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The relationship between the characteristics of entrepreneurs and the characteristics of poker players.

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Abstract

This paper discusses the correlation between the characteristics of poker players and entrepreneurs. There has not been a lot of official research about the characteristics of poker players. This paper will try and serve as a baseline for future papers. This can be useful as there is a significant part of the adult population that plays poker. This gap in the literature can be useful to help explain some phenomena through another lens and teach people certain skills through poker. The data set comes from a survey conducted by myself based on entrepreneurial survey questions from the Entrepreneurial Potential Self-Assessment (2022), the Entrepreneur Scan (2022) and BBC News (2015). The results of my survey were analysed through a one-sample t-test and the independent samples t-test. The results of the one-sample t-test show that there is a positive correlation between 5 out of 7 measured variables, whereas the independent samples t-test shows there is only 1 variable positively correlated out of 13 variables. There is also an analysis of the correlation between the frequency of poker played by an individual and entrepreneurial characteristics. This data was analysed through the multivariate analysis of variance (MANOVA). The results show that an increase in poker frequency does not lead to an increase in entrepreneurial characteristics. This implies, that for the data of this paper, we can not say that there are correlations between poker players and entrepreneurs. Recommendations for future research include another, broader survey and a possible experiment on different groups of people.

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List of important terms

Action: The action can be classified as the action someone makes during a hand if someone bets or raises. Another definition of this term is that it describes a game where a lot of betting and raising is done (World Series of Poker, n.d.).

Aggressive: An aggressive player rarely calls, but often elects to raise the pot if the situation warrants it. Post-flop an aggressive player bets a lot (Tight Aggressive Poker - Playing Tight & Aggressive Poker, 2021).

Bad beat: A bad beat is when a player has a significant percental lead over an opponent but ends up losing to the opponent (World Series of Poker, n.d.).

Big blind: The big blind is the number of chips the second player to the left of the dealer has to put in the pot at the start of each hand. This is to ensure that there is something to play for before any action (World Series of Poker, n.d.).

Buy-in: A buy-in is the cost of entering a poker tournament or entering a certain cash game. In cash games, this is usually 20 times the big blind (World Series of Poker, n.d.).

Call: Contributing the minimal amount to the pot to continue playing (World Series of Poker, n.d.).

Cash games: A cash game is a game where you can buy in and leave whenever you want. You can always add or remove money from your stack. A 1$/2$ cash game means that the small blind is 1$ and the big blind is 2$ (Cash Game Dictionary Entry, n.d.).

Check: To pass on betting. This is only possible when nobody before you has taken an action or bet in this case (World Series of Poker, n.d.).

Community cards: These are the cards that are dealt face up on the table. These cards are available for all the players to make a hand (World Series of Poker, n.d.).

Flop, pre-flop and post-flop: The flop are the first 3 community cards that are dealt after the first round of betting. The first round of betting before the community cards are dealt is called pre-flop. Post-flop happens after the flop and the remaining community cards are dealt (World Series of Poker, n.d.).

Fold: To give up your cards by moving your cards away from yourself. By doing this, you will immediately forfeit all chances of winning (World Series of Poker, n.d.).

Hand: Your hand consists of the 2 cards you are dealt. Your complete hand are the five cards that are made from the best community cards and your hand (World Series of Poker, n.d.).

Loose: A loose player is someone who plays a lot of their hands. Because of this, it is very hard to know if he has a good or bad hand (Tight Aggressive Poker - Playing Tight & Aggressive Poker, 2021).

Passive: Passive players rarely raise hands and mostly call. This is mostly because they are timid and this results in them playing smaller pots (Tight Aggressive Poker - Playing Tight & Aggressive Poker, 2021).

Position: Playing in position means you are able to act last on every decision. Playing out of position will force you to play earlier in the hand. (What Is Meant by Position in Poker? | Position Explained | Automatic Poker, n.d.)

Premium hands: Premium hands are the strongest hands. These hands include 2 Aces, 2 Kings or 2 Queens. A premium is considered to win most of the time pre-flop (Premium Hands Dictionary Entry, n.d.).

No-limit: The game with a structure where players can bet their entire stack without limitations. There is a minimum amount to what someone can bet, but no maximum (World Series of Poker, n.d.).

Nuts: This is the best possible hand at a given moment (World Series of Poker, n.d.).

Raise: When you raise, you put more money in the call than the minimum required amount to call. This forces other players to put in more money as well (World Series of Poker, n.d.).

Range: The range is the group of starting hands you or your opponent can have. This means you represent a combination of cards, instead of your actual 2 cards (Range | Poker Terms, n.d.).

Tell: This is the interpretation of a physical action or another pattern that reveals the strength of a player's hand. These can be noticeable to other players and they can then more accurately predict someone's hand (World Series of Poker, n.d.).

Tight: Tight players play only a select amount of hands, and most of the time premiums (Tight Aggressive Poker - Playing Tight & Aggressive Poker, 2021).

Tilt: Tilt is usually the result of a bad beat or multiple bad beats in a row. When a player is "on tilt", they are more likely to play recklessly (World Series of Poker, n.d.).

Tournament: A poker tournament is an event involving one or more tables of players each beginning with a fixed amount of tournament chips. The players play until they have either lost all of their tournament chips or if they are the last remaining player holding the chips. In a tournament, you always have a set buy-in which partly goes into the prize pool that is distributed to the best players. Most of the time the prize pool is exponentially rewarded to the top 10%. You can not leave with your chips in the middle of a tournament as they have no external value like in a cash game (World Series of Poker, n.d.).

Introduction

What do Christiano Ronaldo, Kevin Hart, Matt Damon and Guy Laliberté all have in common except for being rich and famous? They are all poker players. A lot of celebrities have become a fan of the game and started playing in the World Series Of Poker (WSOP), on television shows like the PokerStars duels or other events. This made the public more aware of poker and drew more eyes to the game. We saw an increase of 34% in the number of average players from 2008 to 2010 (Fiedler & Wilcke, 2011). This trend continued steadily until the onset of the COVID-19 pandemic. Corona caused online poker to skyrocket in popularity and created a whole new interest in poker for people who have yet to play before due to them being stuck at home. 5 of the biggest poker operators reported a 20% increase in profits in 2020 and also an increase in their play base (Offshore, 2021). Furthermore, there is an estimation that there are 120 million poker players worldwide, which is a significant portion of the adult population. Even though there is such a huge part of the population who plays poker, there has not been a lot of research done about poker and its player base. Most research about poker has been done by professional poker players about optimising their play and how to win the most money. Another part of the research is also performed by professional poker and they research the general advantages of playing poker. However, this can be quite subjective and thus could impact their results. But the research about the players themselves is still quite lacking. This can be a great opportunity to learn about such a large part of the population and identify what characteristics are associated with poker players. One thing that can be observed is that successful people tend to grasp the basics very quickly. Matt Damon for example won a WSOP bracelet in a $5000 tournament and Fatima Moreira went from being a successful hockey player to being a poker player (From Jennifer Tilly to Ben Affleck, 5 of the Best Celebrity Poker Players, 2021). Because of this, I wanted to figure out whether certain poker characteristics would make someone successful in other professions. This scope is a little too big for baseline research as there is almost no other research done about this topic, thus the focus was put on entrepreneurs. There is an overlap where some great entrepreneurs turn to poker, like Guy Laliberté and David Einhorn (Sutevski, 2022), or some great poker players who used their money to become an entrepreneur like David Daneshgar (Pozin, 2021). In addition to having people in common, they also seem to share some surface-level characteristics. An example of this is that both entrepreneurs and poker players are seen as risk-takers (Cambridge Dictionary, 2022) (P, 2019). Another example is that both entrepreneurs and poker players have a need for achievement (Oosterbeek et al., 2010). Entrepreneurs want to prove themselves through their results in business and poker players want to prove themselves through winning a lot of money.

Unlike the little amount of research done about poker players, there is an extensive list of research about entrepreneurs and entrepreneurial activities. This however does not make the research easier, as there are so many angles and definitions, that it can be seen as an overflow of data as shown by the number of definitions in the work of Gartner (1988).

This paper will look at and discuss the potential correlation between (successful) entrepreneurial characteristics and the characteristics of poker players. This will be done by performing a literature review and forming a theoretical framework for entrepreneurs and poker players. The entrepreneurial framework will mostly be based on the literature of researchers, whereas the poker player framework will mostly be based on data and papers written by poker players themselves. Afterwards, the hypothesis will combine these frameworks to figure out whether or not there is a correlation between the two groups. Answering this question will start with summarizing and explaining the data set. This will then be followed by the methodology that will explain what methods I will use to answer the question. After this, we have everything to perform the research and review the results. The results will show the outcomes, which will be discussed in the discussion. The discussion will also be used for practical application, limitations and potential recommendations for future research.

Framework

In this section, I will create an overview of the current state of entrepreneurial literature and poker literature. At the current time of writing there has not been real extensive research on the combination of both topics. Therefore I will divide the framework into two sections, the entrepreneurial theoretical framework and the theoretical poker framework. I will divide the entrepreneurial framework into 3 sub-sections and each section will answer a specific question.

The first question will be what characteristics define entrepreneurs? The second question is: can these characteristics be taught or are they inherited at birth? And the last question will be about the differences between entrepreneurs?

After setting up the entrepreneurial framework, I will present the poker framework in the same way. The poker framework will be mostly based on multiple agreements within the poker community and research that has been done about the benefits of playing poker. The first question for the poker framework will be; What are the characteristics of a poker player? The second question is if there is a difference between online and offline poker players? The last question is; what are the benefits of playing poker?

The characteristics that define entrepreneurs

At the heart of this research are the characteristics of entrepreneurs and poker players. But defining these characteristics is not as easy as looking at the definition of an entrepreneur, however, this may give us our first sense of direction. The definition of an entrepreneur by the American dictionary tells us an entrepreneur is: "a person who attempts to make a profit by starting a company or by operating alone in the business world, esp. when it involves taking risks" (Cambridge Dictionary, 2022) As we can observe, this definition is very broad and does not tell us a lot about the characteristics of entrepreneurs, except for someone willing to take risks and possibly work alone. The problem of this definition also plagues most of the frameworks as shown by Gartner (1988). His research shows all the different definitions that have been used by a lot of different researchers. Because of this unclarity in the definition, this paper will use the American dictionary definition of an entrepreneur and will thus not include managers. Now that we have a set definition of the entrepreneur, we can assign characteristics to the so-called entrepreneur. To assign these characteristics we can look at the Escan that has been used in the Netherlands. The Escan is a self-assessment test that looks into the characteristics of a person. The Escan has been developed based on psychological and business studies (Driessen and Zwart, 1999; Driessen, 2005). The Escan shows results for several characteristics, namely: Need for achievement, Need for autonomy, Need for Power, Social orientation, Self-efficacy Endurance and Risk-taking Propensity. Another way to look at the characteristics of an entrepreneur is through the lens of the Big Five personality dimensions (Zhao & Seibert, 2006). The Big Five personality traits consist of Neuroticism, Extraversion, Openness, Agreeableness and conscientiousness (Leutner et al., 2014). Leutner et al. (2014) show us that the Big 5 can predict entrepreneurial success to a certain extent. Thirdly, META – Measure of Entrepreneurial Talents and Abilities - is another measuring tool people use to define the characteristics of entrepreneurs. META assesses four aspects of entrepreneurial

personality, namely, entrepreneurial awareness, entrepreneurial creativity, opportunism and vision (Almeida et al., 2014). These are the 3 major analyses and there have also been differences within these analyses, which makes the topic very broad. For my research, I will select particular characteristics to address our specific question. Because some characteristics are hard to measure or are most likely not used in a poker game (see poker framework), I have decided to focus mostly on the following characteristics:

The first characteristic that will be focused on will be risk-taking. It is a characteristic that is mentioned in the definition of entrepreneurship and also something that will be mentioned by most people if they think about entrepreneurs. According to Begley and Boyd (1987), risk-taking is part of the psychological characteristics that are associated with the performance of entrepreneurial firms and smaller businesses. Risk-taking is a characteristic that is significantly different among entrepreneurs. Entrepreneurs need to take the risk of starting their own business and give up a stable wage at a job. Because of this, not everyone wants to take the risk, especially because the rewards of starting your own company are unknown. But after starting your own company, you need to make decisions that will ensure the survival of your company, which may lead to entrepreneurs taking fewer risks (Kozubíková et al., 2017). Because of this, Kozubíková et al. (2017) argue that you need to have high-risk tolerance to start a business and lessen your risk-taking after the starting phase.

The second characteristic is the internal locus of control. Internal locus of control is the feeling that you have control over your own decisions and outcomes. This characteristic has a positive correlation with success and starting a business (Rauch & Frese, 2007). According to Rotter (1966), an internal locus of control is important for entrepreneurs as they need to believe that what they do and the effort they put in, will have an impact on the results and rewards they can obtain.

The next characteristic is self-efficacy. This has shown to have the highest correlation with success in a meta-analysis (Rauch & Frese, 2007). Self-efficacy is the trust a person has in themselves that they can successfully impact their environment. This is an important characteristic as most entrepreneurs must have trust in their own capabilities if they face something they did not expect. They must trust their overall capabilities to tackle these problems although they are not certain about the results. (Baum & Locke, 2004)

Innovativeness and curiosity are linked to entrepreneurs wanting to innovate themselves, but also like to apply the innovations of the market in their own lives. Innovating themselves and learning things is often done in spare time and can come from reading, learning new skills or participating in new activities. Innovative people are curious about what's happening in the world and they are up to date on things that interest them. This may lead to them having an idea to create a new product or innovate an old product. The increase in innovativeness will lead to an increase in entrepreneurial success (Ngah & Salleh, 2015).

The need for achievement is a characteristic most entrepreneurs score high on. This is due to them striving to perform adequately and wanting to compete with others (Oosterbeek et al., 2010). People with a high need for achievement tend to get caught up in work and will do this to increase the likelihood of succeeding

(Wu & Dagher, 2007). But because they need to succeed, they tend to work alone. This is because they want it to be done their way. This way of thinking also closely resembles the need for autonomy in a person as they rather make their own decisions and they think they can be most successful following their path (Baluku et al., 2018). Both of these characteristics are found in entrepreneurs.

To summarize, the character profile of an entrepreneur is someone with a higher than average internal locus of control, someone with a need for achievement, who learns from their failures, does not mind taking risks, likes autonomy, is self-efficacy and is also curious and likes innovation. This is an entrepreneur that should have all the characteristics to have a higher chance of starting a successful business. More characteristics can attribute to the success of a business as discussed by Gartner (1988), but not all of these characteristics have proven to be relevant or these characteristics will not add anything to this research.

Entrepreneurial characteristics you are born with and entrepreneurial characteristics you are taught

The discussion between nature and nurture started with psychologists is almost as old as the mid-1800s. (NCBI - WWW Error Blocked Diagnostic, 2013) But even though the discussion has been around for a long time, we still do not have answers that can completely assign certain characteristics to nature or nurture. We know for example that hair colour is mostly decided by sets of genes (Sturm, 2009), but hair colour can still be affected by colouring your hair or exposing your hair to different climates. But personality is first of all less straightforward than the colour of hair but is also something that changes over a longer period of time. Your mannerisms, your tastes, your preferences, everything of your personality develops and changes over time, but the question is whether or not we can influence these traits a lot or if they are set in stone.

To look at this phenomenon with entrepreneurs, we will first of all look at twins as they may give us a lot of insight on a cellular level. Nicolaou et al. (2008) look at both monozygotic and dizygotic twins. They conclude that they found that entrepreneurship as a whole was highly heritable and that the family environment and upbringing had little effect on the probability to engage in entrepreneurship. This would mean that the characteristics can not be taught according to Nicolaou et al. (2008) and that most entrepreneurs are born entrepreneurs. Oosterbeek et al., 2010 researched whether or not an entrepreneurial education program could boost entrepreneurial skills and entrepreneurial motivation. The impact on the skills seems to be insignificant and the motivation to become an entrepreneur is negative. This would mean that teaching someone entrepreneurial skills, is very tough. The study of Oosterbeek et al. (2010) was however performed with a mandatory class, which may skew the effects. Nevertheless, the number of skills not increasing tells us that teaching entrepreneurial skills is very tough. Paço and Palinhas (2011) however tell us that teaching children entrepreneurial skills helps with retaining information and that it does increase personal characteristics that help in becoming an entrepreneur. But, we should not just teach in the usual way according to Arasti et al. (2012). Some methods like projects and discussions have a higher chance of success than teaching in a usual classroom. Fiet (2001) argues that teaching entrepreneurship should be done through experience and that this is the fastest way to learn. But, he suggested that if we would teach it in theory, it should be what someone should do if they came into such a situation. However, a new study from

Purwanto et al. (2022) shows that through the teaching factory program they were able to grow entrepreneurial skills and also improve interest, but this can only be done when the teacher is a good leader. This would mean it is possible to increase these skills under the right guidance. A characteristic like self-efficacy can be taught according to Margolis & McCabe (2006), but yet again when the teacher upholds certain standards. Fouché & Visser (2008) show through board games that teaching is also possible. They conclude that these board games enhanced the learning capabilities, technical competencies, soft skills and finally broadened the view of the people participating. Does this however mean that we can only learn from teachers? According to Alloza Castillo & Escribano (2017), other soft skills like risk-taking can already be thought through playing video games. They also proved that things like concentration and emotion control were improved by playing games. So learning and teaching these characteristics is also possible outside of the classroom.

The differences between entrepreneurs

Although some entrepreneurs may look and act the same and some may even fulfil the role of a manager, there is still a big difference between these people. First of all, the way you act as an entrepreneur is largely determined by your demographic, of which age and gender are two of the biggest factors. Ferk et al., (2013) look at this and finds that females are less likely to become a successful entrepreneur than men, but women are more likely to become successful managers. This is due to women being able to multitask, they have a broader approach to things and are less likely to take risks. Men are more likely to become an entrepreneur due to them taking risks in areas where there is not a lot of information, their approach to focusing on narrow issues and their visionary approach.

Not only does gender influence the likelihood of becoming a (successful) entrepreneur, but age also plays a huge role. This is due to individuals with greater wealth tend to get involved more in entrepreneurial activities than people without wealth (Evans and Jovanovic, 1989). That means that most of the time older people are more likely to become entrepreneurs as they have had more time to gather wealth. Adding to that, there is also a trade-off between becoming an entrepreneur and making your living and having a stable wage. (Lévesque & Minniti, 2011). The risk of becoming an entrepreneur decreases when you have more experience and wealth, but wages also tend to increase as you grow older, thus lessening the difference (Jovanovic, 1994)**.** According to Lévesque & Minniti (2011), this will eventually result in a **reverse** U-shaped curve. Where young people lack wealth and resources/ experience and older people like the comfort of having a stable wage. People around 40-49 are thus more likely to become an entrepreneur

Characteristics of a poker player

Just like an entrepreneur, a poker player is not defined by one definition. Even the term poker is not something that has a singular meaning, but most people associate poker with No Limit Texas Hold'em (NLH and poker from now on). Poker has a lot of different types of games, including draw poker, stud poker and community card poker of which NLH is part (gamblingsites.org, n.d.). Within these categories, there are a lot of different games and there are still new games being created as people are creating their own games. But

for this paper, we will mainly research NLH players as this is the most popular game at the moment and is also the most recognised form of poker (McCormack & Griffiths, 2012). Within NLH there are a lot of different types of players, but they can be classified into different groups. For most of the preflop action, we call people either tight or loose. This determines the range of card combinations they are willing to play with preflop. Then during and after the preflop action, we have aggressive and passive players. These characteristics show us whether a player likes to put pressure on people by betting a lot pre- and post-flop. This all comes together in the following player types, tight aggressive, tight passive, loose aggressive and loose passive. First, we will discuss the overarching characteristics of a poker player and then we will assign characteristics to the specific types of poker players.

According to Shead et al. (2008), the demographic of players is young male students. These males also report higher use of alcohol and gamble more in general. However, this does not seem to impact the general skill of these people.

Quantitative and statistical skills are also something that is commonly found in poker players. Most of the time this can be found in practicality when they are making decisions which in turn will lead to better outcomes (St. Germain & Tenenbaum, 2011). This can both be found inside of the boundaries of the game, but they also seem to have these skills in real life. One caveat is that this also comes from experience in a game. When people have more experience in certain areas, they will make better decisions, however, most poker players still have higher quantitative and statistical skills.

These skills closely align with another trait, intelligence. Although intelligence helps a lot with almost any job and game, some specific things help in poker. Poker players think critically and they need to think about a lot of information and need to apply this information on the spot (Poker Success - Poker Discipline - How to Win Playing Poker, n.d.). Quick thinking, quantitative and statistical skills and absorbing and applying information are a lot easier with a higher IQ. This is probably why the demographics show that 30% of players are current college students and the average poker player is in general 20 to 30 percentage points more likely to have gone to college, meaning their overall academic intelligence is higher (Dufour et al., 2015). This does not always give a perfect comparison, but academic intelligence can indicate intelligence in general and will thus make the average poker player "smarter" than a non-poker player.

Something that most poker players also need, is confidence. This is both the confidence in a social setting to not feel nervous, but especially confidence in themselves. When poker players make a decision, they need to be sure and can not show weakness. If they don't trust themselves, they will not come far in most tournaments (Poker Success - Poker Discipline - How to Win Playing Poker, n.d.). However, social intelligence is also an important part. Although this might show in someone talking to people at the table, it is mostly about reading social cues and being able to act and adapt to them (Bellin, 2002). Reading some of these tells can make a bad player and having these tells can break some good players. Most players do not know

whether they got an obvious tell, but being able to recognise them in others and exploiting them, is something that needs social intelligence.

Of course, last but not least, poker players are always risk takers. They put money into cash games or tournaments and they have no clue if they are going to see it back. Sometimes this risk-taking goes too far and will turn poker players into gamblers. Although that may be the most extreme outcome, a poker player always is a risk-taker. Risk-taking on a certain level is very acceptable for most poker players as they believe they can win, even though there is a luck factor, making the game riskier. Believing in themselves comes with an extra characteristic, which would be the need for achievement. Poker players sometimes play for fun, but in the end, they play to win money and if they do not win, they not only lose money, they lose their pride.

Figure 1

Starting hands range of a tight aggressive player (Sweeney, n.d.-b)
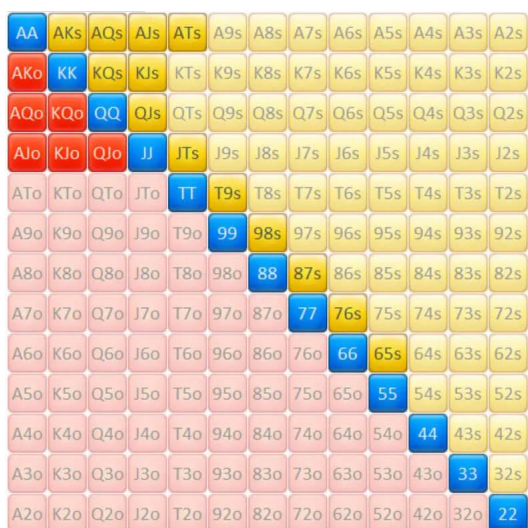
Note: The opening range of a tight aggressive player

Tight aggressive players (TAG from now on) are players that like to put pressure on people by betting a lot when they have a good hand. This style of play is most often seen as a very strong style of play and is seen often at the top (Siler, 2009). They play around 14% of the starting hands, which looks like Figure 1 (Tight Aggressive Opponents (TAG) Poker Strategy, 2013). The highlighted hands are the hands they are most likely to play. The small s, stands for suited, for example, two diamonds or two hearts. The small o stand for unsuited, for example, 1 heart and one diamond. TAGs are mostly seen as solid players who know what hands they like to play and know how to play them during the whole hand. Because they only seem to play premium hands, they are allowed to bluff more and get more out of their aggression. Because of this they always seem to get more value out of their hands. However, they have some weaknesses. TAGs don't like it when they are met with someone who also bets a lot because they only play limited hands and when they don't have a great hand that can deal with this counter aggression, they lose more. Because they don't play a lot of hands and they lose these hands, they tend to be prone to tilt. Furthermore, they do not like playing

out of position because they want to have all the information before acting, which is only possible in position. Because of this, TAG risk-taking might be a bit lower due to them only wanting to play premium hands and they would probably like to have more autonomy due to them always wanting to be in control of the hand.

Figure 2

Starting hands range of a tight passive player (Sweeney, n.d.-b)
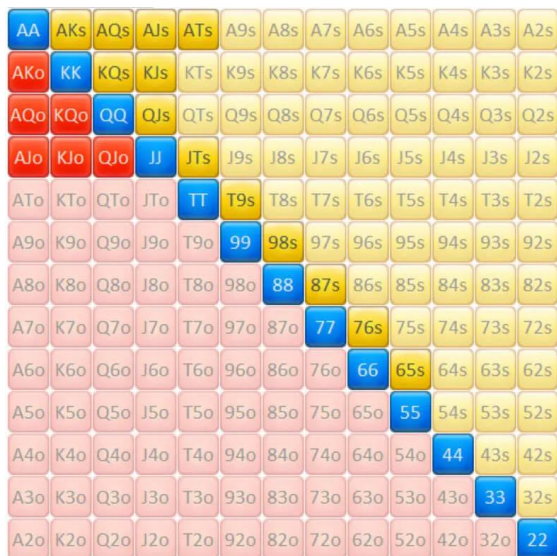
Note: The opening range of a tight passive player

Just like TAGs, tight passive players (TPA from now on), tend to play more premium hands. They play around 14% of the starting hands, which looks like figure 2 (Weak Tight Opponent (Mice) Poker Strategy, 2013). But unlike a TAG, the TPA does not like to put pressure on someone and does not bet/ raise their cards often and elects to call more than the TAG. This comes mostly from the fact they only think of their cards and not about their range. They always look for reasons to fold and only play aggressive when they are certain they have the best hand. Because of this, they do not get as much value from hands as a TAG. Just like the TAG, they are prone to tilt when they lose with their premium hands, but most of the time they will lose less than the LAG as they do not put a lot of money into the pot on their own and rely on others to build the pot. Again, the TPA might score lower on risk-taking than other poker players. Because they are also looking for reasons to fold, their self-efficacy might be lower than other poker players.

Figure 3

Starting hands range of a loose aggressive player (Sweeney, n.d.-a)
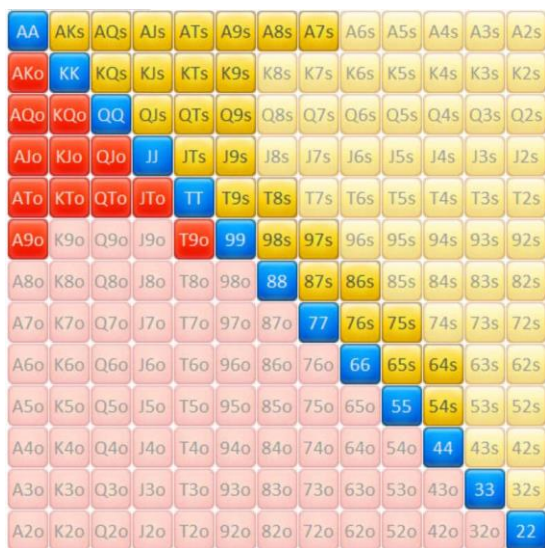
Note: The opening range of a loose aggressive player

Loose aggressive players (LAG from now on) are more fearless than TAGs and like to play aggressively with more hands. They rely on their skills and hand reading to win a lot. They find optimal spots to bet and exert extreme pressure due to their betting patterns and also playing a lot of hands. They play around 20% to 25% of the starting hands, which looks like figure 3 (Loose Aggressive Opponent (LAG) Poker Strategy, 2013). They are unpredictable and because they seem to play a lot of hands, they get paid because people are curious if they have a good hand. A problem however with their pressure, is that they can also lose a lot if they don't get hands that win them pots. They are also easy to trap as they love to bet and see passiveness for weakness. They love to call spots if someone does not seem to play accordingly to their standards, which can win or lose them a lot of money. Although it might seem their risk-taking might be higher, they tend to know what they are doing and try to optimise their spots. Because of this, their internal locus of control might be higher and their curiosity is very high. They want to know what the other opponent is doing, but also how to optimise spots.

Figure 4

Starting hands range of a Loose passive player (Sweeney, n.d.-c)
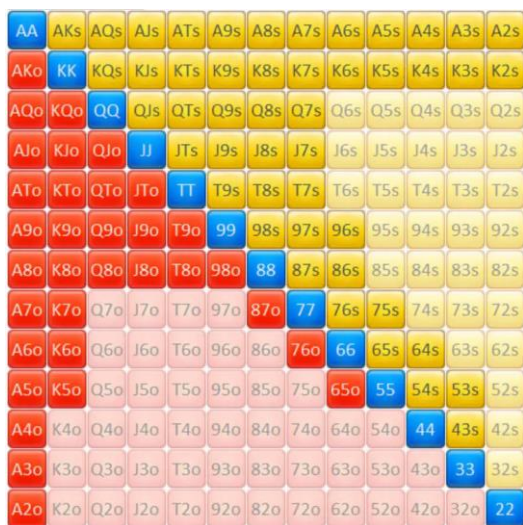
Note: The opening range of a loose passive player

Loose passive players (LPA's) are seen as the weakest form of players. They love to gamble and almost play every hand, even though the hand is not great to play with. They play around 50% of the starting hands or even more, which looks like figure 4 (Loose Passive Opponent (Fish) Poker Strategy, 2013). You will most often see this kind of play with newer players or in friendly situations where people just like to play hands. Because of this, they see the game more as luck based. They will almost always call everything, but will never bet or raise themselves. They seem to be unbluffable because of this and thus other aggressive players may lose money to them because they call almost everything, no matter their hand strength. Because of this, their risk-taking is through the roof. They might believe the results are out of their hands and thus might score lower on self-efficacy.

The online player

One distinction that has to be made within the poker community, is the difference between online and offline players. Although they play the same game, it feels different. The first reason is obvious, you are not sitting in a poker room with all kinds of players, but you are sitting behind your screen. This makes the playing of poker less social and more of a "job". Furthermore, because it is not in person, the tournaments are significantly bigger in the number of players participating. The turnout for a $1 buy-in on Pokerstars was 225,000 players, whereas the biggest live tournament had "only" 14,284 unique players. Although this is also quite a large number, it is simply not possible to organise such an event in real life (What Was The Largest Ever Online Poker Tournament?, n.d.). Because of this, the prize pools may be larger, but the competition is also tougher because there a simply more people playing, which makes it harder to win. However, this does not mean that the average online player is better, they just simply have more numbers (MacKay et al., 2014). The thing that does differ between the two groups is the assessment of their skills according to MacKay et al. (2014). Online players tend to overvalue their skills, while offline players tend to perceive their

skills more accurately. This can be caused by the lower stakes offered by online programs. Cash games can start at $0.01/$0.02 rakes and you can play some free tournaments and win real money with them. This is not sustainable for a casino that has to pay dealers, the venue etc. Because of this the barrier of entry is much lower and can thus be great for practising (Maloux, n.d.).

Something that online poker players also enjoy, is the possibility of playing more hands and potentially more tables at the same time. With offline poker, you play an average of 25 to 30 hands per hour, whereas at an online table you will play between 60 to 80 hands an hour in the same setting (Fisk, 2020). On top of that, you can play multiple tables at the same time while playing online, increasing the number of hands per hour even more drastically.

The last point may be the most obvious, but you can't see your opponent in online poker. This makes a poker face insignificant and makes reading tells a lot harder. While playing online you do not have to communicate with people and you do not have physical chips you have to play with (Maloux, n.d.). This makes it a lot more impersonal and will result in some people making more risky plays because no one can judge/ criticize your play in real life. Because of this, some will try to make more questionable calls when drawing to a limited amount of cards that can make them win.

Benefits of playing poker

There has not been a lot of research done to figure out what the benefits are of playing poker, but professional poker players have opened up about their experiences and what poker taught them. Just like in life, we have to have skills, but also luck. A great example is that someone who smokes for 50 years may not have any lung problems and someone who has a healthy lifestyle might get lung cancer. This then leads into the first point(3 lessons on decision-making from a poker champion | Liv Boeree, 2018). Decision-making is important in poker (3 lessons on decision-making from a poker champion | Liv Boeree, 2018). But, when we make decisions, we love to look at the results and attribute them to our skills, especially if the results are positive, but we sometimes overlook a luck factor that may have contributed to positive results. This can also be attributed to confirmation bias. When the result however is negative, we tend to blame it on bad luck and not our skills. With poker, however, especially with the increase in poker solvers, we can look at our decisions and see if this decision was closer to optimal or if we just got lucky. This thinking about all your poker hands also increases your self-awareness about making certain decisions. This increases the smaller and smarter parts of our brain that uses data and evidence to make our decisions and thus will make us more rational (23 Things Poker Teaches You About Life (According to Pros), n.d.). The second part of the decision-making is that you learn to quantify your thinking. This leads to someone thinking in numbers and probabilities instead of going on a gut feeling and just winging every decision. This is also the last part of decision-making, we should not ignore all of the intuition, but we should also not always try to use it to explain our decision-making. Sometimes our intuition tells us to play or not play certain hands, but when we are on a bad streak, we tend to remember it longer and proceed to wait for a better opportunity. This is part of the loss-aversion bias and makes us think more about our losses than our wins (Novemsky & Kahneman,

2005). But this however does not mean that you should always wait for the perfect opportunity. You have to make the decisions you are making with the hand you are dealt with and cannot always hope for a better opportunity. This increase in decision-making will be very tough to assess in the short term. Most effects of bigger decisions only show their full effects after a certain period of time. The difference with poker is that you can play a lot of hands and improve your skills every day, in life, you will only have a limited amount of moments to learn from. You will have to gather feedback from these decisions and improve on them for the next time something similar might present itself. Doing this every time something happens will lead to better results due to the results of compounding your energy.

Intuition is something that closely relates to emotions. Emotions are something that makes us who we are, but extreme emotions can lead to undesired outcomes. Poker players know the feeling of losing a hand where they were a 9 to 1 favourite and still somehow lose the hand on the last card. After this happens, you can not lose your temper or you will lose more money because you are on tilt. Your decisions should not be crippled by emotions. Because poker often puts you in these situations where you either have to control your anger or your excitement during a hand, it will egalise your emotions, which makes you a more stable and mature person. But sometimes, when the stakes are high, poker players still revert to intuition as this can be more objective for some players than their actual decision. This intuition is honed by years of playing and by looking at what happens when you follow it and when you do not follow it.

Innovation and curiosity is something that has become an important skill set for new players. This has become more important in the world of poker due to the poker solvers becoming very prominent. Older players used to rely on intuition and playing the hand they were dealt. Nowadays, poker players analyse their hands, and common spots and try to improve their game without playing. Curious players now have the possibility to study every day, and thus improve their skills, without spending a dollar. Older players now mostly rely on their experience to still have a chance against upcoming players, but the gap has already been closed between the "old" school and "new" school players. Poker solvers are computer-generated optimal plays and people can use them to input a scenario and create an optimal response. Although this tool seems very powerful, it is not like the chess tool that always gives 1 or 2 possibilities which are both seen as optimal. The poker solver gives a percentage of several possible plays based on the opponent's optimal play and because of that, you still have to interpret and adjust to your opponent as no one plays 100% optimally.

Another benefit that may be counterintuitive for some, is that you have to manage your money well. People see poker as gambling and thus may not recognise this benefit, but poker players need to think about how they are spending their money. If you have $100 and you have the option to play at $0.25/$0.5 stakes or $1/$2, you can try your luck and win more at the $1/$2 table, but in the end, the $0.25/$0.5 stakes give you more certainty in being able to apply your skill instead of it coming down to luck. This also goes into the risk vs reward assessment of poker players (P, 2019). Poker players are presented with a lot of different opportunities to play at different stakes and have to pick their spots to optimise their investment of both their money and time. You have to know your stack, referring to your money and skills, before you are going

to play, but also before you are going to bet. When you bet in life, it will be reflected in performing a task, trying to create a new relationship or applying for a job. Knowing your stack in life will help you know what you can handle and what you can add to something and will help you avoid overvaluing yourself and will keep you safe from tough situations. To add to the stakes, playing in lower stakes does not mean you are unable to win big. The pot will only become big if you want to build the pot. It is easy to always take it easy and safe when the stakes are low but to win big, you have to increase what you are willing to invest. This is also true in life. You have to take risks and set out to do work to enhance your life to get money out of it. This can be investing in skills or another job you want to pursue, but you have to increase your skills in what you are doing to get further in life.

The last thing most poker players will have to learn is what games to pick. This means what kind of poker you are going to play. You need to pick the games you are confident you are going to win. Do not play a game of stud when you have no clue how it works. Not only do you pick your games, but you can also pick your table. Play at tables that you know you are going to win in. This means that even though you are very good at poker, you will win more at a table with amateurs instead of playing at a table full of pros. To win, play at an amateur table, to learn, go to the table full of pros, but be prepared to lose. Because you can always lose against amateurs, you should also know when to walk away and try again on another day.

Hypotheses

This paper will study the correspondence between the characteristics of poker players and the characteristics of entrepreneurs. To do this, we have to look at the profile of poker players and entrepreneurs. Baum et al. (2014) established that an entrepreneur is someone who has a higher than average internal locus of control, someone with a need for achievement, who learns from their failures, does not mind taking risks, is self-efficacy and is also curious and likes innovation. Most of these characteristics are also present in poker players. The most obvious one is risk-taking, where you have to bet money to win money and are always presented with uncertainty. Some poker players might take more risks than others, but just like entrepreneurs, they are always taking a risk because they do not have any certainty. This goes hand in hand with poker players having higher self-efficacy. If you don't feel confident in your skills, you will not put money into a game where skill is needed to win. Of course, some poker players take risk-taking to the extreme and this will lower self-efficacy, but most successful poker players will have confidence in their skills and thus not see poker as a game of pure luck. An internal locus of control is also present in most poker players. Although every player may get upset about a bad beat and get emotional because of that, in the end, most poker players know when they have done something wrong and will learn from that, instead of blaming it on only outside factors in the long run. Curiosity and innovativeness, especially in themselves, are really important. These characteristics are present in successful entrepreneurs and are shown through their actions where they are likely to be curious about what happens around them, but also curious about what they can learn about themselves (Ngah & Salleh, 2015). They also have the drive to see if they can improve on certain aspects where their skills are lacking, thus trying to innovate themselves. This innovation of themselves can then also lead to innovation in technology or their job. The same can be said about poker players. They are constantly trying to improve their play and they do this by improving the solvers they use to study. Poker players are always curious about how others play and if they can learn from them and use that to improve their play.

Not only do the characteristics of poker players and entrepreneurs align, but the demographics also seem to align in certain places. In general, there are more white males with a higher education level in both fields. The average age of poker tends to be higher as well as you need money to play poker. The average age of (professional) poker players is around 39 and most entrepreneurs become entrepreneurs between 40 and 49 (Professional Poker Player Demographics and Statistics [2022]: Number Of Professional Poker Players In The US, 2022) (CBS Statline, 2021). Because of these similarities, I expect that there is a positive relationship between the characteristics of poker players and the characteristics of entrepreneurs.

Hypothesis 1: There is a positive correlation between the characteristics of poker players and entrepreneurs

This hypothesis will answer the general question of whether people that play poker have a higher chance of becoming an entrepreneur. This includes poker players who play once in a while and although this person may also have some characteristics that could lead to being a successful entrepreneur, I expect someone who plays more poker will have a higher correlation with the entrepreneurial characteristics. This is because

when you play more poker, you will automatically start to learn more about the game and automatically gain some of the benefits from playing poker. Another effect is that you will resemble more of a generalisable poker player. The more generalisable poker player will have their playing style more set in stone, will be less random and will have more experience. These experiences will make you gain better decision making, a higher level of locus of control, be more emotionally stable etc. Because you will gain these benefits over time, I expect them to help you in becoming a successful entrepreneur.

Hypothesis 2: There is a positive correlation between the characteristics of the amount of poker played by poker players and entrepreneurs

So far the literature has shown that online players and offline poker players are not that different from each other. However, somewhere they differ in the personal contact between players. Offline players sometimes do not play optimally or make more risky plays because they don't feel the physical attachment to their chips, but they also don't have to explain their plays to other players (Maloux, n.d.). Because it is more impersonal for players, it seems that their experience gained and their curiosity is reduced. There is always another tournament they can quickly get into, whereas an offline player will often have only 1 tournament, with potential rebuys, to play, but they can nearly not play the same amount of tournaments as online players. Yet, their comparative skill is the same according to MacKay et al. (2014). This means that overall, offline players tend to either learn quicker or are more curious about learning in their spare time. Another reason is that online poker players have the possibility of playing in lower-stakes tournaments and thus will most likely attract people with less money, e.g students. Offline tournaments will more likely be represented by people with more money and are thus older than these students. This will therefore come closer to the age where most people become entrepreneurs, the age between 40 and 49. The last reason is that online players have less personal contact with people. Because of this, they will miss one of the benefits of poker, reading people (Bellin, 2002). According to Ray (1993), it is very important to have listening skills, especially information acquisition skills. This means you need to be able to pay attention to verbal and non-verbal communication. These skills are only learned through offline poker and not through online poker. Because of this, I expect that offline poker players are more likely to become successful entrepreneurs.

Hypothesis 3: Offline poker players show more entrepreneurial characteristics than online poker players

Data

Data Gathering

To answer the hypothesis, I created a survey and spread the survey into different poker communities. The survey was made in the Qualtrics program. The survey was mostly sent to people from my own community, the Dutch poker community (pokeren.nl) and personal messages online. My survey was sent to mostly poker players and not to people who have never played poker in their life. Because of this, I will have to use the data from other papers to compare my data between non-poker players and poker players. Some non-poker will answer this survey and these will be used as a baseline for comparison, but will not be used to fully compare the non-poker playing group and the poker player group because there are not enough respondents. The survey was sent out on the 16th of June 2022 and was open until the 4th of July 2022. The respondents were mostly from the Netherlands because of my country of origin and the inability to spread my survey easily through international communities without compromising integrity. The integrity could have been compromised due to online forums being unmonitored and thus potentially creating a massive influx of spam data. This was tested with a test survey that I send out.

My survey consisted of 9 questions about the respondents' demographics, whether they were an entrepreneur and their poker history. The survey continued by asking the respondents to respond to 50 statements and how much they disagreed or agreed with the statements. These statements were mostly taken from Entrepreneurial Potential Self-Assessment (2022), Entrepreneur Scan (2022) and BBC News (2015). This was done because these tests have shown to be reliable and give a clear result on whether someone is an entrepreneur or not. Furthermore, I added some extra statements that were more focused on how someone would react at a poker table. Last, but not least, I only used fully completed surveys. In total there were 136 respondents, if people missed 1 question or more, I deleted their responses. These were the only responses I excluded from my data set. This way I ended up with a fully usable data set with 89 respondents.

General questions

The first 3 questions were about the respondents' demographics.

Age: The age of the respondent was asked and the respondent could fill in any value

Gender: The gender of the respondent was asked. There were multiple possibilities, but only "male" and "female" were selected

Education level: The education level of the respondent was asked. This was either the latest enjoyed education for people who were not engaging in studies or their current study program if they were still taking part in a study program.

This was then followed up by questions about variables that gave an insight into their poker lives and also their entrepreneurial interest:

Poker frequency: The respondents were asked how often they played poker. The answers possibilities were: Once every couple of months, Once every month, Once every couple of weeks, Once every week, Daily, (Almost) Never.

How they played poker: The respondents were asked how they played poker most of the time. The answer possibilities were: Online, Offline, I don't play poker and a mixture of both.

Type of poker: The respondents were asked what kind of poker they played most of the time. The answer possibilities were cash games, tournaments and I don't play poker.

If they have ever played professionally: The respondents were asked about their experience level in poker. The answer possibilities were Yes, I play(ed) poker professionally, Yes, I play(ed) poker as a side job/hobby, No, I only play with friends and I don't play at all.

Games when little: The respondents were asked how often they played any kind of board games or card games when they were little. The answers possibilities were: Once every couple of months, Once every month, Once every couple of weeks, Once every week, Daily, (Almost) Never. Although this is not a variable directly mentioned in my research so, it can provide an answer to why some people may have started playing poker in the first place.

Entrepreneurial interest: The respondents were asked if they are an entrepreneur or if they have had an interest in becoming an entrepreneur. The answers possibilities were: Yes, I currently have my own business/ businesses, No, but I used to own my own business/ businesses, No, but I have thought about becoming an entrepreneur, No, and I will never want to become one

Research questions

To perform my research I used 50 questions that would enable me to predict someone's characteristics. These 50 questions all had the same setup; A statement was presented and respondents were asked to respond to these statements. They could answer with a 0, meaning they would completely disagree with the statement, they could answer with a 5, meaning they would be completely neutral towards the statement or with a 10, meaning they would completely agree with the statement. Everything in between 0, 5 and 10 would be a linear step upwards or downwards when changing your answer with 1. The 50 statements all had an impact on one of the following characteristics: the need for achievement, self-efficacy, curiosity, locus of control, need for autonomy, how much someone learns from failure, Risk-taking, stress management, people skills, analytical capabilities, determination, money control and reliance on instincts. To acquire the results for these variables, I matched the results of the statement to the variable in question. The results would be between 0 and 10 for every person, where a 0 would mean they would absolutely have no association with the characteristic and a 10 would mean they would perfectly resemble the characteristic.

Methods

The dataset that has been used combined the results of 89 respondents. The calculation of all the methods will be done by Stata or SPSS. For the first hypothesis, we are interested in checking whether poker players in general have similar characteristics as entrepreneurs. Because of the lower amount of respondents that have never played poker, we will perform two tests to compare the two groups. The first test will be a comparison with other literature and look if my results show a resemblance with their results. Another way we are going to check our results is to compare the two groups in our sample. Although this is a small number of people, it will give us an extra insight into the question. To test the differences between the averages of other studies and our results, I will use a one-sample t-test. I have chosen to do a one-sample t-test because I have to compare the means of only two groups with information from other sources. This result will determine whether or not the population is significantly different from a specific sample. This will then tell us if entrepreneurs and poker players are relatively similar. This t-test will be performed with the following variables: the need for achievement, need for autonomy, determination, self-efficacy, stress management, curiosity and locus of control. These variables have been chosen as they are part of the results of the Entrepreneurial Potential Self-Assessment (2022). This survey gives insight into a lot of the variables and also gives averages for the population. Because of this, we can look for differences between the population and our sample. Other papers and tests have not been chosen for this as they mostly focus on specific attributes or do not release the average scores of entrepreneurs and the general population. A combination of papers and tests could have been possible, but due to large differences in researched groups,

I have chosen not to take this route as it may distort results. One thing we have to account for is that the results of the Entrepreneurial Potential Self-Assessment (2022) are not between 0 and 10. Because of this, I will rescale the scores to account for the differences in the scale. The second test will be an independent samples t-test. This test will compare the means of the two independent groups, in this case, poker players and non-poker players, and will tell us whether or not there is a significant difference between the two groups. The dependent variable, in this case, will be all 13 variables. The independent variable will be whether or not someone plays poker.

We are also interested in whether playing more poker, also increases entrepreneurial characteristics, we had to perform a method with a mean comparison. The test has to compare the effects of playing poker as a between-group design. This is due to the data coming from a group that took the survey at the same time and did not receive treatment. 13 variables were used in the data analysis and they were all compared within the poker frequency groups. I used a multivariate analysis of variance (MANOVA) for this as there had to be a comparison between the means of more than 2 dependent variables, 6 groups in this case. The MANOVA test is a form of the analysis of variance (ANOVA). They both use the covariance between outcome variables to test whether there is a statistical significance of the difference in means between the variables (MANOVA, n.d.). Some assumptions need to hold for the MANOVA to work, like no outliers and linearity, but

these seem to hold. The same logic also applies to the third hypothesis, which tells us whether or not there is a difference in entrepreneurial skills between poker players that play online or players that play offline. Because there are more than 2 dependent variables, I used MANOVA again. We will test all results for a 5% confidence interval for statistical significance.

Results

Hypothesis 1

This section will discuss the results of the different tests. The first results (appendix A.1) analyse the mean difference between the Entrepreneurial Potential Self-Assessment (2022) and poker players. This was done through a one-sample t-test. The means that were used from the Entrepreneurial Potential Self-Assessment (2022) are taken as an H0 for the 7 different variables. The results, shown in Appendix A.1, show us that 5 variables of poker players are significantly higher than that of non-poker players. These 5 variables, with their significance in brackets, are the need for achievement (0.001), stress management (0.000), self-efficacy (0.000), locus of control (0.000) and curiosity (0.000). The determination (0.018) variable is significant but in the opposite direction. This means that poker players have less determination than non-poker players. The only variable that seems to be the same between the two groups would be the need for autonomy. These results tell us that there is a significant difference between the people that took the Entrepreneurial Potential Self-Assessment (2022) test and poker players on multiple entrepreneurial variables.

The second part that tries to answer the first hypothesis is conducted with the independent samples t-test. The results can be found in Appendix A.2. This test was performed to see if within my survey there would be significant differences between the two groups. This test however looks at all 13 variables that were tested in the survey, instead of just 7. The results show that there is no significant difference between the poker and non-poker players on almost every variable. The only variable that differs, is the curiosity variable (0.024). However this variable is positive, thus non-poker players are more curious than poker players. But the drawback with these results is that they are performed with only 6 non-poker observations and are thus not really representative.

Hypothesis 2

The results of the second question are shown in Appendix 2.A. Appendix 2.A shows the MANOVA analyses performed on 6 dependent variables. These dependent variables are all different frequencies on how much someone plays poker. The mean of these 6 dependent variables were compared across all 13 variables. This test should show us whether playing more poker would increase entrepreneurial skills. Appendix 2.A shows that only one of the variables is significant in the whole data set, which is instinct 0.01. This variable is the only variable where poker players that play more differ from players who play less. But we also have to look at Appendix 2.B and look at the Wilks Lambda. The significance level is 0.072 and thus we can not reject the statement that increasing the number of times playing poker grants you more entrepreneurial skills on a 95% confidence interval.

Hypothesis 3

The results of the third analysis are shown in Appendix 3.A. Appendix 3.A shows the MANOVA analyses performed on 3 dependent variables. These dependent variables are the different ways of playing poker, online, offline or a mixture of both. The mean of these 3 dependent variables were compared across all 13 variables. This test should show us whether offline poker players differ from online poker players based on

their entrepreneurial skills. Appendix 3.A shows that none of the variables are significantly different across the two groups. This is also visible in Appendix 3.B where Wilks Lambda is 0.816. Because of this, we can not reject the statement that offline and online poker players have different characteristics on a 95% confidence interval.

Discussion

When analysing our first hypothesis, we have to look at the two results from the different samples. The first test was done on the results of the Entrepreneurial Potential Self-Assessment (2022) test. The results report a significant difference between poker players and non-poker players on 6 of the 7 variables, of which 5 were positively correlated and 1 was negatively correlated. This would support the claim that there is a correlation between the characteristics of entrepreneurs and the characteristics of poker players and would thus confirm our main thesis question. However, when we run a test on our own data set, we find that only 1 out of 13 variables are correlated. If we would follow these answers, it would not confirm our thesis question, meaning there is no correlation between the characteristics of the 2 groups. So which test should we follow? This is a tough one as both have limitations. First of all, there was a small sample size that partook in the survey that did not play poker. Because of this, the results may not be very accurate and representative of a larger population. Another drawback was the interpretation of the Entrepreneurial Potential Self-Assessment (2022) test. For the t-test we had to use the results that were given on their website because there was no direct access to the underlying formulas and results, I had to interpret these myself and thus these numbers may not be fully accurate. Because both tests have significant drawbacks and differ hugely in their results, it is safe to say that we can not confidently accept our hypothesis.

However, our second hypothesis about poker frequency impacting the characteristics of the groups can give us an insight and may give more clarity about the correlation. The results show that there is no correlation between the increase in poker frequency and the increase in entrepreneurial characteristics. This could also suggest there is no correlation between the characteristics of poker players and entrepreneurs. However, one problem is that we use the same data that was used in the second part of our first hypothesis, which also did not find a correlation between the two groups.

The last hypothesis asked the question of whether playing poker online would increase entrepreneurial characteristics. The results of this test also showed that there was no correlation between the type of poker played and entrepreneurial characteristics. This result was more expected than other results because they are all poker players. Before the research had been done, I expected there would be a correlation between poker players and entrepreneurs. This is due to both groups seeming to have roughly the same demographics, males around 40 years old with a college or university degree. Furthermore, they seem to have roughly the same surface-level characteristics. Because of these similarities, I also tested if the effects were different with other variables taken in mind, like whether or not someone played games as a kid, whether someone is already an entrepreneur or their education level. But all results show that there is no difference in means between the groups. This can thus imply that the whole survey might have been too fugue or that the people who completed the survey were too similar. However, stating the actual reason this happens can not be verified with our current data.

So far I have mainly shown limitations for the specific test that have been run, but some limitations affected the whole research. The first one is that the survey was set up based on questions from a combination of

other sites. Because of this, we do not exactly know the weight of each question, resulting in every question having the same weight on each characteristic. Furthermore, the sample size was relatively small, especially among the non-poker players. In addition, the samples mostly came from the same communities. The combination of these points will make it very difficult to accept these results as externally valid. Another point that affects the external validity, is that all the samples came from the Netherlands. Because of this, if the result would apply to a population, it would only be applicable in the Netherlands.

There are several possibilities for future research. First of all, is to test the same hypothesis on a larger scale with a more reliable survey. The larger scale would help the external validity and the survey would cause there to be a higher internal validity. The survey is now less externally valid due to the respondents being from 3 separate communities, my community, the Dutch poker community (pokeren.nl) and personal messages. Changing the survey would bring more internal validity as I created my survey based on other surveys and did not perform my research to create a separate survey. This survey could also be extended in length to gain a more accurate result on each of the characteristics. Another possibility for future research is to test whether or not teaching people poker would increase their entrepreneurial characteristics through an experiment. This can be beneficial for entrepreneurial characteristics, but also other skills like overall decision making or knowing what you are good at and acting on it. This would especially be interesting with children and people between the ages of 40 and 50. The experiment with children would teach us whether or not teaching poker would increase these entrepreneurial characteristics. Whereas teaching the people between the ages of 40 and 50 would help the largest portion of potential entrepreneurs evaluate their skills and maybe teach them about their strengths and weaknesses. This can then partly be done by examining the type of poker player as this can give an insight into how a person thinks.

Although there are some limitations to the study and there is no significant correlation between the 2 groups, there can still be some practical applications. One way to apply this is to teach some entrepreneurial practicalities through poker because the benefits of playing poker can still help in teaching certain aspects of entrepreneurship (Fouché & Visser 2008). The people themselves and teachers can also figure out through the playstyle of someone whether or not someone takes a lot of risks or likes to put pressure on people through a difficult decision. This can help them identify what kind of entrepreneur they are, either someone who can take the risk and start a start-up or is better at managing people and risks, and maybe help to identify their strengths and weaknesses in the business world. These practical implications can be taught both online and offline as there do not seem to be large enough differences between the two. This would make it easier and more accessible for more children. Also, due to there being a large amount of online public guides on playing poker, people may not even need a teacher if they want to learn it at their own pace. Another advantage of playing online is that you can play more hands in a shorter period of time. But you will miss the personal touch, so there are advantages and disadvantages to both options.

Conclusion

This research was done to investigate whether there was a correlation between the characteristics of entrepreneurs and poker players. This was done by collecting data through a survey. The survey was a collection of several questions from the Entrepreneurial Potential Self-Assessment (2022), Entrepreneur Scan (2022) and BBC News (2015) entrepreneurial tests. The hypothesis was tested through a one-sample t-test and an independent variable t-test. The results showed that there was a correlation between the two groups in the one sample t-test and that there was no correlation between the two groups in the independent variable t-test. Because of this, we can not confidently accept the hypothesis that there is a correlation between the characteristics of an entrepreneur and a poker player. The hypotheses that tested the correlation between the frequency of playing poker and playing offline poker were both analysed by a MANOVA test. The results of the MANOVA tests showed that there was no correlation in both instances. This was in line with the results of our independent variable t-test, but not in line with the one-sample t-test, but this can be due to the tests using results from different tests. Although these hypotheses were not significant, this research can be seen as baseline research as there was almost no official research about poker players. This research also shows that playing poker brings a lot of interesting benefits that can be used by almost anyone to improve certain skills in life. Furthermore, there are several possibilities for further research. One possibility is to perform the same research, but extend the reach and produce a more reliable survey. This way, we would gain more reliable results. Another possibility is to create an experiment and report the results of the experiment.

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Appendix

Appendix A.1

Results one sample t-test for the characteristic need for achievement with a mean of 6

```
One-sample t test
─────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼───────────────────────────────────────────────────────────────
Needfo~t │      87    6.535632    .1337668    1.247693    6.269713    6.801552
─────────────────────────────────────────────────────────────────────────
    mean = mean(Needforachievement)                          t =    4.0042
H0: mean = 6                                  Degrees of freedom =        86

   Ha: mean < 6                 Ha: mean != 6                  Ha: mean > 6
 Pr(T < t) = 0.9999        Pr(|T| > |t|) = 0.0001        Pr(T > t) = 0.0001
```

Results one sample t-test for the characteristic the need for autonomy t with a mean of 5.5

```
One-sample t test
─────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼───────────────────────────────────────────────────────────────
Autonomy │      88    5.450758    .1488217    1.396072    5.154958    5.746557
─────────────────────────────────────────────────────────────────────────
    mean = mean(Autonomy)                                     t =   -0.3309
H0: mean = 5.5                                Degrees of freedom =        87

  Ha: mean < 5.5                Ha: mean != 5.5               Ha: mean > 5.5
 Pr(T < t) = 0.3708        Pr(|T| > |t|) = 0.7415        Pr(T > t) = 0.6292
```

Results one sample t-test for the characteristic determination with a mean of 6.3

```
One-sample t test
─────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼───────────────────────────────────────────────────────────────
Determ~n │      88    5.914773     .179839    1.687039    5.557323    6.272222
─────────────────────────────────────────────────────────────────────────
    mean = mean(Determination)                               t =   -2.1421
H0: mean = 6.3                                Degrees of freedom =        87

  Ha: mean < 6.3                Ha: mean != 6.3               Ha: mean > 6.3
 Pr(T < t) = 0.0175        Pr(|T| > |t|) = 0.0350        Pr(T > t) = 0.9825
```

Results one sample t-test for the characteristic stress resistance with a mean of 5.4

```
. ttest StressRes == 5.4

One-sample t test
─────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼───────────────────────────────────────────────────────────────
Stress~s │      86    7.385659    .1489759    1.381545    7.089455    7.681863
─────────────────────────────────────────────────────────────────────────
    mean = mean(StressRes)                                    t =   13.3287
H0: mean = 5.4                                Degrees of freedom =        85

  Ha: mean < 5.4                Ha: mean != 5.4               Ha: mean > 5.4
 Pr(T < t) = 1.0000        Pr(|T| > |t|) = 0.0000        Pr(T > t) = 0.0000
```

Results one sample t-test for the characteristic self-efficacy with a mean of 5.7

```
. ttest Selfefficacy == 5.7

One-sample t test

────────────────────────────────────────────────────────────────────────────
Variable │    Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼──────────────────────────────────────────────────────────────────
Selfef~y │     87    7.136289    .1121091    1.045684    6.913424    7.359154
────────────────────────────────────────────────────────────────────────────
    mean = mean(Selfefficacy)                                   t =   12.8115
H0: mean = 5.7                                Degrees of freedom =        86

   Ha: mean < 5.7              Ha: mean != 5.7              Ha: mean > 5.7
 Pr(T < t) = 1.0000       Pr(|T| > |t|) = 0.0000        Pr(T > t) = 0.0000
```

Results one sample t-test for the characteristic locus of control with a mean of 5.9

```
. ttest Locusofcontrol == 5.9

One-sample t test

────────────────────────────────────────────────────────────────────────────
Variable │    Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼──────────────────────────────────────────────────────────────────
Locuso~l │     88    6.335227    .0872676    .8186423    6.161774    6.508681
────────────────────────────────────────────────────────────────────────────
    mean = mean(Locusofcontrol)                                 t =    4.9873
H0: mean = 5.9                                Degrees of freedom =        87

   Ha: mean < 5.9              Ha: mean != 5.9              Ha: mean > 5.9
 Pr(T < t) = 1.0000       Pr(|T| > |t|) = 0.0000        Pr(T > t) = 0.0000
```

Results one sample t-test for the characteristic curiosity with a mean of 6.3

```
. ttest Curiousity == 6.3

One-sample t test

────────────────────────────────────────────────────────────────────────────
Variable │    Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼──────────────────────────────────────────────────────────────────
Curiou~y │     88      7.4375    .1649888    1.547732    7.109567    7.765433
────────────────────────────────────────────────────────────────────────────
    mean = mean(Curiousity)                                     t =    6.8944
H0: mean = 6.3                                Degrees of freedom =        87

   Ha: mean < 6.3              Ha: mean != 6.3              Ha: mean > 6.3
 Pr(T < t) = 1.0000       Pr(|T| > |t|) = 0.0000        Pr(T > t) = 0.0000
```

Appendix 1.B

Results independent samples t-test for the characteristic need for achievement

```
. ttest Needforachievement, by(pokerfreq1) unequal

Two-sample t test with unequal variances

────────────────────────────────────────────────────────────────────────────
   Group │    Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
─────────┼──────────────────────────────────────────────────────────────────
No_Poker │      6         5.9    .4219004    1.033441     4.81547     6.98453
Poker_pl │     87    6.535632    .1337668    1.247693    6.269713    6.801552
─────────┼──────────────────────────────────────────────────────────────────
Combined │     93    6.494624    .1285948    1.240123    6.239223    6.750024
─────────┼──────────────────────────────────────────────────────────────────
    diff │           -.6356322    .4425986                -1.716371    .4451062
────────────────────────────────────────────────────────────────────────────
    diff = mean(No_Poker) - mean(Poker_pl)                      t =   -1.4361
H0: diff = 0                        Satterthwaite's degrees of freedom = 6.05223

   Ha: diff < 0                Ha: diff != 0                Ha: diff > 0
 Pr(T < t) = 0.1003       Pr(|T| > |t|) = 0.2006        Pr(T > t) = 0.8997
```

Results independent samples t-test for the characteristic self-efficacy

```
. ttest Selfefficacy , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	6.880952	.3050966	.7473309	6.096677	7.665228
Poker_pl	87	7.136289	.1121091	1.045684	6.913424	7.359154
Combined	93	7.119816	.106583	1.027849	6.908133	7.331499
diff		-.2553366	.3250421		-1.037845	.5271719

```
    diff = mean(No_Poker) - mean(Poker_pl)                     t =  -0.7855
H0: diff = 0                      Satterthwaite's degrees of freedom =  6.43456

    Ha: diff < 0                  Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.2300       Pr(|T| > |t|) = 0.4601        Pr(T > t) = 0.7700
```

Results independent samples t-test for the characteristic curiosity

```
. ttest Curiousity, by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	8.25	.3095696	.7582875	7.454226	9.045774
Poker_pl	88	7.4375	.1649888	1.547732	7.109567	7.765433
Combined	94	7.489362	.1568206	1.520432	7.177947	7.800776
diff		.8125	.3507914		.0070921	1.617908

```
    diff = mean(No_Poker) - mean(Poker_pl)                     t =   2.3162
H0: diff = 0                      Satterthwaite's degrees of freedom =  8.20585

    Ha: diff < 0                  Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.9758       Pr(|T| > |t|) = 0.0484        Pr(T > t) = 0.0242
```

Results independent samples t-test for the characteristic locus of control

```
. ttest Locusofcontrol , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	6.083333	.2183694	.5348936	5.521997	6.64467
Poker_pl	88	6.335227	.0872676	.8186423	6.161774	6.508681
Combined	94	6.319149	.0829094	.8038362	6.154507	6.483791
diff		-.2518938	.2351613		-.8127866	.3089989

```
    diff = mean(No_Poker) - mean(Poker_pl)                     t =  -1.0712
H0: diff = 0                      Satterthwaite's degrees of freedom =  6.71475

    Ha: diff < 0                  Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.1605       Pr(|T| > |t|) = 0.3211        Pr(T > t) = 0.8395
```

Results independent samples t-test for the characteristic learning from failures

```
. ttest LearnFail , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	7.111111	.5211573	1.276569	5.771433	8.450788
Poker_pl	87	7.409962	.1092286	1.018817	7.192822	7.627101
Combined	93	7.390681	.1069775	1.031653	7.178215	7.603147
diff		-.2988508	.5324808		-1.634444	1.036742

```
    diff = mean(No_Poker) - mean(Poker_pl)                    t =  -0.5612
H0: diff = 0                        Satterthwaite's degrees of freedom =   5.44831

    Ha: diff < 0                  Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.2985        Pr(|T| > |t|) = 0.5969         Pr(T > t) = 0.7015
```

Results independent samples t-test for the characteristic need for autonomy

```
. ttest Autonomy , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	5.444444	.6363476	1.558727	3.808661	7.080228
Poker_pl	88	5.450758	.1488217	1.396072	5.154958	5.746557
Combined	94	5.450355	.1441741	1.39782	5.164053	5.736656
diff		-.0063131	.6535183		-1.636523	1.623897

```
    diff = mean(No_Poker) - mean(Poker_pl)                    t =  -0.0097
H0: diff = 0                        Satterthwaite's degrees of freedom =   5.56095

    Ha: diff < 0                  Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.4963        Pr(|T| > |t|) = 0.9926         Pr(T > t) = 0.5037
```

Results independent samples t-test for the characteristic risk-taking

```
. ttest Risktaking , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	6.333333	.2713137	.6645801	5.635899	7.030767
Poker_pl	88	6.389205	.11131	1.044181	6.167964	6.610445
Combined	94	6.385638	.105382	1.021716	6.176371	6.594906
diff		-.0558712	.2932593		-.7531811	.6414387

```
    diff = mean(No_Poker) - mean(Poker_pl)                    t =  -0.1905
H0: diff = 0                        Satterthwaite's degrees of freedom =   6.81372

    Ha: diff < 0                  Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.4272        Pr(|T| > |t|) = 0.8545         Pr(T > t) = 0.5728
```

Results independent samples t-test for the characteristic stress resistance

```
. ttest StressRes, by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	7.083333	.3542076	.8676278	6.172814	7.993853
Poker_pl	86	7.385659	.1489759	1.381545	7.089455	7.681863
Combined	92	7.365942	.1410295	1.352707	7.085804	7.64608
diff		-.3023256	.3842614		-1.213291	.6086399

```
    diff = mean(No_Poker) - mean(Poker_pl)                    t =  -0.7868
H0: diff = 0                      Satterthwaite's degrees of freedom =  6.91269

    Ha: diff < 0                  Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.2288        Pr(|T| > |t|) = 0.4575        Pr(T > t) = 0.7712
```

Results independent samples t-test for the characteristic people skills

```
. ttest Peopleskills , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	6.972222	.308571	.7558415	6.179015	7.765429
Poker_pl	88	7.015152	.1281923	1.202551	6.760355	7.269948
Combined	94	7.012411	.1213249	1.176289	6.771484	7.253339
diff		-.0429294	.3341397		-.8362509	.7503922

```
    diff = mean(No_Poker) - mean(Poker_pl)                    t =  -0.1285
H0: diff = 0                      Satterthwaite's degrees of freedom =  6.86308

    Ha: diff < 0                  Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.4507        Pr(|T| > |t|) = 0.9015        Pr(T > t) = 0.5493
```

Results independent samples t-test for the characteristic analytical

```
. ttest Analytical, by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	7.5	.4614791	1.130388	6.31373	8.68627
Poker_pl	88	7.715909	.1195676	1.121643	7.478256	7.953563
Combined	94	7.702128	.115244	1.117332	7.473276	7.930979
diff		-.2159089	.4767173		-1.397847	.9660292

```
    diff = mean(No_Poker) - mean(Poker_pl)                    t =  -0.4529
H0: diff = 0                      Satterthwaite's degrees of freedom =  5.69237

    Ha: diff < 0                  Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.3337        Pr(|T| > |t|) = 0.6674        Pr(T > t) = 0.6663
```

Results independent samples t-test for the characteristic determination

```
. ttest Determination , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	5.25	.7388053	1.809696	3.35084	7.14916
Poker_pl	88	5.914773	.179839	1.687039	5.557323	6.272222
Combined	94	5.87234	.1745891	1.692704	5.525641	6.21904
diff		-.6647727	.7603785		-2.557253	1.227707

```
    diff = mean(No_Poker) - mean(Poker_pl)                      t =  -0.8743
H0: diff = 0                        Satterthwaite's degrees of freedom =   5.60895

    Ha: diff < 0                    Ha: diff != 0                     Ha: diff > 0
 Pr(T < t) = 0.2089          Pr(|T| > |t|) = 0.4178          Pr(T > t) = 0.7911
```

Results independent samples t-test for the characteristic money control

```
. ttest Moneycontrol, by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	6.416667	.8001736	1.960017	4.359755	8.473578
Poker_pl	87	5.821839	.198224	1.848911	5.427783	6.215895
Combined	93	5.860215	.1919313	1.850919	5.479023	6.241407
diff		.5948276	.8243607		-1.454763	2.644418

```
    diff = mean(No_Poker) - mean(Poker_pl)                      t =   0.7216
H0: diff = 0                        Satterthwaite's degrees of freedom =   5.63128

    Ha: diff < 0                    Ha: diff != 0                     Ha: diff > 0
 Pr(T < t) = 0.7503          Pr(|T| > |t|) = 0.4994          Pr(T > t) = 0.2497
```

Results independent samples t-test for the characteristic instinct

```
. ttest Instinct , by(pokerfreq1) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
No_Poker	6	7.5	.5	1.224745	6.214709	8.785291
Poker_pl	88	7.511364	.1695115	1.590159	7.174441	7.848286
Combined	94	7.510638	.1613151	1.564008	7.190298	7.830978
diff		-.0113636	.5279528		-1.292668	1.269941

```
    diff = mean(No_Poker) - mean(Poker_pl)                      t =  -0.0215
H0: diff = 0                        Satterthwaite's degrees of freedom =   6.2107

    Ha: diff < 0                    Ha: diff != 0                     Ha: diff > 0
 Pr(T < t) = 0.4918          Pr(|T| > |t|) = 0.9835          Pr(T > t) = 0.5082
```

Appendix 2.A

Results of the MANOVA test on poker frequency

		Levene Statistic	df1	df2	Sig.
Needforachievement	Based on Mean	.780	5	83	.567
	Based on Median	.729	5	83	.603
	Based on Median and with adjusted df	.729	5	78.337	.603
	Based on trimmed mean	.773	5	83	.572
Selfefficacy	Based on Mean	1.191	5	83	.321
	Based on Median	.851	5	83	.518
	Based on Median and with adjusted df	.851	5	75.881	.518
	Based on trimmed mean	1.164	5	83	.334
Curiousity_A	Based on Mean	1.884	5	83	.106
	Based on Median	1.203	5	83	.315
	Based on Median and with adjusted df	1.203	5	70.319	.317
	Based on trimmed mean	1.877	5	83	.107
Locusofcontrol	Based on Mean	.419	5	83	.835
	Based on Median	.314	5	83	.903
	Based on Median and with adjusted df	.314	5	63.407	.903
	Based on trimmed mean	.394	5	83	.852
Autonomy	Based on Mean	.247	5	83	.940
	Based on Median	.214	5	83	.955
	Based on Median and with adjusted df	.214	5	79.062	.955
	Based on trimmed mean	.251	5	83	.938
LearnFail	Based on Mean	.979	5	83	.436
	Based on Median	.952	5	83	.452
	Based on Median and with adjusted df	.952	5	77.135	.453
	Based on trimmed mean	.981	5	83	.435
Risktaking	Based on Mean	.727	5	83	.605
	Based on Median	.650	5	83	.663
	Based on Median and with adjusted df	.650	5	76.684	.663
	Based on trimmed mean	.711	5	83	.617
StressRes	Based on Mean	1.528	5	83	.190
	Based on Median	1.342	5	83	.255
	Based on Median and with adjusted df	1.342	5	76.137	.256
	Based on trimmed mean	1.471	5	83	.208
Peopleskills	Based on Mean	1.068	5	83	.384
	Based on Median	.634	5	83	.675

		Levene Statistic	df1	df2	Sig.
	Based on Median and with adjusted df	.634	5	74.125	.675
	Based on trimmed mean	.987	5	83	.431

Analytical	Based on Mean	.584	5	83	.712
	Based on Median	.565	5	83	.726
	Based on Median and with adjusted df	.565	5	77.949	.726
	Based on trimmed mean	.613	5	83	.690
Determination	Based on Mean	.740	5	83	.596
	Based on Median	.644	5	83	.667
	Based on Median and with adjusted df	.644	5	74.853	.667
	Based on trimmed mean	.743	5	83	.593
Moneycontrol	Based on Mean	1.353	5	83	.251
	Based on Median	1.158	5	83	.337
	Based on Median and with adjusted df	1.158	5	76.457	.338
	Based on trimmed mean	1.330	5	83	.260
Instinct	Based on Mean	3.223	5	83	.010
	Based on Median	2.920	5	83	.018
	Based on Median and with adjusted df	2.920	5	76.302	.018
	Based on trimmed mean	3.163	5	83	.012

Appendix 2.B

Effect		Value	F	Hypothesis df	Error df	Sig.
pokerFreq	Pillai's Trace	.877	1.227	65.000	375.000	.126
	Wilks' Lambda	.349	1.302	65.000	339.477	.072
	Hotelling's Trace	1.295	1.383	65.000	347.000	.036
	Roy's Largest Root	.770	4.440[c]	13.000	75.000	<.001

Appendix 3.A

Results of the MANOVA test on playing poker offline

		Levene Statistic	df1	df2	Sig.
Needforachievement	Based on Mean	.729	2	85	.485
	Based on Median	.683	2	85	.508
	Based on Median and with adjusted df	.683	2	82.740	.508
	Based on trimmed mean	.731	2	85	.485
Selfefficacy	Based on Mean	.873	2	85	.422
	Based on Median	.863	2	85	.426
	Based on Median and with adjusted df	.863	2	82.469	.426
	Based on trimmed mean	.879	2	85	.419
Curiousity_A	Based on Mean	.664	2	85	.517
	Based on Median	.636	2	85	.532
	Based on Median and with adjusted df	.636	2	82.448	.532
	Based on trimmed mean	.666	2	85	.516
Locusofcontrol	Based on Mean	.338	2	85	.714
	Based on Median	.237	2	85	.790
	Based on Median and with adjusted df	.237	2	79.678	.790
	Based on trimmed mean	.276	2	85	.759
Autonomy	Based on Mean	.098	2	85	.906
	Based on Median	.092	2	85	.913
	Based on Median and with adjusted df	.092	2	77.685	.913
	Based on trimmed mean	.085	2	85	.919
LearnFail	Based on Mean	1.241	2	85	.294
	Based on Median	1.113	2	85	.333
	Based on Median and with adjusted df	1.113	2	78.725	.334
	Based on trimmed mean	1.238	2	85	.295
Risktaking	Based on Mean	.123	2	85	.884
	Based on Median	.126	2	85	.882
	Based on Median and with adjusted df	.126	2	84.121	.882
	Based on trimmed mean	.120	2	85	.887
StressRes	Based on Mean	1.110	2	85	.334
	Based on Median	.987	2	85	.377

		Levene Statistic	df1	df2	Sig.
	Based on Median and with adjusted df	.987	2	83.362	.377
	Based on trimmed mean	1.067	2	85	.348
Peopleskills	Based on Mean	.159	2	85	.853
	Based on Median	.160	2	85	.852
	Based on Median and with adjusted df	.160	2	76.860	.852
	Based on trimmed mean	.153	2	85	.858

Analytical	Based on Mean	.507	2	85	.604
	Based on Median	.520	2	85	.597
	Based on Median and with adjusted df	.520	2	76.762	.597
	Based on trimmed mean	.472	2	85	.626
Determination	Based on Mean	.040	2	85	.960
	Based on Median	.047	2	85	.954
	Based on Median and with adjusted df	.047	2	84.150	.954
	Based on trimmed mean	.043	2	85	.958
Moneycontrol	Based on Mean	.211	2	85	.810
	Based on Median	.148	2	85	.862
	Based on Median and with adjusted df	.148	2	84.056	.862
	Based on trimmed mean	.214	2	85	.808
Instinct	Based on Mean	.446	2	85	.642
	Based on Median	.486	2	85	.617
	Based on Median and with adjusted df	.486	2	77.994	.617
	Based on trimmed mean	.477	2	85	.622

Appendix 3.B

Effect		Value	F	Hypothesis df	Error df	Sig.
pokerline	Pillai's Trace	.229	.737	26.000	148.000	.817
	Wilks' Lambda	.781	.738[b]	26.000	146.000	.816
	Hotelling's Trace	.267	.739	26.000	144.000	.815
	Roy's Largest Root	.201	1.142[c]	13.000	74.000	.339