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MOTIVATIONAL FACTORS OF PROFESSIONAL TENNIS STARS

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A capstone project submitted for Graduation with University Honors

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University Honors
University of California, Riverside

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Abstract

Multiple social motivational factors have an impact on child development, which may have significant impacts on their futures in life. This is particularly interesting to observe in the lives of professional female athletes, namely Billie Jean King, Serena Williams, and Naomi Osaka. This project aimed to investigate the different motivational factors which influenced each athlete's ability to find success in their professional careers. This study hypothesized that similar factors in the home and professional environments of each of these athletes contributed to their development as tennis players, which in turn allowed them to find success in their later careers. The study utilized a mixed methods approach, in that qualitative data were first retrieved from biographical novels about each athlete; subsequently, thematic units in the novels were coded and the resulting quantitative data were statistically analyzed. The analytic approaches included correlations, analyses of covariance, and regression. Regression analyses revealed significant findings related to Support factors (i.e., Family, Coach, Peer, and Resource) on Outcome variables (i.e., Outspoken, Resiliency, and Accomplishments). These findings are important to discuss both in the realms of developmental and sports psychology because it sheds light on how motivational factors during development can yield the greatest amount of personal and objective success later in life.

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Introduction

The rise of professional athletes is dependent on a multitude of factors, each carrying their own level of significance. Much empirical research has delved into the topic of motivation specifically related to how athletes perform long-term (Till et al., 2022). It is important to focus on their levels of performance, but it is just as important to focus on how they achieved their success. This can be based on a number of factors, including how much social and tangible support they receive, the goals they create, and how dedicated they are to achieving their goals. Motivational factors will vary between athletes, and there has been little research regarding professional female athletes in this field. The aim of this project is to discover which motivational factors influence three of the most impactful female tennis players the greatest, and which ones contribute the largest to their personal and professional success.

In this study, I will focus on female professional tennis players who are, and were, shaped by a multitude of influences in their childhood. This is based on the notion that by setting goals that are achievable, challenging, and specific, the athlete can experience self-regulation and feel fulfilled in their accomplishments (Eccles & Wigfield, 2002). There are few studies on motivation that concentrate on tennis players specifically; these studies are limited in that they only look at professional male tennis players and how their performance was influenced by their psychological skills, such as self-confidence and concentration on the task (Harmison, 2011). Other studies focusing on causes of success also observe the relationship between the athlete's goals and their beliefs, which varied depending on gender (Newton & Duda, 1993). This study found that females typically held more task-oriented goals than males did; males typically held more ego-oriented goals. It was also found that females believed that perceived effort and forming relationships with coaches are both avenues to success (Newton & Duda, 1993). Tennis

is one of the most psychologically intense sports because it couples being focused both mentally and physically on the court and requires a level of motivation most other sports do not possess. I hypothesize that the women at the center of my project, namely Serena Williams, Naomi Osaka, and Billie Jean King, had comparable influences during their childhoods to motivate them to become professional tennis stars. These players have diverse backgrounds regarding their motivation, but it is hypothesized that they share factors that have influenced their motivation to play tennis and their professional success within the sport.

Literature Review

Motivation can have many positive implications on how people choose their intended career (Eccles & Wigfield, 2002). An individual's environment can shape how they view motivation and extend into many aspects of their lives, specifically on their interactions with others. There have been many studies focusing on academic motivation in children (Fraser-Thomas & Coté, 2009), but only a few have focused specifically on motivation related to the developmental trajectories of elite athletes. Studying motivational factors as they develop in an athlete's life can have a profound effect on their self-image and confidence levels as they develop into an adult (Houlthberg & Scholefield, 2020). The environment in which a child athlete grows and becomes motivated to play their sport is incredibly influential to their personal development and their ability to socially interact with others.

Personal factors, such as maintaining feelings of dedication towards competition, allow children to cultivate interactions with other children their age (Meyer-Parlapanis et al., 2017). These interactions can be positive for children because they encourage communication and growth outside of their home environment. Having children participate in sports during childhood can expose them to new opportunities for social interactions and skill development

(Pynn et al., 2019). Kids can become introduced to sports through avenues such as after-school programs, which are shown to increase their levels of self-confidence, as well as provide them with physiological and psychological benefits (Coatsworth & Conroy, 2007). Equipping children with the opportunity to discover a sport with their peers can open up a world of possibilities for them, including turning their sport into their career. Peer support is also a crucial component of the social context for athletes because it provides them with experiences regarding competition and comparing themselves to others in an athletic environment (Coatsworth & Conroy, 2007). Having someone who plays the same sport will provide any athlete with the motivation to prove themselves to perform better than their opponent.

When a child athlete becomes a professional athlete, there are multiple reasons as to why they have felt motivated to make this their career. Specifically, athletes can attribute their home environment and interactions with their parents as key determining factors in why they feel motivated to play. If a child has grown up in a competitive environment, then they are more likely to also become competitive in their sport (Monsaas & Engelhard, 1990). Having a coach that drives their athletes to play their best will positively influence their motivation to continue playing (Fraser-Thomas & Coté, 2009). Parents have an immense amount of influence on their children, especially in regard to how motivated their children are to pursue a certain career (Madrigal & Gill, 2014). Growing up in a particular region in the world, with parents that motivated their child and a coach that pushed them to work and train harder, are all social motivational factors that can shape the mindset of an athlete.

In addition to familial and coach support, athletes can also find success in their careers through different forms of resources and access to them. Athletes who show the highest levels of success in their sports also show higher levels of dedication through time spent practicing (Baker

& Coté, 2003). Athletes spending a majority of their time practicing a sport becomes easier as they have more access to courts or sponsorships. In turn, these experiences allow them to devote more time to improving their games. Having access to more resources as the athlete begins training will help increase their motivation to continue playing for a longer period of time. To optimize the length of time an athlete can develop and perform professionally, there are many forms of resources available to help (Till et al., 2022). These include monetary funds, training programs, access to equipment, and courts to practice on. Resource support is a pivotal component of motivation for athletes because it is what allows them to pursue their careers from the beginning; some athletes begin their journeys with greater access to resources, while others have much less.

These four types of support are crucial in predicting how an athlete will find success in their athletic career. Success can be measured by a multitude of variables, and each one is greatly influenced by how the athlete defines motivation and success themselves. Becoming motivated to find success may be through belief in their ability, amount of effort put in or working hard (Newton & Duda, 1993). All of these factors can shape how an athlete finds personal and objective accomplishments throughout the span of their careers. To some athletes, success can take the form of titles, tournaments, and the number of trophies won; to others, it may involve what they can do outside of their sport to help others. Success is a subjective measurement of a career because it can have varied meanings, depending on each individual athlete.

In this same vein, each athlete can have varied interpretations of other outcomes from their careers, which may involve becoming outspoken outside of their sport or their level of resiliency. There is little research regarding how athletes become outspoken about their passions outside of their career, but we can observe through newspapers, magazines, and interviews how

their voices have an impact (Birrell & McDonald, 2012). These athletes are driven to make a difference not only in tennis but in the world as well. Being outspoken as a professional athlete is an area within research that has not been explored in great detail, which leads to a research gap within the fields of both sports and developmental psychology. One of the goals of this project is to assess the impact that having support has on the level of an athlete's ability to be outspoken. Another important variable to assess is the athlete's level of resilience; many athletes possess resiliency if and when they experience setbacks during their careers. The level of their resilience is dependent on multiple predictor factors, most importantly social support found in coaches and family members (Madrigal & Gill, 2014). Experiencing a setback in any career can be devastating and difficult to recover from, especially if it is a physical one for professional athletes. Setbacks can also come in multiple forms, which may have varying severity on each athlete. Some common obstacles athletes face include physical injuries, sport-related anxiety, personal loss, or forms of harassment (O'Brien & Kilrea, 2021). Having people who support the athlete unconditionally can allow them to become more resilient during and after their setbacks.

An analysis of the different social and personal motivational factors of these professional athletes will be beneficial to sport psychologists in particular because it may provide evidence as to what factors influence motivation the most. The environment in which an athlete practices their sport is extremely important for their overall development on the court as well as in their life outside of sports (Moller & Sheldon, 2020). The research project I will be focused on will also impact the field of developmental psychology because it will showcase different motivational themes that begin in childhood, which is the most crucial period for developing lifelong habits and mindsets. When a child feels motivated by their surroundings, their motivation will increase to continue playing and lead them to find success in their adult life

(Mallett & Hanrahan, 2004). The motivation children feel to play a sport changes as they grow into adults (Mallett et al., 2007), which is why this research study will expand the knowledge of specific motivational factors and their impact on the development of the most famous female tennis players to exist.

The factors covered within this study will encompass predictor factors and their impact on the athlete's motivation and outcome within their field. These predictor variables will help distinguish between the amount of support athletes receive from their parents, coaches, resources, and their peers. Each of these supports will play an important role in the outcome and success of the athletes mentioned above. There are also other predictor variables analyzed, but these will ultimately have a smaller impact on motivation than originally believed; for this reason, this study will focus more so on how the support types more greatly impact the athletes. The outcomes of each athlete will be measured on multiple levels, including their ability to be outspoken, resilient, and the accomplishments they have gained throughout their careers. This study will utilize a mixed method approach, focusing on gathering qualitative data from biographical novels which will be quantitatively analyzed for similarities and differences among the three athletes. A mixed method approach will be most useful to fully explore the relationships between multiple variables and how each one has an impact on the athletes chosen. These factors will then be coded and analyzed for comparisons between athletes and directional relationships across them.

Method

Materials

The materials used in this project were acquired from online resources, namely BarnesandNoble.com, Thriftbooks.com, Bookoutlet.com, and Amazon.com. These books were

selected due to their biographical nature, but no books were chosen that were autobiographical. This was due in part to gain information on each athlete and their lives from an objective and outside perspective, not from the players themselves. One of the criteria for choosing the books was readers' age, in that all of the books chosen were written for children aged eight to eighteen. These ages were chosen to understand the history of each player from multiple perspectives, as books targeted for younger audiences are not as in-depth as books written for older audiences. Children's books about athletes focus on simple characteristics, such as their family, physical characteristics, and some of their major achievements. The books written for older children and adults go more deeply into their family history and background, what challenges they faced during their careers, and how they have used their success through tennis in other ways off of the court. This sample of books utilized a combination of both children and young adult audiences to capture a wide range of perspectives on each athlete from a non-autobiographical lens.

Another criterion for choosing the books was specifically focusing on text-based books; this project did not include comic books or wordless picture books because the focus was on written descriptions of each athlete. This is partly due to the nature of coding written phrases instead of observing visuals of each athlete without text. Based on the criteria for selection, there were only a small number of books available that met all of the stated criteria. In total, seventeen nonfiction books were purchased and further analyzed. The books were coded for set themes that are central to the research questions and were chosen based on a thorough review of academic literature. A specific coding system (see Table 5) was developed in order to code each time the factors appeared in each book that was read. Data was entered in Excel and analyzed using SPSS version 26.0.

Procedure

Development of the Coding System

To begin developing the coding system, all of the books were given a thorough preliminary read-through to see which themes were common across the majority of the books. The dimensions were guided in part by theories regarding motivation of children in sports, which include parental support, coach involvement, and goal-setting, to name a few. The dimensions were also guided by previous knowledge of each player and creating initial assumptions as to which factors may be most important in their motivation. Once a list had been created containing all of the factors, the list was edited and finalized to encapsulate the main dimensions of the project. This involved revising the list many times, which included the removal of some dimensions entirely. These dimensions were removed from the coding system due to the lack of information on them or for the dimension being repeated in another dimension. An example of this would be Sibling Support being repeated in Family Support, since siblings would be considered part of the family of the player. Once the dimensions were fully finalized, a list was developed to be easily referenced when coding each book, as described below.

Coding

The books were read by a trained researcher, who recorded the frequencies of each of the coded factors within the text. Each factor was outlined on the Excel spreadsheet and recorded for their quantitative data. This spreadsheet was used to collect the factors found in each book to be easily compared across the multiple sheets within the main spreadsheet (See Table 5). Each entry on the spreadsheet contained the page number and a short description of the phrase and was further categorized into one of the sixteen measures described below.

Coded Dimensions

Support. Support was defined as the athletes' ability to function or improve their lives on and off of the court. Frequencies of each athlete's support were coded and categorized into four subtypes, including family support, resource support, coach support, and peer support. An example of family support is "Her parents supported her dream of being a tennis player" and resource support is "Billie saved her allowance to buy her first racket." An example of coach support would be "Serena's new coach brought out the best in her" and peer support is "Naomi's opponent Coco Gauff called her a 'true athlete.'"

Goals. Frequencies of players exhibiting learning goals or performance goals were coded. Learning goals were defined as the athlete mastering a certain skill over time and finding long-term success. Performance goals were defined as having a specific and measurable outcome of a match and finding short-term success. An example of a learning goal is "Her goal was to be the best player from a young age" and a performance goal is "She was motivated to have the largest number of titles in tennis history."

Self-Efficacy. Instances of the athletes utilizing physical or mental self-efficacy beliefs were recorded. This category is composed of two sub-factors. First, physical self-efficacy was explained as a belief in physical abilities relating to strength level, groundstrokes, serves, or other forms of physical expertise. Second, mental self-efficacy relates to the mental belief in each athlete's ability to perform well while on the court. This is coded separately from physical self-efficacy because it does not relate to how they perform physically, but is more so focused on their psychological abilities to succeed. An example of physical self-efficacy would include "She was confident in her killer serve" and mental self-efficacy would be "She believed mentally that she could beat anyone."

Dedication. This measure encompassed showing full commitment to the sport and putting their heart and soul into their craft. Some examples of this are “She prepared for each match with great vigor” and “She worked on every aspect of the game to improve herself.”

Competition. In instances that describe matches the athletes played in, this measure described whether they viewed it in a positive or negative light. Examples include “She believed that losing the match only made her stronger” and “She was haunted by the loss.”

Overall Competition. This measure viewed the player’s opinion on competition as a comprehensive topic rather than on a single competition they had played in. A Likert scale was chosen for Overall Competition because it is a reliable and easily quantifiable measure to assess how the players felt toward competition overall, which was indicative based on the data found in the Competition measure. It was described on a Likert scale of 1 (Strongly Negative) to 5 (Strongly Positive) and was only coded once for each of the seventeen books.

Outspoken. Instances showing the athletes speaking up about issues outside of athletics were coded, which include gender equality, women’s rights, racism, and mental health. Instances of being outspoken were categorized as being an activist off of the tennis court. Some examples of this include “Billie championed equality and became a pioneer in the sport” and “Serena wanted to be remembered for helping people.”

Resilience. Instances of athletes’ resilience, defined as persisting through setbacks after losses or injuries, were recorded. Resilience also included instances regarding staying strong despite facing challenges regarding sexuality or race during matches. Example instances include “Through tragedy she triumphed” and “Despite her controversial comeback, she found strength again.”

Accomplishments. Accomplishments were defined as achievements that were founded by each athlete in both their personal and professional lives; this encompasses both Personal and Objective Accomplishments. Personal Accomplishments include personal successes like titles or ranks won in the tennis sphere. Objective Accomplishments involve tangible achievements, such as medals, trophies, or buildings they help fund to be constructed. One example of a personal accomplishment is the “Serena Slam,” which is winning all four Grand Slam titles in a row. One example of an objective accomplishment would be “Billie was awarded with the Presidential Medal of Freedom.”

Results

Comparisons Across Coded Dimensions

T tests were conducted to examine mean level differences across players on the coded factors (see Table 1). The coded factors sampled showed more frequent mentions of Family Support ($M = 5.12$, $SD = 6.38$), compared to Resource Support ($M = 0.65$, $SD = 0.70$). There were also more frequent mentions of Outspoken ($M = 3.53$, $SD = 3.92$) than Resiliency ($M = 2.94$, $SD = 4.45$) in relation to the athlete’s outcomes outside of tennis. The coded factors sampled also showed more frequent mentions of Personal Accomplishments ($M = 3.18$, $SD = 2.30$), compared to Objective Accomplishments ($M = 1.53$, $SD = 1.77$). The other dimensions coded, such as Learning and Performance Goals, Dedication, Self-Efficacy, and Competition, were not included in the comparisons due to the focus on the multiple support predictor variables. The support factors were more significant to report upon because of the larger quantity of outcomes they produced, compared to the other predictor variables.

Associations between Player Characteristics

A series of correlational analyses were conducted to examine the associations between the various factors that were coded (see Table 1). The correlations revealed significant associations between many of the factors, specifically related to the four types of support and the factors related to the athletes' outcomes. There was a significant positive correlation between Family Support and Resiliency, $r = 0.85, p < .01$. There was a significant positive correlation between Coach Support and Outspoken, $r = 0.61, p < .01$. There was also a significant correlation between Resource Support and Outspoken, $r = 0.57, p < .05$. There was a significant positive correlation between Resource Support and Objective Accomplishments, $r = 0.61, p < .01$. There was a significant positive correlation between Coach Support and Personal Accomplishments, $r = 0.65, p < .01$.

Uniqueness of Each Factor

To understand the unique contributions of each factor, multiple regression analyses were conducted to assess the relationships between some of the significantly correlated variables, while adjusting for the other coded dimensions (see Table 2). The predictor variables utilized in the regressions were three of the support types, namely Family, Coach, and Resource Support. These three types of support were chosen as predictor variables because of their impact on the outcomes of each athlete. The outcome variables the regression analyses focused on included Outspoken, Resiliency, Personal Accomplishments, and Objective Accomplishments. There was a significant association between Resource Support and Outspoken, $\beta = 0.53, p = .008$. This indicates the more resources athletes had, the more they demonstrated being outspoken in domains outside of tennis. There was a significant association between Family Support and Resiliency, $\beta = 0.43, p = .008$, indicating that the more familial support provided, the more resilient the players could be after facing a setback in their careers. There was also a significant

association between both Family Support, $\beta = -0.67, p = .036$ and Coach Support, $\beta = 0.87, p = .017$ and Personal Accomplishments. This shows that more support from both family members and coaches showed an increase in their personal accomplishments. The last set of analyses revealed a significant association between Resource Support and Objective Accomplishments, $\beta = 0.57, p = .006$. This shows that the more resources provided to the athletes, they were able to achieve more objective accomplishments as results of their lucrative careers in tennis.

Analysis for Between-Athlete Differences

To assess between-athlete differences on their achievements and support types, univariate analyses of covariance (ANCOVAs) were conducted. Results are presented in Table 3 and Table 4, for outcomes and support types, respectively. Figure 1 outlines the four outcome factors and Figure 2 outlines the four support factors for each of the athletes in a bar graph format.

ANCOVAs were conducted to assess between-athlete differences on support types, but no significant results were obtained. Additional analyses should be conducted to obtain further information. A one-way ANCOVA revealed a significant difference between athletes on Outspoken, $F(2, 13) = 8.02, p = .005$. Post-hoc analysis was conducted using a Bonferroni correction to control for error. The post-hoc analysis indicated a significant difference between athletes, in that Billie was more outspoken than both Serena and Naomi. The next one-way ANCOVA showed a significant difference between athletes on Resiliency, $F(2, 13) = 5.71, p = .017$. The post-hoc analysis showed Serena having greater resiliency than Billie. Another one-way ANCOVA revealed a significant difference between athletes on Objective Accomplishments, $F(2, 13) = 5.10, p = .023$. The post-hoc analysis conducted for this ANCOVA revealed Billie having a greater number of objective accomplishments than Serena. The final one-way ANCOVA showed a difference between athletes on Personal Accomplishments, $F(2,$

13) = 1.20, $p = .334$; this result was indicated as non-significant but is still important to include within this result section. The post-hoc analysis was still conducted and was hypothesized to show a significant finding for Billie, in that Billie had a greater number of personal accomplishments than both Serena and Naomi.

Discussion

This study aimed to analyze different motivational factors which may predict the level of measurable successes and outcomes of their careers. Overall analyses showed a significant impact of Family Support on multiple outcomes including, but not limited to, Resiliency and Personal Accomplishments. The data that was found support one initial hypothesis, such that familial support appears to be particularly important for athletic performance and success in a professional setting. The other forms of support, which are Coach, Resource, and Peer Support, also had impacts on how each individual performed throughout their careers, but the support from immediate family members tends to have more consistent implications for the development of elite female tennis players. This finding is supported by the notion that family members providing support through verbal praise or motivation can help each athlete recognize their potential and continue creating accomplishments for themselves (Mallett & Hanrahan, 2004). This finding is consistent with other literature related to family support given to athletes as they begin their careers in athletics.

The results also indicated more Personal Accomplishments compared to Objective Accomplishments, indicating that the athletes had more success winning tournament titles than creating tangible achievements. The athletes increased their Personal Accomplishments when there was a higher level of both Family and Coach Support, which can be explained by the motivation they feel from the support of their family and coaches. When athletes have an

increase of motivation in their sport, their confidence in their ability to find success increases, leading to more accomplishments they can strive to achieve (Fraser-Thomas & Coté, 2009). In regards to Objective Accomplishments, the athletes still showed significant increases if they had more Resource Support through finances or sponsorships in their successes. This is supported by the notion that the more access to monetary resources athletes have, the greater access to creating schools or programs to help other children succeed. Providing children with support early will increase their feelings of self-confidence and self-efficacy in their physical abilities in their sport (Donaldson & Ronan, 2006), which is why it is important to give them as much support as possible.

This study also aimed to distinguish any factors that differed between the three female athletes and aimed to see which had the most impact in their careers. For example, Billie Jean King showed more opportunities of her outspokenness than both Serena and Naomi did. This is supported by Billie's many accomplishments toward gender equality in tennis and her support and advocacy for the LGBTQ+ community in sports (Birrell & McDonald, 2012). She showed great outspokenness in fighting for policy changes regarding the things she was passionate about, which she was able to due to her great success within the tennis community. The athletes also differed on their level of resilience, specifically that Serena showed greater levels of resilience than Billie. This result is aided by the fact that Serena faced a number of challenges throughout her personal and professional career, including losing her sister, multiple health scares, and frequent attacks of racism and prejudice in competitions (Douglas, 2005). Despite these setbacks, Serena chose to overcome them and continue playing because of her strength and motivation to succeed. She also found great strength in her family, specifically her father Richard Williams and her sister Venus Williams. Since they had all gone through similar struggles in regard to their

race, they supported one another through love and perseverance. Each athlete found success despite multiple obstacles and challenges they faced over the course of their careers.

Limitations

There are a few limitations that could be addressed in further research on this topic. The first limitation focuses on the small sample size of seventeen biographical novels which were coded. Since there was a small number of books that were available, this may have altered the sample size and therefore the quality of the findings. In addition to the small sample size, there were also inconsistencies in how many books were available on each athlete; for example, Serena had the majority of books coded (eight of seventeen), while Naomi only had four. Having so few books to extract factors from left Naomi's profile much smaller than both Serena and Billie, who each have large careers with plentiful amounts of text to pull from. This led to a general conclusion that Naomi did not have a significant amount of textual information, leaving many of her results non-significant, despite her successes thus far. This limitation can be addressed in the future as more books are being written about each of the players to increase the sample size overall.

The second limitation that arose was the limitation regarding which categories of factors could be coded. Some factors originally designated included confidence, self-esteem, and self-regulation; however, these factors were ultimately removed from the study due to the lack of examples found in the books being sampled. These factors were also removed due to their lack of relevance towards the hypothesis that was originally generated, which focused more on sources of motivation than personal factors which relate to the self. Other factors, such as Family Support, were originally divided into Parental and Sibling Support, but for the nature of this

study were combined into one coded factor. This may be a limitation because one of these groups may have had a larger impact, but since they were combined this effect was not analyzed.

Conclusion

This study aimed to determine which motivational factors most greatly influenced how three of the most impactful female tennis players found success in their personal and professional careers. Such factors of importance focused on the varying types of support, which had implications for how motivated they were to become outspoken and resilient in the face of challenging situations. These four support factors also greatly influenced their ability to create personal and objective accomplishments for themselves. Since there is limited research regarding specifically female tennis players, this project aimed to add to this subject and create a discussion for future research to be conducted. This study began to scratch the surface of motivational factors of professional female tennis stars, but these factors may show great implications for future generations of athletes in multiple disciplines.

Table 1*Correlations and Descriptive Statistics for Support, Outspoken, Resiliency, and Accomplishments*

Variables	1	2	3	4	5	6	7	8
1. Family Support	-							
2. Peer Support	0.32	-						
3. Coach Support	0.39	0.72**	-					
4. Resource Support	0.08	0.18	0.09	-				
5. Outspoken	0.20	0.74**	0.61**	0.57*	-			
6. Resiliency	0.85**	0.49*	0.69	- 0.07	0.27	-		
7. PA	0.06	0.65**	0.71**	0.16	0.74**	0.25	-	
8. OA	0.40	0.48*	0.41	0.61**	0.73**	0.31	0.36	-
<i>M</i>	5.12	0.76	1.47	0.65	3.53	2.94	3.18	1.53
<i>SD</i>	6.382	1.251	1.875	0.702	3.923	4.451	2.298	1.772

Note. * $p < .05$. ** $p < .01$, two-tailed. PA= Personal Accomplishments, OA= Objective Accomplishments.

Table 2*Effects of Support Types on Athletes' Positive Outcomes*

Outcome	<i>b</i> (<i>SE</i>)	CI _{95%} for <i>b</i>		β
		Lower	Upper	
Outspoken				
Family Support	-0.27 (0.16)	-0.62	0.09	- 0.43
Coach Support	0.87 (0.75)	-0.75	2.48	0.42
Resource Support	2.92 (0.95)	0.89	4.94	0.52**
Resiliency				
Family Support	0.30 (0.10)	0.09	0.50	0.43**
Coach Support	-0.28 (0.49)	-1.34	0.77	- 0.12
Resource Support	-0.97 (0.73)	-2.54	0.60	- 0.15
Personal Accomplishments				
Family Support	-0.24 (0.10)	-0.46	-0.02	- 0.67*
Coach Support	1.07 (0.40)	0.22	1.92	0.87*
Resource Support	0.36 (0.75)	-1.25	1.98	0.11
Objective Accomplishments				
Family Support	0.03 (0.10)	-0.18	0.23	0.12
Coach Support	0.05 (0.38)	-0.77	0.87	0.05
Resource Support	1.44 (0.45)	0.47	2.41	0.57**

Note. * $p < .05$, ** $p < .01$. All models adjusted for page count.

Table 3*Athlete Differences on Positive Outcomes*

	S		B		N		<i>F</i>	<i>df</i>	<i>p</i>	Follow-up
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
1. Outspoken	3.00	2.78	7.00	4.63	0.25	0.50	8.02	2	.005	B > S, N
2. Resiliency	5.38	5.53	0.80	1.30	0.75	1.50	5.71	2	.017	S > B
3. OA	1.38	1.69	3.00	1.58	0.00	0.00	5.10	2	.023	B > S
4. PA	2.88	2.53	4.20	2.17	2.50	2.08	1.20	2	.334	B > S, N

Note. S= Serena Williams; B= Billie Jean King; N= Naomi Osaka. OA= Objective Accomplishments; PA= Personal Accomplishments.

Table 4*Athlete Differences on Support Types*

	S		B		N		<i>F</i>	<i>df</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1. Family Support	8.75	7.96	1.60	1.14	2.25	0.96	2.93	2	.090
2. Coach Support	1.62	2.33	2.00	1.58	0.50	1.00	1.12	2	.357
3. Peer Support	0.75	1.17	1.20	1.79	0.25	0.50	1.52	2	.255
4. Resource Support	0.50	0.54	1.20	0.84	0.25	0.50	2.69	2	.105

Note. S= Serena Williams; B= Billie Jean King; N= Naomi Osaka.

Table 5

Excerpt of the Coding Sheet

Capstone Data Collection ☆ 📄 ☁

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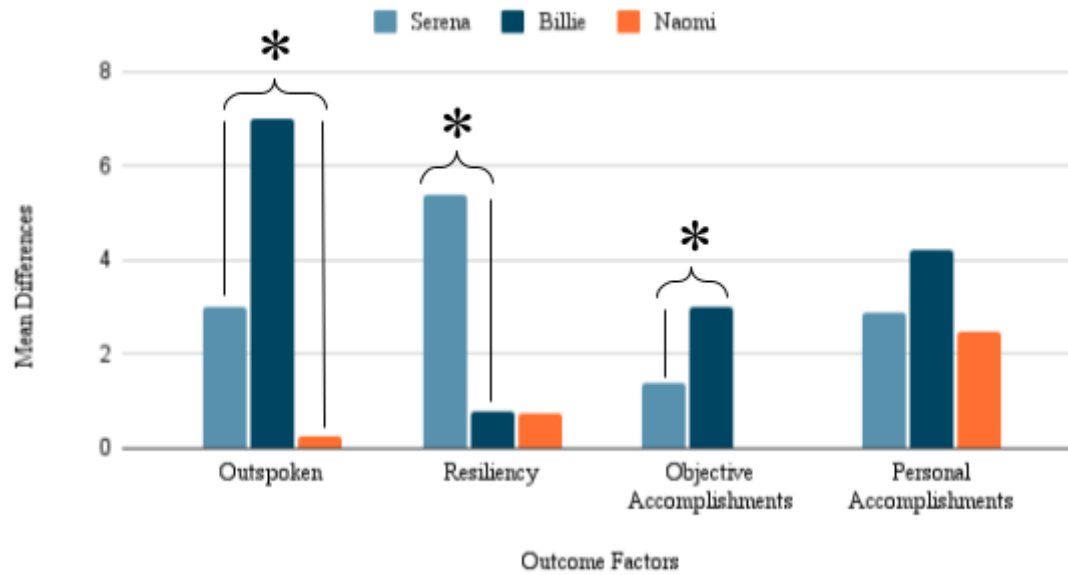
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D27

	A	B	C	D	E	F	G	H	I	J	K	L
1	Book ID	Page No	Description	Support	Goals	Self-Efficacy	Dedication	Competition	Overall Competition	Outspoken	Resiliency	Accomplishments
2		5	5 Dad played equally	family					4-Positive			
3			6 Coach made tennis fun	coach								
4			6 Coach taught racket	coach								
5			6 #1 player		learning							
6			7 Save money for racket	resource								
7			7 Mom drove for hours	family								
8			8 Coach convinced her win	coach								
9			8 Part of something bigger							1		
10			9 Youngest team to win									personal
11			9 Knew it had to change							1		
12			10 #1 player in world									personal
13			11 Original 9 change							1		
14			11 Sportswoman of year									personal
15			13 150 overheads				1					
16			14 Ready to win			mental						
17			16 Didn't hold back			mental						
18			16 Didn't miss overhead			physical						
19			17 Crushed him					positive				
20			18 Fund Title 9									objective
21			18 Established WTA									objective
22			19 Harder & more powerfully			physical						
23			19 Nothing left, give more								1	
24			20 Sports to social change								1	
25			21 Champion equality								1	

Figure 1

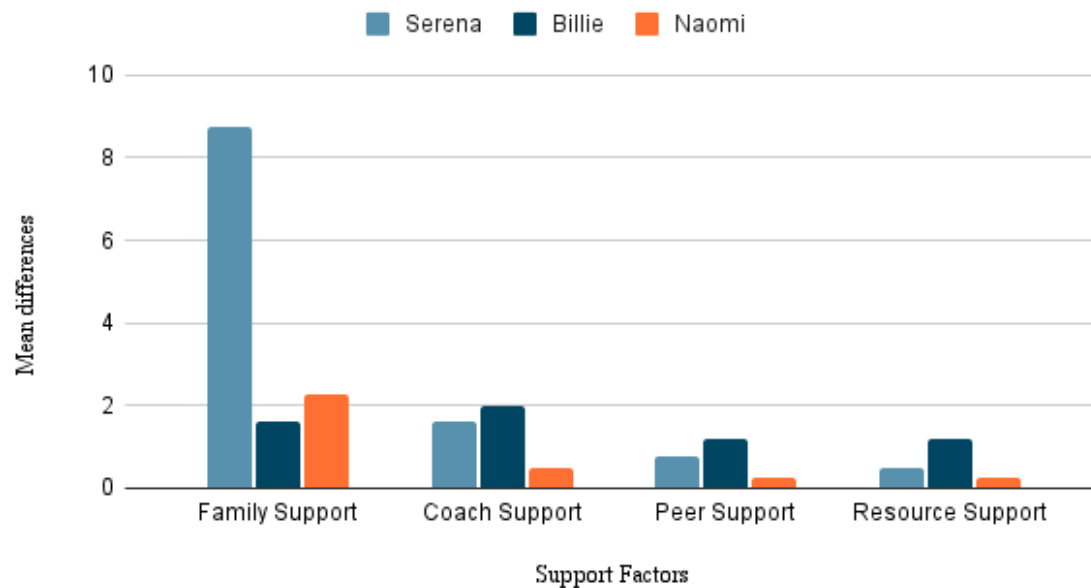
Mean-level differences across outcome factors



Note. * = $p < 0.05$.

Figure 2

Mean-level differences across support factors



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