MMA Wages:
The Determinants of UFC Fighter's Salaries

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Abstract

Mixed Martial Arts, commonly referred to as MMA, is one of the fastest growing sports today with the world's largest promotion company, The Ultimate Fighting Championship (UFC), being operated in Las Vegas, Nevada. Since its inception in 1993, the UFC has gained an international following with the numerous bouts they host on a weekly basis. As with other sports, the question of athlete pay is consistently relevant. Surprisingly, there is little to no academic research into the salary determinants of MMA fighters. The goal of this paper is to find the determinants of MMA fighter's salaries, more specifically UFC fighters, by controlling for variables such age, career record, and fighter statistics. The model uses a traditional Mincer (1970) wage equation framework as well as applying hedonic pricing methods, pioneered by Rosen (1974), to variables that can be decomposed into constituent characteristics, such as career record. The results indicate that

successful strikes thrown, total takedowns, wins by knockout, wins by submission, losses by submission, and ever being champion are strong determinants of UFC fighter earnings.

Introduction

Mixed Martial Arts, commonly referred to as MMA, is one of the world's fastest growing sports with the largest promotion company, the Ultimate Fighting Championship, usually called the UFC, having its home in Las Vegas, Nevada. The official definition of MMA is as follows: an extreme combat sport in which contestants are permitted to use the fighting techniques of wrestling and boxing but also those of martial arts such as kickboxing, judo, and karate.

The first UFC event, UFC 1, was held on November 12, 1993 in Denver, Colorado. It originated as a tournament style competition pitting contestants of different fighting backgrounds against one another. The tournament style was eventually changed to the current three to five round setup depending on if the fight is a regular or championship bout, respectively.

The UFC currently has four formats for fans to watch fights live:

- All numbered events (Ex. UFC 1, UFC 185, UFC 202, etc.) air on pay-per-view
- "UFC on Fox" (Ex. UFC on Fox 22) airs for free on Fox
- "UFC Fight Night" (Ex. UFC Fight Night: Johnson vs. Reis) airs for free on Fox
- "The Ultimate Fighter", a reality show, airs on for free on Fox

MMA viewership has grown exponentially over the last two decades, mostly due to the popularity of the UFC. The highest grossing pay-per-view event was UFC 202, hosted in August 2016, with 1.65 million buys. UFC on Fox 22, hosted in December 2016, had the highest viewership since 2013 for any UFC event at 3.17 million viewers.

In the UFC, and most MMA events, a fight has six possible outcomes: Win by knockout/technical knockout, win by submission, win by decision, lose by knockout/technical knockout, lose by submission, and lose by decision. Winning by knockout/technical knockout is defined as when your opponent loses consciousness or is unable to defend themselves as a result of legal strikes. Winning by submission is defined as when you yield your opponent, resulting in your opponent admitting defeat (submitting) during the fight. The most common way fighters signal submitting is by tapping either the ground or the opponent with their hand (known as tapping, which is synonymous with submitting). Winning by decision is defined as when the fighters completes all rounds (either 3 or 5) and the winner is decided by the judges.

One of the most consistently relevant topics in Economics is wages. This is no different in the sports world, as athlete pay is always a hot topic of discussion. Because of this, there is an abundance of literature and research on the earnings of athletes. However, this excludes MMA, as there is little to no research on MMA fighter's earnings. The aim of this research is to study the determinants of MMA fighter's salaries. More specifically, by controlling for variables such as age, career record, and fighter statistics this research looks at the determinants of UFC fighter's earnings.

The remainder of this paper is as follows: a review of the literature and basis for analysis, explanation of the model used, listing and analysis of descriptive statistics, listing and analysis of empirical results, and final conclusions.

Literature Review

As noted in the introduction, there is little to no academic research on the salary determinants of MMA fighters. As a result, the framework of this research is based on two established economics papers: "Investment in Human Capital and Personal Income Distribution" by Jacob Mincer (Mincer 1970) and "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition" by Sherwin Rosen (Rosen 1974).

In Mincer 1970, a framework for analyzing the logarithmic nature of wages is setup. The purpose for this, as noted in the paper, is that "personal income distributions are not normally symmetrically distributed, but the distribution of logarithms of income is rather symmetric and in a rough way approximates normality". This is no different when it comes to earnings of athletes, and in this case MMA fighters. This idea is extended in Mincer's 1975 work "Education, Experience, and the Distribution of Earnings and Employment: An Overview". While the contexts on this research are quite different than that of Mincer's work, the underlying idea that earnings have a diminishing marginal return is the same (Mincer 1975).

In Rosen 1974, a framework for breaking up variables into their component parts is setup. The hedonic hypothesis, according to Rosen, states that "goods are valued for their utility-bearing attributes or characteristics" (Rosen 1974). Any product that can be differentiated is applicable to this sort of methodology. For this research, MMA fight wins and losses are broken up using the hedonic hypothesis as a basis. Because MMA fights have a finite set of outcomes, this type of methodology allows us to intuitively break them up hedonically. The specific fight outcomes (i.e. win by knockout, win by submission, etc.) are the implicit prices of winning and losing, as a career record only counts general wins and losses.

Model

The model presented in this paper assumes a UFC fighter's salary is a function of both fighter statistic and demographic variables. Fighter statistic variables include career record, striking accuracy, takedown accuracy, and number of wins and losses by knockout/technical knockout, submission, and decision. Fighter demographic variables can be categorized into two types: general and UFC specific. General demographics include age and gender, while UFC specific variables include weight class, status of being current champion, and status of ever being champion. The model can be summarized as follows:

Lifetime Earnings = f(Age, Age2, Female, Win KO/TKO, Win Submission, Win Decision, Loss KO/TKO, Loss Submission, Loss Decision, Champ, Ever Champ, Successful Strikes, Attempted Strikes, Successful TD, Total TD, Strawweight, Flyweight, Bantamweight, Featherweight, Lightweight, Welterweight, Middleweight, Light Heavyweight, Heavyweight)

For the analysis, two types of data were used: earnings and fighter statistics data. For the earnings dataset, the lifetime earnings for every UFC fighter as of March 2017, both current and retired, was estimated using disclosed fight pay from various state athletic commissions. While it is commonly understood that fighters make, on average, more than the disclosed fight pay due to "locker room" bonuses, the UFC does not disclose this information. Fighter contracts, which contain details regarding fighter salaries and longevity within the company, are also not disclosed by the UFC. As a result, the only available data on fighter pay is that which is disclosed by the various state athletic commissions where the fight events take place.

For the fighter statistics dataset, I personally aggregated fighter statistics directly from the UFC website as well as other MMA companies such as Sherdog and FightMetric. These fighter statistics include: Career record, striking record and accuracy, takedown record and accuracy, and number of wins and losses by knockout, submission, and decision. I also aggregated data for the following demographic variables from the same sources listed above: Age, gender, current weightclass, current holding of championship belt, and status of ever holding a championship belt.

The model follows the traditional Mincer wage equation framework by using the natural log of UFC fighter earnings as the dependent variable. By doing this, the distribution of earnings across fighters is smoother and more closely follows a normal distribution. This also allows for a Log-Level interpretation of the regression coefficients as percentage changes.

The model uses the Rosen hedonic framework for the variables Win and Loss. In the UFC, and most MMA events, a fight has six possible outcomes: Win by KO/TKO, win by submission, win by decision, lose by KO/TKO, lose by submission, and lose by decision. Using the hedonic framework, I am able to

break up the variables Win and Loss into these six component characteristics. By doing this, I am able to measure the effect of each specific outcome as opposed to the effect of a general win or loss.

Lastly, the model uses a Blinder-Oaxaca decomposition to determine the primary contributory factors to a fighter wage gap, if one exists, between fighters who have ever been champion and those who have never been champion.

In total there are twenty-four independent variables, with twelve being binary variables. The expected signs of each of the independent variables are described in Table 1 seen below.

Table 1: Variables, definitions and expected signs

Variables	Definition	Expected Signs
Dependent Variable		
Lifetime Earnings	Natural log of UFC Career Earnings	
Independent Variables		
Age	Current age of fighter	Negative (-)
Age2	Age squared	Negative (-)
Female	1 if Female, 0 if Male	Negative (-)
Win KO/TKO	Total wins by KO/TKO	Positive (+)
Win Submission	Total wins by Submission	Positive (+)
Win Decision	Total wins by Decision	Positive (+)
Loss KO/TKO	Total Losses KO/TKO	Negative (-)
Loss Submission	Total Losses by Submission	Negative (-)
Loss Decision	Total Losses by Decision	Negative (-)
Champ	1 if current champion, 0 if not	Positive (+)
Ever Champ	1 if ever champion, 0 if not	Positive (+)
Successful Strikes	Total successful strikes in UFC	Positive (+)

Attempted Strikes	Total attempted strikes in UFC	Positive (+)
Successful TD	Total successful takedowns in UFC	Positive (+)
Total TD	Total attempted takedowns in UFC	Positive (+)

Weightclass Variables

Strawweight	1 if in Strawweight division, 0 if not	Negative (-)
Flyweight	1 if in Flyweight division, 0 if not	Positive (+)
Bantamweight	1 if in Bantamweight division, 0 if not	Positive (+)
Featherweight	1 if in Featherweight division, 0 if not	Positive (+)
Lightweight	1 if in Lightweight division, 0 if not	Positive (+)
Welterweight	1 if in Welterweight division, 0 if not	Positive (+)
Middleweight	1 if in Middleweight division, 0 if not	Positive (+)
Light Heavyweight	1 if in Light Heavyweight division, 0 if not	Positive (+)
Heavyweight	1 if in Heavyweight division, 0 if not	Positive (+)

Age is the current age of the fighters in the sample and is expected to have a negative effect on earnings. While intuitively it makes sense that fighters who are older will make more on average than younger fighters, the expected effect is still negative due to the extreme volatility of a MMA fighter's career length. MMA fighters are subject to extreme physical strain and their longevity is mainly due to winning fights, not age. Age2 is age squared and is expected to have a negative effect as it captures the diminishing marginal returns to earnings from age. Age2 also captures the optimal age for a UFC fighter in the sample.

Female is expected to have a negative effect on earnings. This is in line with the abundance of economic literature on wages where there is a gender wage gap.

Win KO/TKO, Win Submission, and Win Decision all are expected to have positive effects on earnings, as any win means the fighter will get paid more relative to the loser. Win KO/TKO is expected to have the greatest positive effect of these three variables, as winning in an entertaining fashion will most likely generate the most interest in a fighter. Loss KO/TKO, Loss Submission, and Loss Decision are all expected to have negative effects on earnings, as any loss means the fighter gets paid less relative to the winner.

Loss Decision is expected to have the greatest negative effect, as losing in a perceived unentertaining fashion will most likely generate the least amount of interest in a fighter.

Champ is expected to have a positive effect on earnings as the current champions usually make substantially more on average than fighters who are not current champions. Ever Champ is expected to have a positive effect on earnings for similar reasons. The effects of both variables could also be considered to be a proxy for a “star” quality that is prevalent in sports. Intuitively, it makes sense that fighters who are either current champions or have ever been champion have a greater “star” power than those who have never been either.

Successful and Attempted Strikes are both expected to have positive effects on earnings. In general, striking is considered to be entertaining to viewers so the effect of having a large number of strikes, both successful and attempted, is expected to be positive. Successful and Total TD are both expected to have positive effects on earnings for similar reasons. While takedowns are generally not considered as entertaining as striking, they still hold value and are expected to have a positive effect on earnings.

All of the weightclass binary variables except for Strawweight are expected to have positive effects on earnings. Strawweight is excluded because it is the only weightclass that consists of only female fighters. The Bantamweight and Featherweight divisions consist of both male and female fighters. The Flyweight, Lightweight, Welterweight, Middleweight, Light Heavyweight, and Heavyweight weight classes only consist of male fighters.

Descriptive Statistics

Table 2, seen below, contains descriptive statistics for all independent variables used in the model as well as the dependent variable.

Table 2: Descriptive statistics of the variables included in the model (N = 1403)

Variables	Mean	SD	Min	Max
Lifetime Earnings*	271,678	678,537	2000	9,542,000
Log Lifetime Earnings	11.0788	1.691	7.601	16.071
Age	33.403	5.333	20	53
Age2	1144.189	371.681	400	2809
Female	0.0563	5.334	0	1
Win*	15.201	8.431	0	91
Loss*	6.069	4.401	0	33
Win KO/TKO	5.425	4.244	0	33
Win Submission	5.743	5.424	0	63
Win Decision	3.970	3.521	0	26
Loss KO/TKO	1.891	2.006	0	13
Loss Submission	1.655	2.037	0	16
Loss Decision	2.479	2.434	0	19
Champ	0.0078	0.0882	0	1
Ever Champ	0.0406	0.1975	0	1
Successful Strikes	174.25	206.01	0	1533
Attempted Strikes	412.98	491.85	0	4030
Successful TD	6.567	9.982	0	87
Total TD	16.795	23.48	0	186
Strawweight	0.0313	0.1744	0	1
Flyweight	0.0485	0.1744	0	1
Bantamweight	0.0984	0.2979	0	1
Featherweight	0.1098	0.3127	0	1
Lightweight	0.1725	0.3779	0	1
Welterweight	0.2038	0.4030	0	1
Middleweight	0.1447	0.3519	0	1
Light Heavyweight	0.0976	0.2969	0	1
Heavyweight	0.0933	0.2911	0	1

Note: * Lifetime Earnings with the asterisk is not logged. This was included to show the average earnings of UFC fighter's. Win and Loss were not included in the model. Both are shown in the table above to show the average career record of a UFC fighter.

From Table 2 we can see that the average UFC fighter is 33 years old, has a career record of 15 wins and 6 losses, and earns $271,678 over their career. Of the average total career wins, 5.42 are from KO/TKO, 5.74 are from submission, and 3.97 are from decision. Of the average total career losses, 1.89 are from KO/TKO, 1.65 are from submission, and 2.47 are from decision.

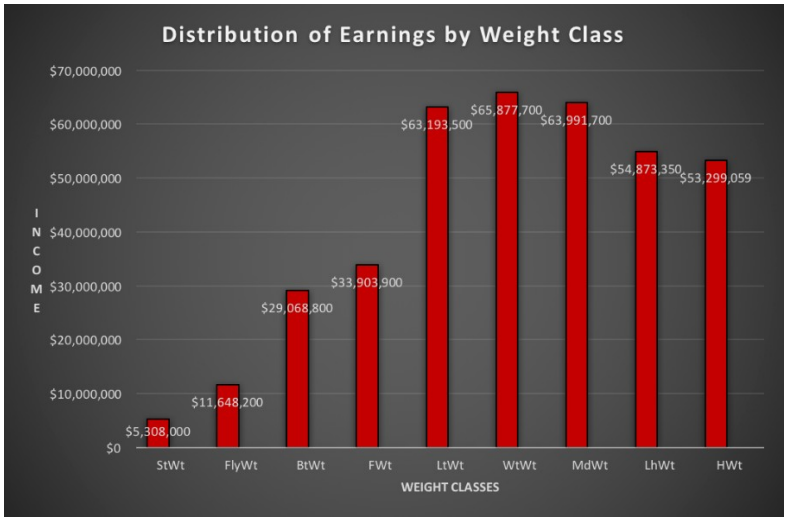
The average UFC fighter in the sample throws 412.98 strikes over their career, landing 174.25 of them. They also attempt 16.79 takedowns over their career, only landing 6.57 of them. The number of strikes thrown can be volatile depending on the length of the fight and the specific matchup of fighting styles.

Of the 1403 fighters in the sample only 5.63%, or about 79, are female. The remaining 94.37%, or 1324, fighters are male. The reason for the disparity is due to the UFC signing their first female fighter in November 2012, while male fighters have been in the UFC since its inception in 1993.

Currently there are only 9 champions, as there are only 9 weight classes. Of the 1403 fighters in the sample, only 4.06%, or about 57, have ever been champion. Of the 9 current weight classes, Welterweight has the most fighters with 20.38% of the sample and Strawweight has the least fighters with 3.13% of the sample. Strawweight only consists of female fighters, so it makes sense this division has the least number of fighters.

Figure 1, seen below, shows the distribution of earnings through the 9 weight classes.

Figure 1: Distribution of Earnings by Weight Class



As we can see, the Welterweight division holds the most earnings with 17.3%. Strawweight holds the least with 1.39% of total earnings. This is expected, as noted above the Welterweight division has the most fighters and the Strawweight division has the least number of fighters.

Empirical Results

Table 3, seen below, contains the regression coefficients for the full model. For the weight class binary variables, Lightweight is the base group.

Table 3: Regression coefficients

Dependent Var.		Log Lifetime Earnings	
Age	-0.0029708	Attempted Strikes	-0.0003819
	(.0498487)		(.0002731)
Age2	-0.0004734	Successful TD	-0.001497
	(.0007126)		(.0085137)
Female	0.277521	Total TD	0.0144241***
	(.1831759)		(.0036171)
Win KO/TKO	0.0725327***	Strawweight	0.364766
	(.008182)		(.242285)
Win Submission	0.0252876***	Flyweight	-0.0182637
	(.0064379)		(.1430474)
Win Decision	-0.0086737	Bantamweight	0.1094251
	(.0098462)		(.1173286)
Loss KO/TKO	0.0134356	Featherweight	-0.0605968
	(.0167609)		(.1062111)
Loss Submission	-0.0808049***	Welterweight	0.0240116
	(.0158677)		(.091141)
Loss Decision	-0.0177709	Middleweight	0.0067491
	(.0145098)		(.1008415)
Champ	-0.1720356	Light Heavyweight	0.1701865
	(.34824)		(.1148365)
Ever Champ	0.7528874***	Heavyweight	0.0702408
	(.1714907)		(.121934)
Successful Strikes	0.0055065***	Constant	10.26834***
	(.000672)		(.8573105)
N	1380		
R-sq	0.6373		
Adj. R-sq	0.6311		
F statistic	103.58		

Note: Standard errors in parenthesis
*p<0.1, **p<0.05, ***p<0.01
Lightweight is the base group for weightclass binary variables

As we can see from Table 3, the strongest determinants of UFC fighter earnings are Win KO/TKO, Win Submission, Loss Submission, Ever Champ, Successful Strikes, and Total TD. All of these variables are statistically significant at the 1% level, as well as being economically significant. The adjusted R-squared for the model is 63.11%, with all the variables being jointly significant with an F statistic of 103.58.

Age and Age2 both have negative effects on earnings, but are not statistically significant. What is interesting to note is that if Age2 is omitted, the coefficient on Age is both economically and statistically significant with a coefficient of -3.58% and P-value of 0.000. This suggests that when the model controls for the nonlinear returns to earnings, age has no effect on earnings.

Female has a positive effect on earnings, but is not statistically significant (it is at the 13% level). While not statistically significant at the conventional levels, the positive effect of being a female fighter on earnings is interesting as this contradicts the expectations from Table 1 and the economic literature on wages. At conventional levels of statistical significance, the effect of being a female fighter is not statistically different from zero, meaning gender may not be a contributory factor to the earnings of UFC fighters. However, this result could be from the small sample size of female fighters, 79, relative to male fighters, 1324.

Winning by KO/TKO has a positive effect on earnings, increasing average salary by 7.25%. This is in line with our intuition noted earlier of a possible entertainment value effect. This could also be correlated with the difference in skill sets between fighters who have ever been champion and those who haven’t, as the former have more knockouts on average (See Table 5). Winning by submission also has a positive effect on earnings, increasing average salary by 2.52%. Again, this is in line with our intuition noted earlier. Winning by decision is not statistically different from zero, meaning that this has no effect on earnings. This is an interesting result, as any type of win, albeit through unentertaining ways, should increase average salary.

Losing by KO/TKO is not statistically different from zero, meaning this has no effect on earnings. This is a very interesting result, as this implies that losing in an entertaining way may not have negative effects on earnings. This is interesting because any type of loss should decrease average salary. Losing by submission has a negative effect on earnings, decreasing average salary by 8.08%. This is in line with our intuition noted earlier. Losing by decision is not statistically different from zero. Again, this result is interesting as any type of loss should have negative effects on earnings.

The coefficient on Champ is neither economically or statistically significant. While this result may initially seem interesting, as we would expect champions to have a large positive effect on earnings, the sample size is only 9 fighters. However, Ever Champ has a positive effect on earnings, with fighters who have ever been champion earning 75.28% more than fighters who have never been champion. While the sign is expected, this is an interesting result for the magnitude and statistical significance of the coefficient with the sample only being 57 fighters.

Successful Strikes have a positive effect on earnings, increasing average salary by 0.55%. It should be noted that the interpretation for this variable is key, as this is a 0.55% increase for every successful strike thrown over a fighter's career. If we take the average successful strikes thrown from the sample, 174.25, this would amount to a .9584% increase on average salary, which is economically significant. Attempted Strikes is not statistically different from zero.

Successful TD is not statistically different from zero, while Total TD is both economically and statistically significant. If we take the average Total TD from the sample, 16.795, this would amount to a 24.22% increase over the career of a UFC fighter. Note that this is not a 24% increase for every takedown attempted; this is a 24% increase if the total number of takedowns over a fighter's career is about 17.

For the weight class binary variables, the Lightweight division is the base group. None of the weight class binary variables are statistically different from zero.

Table 4, seen below, contains the Blinder-Oaxaca decomposition results for the Ever Champ variable: fighters who have ever been champion compared to those who have never been champion. For the weight class binary variables, the Lightweight division is the base group.

Table 4: Decomposition of average wage gap between fighters who have ever been champion and fighters who have never been champion

Ever Champ = 0		Ever Champ = 1	
B^{EC0}	□□^{EC0}	β^{EC1}	□□^{EC1}

Part A: Summary results of Ever Champ equations

Intercept	10.12184***			3.82364		
Age	0.0007609	33.30		0.048684	35.77	
Age2	-0.000516	1136.91		-0.0008567	1316.02	
Female	0.061425	0.053		0.9139685	0.123	
Win KO/TKO	0.069403***	5.27		0.0651702*	9.07	
Win Submission	0.0286909***	5.73		-0.037721	5.89	
Win Decision	-0.0066849	3.85		-0.0675061	6.69	
Loss KO/TKO	0.0008431	1.86		0.0051701	2.57	
Loss Submission	-0.0862476***	1.66		-0.1481086	1.36	
Loss Decision	-0.0270925*	2.48		-0.1042538	2.43	
Successful Strikes	0.0057241***	157.89		0.0012406	556.49	
Attempted Strikes	-0.0003047	377.71		0.0000881	1237.31	
Successful TD	0.0175512**	5.97		0.01180551	20.36	
Total TD	0.009488**	15.60		-0.0033147	44.51	
Strawweight	0.272843	0.031		-2.264068*	0.035	
Flyweight	0.0200202	0.049		-0.4266571	0.017	
Bantamweight	0.132208	0.095		-1.160589	0.175	
Featherweight	-0.0217372	0.112		-0.193172	0.052	
Welterweight	0.0375258	0.208		0.0198365	0.087	
Middleweight	0.0628101	0.142		-0.5097147	0.192	
Light Heavyweight	0.1514887	0.094		0.4894145	0.175	
Heavyweight	0.0929908	0.091		-0.0450881	0.157	

Part B: Decomposition

Ln(Lifetime Earnings) gap:	-3.20444
Due to differences in skills:	-0.6963032
Due to discrimination	-0.4614886

Note: *p<0.1, **p<0.05, ***p<0.01

The columns under "**β**"are the coefficients for the corresponding variables in the leftmost column for the two regression run for just Ever Champ = 0 and Ever Champ = 1, respectively. The columns under "□"are the averages for the corresponding variables in the leftmost column for Ever Champ =0 and Ever Champ = 1, respectively.

For fighters who have never been champion, the regression results are similar to those described in Table 3. For fighters who have ever been champion, only Win KO/TKO has maintained statistical significance, now at the 10% level. The coefficient on Strawweight is now statistically significant at the 10% and economically significant at -2.26, or -226%. The large economic significance on the Strawweight variable compared to the base group Lightweight is most likely due to a few reasons. First, the sample for fighters who have ever been champion is small. Second, Strawweight holds the least number of fighters for any division. Third, the highest grossing UFC fighter ever, Connor McGregor, is in the base group, which explains the large magnitude on the Strawweight coefficient.

On average, past champions are 2 years older than non-champions. What is interesting to note is fighters who have ever been champion win more by all three modes of winning, while also losing more by knockout. Fighters who have ever been champion also throw a substantial more number of strikes, successful and attempted, as well as takedowns, successful and attempted. When compared with the regression results from Table 3, this suggests there is correlation between fighter skill sets and the status of ever being a champion, which makes sense intuitively. However, this raises the question if past champions have relatively higher earnings because they have a higher skill set or simply because they have ever been a champion.

In Part B, we can see that the gap in earnings between fighters who have ever been champion compared to those who have never been champion is 320%, in favor of those who have ever been champion. This result is expected, as noted in Table 3 past champions make on average 75% more than non-champions.

Conclusion

While the methodology and results in this research should be considered a starting point for analyzing wages in the sport of MMA, there are some issues. As noted in the section titled Model, due to the secrecy of UFC contracts and fighter pay parameters, the lack of transparency may have resulted in measurement error for lifetime earnings. There may also be measurement error for the fighter statistical variables, as I personally aggregated the data myself.

Due to various constraints, some of the variables may have led to misleading results. For example, while the hedonic approach to breaking up wins and losses is appropriate, the wins and losses used were career based, not those solely in the UFC. A portion of the fighters in the sample either started in other promotion companies before entering the UFC, or moved to different promotion companies in the middle of their career. As a result, the only available data on wins and losses were career based, meaning every fight in a fighter’s career was counted. To continue this research, I would further break up wins and losses to focus on both career record and UFC record.

For future studies, I would want to incorporate data from other MMA promotion companies such as Bellator, WSOF, and Rizin. By doing this, I would hopefully be able to further see what the determinants of MMA salaries are and not just for UFC fighters. This would also allow me to further study the gap in earnings between male and female fighters as well as champions and non-champions. I would also want to use a similar methodology for other combat sports such as boxing, kickboxing, etc.

The results of this study indicate that successful strikes thrown, total takedowns, wins by knockout, wins by submission, losses by submission, and ever being champion are strong determinants of UFC fighter earnings. They also imply winning by decision, losing by knockout, and losing by decision have no effect on earnings. These results also indicate that being a female fighter has no effect on earnings, meaning that gender may not be a strong determinant of UFC salaries.

References

Rosen, Sherwin. "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition." *Journal of Political Economy* 82.1 (1974): 34-55.

Mincer, Jacob. "Investment in Human Capital and Personal Income Distribution." *Journal of Political Economy*. University of Chicago Press (1970).

Mincer, Jacob. "Education, experience, and the distribution of earnings and employment: an overview." *Education, income, and human behavior* (1975): 71-94.

"The Official Website of the Ultimate Fighting Championship® (UFC)." *UFC*. Web.

Sherdog.com. "UFC, Mixed Martial Arts (MMA) News, Results, Fighting." *Sherdog*. Web.

FightMetric LLC :.: The World's First Comprehensive MMA Statistics Provider. Web.