 Ethicality, Validity, Reliability

In the following chapters, we will examine how ethicality, validity, and reliability were considered and how they influenced the research for this thesis.

3.4.1 Ethicality

The word "research ethics" refers to the idea that ethical concerns and proper scientific conduct are necessary for society to appreciate scientific research and give it legitimacy. A component of doing research responsibly is adhering to research ethics. The entire study process is covered by ethics review. Issues with research ethics might have to do with the study's methodology, findings, or topic. These concerns include informed consent, subject anonymity, ethical governance practices, and research withdrawal. They also deal with approved and pending research permissions. (Research Council of Finland 2023.)

It was fundamental to take ethical considerations into account when obtaining data for the thesis. Above all, it was ensured that respondents have provided their informed consent and are well aware of the purpose of the survey as well as their rights. In order to safeguard respondents' privacy and confidentiality, efforts were taken to anonymize data and maintain respondents' identities. Additionally, the survey included a prize draw that needed an email address to enter. It was assured that participation in the prize draw would not be mandatory. The email addresses entered into the draw were only to be used for the prize draw. The objectives and purpose of the questionnaire were also known to the respondents prior to their answering, since they were stated in the introduction of each post made on the forums and groups.

3.4.2 Validity

Validity is the extent to which a study accurately represents or assesses the specific hypothesis that the investigator is attempting to examine. While reliability refers to the accuracy of the actual measuring equipment or technique, validity refers to the study's ability to assess the variables that the researchers planned to evaluate. It is important for researchers to focus on both internal and external validity. (Howell et al. 2005.)

The degree to which study findings are transferable or generalizable is known as external validity. When a study is conducted rigorously—that is, its design, measurements are done carefully, and decisions are made about what is and is not measured—it is said to have internal validity. (Huitt 1998.)

The questionnaire included a variety of questions with sufficiently different choices to enable analysis. The survey's format allows for the examination of the results and the discovery of variety. Although it is not flawless, a survey is a proper approach for this study and has the potential to yield meaningful results that may be studied. However, in terms of validity, it would be preferable to

study the lives of disc golfers directly and analyse what their lives actually consist of.

Given the questionnaire included a prize draw and was carried out in a number of public Facebook groups and disc golf forums, there is a risk of dishonest and automated responses.

It is crucial to consider that the respondents for this study were members in specific disc golf-related forums and groups when assessing the findings. Even though that was the target group, it should be highlighted that the results cannot be directly applied to the sports public as a whole. These individuals are often more active in the disc golfing community. For instance, ownership and sales statistics for disc golf discs are probably higher than anticipated for the general public of the sport.

3.4.3 Reliability

A test, experiment, or measurement technique is considered reliable if it consistently produces results after several attempts. Reliability has a critical role in many aspects of our lives, including industry, healthcare, and sports, in addition to its significance in research. A survey's dependability is directly impacted by the quantity of respondents, in particular. (Howell et al. 2005.)

3.5 Schedule

The timetable for the research is illustrated in Table 2, which indicates the dates for developing the approach to research, the time it took to collect results, and how much time and when the information acquired was analysed. It started on April 16th, 2023 and ended on November 10th, 2023.

Tasks to complete research	Approximate time period (Finnish survey)	Approximate time period (The US survey)	Approximate time period (Interview)
Building the structure	2 days starting from April 16 th	1 day of translation October 16 th	2 days of building interview questions starting from October 26 th
Gathering results and responses	April 19 th – April 30 th Approximately 1.5 weeks	October 18 th – November 1 st Approximately 2 weeks	Interview conducted on 3 rd of November
Analysing the results	1 week from 3 rd of November to 10 th of November	1 week from 3 rd of November to 10 th of November	1 week from 3 rd of November to 10 th of November

Table 2. Research schedule.

4 Results

4.1 Interview

We will now look at how ChatGPT responded to the questions it was given. The results are organized into two categories and themes, the first of which is legislation, logistics, and distribution, which answers the first research question, and the second of which is competitive landscape, which answers the second research question. Following an example of how the results were gathered, the rest of the results are compiled using the same method as in the first example. This way, we can see the method first and then concentrate on the results.

Here is an example of how ChatGPT compiled the final answer:

Prompt: "Can you provide insights into the current legal and regulatory framework in the US market as it relates to the disc golf industry? Put the answer in a long paragraph with key points."

Answer: "As of my last knowledge update in January 2022, I don't have specific and up-to-date information on the current legal and regulatory framework in the US market specifically related to the disc golf industry. Legal and regulatory landscapes are subject to change, and it's crucial to consult the most recent sources for the latest information. Generally, the disc golf industry operates within broader recreational and sports industry regulations. Key aspects to consider include land use regulations for disc golf courses, potential liability issues, intellectual property concerns related to disc designs or branding, and compliance with safety standards for equipment. Local jurisdictions may have varying rules regarding the establishment of disc golf courses in public parks or private lands. Environmental regulations may also come into play, especially if courses are developed in natural areas. The industry might also be impacted by broader consumer protection and business regulations. To obtain the most accurate and current information, it's recommended to consult legal professionals familiar with the specific nuances of the disc golf industry and stay updated on any recent legislative or regulatory changes that may affect the sector." (OpenAI 2023.)

All of these responses were compiled into a long list, which was then returned to ChatGPT with the following prompt: "Conduct a thematic analysis on this text based on these two research questions being the thematic code:

1. What is the impact of legislation and distribution when entering the US market, and what are the ramifications for companies in the disc golf equipment industry?
2. What are the primary elements of the competitive landscape of the sports tracking market in the US regarding disc golf?"

The following chapters are results cited from ChatGPT's detailed answers and divided into the two thematic categories where ChatGPT placed them.

4.1.1 Legislation, Logistics and Distribution

The US disc golf industry's legal and regulatory framework takes into account a number of factors, including land use permits in public parks, liability and insurance, the protection of intellectual property, adherence to Professional Disc Golf Association (PDGA) tournament rules and regulations, environmental and conservation concerns, local ordinances and regulations, accessibility, and compliance with drug and alcohol laws. In order to assure compliance, manage risks, and run their disc golf courses and enterprises efficiently, people and organizations participating in the sector must obtain legal counsel and assistance. These rules and regulations can differ depending on the jurisdiction and may change over time. (OpenAI 2023.)

According to ChatGPT no notable recent legal changes that directly influence the distribution of disc golf equipment in the United States were known as of the time of the previous knowledge update, which took place in January 2022. However, laws can change over time, and it is conceivable that since then, new rules or trade agreements have been implemented. It is advisable to consult manufacturers, trade groups, or legal professionals with expertise in the disc golf equipment business to obtain up-to-date information on the potential effects of legislation changes on the distribution of disc golf equipment in the United States. They are able to shed light on any changes that have happened since the last update. (OpenAI 2023.)

According to ChatGPT, businesses operating in the US market must deal with a complex and dynamic regulatory environment that can present challenges such as high compliance fees, legal ramifications, and industry-specific rules. Navigating these laws, however, can also present opportunities: access to financial incentives or prospects for international development; reduced obstacles to market entrance that restrict competition; increased customer trust via compliance; and innovative responses to regulatory changes. Businesses

that thrive at regulatory compliance frequently discover chances for market differentiation and strategic benefits. (OpenAI 2023.)

The AI tells that due to differences in market sizes and degrees of maturity, disc golf equipment distribution tactics and channels vary between the US and international markets. While overseas markets may rely more on internet sales and have fewer dedicated pro shops, the U.S. disc golf business is larger, more developed, and has a network of specialist stores. Distribution tactics in each market are further influenced by competitive landscapes, cultural variations, and regulatory issues. Businesses wishing to enter foreign markets must modify their distribution strategies to fit the unique demands and preferences of each region. (OpenAI 2023.)

4.1.2 Competitive landscape

ChatGPT describes the competitive landscape as a mix and goes on to describe the major players, as well as their strengths and weaknesses. Innova discs, Dynamic discs, Professional players, Local clubs, Small Manufacturers, Independent Retailers, and Media Companies are the major players in the competitive landscape.

As of the most current information update in January 2022, organizations and professional players were listed as major participants in the disc golf business in the US by ChatGPT. (OpenAI 2023.)

The professional disc golf association (PDGA) is in charge of player ratings and tournament management. It creates and upholds the sport's norms and regulations. Strengths for the professional disc golf association (PDGA) are that it is in charge of setting standards and regulations. Weaknesses include that as an organization, PDGA occasionally faces difficulties with bureaucracy and

being receptive to player demands and the expanding disc golf community. (OpenAI 2023.)

According to ChatGPT Innova is a major player in the market. The disc manufacturers strengths are that it is one of the biggest and most reputable producers of disc golf discs. It is renowned for its quality and inventiveness and provides a large selection of disc models. Weaknesses include that Innova's market domination restricts variety and innovation in the sport. It is more difficult for smaller producers to compete. (OpenAI 2023)

ChatGPT describes the strengths of Dynamic Discs to be that it is a well-known company with a wide range of discs and a robust following in the disc golf world. Their network of sponsored players is extensive. Weaknesses on the other hand are that it is like Innova, smaller producers may find their potential limited by the dominance of Dynamic Discs and a few other manufacturers. (OpenAI 2023)

ChatGPT tells that professionals (for example, Paul McBeth, Ricky Wysocki, and Paige Pierce) have strengths like the ability to popularize the sport, and they frequently have a large social media following. They can also motivate and instruct new players. Weaknesses are that the professional players' performance can be inconsistent, and their impact on the sport can change over time. (OpenAI 2023)

Local clubs and courses are critical to the growth of disc golf. They provide players with opportunities to practice and compete. Local clubs' weaknesses are that their resources and funding may be limited, limiting the development of courses and events, according to ChatGPT. (OpenAI 2023.)

ChatGPT describes that smaller manufacturers and individual shops have the ability to give unique disc selections and equipment. They also contribute to the

sport's diversity. Weaknesses: They may find it difficult to compete in terms of manufacturing capacity and marketing with larger firms. (OpenAI 2023)

According to ChatGPT media companies have played a crucial role in providing coverage of disc golf events, both through live broadcasts and edited content. They help increase the visibility of the sport. Their weaknesses include that their financial viability in a specialized activity like disc golf might be difficult. (OpenAI 2023)

The competitive landscape and product offerings in the sport's tracking market for disc golf include several key factors. Manufacturers compete by offering a variety of disc models, plastics, and blends to cater to different player preferences. Performance is a central focus, with an emphasis on factors such as durability, grip, and flight characteristics. The influence of professional players and their endorsements also plays a significant role in product choices. Players often look to the top pros for guidance on disc selection, as their expertise and performance can directly impact consumers' decisions. (OpenAI 2023.)

Technological advancements have been a notable trend in the disc golf industry, with innovation occurring in various aspects. Disc technology has advanced with the introduction of new disc molds, materials, and flight analysis tools. Course design software has also gained prominence, helping course designers optimize layouts. The use of drones and aerial photography for capturing stunning visuals of disc golf courses has increased, especially for media coverage. Media companies have contributed to the sport's growth through live broadcasts, commentary, and in-depth analysis. Furthermore, the development of data tracking and scoring apps has provided players with valuable tools for recording scores and tracking performance on the course. (OpenAI 2023.)

Consumer behaviour is another key aspect of the sports tracking market in disc golf. Players' preferences for innovative features, traditional equipment, and the importance of customization options may vary. The influence of social media, online communities, and peer recommendations has a significant impact on consumer choices. Sustainability considerations, including eco-friendly product options, have gained importance as environmental awareness grows in the disc golf community. (OpenAI 2023.)

Marketing and influence strategies are central to the competitive landscape. The influence of professional players through endorsements and sponsorships significantly affects consumer choices. Online reviews and communities play a crucial role in shaping consumer decisions as players seek peer recommendations and feedback on equipment. Manufacturers and retailers often provide customization options for discs, allowing players to personalize their equipment, which is another element that influences purchasing decisions. (OpenAI 2023.)

In summary, a range of important companies, product offerings, technology breakthroughs, consumer behaviour, and marketing and influence methods shape the competitive landscape of the sports tracking market in the US for disc golf. These elements contribute to the sport's growth and development, resulting in a dynamic and developing field for manufacturers, players, and fans. However, ChatGPT suggests keeping in mind that the disc golf market is always evolving, and being up to date on the newest advancements and trends is critical for success in this unique sport. (OpenAI 2023.)

4.2 Survey

The Finnish survey received 610 responses, while the US survey received 166. The number of responses was significantly higher for the Finnish one, despite the fact that the US one was distributed to a larger audience. Some respondents in the US survey were not from the United States and chose the response "51. I am not from the United States of America" to the first question of the survey, "Which state are you from?" The number of responses was 37 (22.6%), and these responses were filtered out when the results were analysed. This brings the total number of respondents in the US survey to 129.

4.2.1 The US results

As shown in Figure 5, the age structure of the US survey results is fairly uneven, with 39.2% of respondents aged 21 to 30 years old and 36.7% aged 31 to 40 years old constituting the vast majority. Only 2.4% of those surveyed were between the ages of 15 and 20. The proportion of respondents aged 51 or older was 12%.

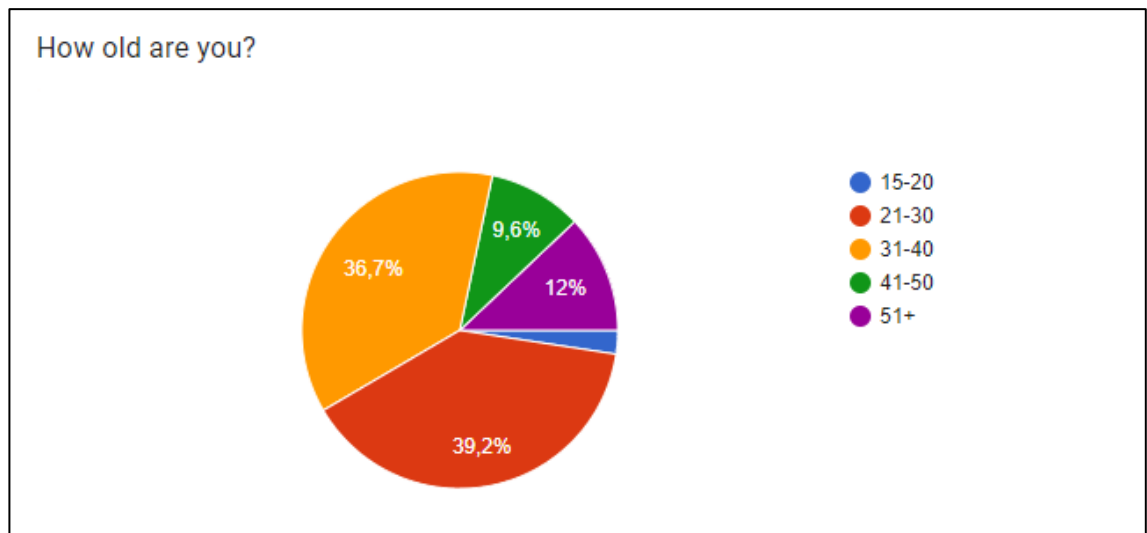


Figure 5. The US survey: Age.

Figure 6 shows that the majority of respondents (33.7%) have been playing disc golf for 3 to 4 years. One-fourth of all players (25.9%) have been playing for five years or more. 12.7% of those polled are new to the sport and have been playing for less than a year, while 27.7% have been playing for one to two years.

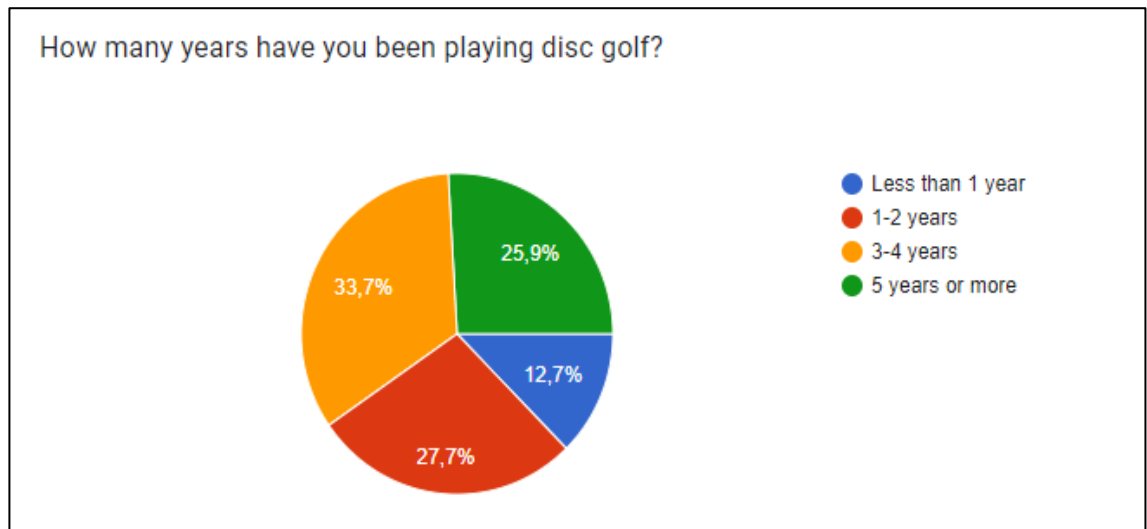


Figure 6. The US survey: How many years have you been playing disc golf?

Figure 7 illustrates that 10.8% of respondents were beginners, and 39.8% were so-called "Hobbyists," for a total of 50.6%, or more than half of all responses. Then there is the "weeklies competitor" at 14.5%. The remaining respondents are more serious players who compete in sanctioned events. These are: C-tier (17.5%), B-tier (5.4%), A-tier (7.8%), and Professional (4.2%). The more serious players account for 34.9% of the total.

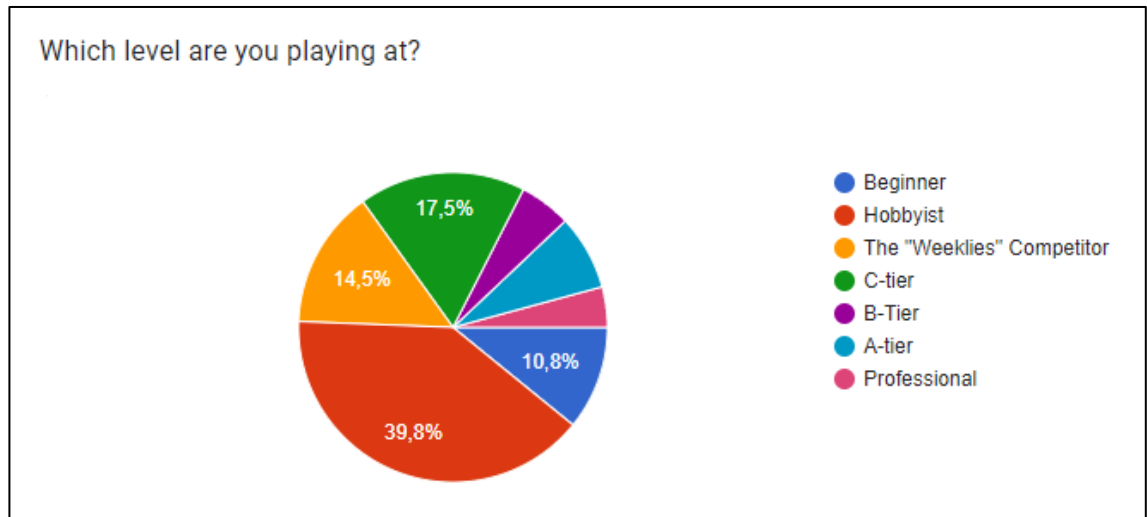


Figure 7. The US survey: Which level are you playing at?

Figure 8 shows that the majority of the players, 71.3%, have a PDGA number, which is obtained by becoming a PDGA member. This is one's competitive identification, and one must have it in order to compete in sanctioned events.

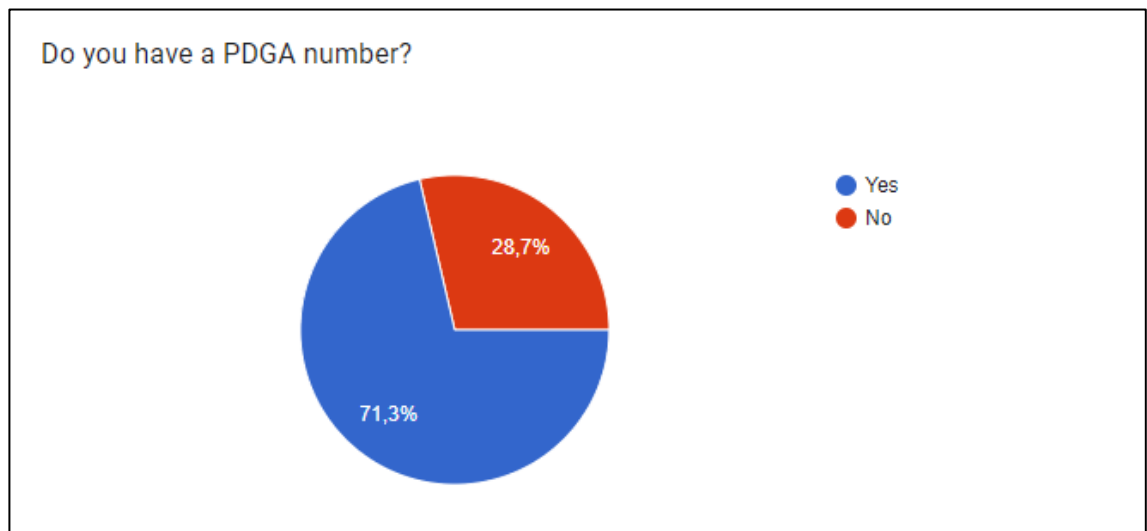


Figure 8. The US survey: Do you have a PDGA number?

Figure 9 depicts how much money players have spent on their discs. The majority of players (32.5%) have invested more than \$300 in their discs. Additionally, 21.1% have put \$200 to \$300 in their discs, while 27.7% have invested \$100 to \$200 in their discs. Only 4.8% have less than \$50 dedicated to their discs, while 13.9% have \$50 to \$100 invested.

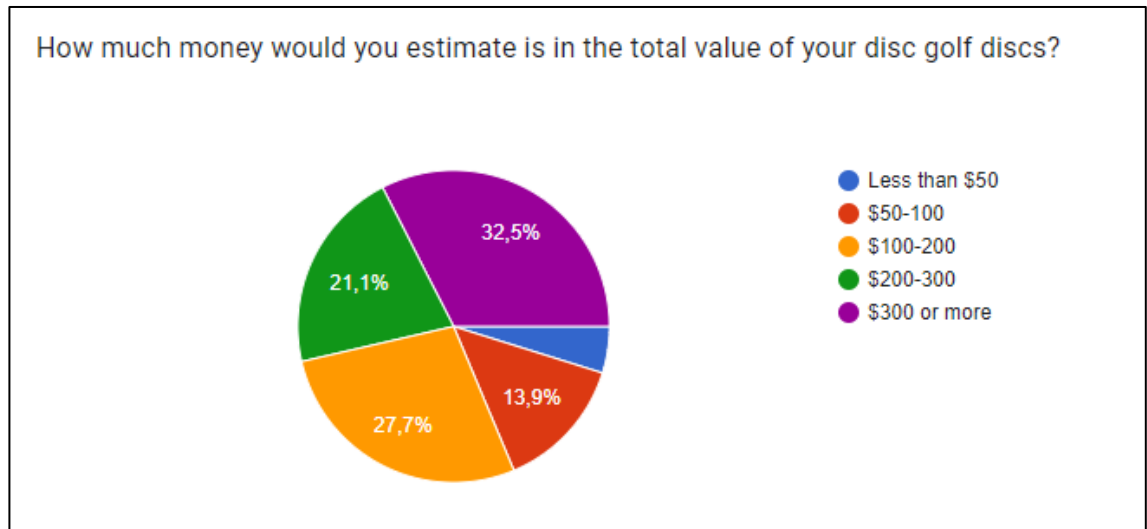


Figure 9. The US survey: How much money would you estimate is in the total value of your disc golf discs?

A disc golf disc typically costs between \$13 and \$15. Disc golf discs, however, can range in price from \$8 to \$20 or more, depending on the plastic quality, manufacturer, disc type, colour, rarity, and continued manufacturing of the model. (DiscgolfNOW 2023.)

Figure 10 portrays the number of discs owned by disc golfers. The majority (30.1%) own 30 or more discs, while 25.9% own 11 to 20 discs, while 6.6% own 21 to 30 discs. More than a quarter of respondents (25.3%) own 5-10 discs, with 12% owning fewer than 5 discs.

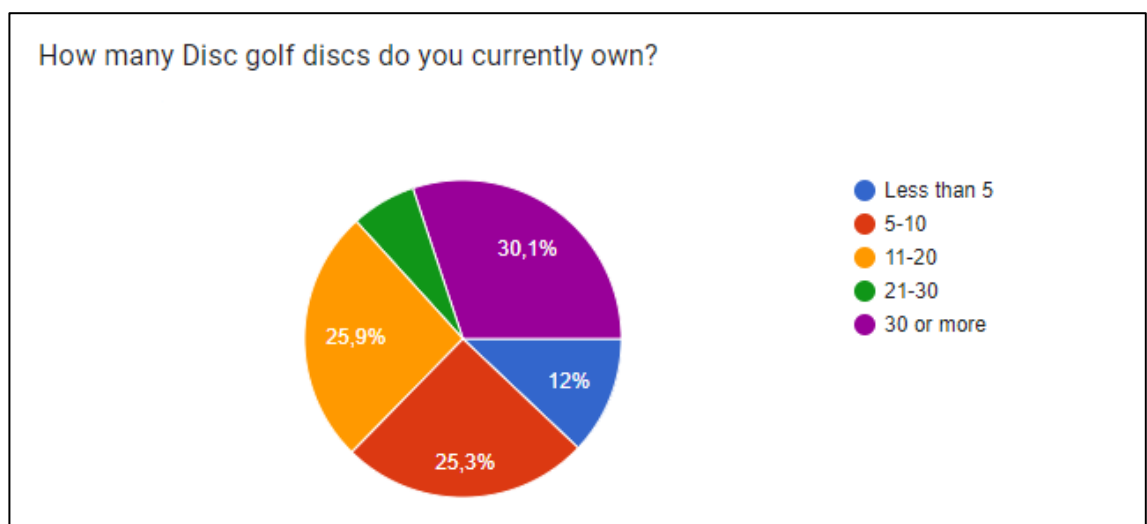


Figure 10. The US survey: How many Disc golf discs do you currently own?

Figure 11 reflects how the respondents felt about disc golf attachment accessories. The scale of interest ranged from 1 (not at all interested) to 5 (extremely interested). On the interested end of the scale, 37.3% chose 5 and 29.5% chose 4, whereas 8.4% of respondents answered 1 and 9.6% answered 2.

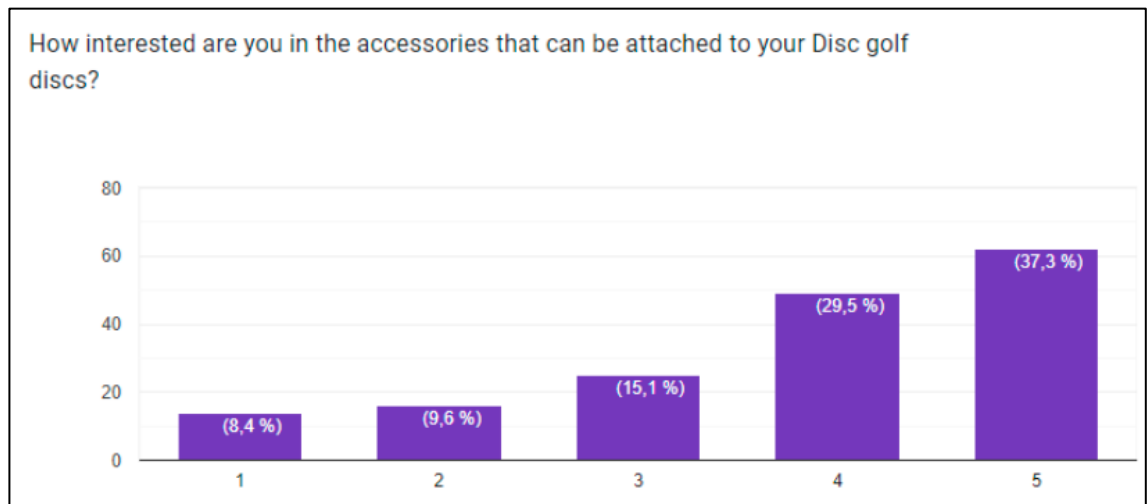


Figure 11. The US survey: How interested are you in the accessories that can be attached to your Disc golf discs?

Figure 12 shows what the respondents chose as the three most important features for a disc golf tracking device. The three most popular features were disc trajectory analysis (52.4%), GPS-tracking (50%) and a feature that made it easier to locate the disc (49.4%). Following closely behind the most popular were disc speed measurement (44.6%), throw height (39.2%), and release angle (38.6%). The two least popular features were the wrist position on release (22.9%) and the disc rotation speed (23.5%).

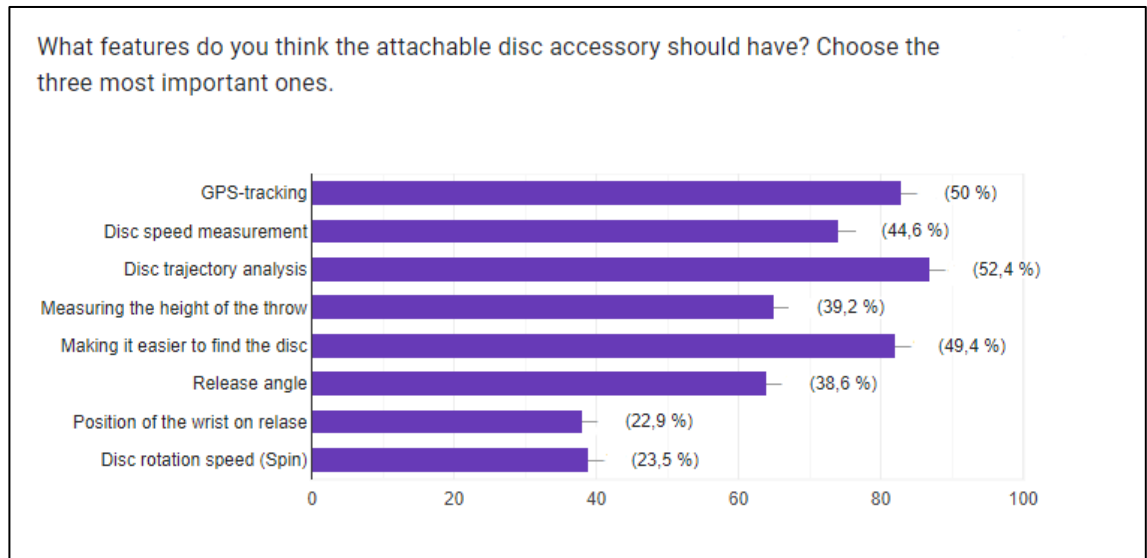


Figure 12. The US survey: What features do you think the attachable disc accessory should have? Choose the three most important ones.

Figure 13 displays the results of the question "Where do disc golfers follow disc golf news and product announcements?" The results are fairly evenly distributed among the most popular methods, with disc golf forums (66.9%) being the most popular. The other three results were evenly distributed: social media (55.4%), friends and family (48.2%), and disc golf stores (50.6%).

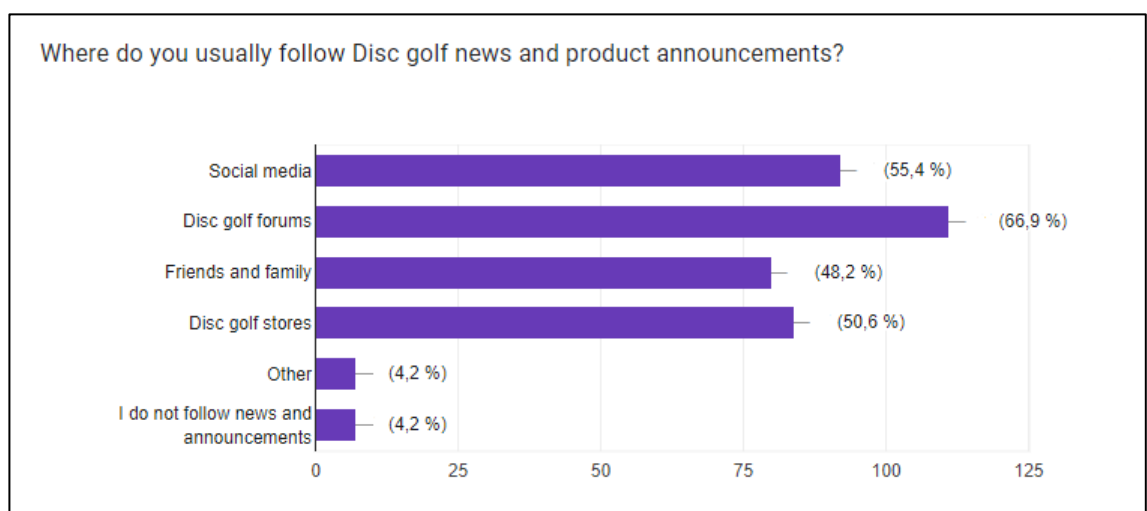


Figure 13. The US survey: Where do you usually follow Disc golf news and product announcements?

The majority of disc golfers who responded to this survey prefer to receive disc golf product news via email (63.4%) or social media (46.6%). The two options with the fewest responses were text messaging (24.8%) and direct advertising on disc golf courses (28%), as shown in figure 14.

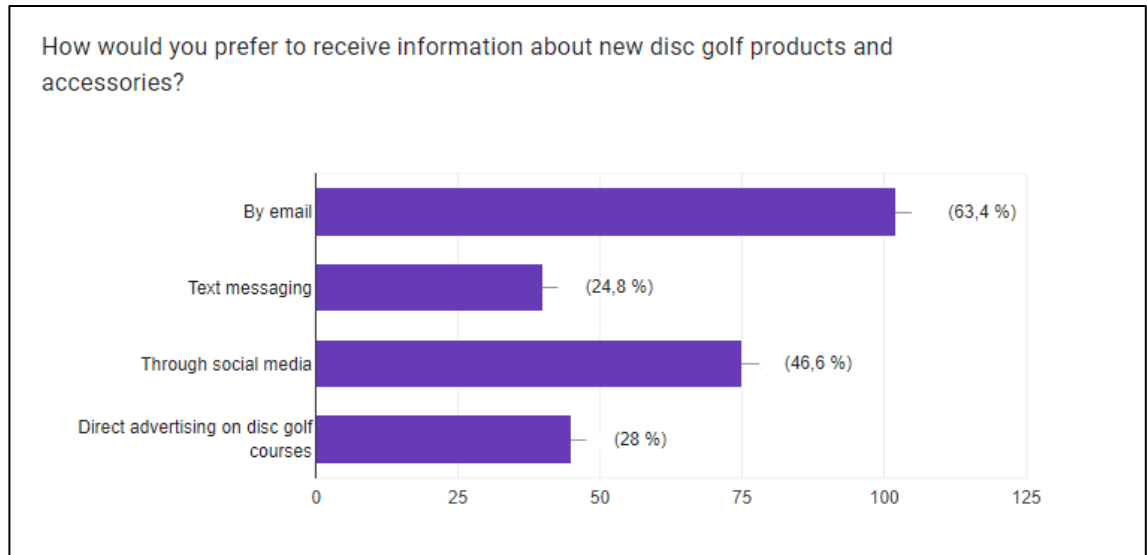


Figure 14. The US survey: How would you prefer to receive information about new disc golf products and accessories?

4.2.2 Comparison

Figure 15 shows the auxiliary survey and infinite discs combined. There are significant differences between the two sets of data: 73.42% of respondents in 2018 had more than 30 discs, whereas 48% of respondents in 2023 owned between 11 and 20 discs. Compared to the figures from 2018, the replies in 2023 are more evenly spread. It should be mentioned that the 2023 poll has significantly less responses than the Infinity Discs survey from 2018. Another possible explanation is that the Infinite Disc survey was distributed to customers of said disc store, who are more likely to buy a large number of discs. (Smellie 2019.)

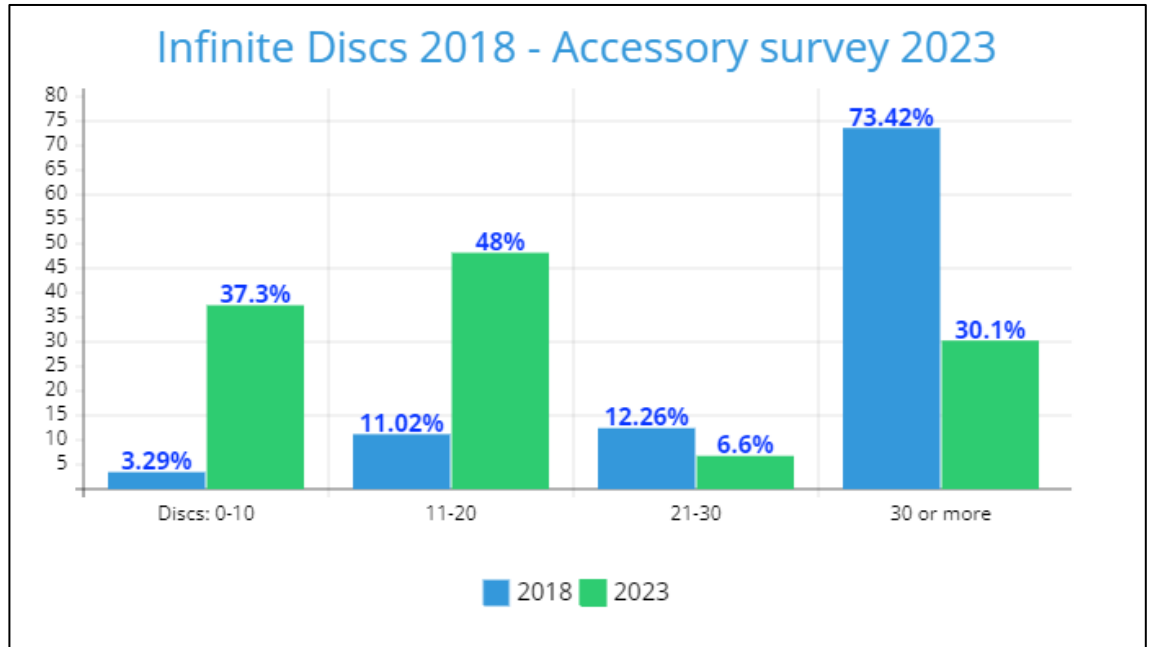


Figure 15. Infinite disc survey 2018 comparison to the US survey 2023 (Smellie 2019).

When we compare the age structure in Figure 16, we can see that the survey results are similar. The greatest similarities exist between the ages of 21-50, with only a 0.8% difference in the ages of 21-30. The Finnish respondents held a majority in the category of 15-20 year olds with 14.1% compared to the American value of 3.1%. The proportion of respondents 51 and older in the US survey was nearly double (14%) that of the Finnish survey (7.2%).

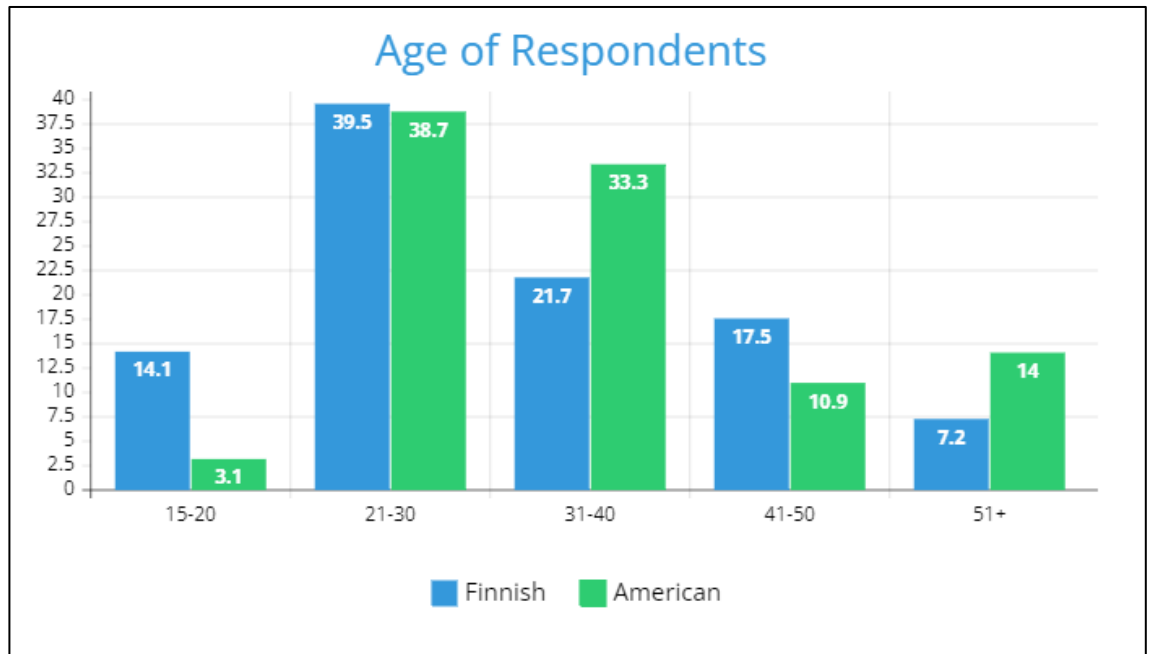


Figure 16. Finnish and American responses: Age of respondents.

Figure 17 portrays the number of years that the Finnish and American players have been involved in the sport. The structure is similar yet again. Americans have more new players, with 12.7% of respondents having played for less than a year, compared to 3.1% of Finns. In the Finnish survey, nearly half (47%) of respondents had played for 5 years or more, while the same category for Americans was only 25.9%. With only a 0.2% difference, the category "3 to 4 years" has the most similarity.

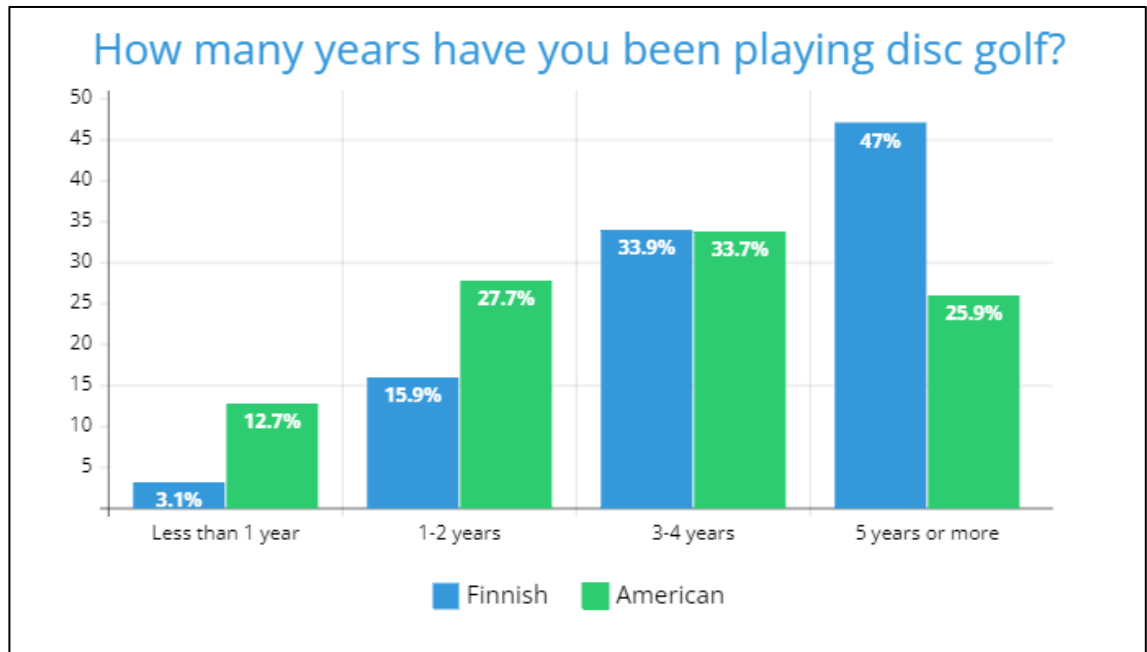


Figure 17. Finnish and American responses: How many years have you been playing disc golf?

According to Figure 18 "Which level are you playing at?", Hobbyist was the most popular response among both respondents. In the Finnish survey, more than half (54.4%) of the respondents were hobbyists, while 39.8% of Americans were. B-tier responses were the most similar, with only a 0.3% difference between American and Finnish responses. A-tier respondents took up 7.8% of the American respondents, compared to 3.3% of Finnish respondents. Americans had more beginners, with 10.8% of respondents seeing themselves as new to the sport, compared to 3.8% in the Finnish survey.

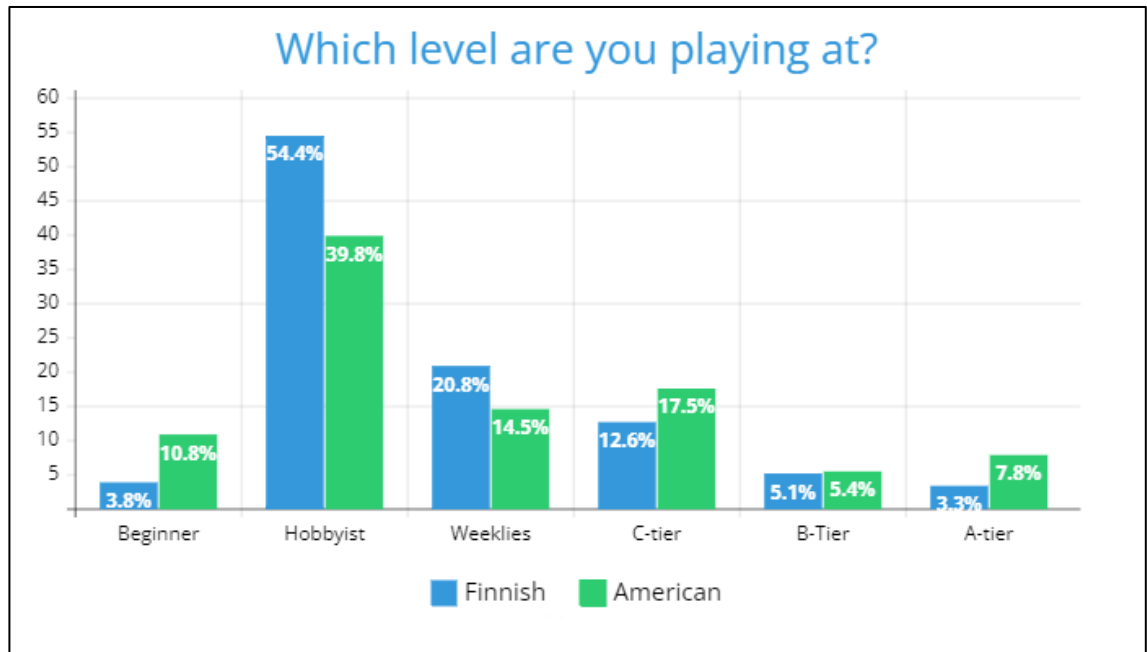


Figure 18. Finnish and American responses: Which level are you playing at?

Figure 19 depicts the comparison between years of playing and level, with values matching. The difference in responses between Americans and Finns was 7% in the "beginner" category and 9.6% in the "played under a year" category. In both cases, the proportion of respondents in The US is nearly three to four times higher.

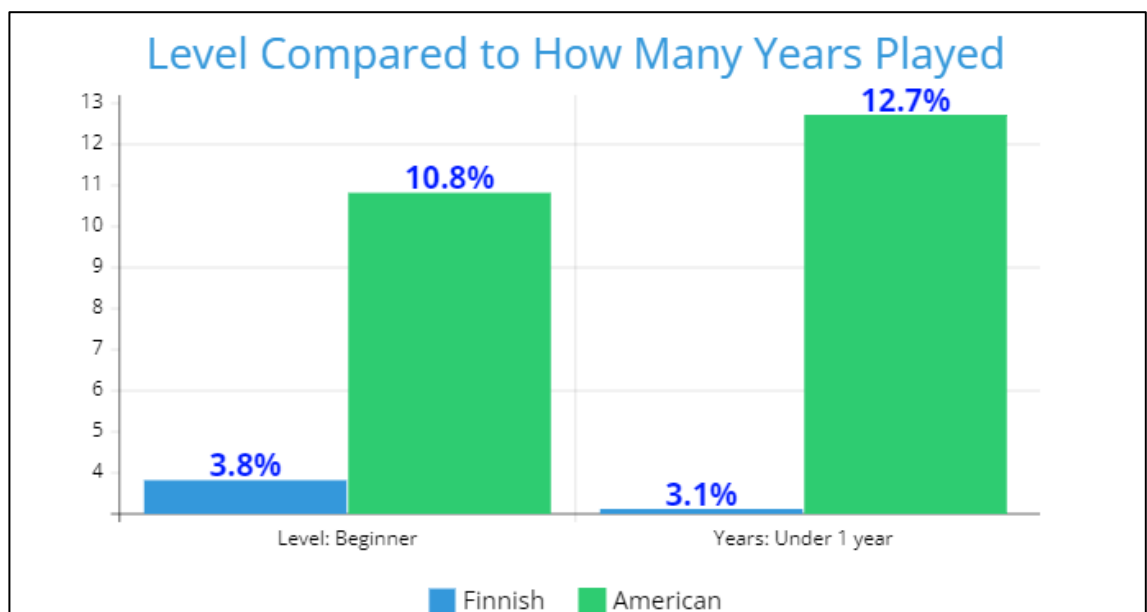


Figure 19. Finnish and American responses: Level compared to how many years played.

Figure 20 shows that the results of the two surveys are nearly diametrically opposed, with 71.3% of American respondents having a PDGA number and only 32.2% of Finnish respondents having one.

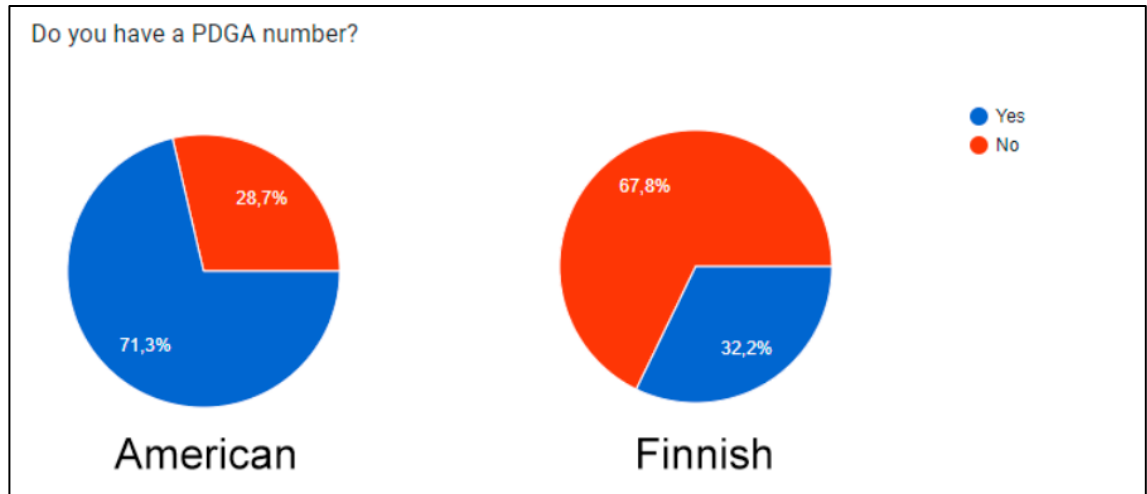


Figure 20. Finnish and American responses: Do you have a PDGA number?

Figure 21 compares three surveys: Infinite discs 2018, the US survey 2023, and Finnish survey 2023. The displayed figure shows similarities between the Finnish survey and the 2018 Infinite discs survey, whereas the American results differ significantly from the other two surveys. It should be noted that the US 2023 survey only had 129 respondents.

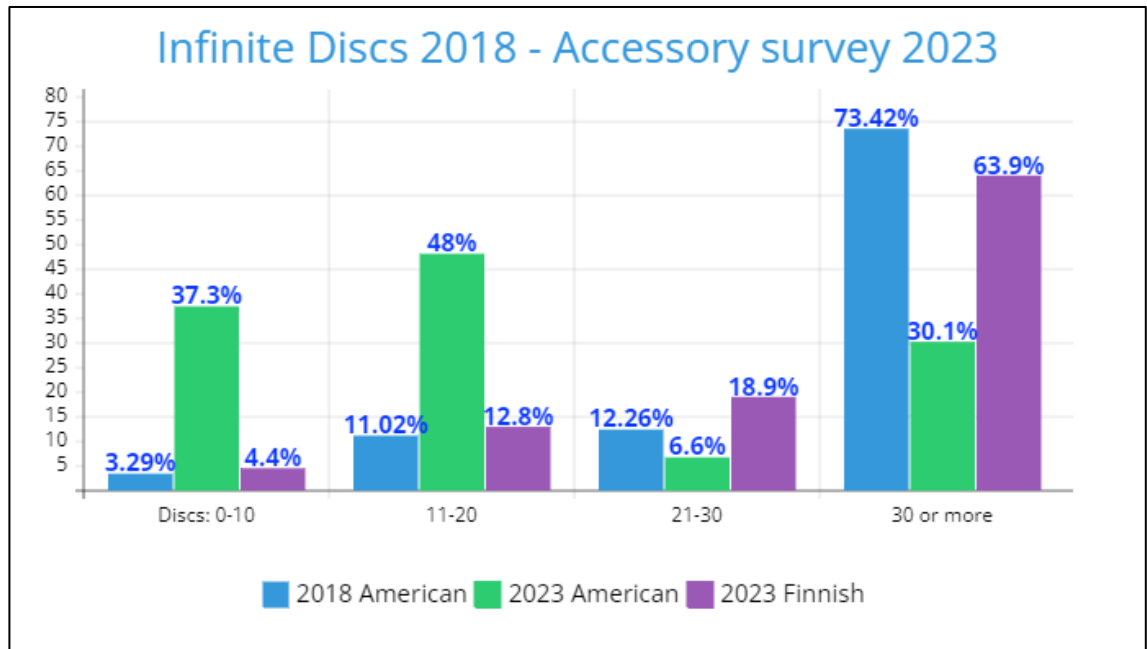


Figure 21. Finnish and American responses: How many Disc golf discs do you currently own? (Smellie 2019; Author 2023).

The amount of money respondents have invested in their discs is illustrated in Figure 22 below. The most common response was "\$300 or more" in both surveys, with 59.8% in the Finnish survey and 32.5% in the US one. Although it has to be noted that the Finnish survey had more responses in that category, the difference was 27.3%. The option with the fewest responses in both surveys was "less than \$50," with 1.6% in the Finnish survey and 4.8% in the US survey. The most similar answer was "\$200 to \$300" with a 1.4% difference.

The Finnish questionnaire contained the same amount of money in the questions, but in euros. It should be noted that the currency exchange rate at the time of the survey was as follows: 1.00 euro = 1.0732178 US Dollars / 1 USD = 0.931777 EUR. Nov 4, 2023 (XE 2023).

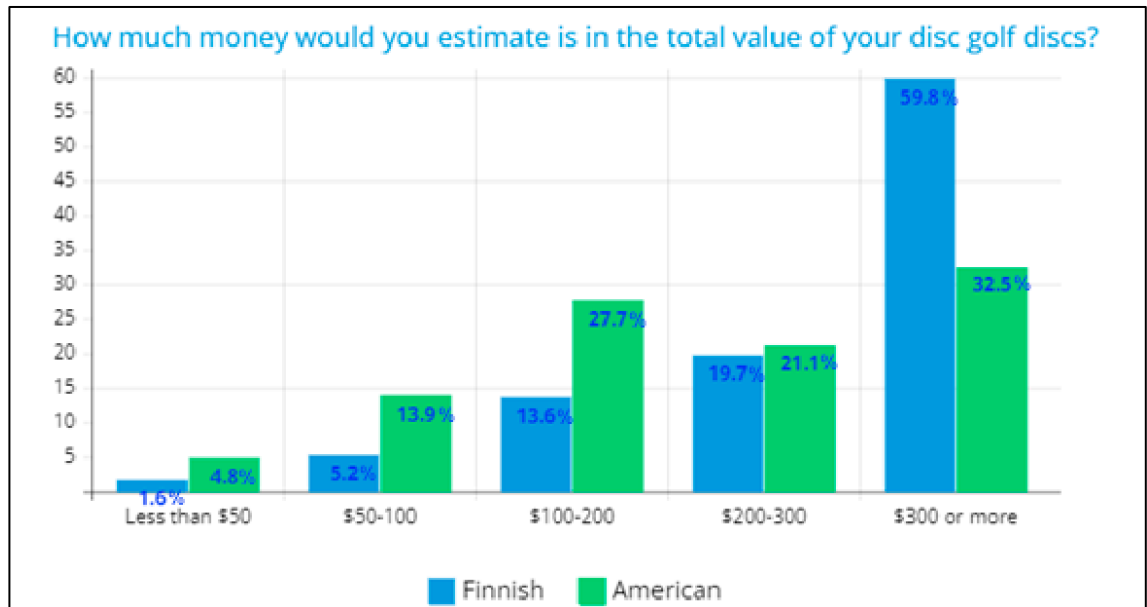


Figure 22. Finnish and American responses: How much money would you estimate is in the total value of your disc golf discs?

Figure 23 portrays the interest in disc attached accessories, with the answer 5 indicating "very interested" and the answer 1 indicating "not interested at all." In the Finnish survey, 32.8% were neither interested nor uninterested and chose to answer 3. Unlike the Finnish respondents, Americans appeared to be more interested, with 37.3% responding to option 5, compared to 8% of the Finnish respondents. Option 1 shares similarities in that it was chosen by 14% of Americans and 13.3% of Finns.

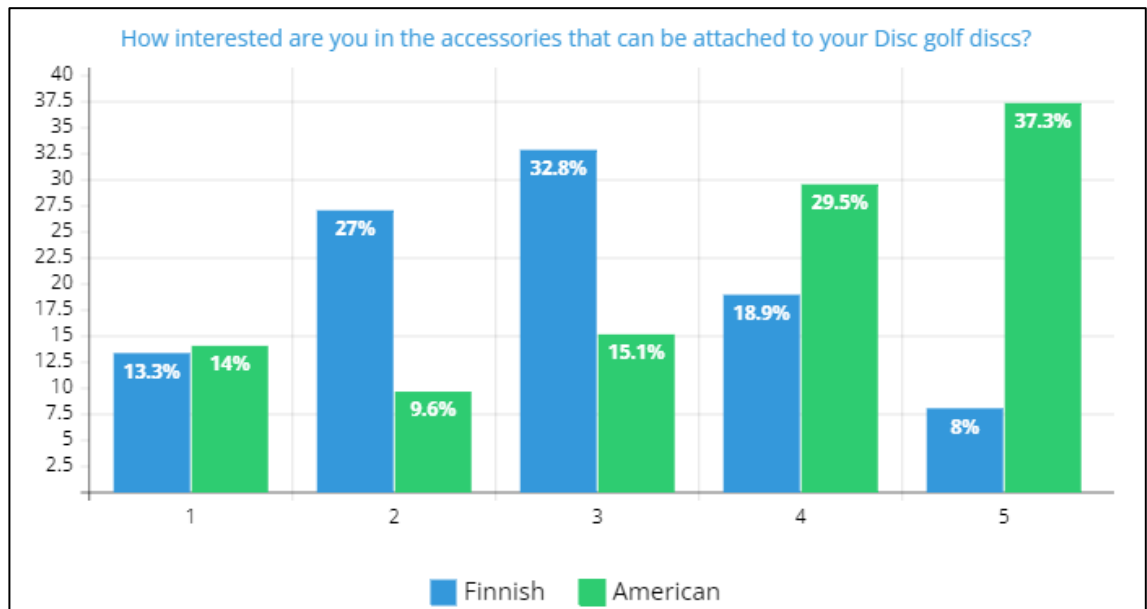


Figure 23. Finnish and American responses: How interested are you in the accessories that can be attached to your Disc golf discs?

Figure 24 depicts the survey results on what features were most important for a disc attachable device. Respondents could select the three most important to them. The following were ranked as the most important by Finnish respondents: GPS-tracking (51.5%), disc speed measurement (51.5%), and making it easier to find the disc (69.8%). The following were ranked as the most important by Americans: GPS tracking (50%), disc trajectory analysis (52.4%), and making it easier to find the disc (49.4%). This indicates that disc trajectory analysis is preferred by American respondents over speed measurement. "Measuring the height of the throw" received the fewest responses in the Finnish survey (8.4%), but this was not the case among American respondents, of which 39.2% mentioned it. In the American results, the options "position of the wrist on release" (22.9%) and "disc rotation speed (spin)" (23.5%) received the fewest responses.

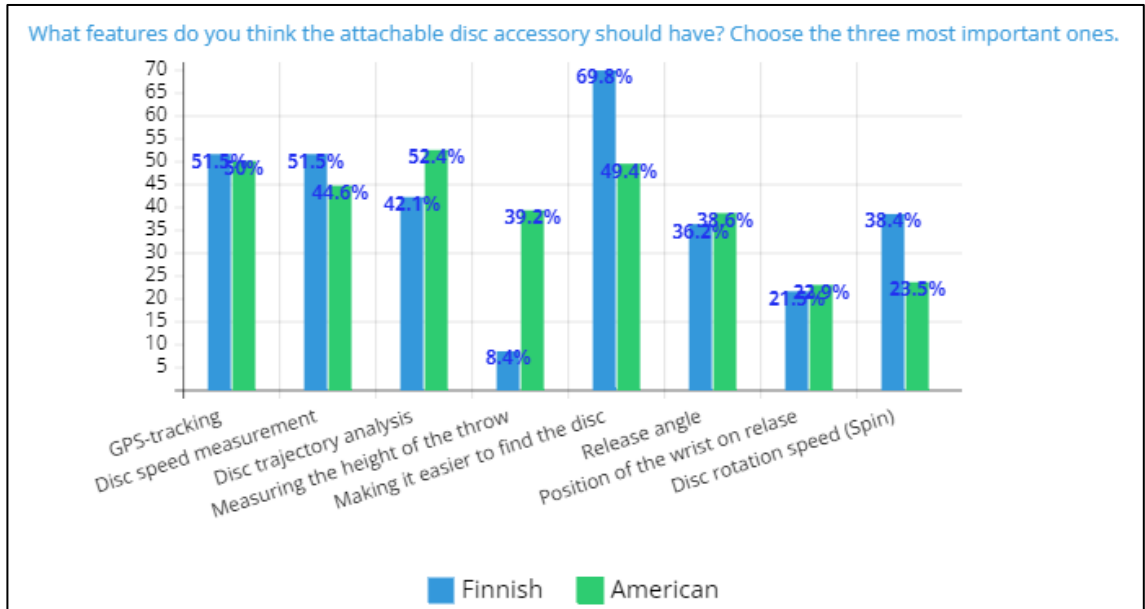


Figure 24. Finnish and American responses: What features do you think the attachable disc accessory should have? Choose the three most important ones.

Figure 25 shows how many respondents bring a mobile device or a smartwatch with them on the course. According to both surveys, the majority of disc golfers in the United States (91.6%) and Finland (96.1%) carry such a device.

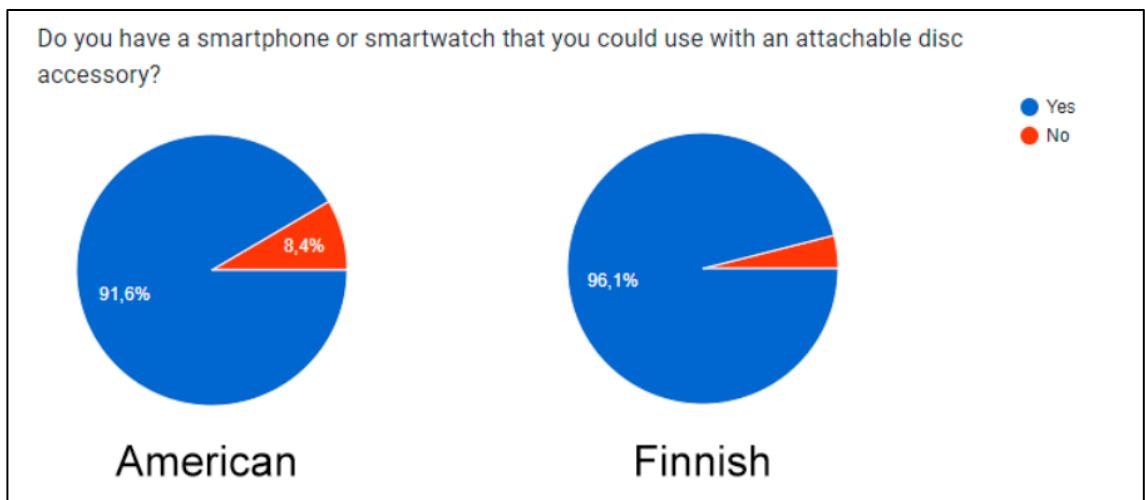


Figure 25. Finnish and American responses: Do you have a smartphone or smartwatch that you could use with an attachable disc accessory?

Figure 26 presents the preferred platforms through which respondents receive news and product announcements. Both surveys found that social media was the most popular, with 93.9% of Finnish respondents choosing it and 55.4% of

Americans. Finnish respondents greatly preferred social media, with "friends and family" (49.5%) coming in second with a 44.4% difference to social media. The options "social media", "disc golf forums", "friends and family", and "disc golf stores" were all in the range of 48.2% to 55.4% in the United States. Disc golf stores were preferred by Americans (50.6%) over Finns (27%). In both surveys, the least popular responses were "other" and "don't follow."

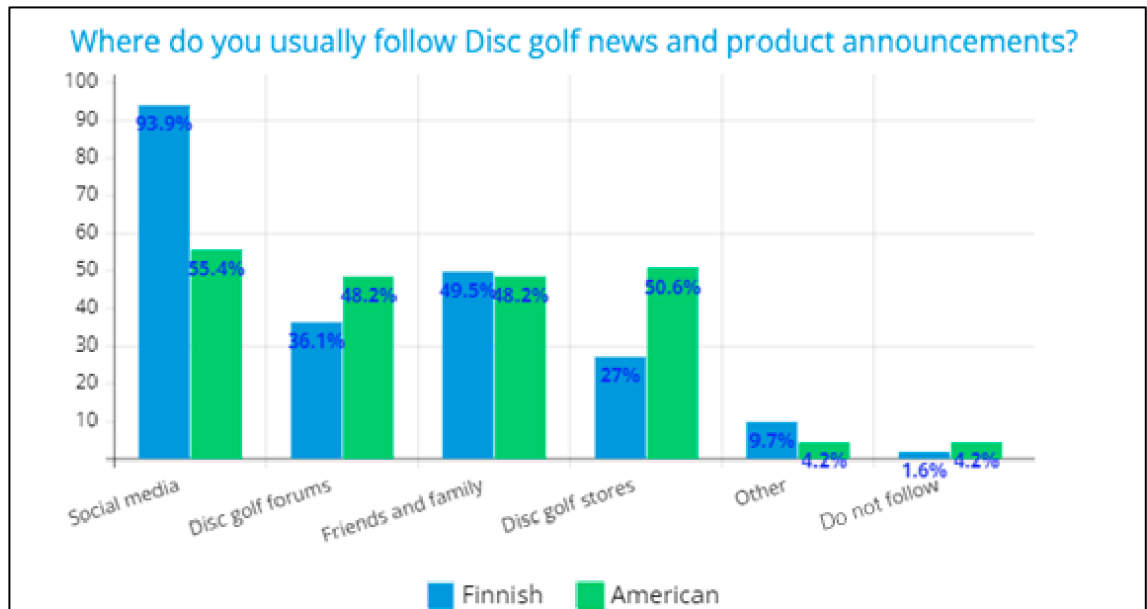


Figure 26. Finnish and American responses: Where do you usually follow Disc golf news and product announcements?

Figure 27 depicts the respondents' preferred method of receiving information about disc golf products and accessories. For 63.4%, email was the most preferred method among Americans. With 90.9% of the Finnish respondents, social media received the most responses. Text messaging was answered by nearly one-fourth of American respondents (24.8%), but only 1.5% of Finnish respondents. Direct advertising yielded nearly identical results in both countries, with 31.5% of Finns and 28% of Americans preferring it. Email was preferred less by Finnish respondents, with 20.2% preferring it compared to 63.4% of Americans.

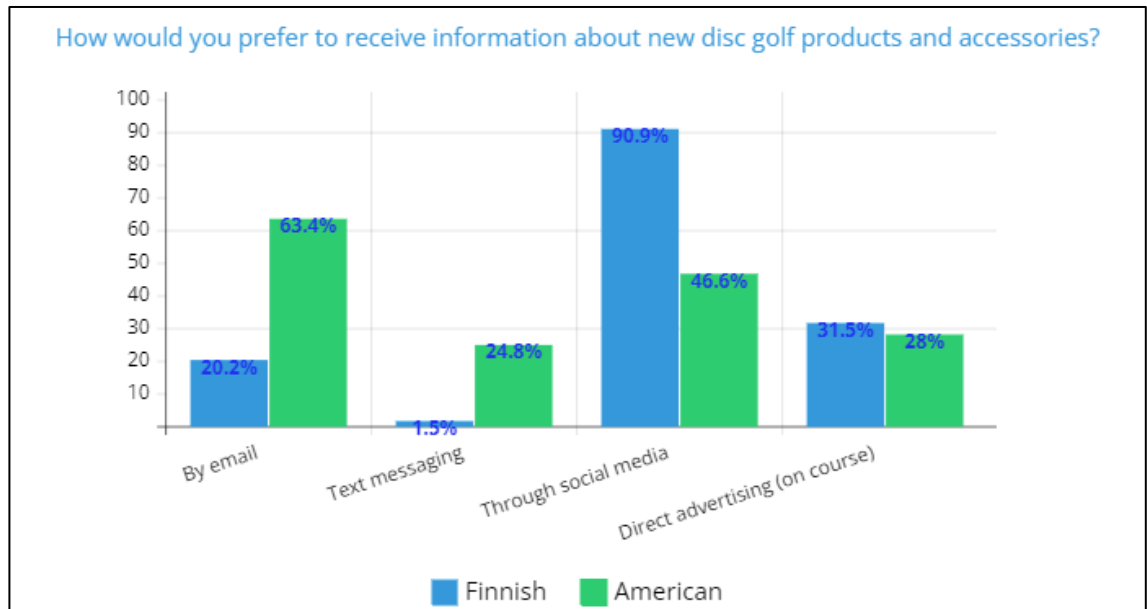


Figure 27. Finnish and American responses: How would you prefer to receive information about new disc golf products and accessories?

4.3 Summary

4.3.1 Interview

The interview was supposed to provide insights into research questions 1 and 2, and it did, with the following major findings.

According to the AI's responses to research question number 1, the legal and regulatory system of the US disc golf sector is complicated, involving concerns such as land use, liability, intellectual property, and tournament rules compliance. Most of these have no direct impact on the sports tracking device, but they do contribute to a better understanding of the entire regulatory framework governing the disc golf sector.

According to the interview results, the disc golf market in US has been maturing for several decades, resulting in a well-established network of producers,

distributors, and retailers. Because of the matured market, it is advantageous for exporting from Finland. Further examination of the interview reveals that organizations seeking success in the US market should prioritize strong partnerships, knowledge of supply chains, and leveraging online platforms to gain an extensive reach. Legislative changes indicate changes in price, product availability, and consumer behaviour. These risks underline the necessity for businesses to adapt and strategize in response to the changing rules in the industry. When entering the US market, this highlights the need for local knowledge and consulting, which can be expensive but is a necessary resource for entering the market.

The most important takeaway from the interview regarding the competitive landscape was that the competition is a mix of organizations, professional players, local clubs, small manufacturers, and media companies, all of which contribute to the consumption of industry-related products. This mix is rather volatile, and the influence of a professional athlete, for example, might be highly dependent on their success in the sport and how well they perform. The industry is heavily influenced by major manufacturers, governing bodies such as the PDGA, and top professional players. Media companies play a vital role in giving coverage and raising awareness of disc golf and disc golf products, and all of these industry players contribute to the sport's growth, which is seen as the most critical task for any player in the disc golf market.

It is also notable that Hill (2023) states that 27% of respondents to the UDisc survey preferred Innova, and that ChatGPT also described Innova discs as one of the major players in the US disc golf market, indicating that the AI-Interview and the literature review were in agreement.

4.3.2 Survey

The survey aimed to give insight to the last research question number 3. In terms of response rate, the Finnish poll outperformed the US survey, despite

the fact that the US survey was given to a bigger audience. This shows that there are different levels of involvement or interest between the two countries.

In terms of the American data, the age distribution in the poll showed a concentration of respondents between the ages of 21 and 40. A sizable proportion of the respondents identified as beginners or amateurs, demonstrating a diversified playing community with varying levels of devotion to the sport. Results show a sizable proportion of serious disc golfers participating in sanctioned events and owning a PDGA number.

The majority of respondents had made a significant financial investment in disc golf, spending more than \$300 on discs alone. This is a strong indication that players are investing in the sport, despite the fact that it is deemed inexpensive to enter, with only a couple of discs required to play. The high interest in accessories and tracking devices implies there may be potential for innovative products in the US market. This may suggest the possibility of capitalizing on features such as the disc trajectory analysis, GPS tracking, and disc locator.

In terms of developing a marketing strategy for consumption channels, in the US, forums and social media are at their peak. Friends and family were also among the common responses, indicating that it is critical to encourage conversation among players and motivate disc golfers to share pleasant experiences. Lastly, the respondents prefer to receive product news via email and social media which highlights the value of these avenues.

Examining the results that compare the American and Finnish results, the age distribution varies significantly, with Finnish disc golfers leading the 15 to 20 age bracket and Americans having a higher proportion among those 51 and older. Overall, Finnish respondents are younger, with a significant number in the 15 to 20 age range compared to the US. When compared to the Finnish respondents, Americans have a higher percentage of new players (less than a year of experience), indicating a potentially larger influx of beginners coming into the sport in the US. Finnish disc golfers, on the other hand, have a higher proportion of players with five years of experience or more. The most common

skill level for both surveys was the hobbyist. Americans were slightly more interested in competitive play, as evidenced by a higher number of C-tier to A-tier responders overall. The rate of PDGA numbers is substantially higher among American respondents than among Finnish respondents, indicating a potentially greater level of interaction with official disc golf organizations in the US compared to Finland.

Both surveys show that respondents like to spend \$300 or more on their discs, but the percentage difference shows that Finnish disc golfers are more conservative with their spending. Americans have a far larger interest in disc attached accessories, especially those who indicate a strong interest (option 5). While Finnish respondents are still interested, their responses were more evenly spread. Differences in feature prioritizing indicate that Finnish players value GPS tracking, disc speed measurement, and disc locator, whereas Americans favour disc trajectory analysis. The majority of disc golfers in both nations bring mobile devices or smartwatches to the course, indicating a high level of technological acceptance among players.

In both surveys, social media was the prominent source of news and product announcements, but Americans relied on disc golf stores more than Finnish respondents. Email was the favoured method of receiving information among Americans, whereas social media was preferred by Finnish disc golfers.

5 Discussions and conclusions

The main objectives of the thesis were to answer three research questions:

- What are the primary elements of the competitive landscape of the sports tracking market in the US regarding disc golf, and what are the ramifications for companies in the disc golf equipment industry?
- What are the demographic, preference, and behavioural variables that distinguish American and Finnish disc enthusiasts? and

- How do these differences influence their disc sports participation and choices?

The key findings include differences and similarities between the two groups surveyed; the results were ultimately quite similar but confirmed some aspects that were predetermined prior to the questionnaire's implementation. One of the main differences between American and Finnish respondents was the PDGA's role on American soil versus Finland; the organizational role is more present in the US. The age of the respondents varied, with the Finns having more young disc golfers and the Americans having more older disc golfers, but America still had more beginners. Finally, the third distinction was in the channels through which Americans obtained discs. The literature review demonstrated how Americans are interested in purchasing discs from local shops based on data from the Infinite Discs survey, the ChatGPT mentioned how local shops are relevant in the competitive landscape, and the survey results demonstrated that Americans were more interested in hearing about product announcements from local shops than the Finnish.

The ChatGPT interview findings revealed some key elements of the legislative framework and competitive landscape. Some key points include the competition's diversity and composition. The legislative side was a little more difficult to gain any practical knowledge in, but it appears to be such a vast area to delve into that the time frame of this research is incapable of answering those questions in depth.

The findings of the literature review raised some questions. These included information on disc golfers' interest and preferences in disc attached accessories in Finland and the US, legislation and the logistical aspects of disc golf equipment, and confirmation of the competitive situation and what the competition consists of.

In comparison to the brief competitive knowledge found in the literature review, the research provided more information about the vast competitive landscape and included more categories in the mix. The questionnaire answered questions

about disc attached devices and provided results where the data was specifically given on the tracker side of things compared to the literature review, which provided information about disc golf discs. Because disc golf accessories are most likely purchased from stores that also sell discs, both of these results complement each other. This is an excellent example of how the literature review laid the groundwork for the research. The interview results went into greater detail about what the disc golf industry consists of in terms of legislative elements. This information was missing from the literature review, but it was provided by ChatGPT, with key points being how complex it is and the risks involved. Consultation is a strong recommendation when entering the market based on the results.

Competitors like GameProofer, TechDisc, and AceTrace are present in the literature review, but none of these were mentioned in the ChatGPT's responses, even when the questions clearly mentioned "sports tracking regarding disc golf." This would imply that there is a scarcity of information about such products.

This research deepens the desired knowledge and highlights key points in the areas that were researched for the company's operations. Most importantly, it highlights areas where more work needs to be done or areas where external assistance is required to succeed. Both the literature review and the ChatGPT interview confirm the importance of strong partnerships when exporting to the US.

The original research plan was good until it was not, and changes occurred during the research. The interview was conducted in such a way that the questions and their importance were not thoroughly considered, and the correlation between the questions and the title of who was supposed to answer them did not match. This resulted in a search for the ideal interviewee, which was never found because the questions were so deeply embedded in the companies' strategies that they could not be answered. Someone with no ties to a brand and the necessary knowledge could have answered them, but such a person was nearly impossible to find. As a result, the interview was conducted

on an Artificial Intelligence. This was not necessarily a bad option, but it may have required some additional knowledge to compare the two for the best reliability. Finally, the ChatGPT interview proved to be a better value than dismissing the entire interview. The questions and their construction in the questionnaire were not perfect. It would have been preferable to create both questionnaires at the same time and in such a way that they could be compared at the end. This was limited because the Finnish questionnaire was completed first, making any changes difficult.

Getting the results was a lot of work, much more work than expected. The interview results were easier to collect because ChatGPT could do thematic keyword summarization of the answers, just like any other thematic coding application or tool, just much faster and easier. Thematic analysis tools are difficult to learn and master, and this method with Artificial Intelligence simply made it easier to produce consistent results than what could have been achieved with basic thematic analysis tool learning in the time frame. The survey charts were compiled by Google Survey, however in order to obtain any useful data, comparisons and graphs had to be created, which proved to be more difficult than anticipated. The graphs produced were not perfect, but given the time it took to edit a graph, the data on conducted visualization can be considered a success. The data is readable, and the comparisons are visible, which was the primary goal in visualizing the data.

Planning was a major breakthrough in the learning curve of conducting research: areas where planning occurred were far more successful than areas of the research that were not properly planned. Even in the most minor aspects of the research, planning is essential. One example was the ChatGPT interview, if the planning had been done correctly, there would have been better ways to achieve the same or even better results in terms of information gathering and prompt decision making. This was due to the inability to obtain a human interviewee to answer the questions and the time constraints imposed by attempting to obtain a human contact. The final plan was to rely on Artificial Intelligence.

The search for a good interviewee was one of the study's limitations; the possible contacts were either too busy for the time frame, could not answer the questions needed due to corporate limitations, or were out of reach for the connections needed to contact these people. The complex and vast nature of the legislative side of exporting to the US also limited the ability to delve into anything practical when it came to details of exportation legislation. This limitation was worsened by a lack of product information. Furthermore, academic research and documentation on disc golf were scarce; the sport is still young, and academic work on the sport is difficult to come by or consists of vague information.

In conclusion, the study successfully uncovered key elements of the competitive landscape in the disc golf market, particularly in the United States, and highlighted demographic and behavioural variables that distinguish American and Finnish disc enthusiasts. The study emphasized the importance of disc golf equipment companies planning, partnerships, and legislative understanding. Despite limitations in finding a suitable interviewee and a scarcity of academic research, the findings provide useful insights for strategic decision-making.

Future research could delve deeper into the legal aspects of disc golf equipment export to the US. Collaboration with legal experts may be required to provide a more comprehensive understanding of the regulatory environment and potential challenges. In summary, the thesis lays the groundwork for future research, pointing to avenues for more in-depth analysis and practical applications in the ever-changing disc golf industry.

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ABBREVIATIONS

Nose/Nose angle	A disc golf disc's front edge, also known as a nose angle which is always related to the direction of the disc or the change in direction as it bends through the air.
Hyzer	The term "hyzer" describes a disc's angle at release. A disc is on a hyzer angle if its ungripped edge is nearer the ground than the edge in the player's hand.
Spin	The number of rotations a disc golf disc makes in the air following a release throw.
Wobble	Refers to a disc's off-axis torque following a throw.
Bag/Bagging	To carry a certain disc in your disc golf bag "Yes I bag the Raptor (A branded disc) as my main over stable fairway driver"
Overstable	Refers to a flight of a disc where the disc turns left on a right handed back hand throw.
Backhand	A throwing method in which the disc is released in front of the body with the back of the hand leading.
CBP	U.S. Customs and Border Protection
PDGA	Professional Disc Golf Association
AI	Artificial intelligence
Weeklies	A weekly competition that can be sanctioned or unsanctioned and is typically held quite locally.

Questionnaire

Survey on accessories for Disc Golf Discs

I am currently working on a thesis project in Karelia UAS, and I would love to hear your thoughts on the topic! By filling in a small questionnaire, you can be involved in the development of the sport and help me a lot with my graduation. The purpose of the questionnaire is to help me better understand enthusiasts' perspectives and thoughts on disc golf accessories and equipment.

By completing the questionnaire, you can also enter a prize draw for a gift voucher to Another Round store, which I will conduct on 1st of November. The questionnaire is short and should take no more than a few minutes to complete. The questionnaire consists of multiple-choice questions and is part of my thesis research.

The questionnaire is completely voluntary. We do not collect personal information and it is completely anonymous to answer the questionnaire, but in case you want to participate in the giveaway we will need your email.

The survey is mainly intended for American enthusiasts, but you can answer even if you are from elsewhere (remember to select option 51 for the first question - Not from the US).

Another Round is not involved in the prize draw

Which state are you from?

1. Alabama
2. Alaska
3. Arizona
4. Arkansas
5. California
6. Colorado
7. Connecticut
8. Delaware
9. Florida
10. Georgia
11. Hawaii
12. Idaho
13. Illinois

14. Indiana
15. Iowa
16. Kansas
17. Kentucky
18. Louisiana
19. Maine
20. Maryland
21. Massachusetts
22. Michigan
23. Minnesota
24. Mississippi
25. Missouri
26. Montana
27. Nebraska
28. Nevada
29. New Hampshire

30. New Jersey
31. New Mexico
32. New York
33. North Carolina
34. North Dakota
35. Ohio
36. Oklahoma
37. Oregon
38. Pennsylvania
39. Rhode Island
40. South Carolina
41. South Dakota
42. Tennessee
43. Texas
44. Utah
45. Vermont
46. Virginia
47. Washington
48. West Virginia
49. Wisconsin
50. Wyoming
51. Im not from the United States of America

How old are you? *

- 15-20
- 21-30
- 31-40
- 41-50
- 51+

How many years have you been playing disc golf? *

- Less than 1 year
- 1-2 years
- 3-4 years
- 5 years or more

Which level are you playing at? *

- Beginner
- Hobbyist
- The "Weeklies" Competitor
- C-tier
- B-Tier
- A-tier
- Professional

Do you have a PDGA number?

- Yes
- No

How often do you play Disc golf? *

- Daily
- Weekly
- Monthly
- Less often

How many Disc golf discs do you currently own? *

- Less than 5
- 5-10
- 11-20
- 21-30
- 30 or more

How much money would you estimate is in the total value of your disc golf discs? *

- Less than \$50
- \$50-100
- \$100-200
- \$200-300
- \$300 or more

How often have you lost a Disc golf disc while playing? *

- Never
- Rarely
- Sometimes
- Often
- Very often

Do you own any accessories that can be attached to the discs? *

- No
- Yes (Please answer below what devices you own)
- Muu...

Questions about attachable disc accessories

Next, we ask questions to identify what features the smart device should have.

Which app do you use to keep track of the score during the round? *

- Upsi
- Metrix
- Udisc
- Other

How interested are you in the accessories that can be attached to your Disc golf discs? *

	1	2	3	4	5	
Not intersted at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interested

What features do you think the attachable disc accessory should have? Choose the three most * important ones.

- GPS-tracking
- Disc speed measurement
- Disc trajectory analysis
- Measuring the height of the throw
- Making it easier to find the disc
- Release angle
- Position of the wrist on release
- Disc rotation speed (Spin)

Do you have a smartphone or smartwatch that you could use with an attachable disc accessory? *

Yes

No

What type of attachment mechanism would you like to see on the accessory to fit different types of Disc golf discs? *

Answer here...

If there were different versions or packages of the attachable disc accessory, what features would you like to see in the different versions?

Answer here...

Where do you usually follow Disc golf news and product announcements? *

Social media

Disc golf forums

Friends and family

Disc golf stores

Other

I do not follow news and announcements

How would you prefer to receive information about new disc golf products and accessories?

By email

Text messaging

Through social media

Direct advertising on disc golf courses

Would you be interested in testing attachable disc accessories and giving feedback to developers in the future? *

Yes

No

Do you want to participate in a prize draw for a chance to win a gift card? If yes, please add your email address in the "Other" field. *Email addresses will only be used for the prize draw* *

Yes

No

Other...