

January 2022

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Dohrn, Stephanie L. and Lopez, L. Yvette P. (2022) "NCAA Transfer Portal: Examining Quarterback Transfer Outcomes in College Football," *Journal of Issues in Intercollegiate Athletics*: Vol. 15: Iss. 1, Article 22. Available at: <https://scholarcommons.sc.edu/jiia/vol15/iss1/22>

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NCAA Transfer Portal: Examining Quarterback Transfer Outcomes in College Football

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This paper aims to increase our understanding of the profile of quarterbacks in the NCAA transfer portal and their transfer impact on program and individual performance. Our sample consists of 124 Division I quarterbacks who transferred prior to the 2019 NCAA football season. Our data comes from the 247Sports website and is comprised of additional data from the 2018 and 2019 seasons (before and after the transfer). We examined the associated effects of transfers on program impact and student-athlete performance. Results indicate that, as a whole, student-athletes are more likely to transfer to lower-ranked programs and benefit from the transfer in terms of their individual performance. While there are unknowns, costs, and concerns over roster management for programs, on-field performance measures overall were not negatively impacted. Implications of these findings for research, theory, and practice are discussed.

Keywords: Human capital, NCAA transfer portal, transfer, performance

The impact of employee turnover on organizational performance has been a consistent topic of interest for practitioners and researchers alike. Concern has been driven by the desire to retain top performers (Thibault Landry et al, 2017) and reduce turnover (Jang & Kandampully, 2018) potentially resulting in lost investment surrounding training and development (Staw, 1980), and the increased costs associated with replacing lost talent (O'Connell & Kung, 2007). As a result, researchers have examined associated consequences of employee turnover (Iqbal, 2010; Lee, 2018; Ton & Huckman, 2008). A substantial portion of the literature has validated these concerns, indicating that employee turnover has a negative impact on organizations in the form of financial costs associated with lost human capital (Becker, 1993; Strober, 1990), lost productivity (O'Connell & Kung, 2007), and increased replacement costs associated with recruitment, selection, and training of new employees (Allen et al., 2010).

Employee turnover is particularly problematic when high performing and engaged employees leave the organization. Yet, turnover and retention issues and concerns are not unique to traditional for-profit business organizations. Intercollegiate athletics' organizations express these same concerns, but in the case for athletics' programs, turnover takes place in the form of a transfer by a student-athlete. The National Collegiate Athletic Association (NCAA, 2020) transfer data reports that the overall Division I student-athlete transfer rate is just under 16% from 2004-2019 and FBS football has increased from 12.7% to 14.7% during that same time period, increasing each year from 2016-2019 prior to the onset of the transfer portal. When looking at 4-year to 4-year (4-4) football transfers, the percentage increases from 3.8% in 2004 to 4.6% in 2019.

An additional issue with student-athlete transfer is the introduction of the transfer portal, which opened in October 2018. The transfer portal was designed as a compliance tool to systematically manage the transfer process, add transparency, and empower student-athletes (Johnson, 2019). The transfer rules, prior to the Division I Council's one-time transfer legislation in 2020-21, required student-athletes to meet at least one of 11 various exceptions via an appeals process. Rules varied by division and sport. Football was one of the sports with a one-year sit rule. The transfer portal was designed to remove steps or potential barriers to the transfer process by allowing student-athletes to enter on their own without requiring them to get approval from a coach or administrator. Student-athletes now have the opportunity to express their interest in transferring, as well as contact other programs without penalty (Johnson, 2019).

Hence, the transfer portal has raised an issue for coaches and programs concerned with student-athlete transfer (Browndorf, 2021; Zeise, 2020). In this paper, we focus on Division I football quarterbacks. In 2019, college quarterback transfers were on center stage as three of the four teams in the college football playoffs had transfers from other teams (e.g., Burrow, Hurts, and Fields). That same year, more than 100 quarterbacks entered the transfer portal (247sports.com, n.d.). As a result, many coaches have been vocal in the media about the difficulties of losing players to the portal and concerned about the increase in transfers and its impact on roster management (Zeise, 2020). They expressed that it led to an overall negative impact on the sport, likened it to free agency, and one prominent coach claimed that it led to spreading "snowflake-ism" (Kirshner, 2019).

The transfer portal in intercollegiate athletics has created a streamlined avenue for student-athletes to seek out alternative institutions to enroll and compete. This tool, along with new transfer rules by the NCAA, warrants an examination into whether concerns over the

transfer portal are justified. Due to the unknowns of the new transfer portal process, coupled with coaches' voiced concerns of a negative impact on the sport, this paper examines the profile of Division I college football quarterbacks in the transfer portal and the transfer impact on program and individual performance outcomes.

Therefore, we seek to answer three overarching questions: First, where are student-athletes, specifically Division I quarterbacks, transferring from and to? Second, what are the impacts on the teams (from and to) that experienced the transfer? And third, what is the impact on the individual, that is, are the transferring student-athletes able to improve their individual performance with the new program?

Theoretical Foundation and Hypothesis Development

The transfer portal is a relatively new way for student-athletes to declare their intention to leave their current institution. As of 2021, one other published study at the time of this submission has examined the impact of the transfer portal. Pifer et al. (2021) analyzed the impact of the transfer portal by examining a dataset containing approximately 1,200 Division I men's basketball transfers in order to identify how transfers impacted teams and players. In the Pifer et al. (2021) study, the researchers employed a social network approach. Here, we examine a human capital approach and focus exclusively on Division I quarterback transfers, given their key role within their program. Since human capital is paramount in achieving a sustainable competitive advantage (Hossini et al., 2014), it is understandable that coaches would be concerned with any potential resulting impact from a player transfer, particularly a quarterback.

A Human Capital Approach to Sports

Human capital is embodied in individuals in the form of skill, knowledge, and expertise and affects the organization more than other factors (Hossini et al., 2014). It is this skill, knowledge, and expertise that presents individuals as productive assets who can increase performance for organizations. Given increased competition in a variety of contexts, it is important for organizations to attract, select, develop, and retain personnel for current and future performance.

As organizations begin to invest in the development of their employees, or in the case of sports, their players, the organization's human capital begins to further develop with the aim of increasing efficiency, productivity, and overall performance. Hence, human capital creates added value for the organization (Becker, 1996) and organizational success depends on the individuals who have higher levels of competencies (Taylor & Bendickson, 2018; Hossini et al., 2014). Furthermore, according to Taylor and Bendickson (2018), star performers are even more valuable as these performers eliminate harmful effects of turnover on unit performance provided turnover rates remain constant and predictable.

From an individualistic perspective, increased skill, knowledge, and experience can influence a player's development and performance potential. From an organizational perspective, increased skill, knowledge, and experience can result in improved productivity and profitability (Nafukho et al., 2004). According to Dess and Shaw (2001), organizational performance is hindered with the loss of human capital through turnover by increased task demands and time spent acquiring new talent. Given the impact of a player's human capital, it is understandable that programs and coaches would be concerned with potential player transfer.

Turnover in the Form of Player Transfer

Voluntary turnover occurs when an employee decides to leave the organization on their own accord. Prior research suggests that athletes' decisions to transfer programs are significantly influenced by athletic factors (Burgess & Cisneros, 2018; Flowers Luzynski, & Zamani-Gallaher, 2014; NCAA Goals study, 2019). Such factors appear to include increased playing opportunities and the potential for improved performance (Pifer et al., 2021). There is a diminished return on human capital as the number of star players increases because only one quarterback can play at a time and therefore the KSAs of the other quarterbacks are not being fully utilized (Boncoeur, 2019; Taylor & Bendickson, 2018). Therefore, it is possible that student-athletes will most likely resort to using the portal to seek out programs that will provide them with increased playing opportunities.

Playing opportunities in college football are illustrated through the depth chart which is used to show the placement of the starting and order of back-up quarterbacks on a team with one-slot being the starter, two-slot the back-up and so forth. This chart communicates to the quarterback where he fits in the pecking order on the team. Additionally, a variety of performance measures are used to rank team performance such as the team's national rank, conference rank, and the team's overall winning percentage; these indicators could signal potential opportunities for the transfer to make an impact and determine fit when comparing one program to another.

Our first research question aims to examine where transfer Division I quarterbacks are likely to transfer from and to. Given the influence of athletic factors in athletes' decisions to transfer programs, this may result in transfers to programs with lower ranks, resulting in less competition for playing time for the student-athlete. Therefore, we hypothesize the following:

Hypothesis 1a: The worse a player's position on the depth chart the more likely the player is to transfer.

Hypothesis 1b: Transfer quarterbacks are more likely to transfer to programs with lower national ranks, conference division ranks, and winning percentages than their current programs.

Hypothesis 1c: Transfer quarterbacks are more likely to transfer to programs that will improve their position on the depth chart.

In response to our second research question, it is worth examining the impact on the teams involved with the transfer. How does the transfer impact the program that experiences the lost talent? In traditional business organizations, transferring employees may be top performers who are significantly more productive than the average employee, and retaining them can be difficult (Sullivan, 2007). High performers can develop reputations within their industries as top prospects resulting in a higher likelihood of being poached by other organizations (Sullivan, 2007).

In a similar manner, increased skill, knowledge, and experience can influence a player's development and performance potential, thereby creating additional opportunities for the player. Such athletes may be advantaged with an array of options, including opportunity created by other

programs, thus increasing the potential for player transfer. Boncoeur (2019) studied human capital in basketball and determined that if a team had too many stars, the KSAs of those players were not available to the team when they were not playing. Thus, the sidelined personnel may look elsewhere to take full advantage of their skillset.

In athletics, some student-athletes are more productive and have a larger role on a team than other team members, so losing these types of impact or star players may be more detrimental to programs, especially if the turnover rate changes significantly from the norm (Taylor & Bendickson, 2018). Quarterbacks entering the portal who are starters, backups, or highly-touted newcomers being groomed to take over the starting role in the future likely would fall into the voluntary transfer category where their departure was not planned or wanted by the coaching staff, making the transfer portal and increased autonomy of the student-athlete undesirable by coaches.

Coaches lose their investment of time, energy, and training by unwanted transfer. This could impact the program in terms of national ranking, conference division ranking, or win-loss record (winning percentage). Although time and impact on coaches is surely frustrating, it is worth examining whether transfers impact certain team outcomes by examining the effect on performance from the year prior to a transfer to the year after the transfer.

Given that transfer players take their human capital in the form of knowledge, skill, ability, (KSA) and experience, it is anticipated that the loss in human capital will result in a disruption to the program's overall on-field performance after a transfer. This is similar to how replacing a leader in CEO leadership succession theory, would have an immediate negative impact on performance due to the disruption imposed on the current system as proposed by vicious cycle theory (Audas, Dobson, & Goddard, 2002; Fazel & D'Itri, 1997; Dohrn et al., 2015). Although this study does not focus specifically on the impact of team performance after a coaching change, in keeping with vicious cycle theory, a coaching change could spur the likelihood of a quarterback transfer due to the disruption in the system. According to Pate et al. (2011), Division I student-athletes struggle through head coaching changes as future outlooks and trust are challenged. Hence, we hypothesize the following:

Hypothesis 2a: A coaching change will increase the likelihood of a player transfer.

Hypothesis 2b: Programs that lose a player to a transfer are likely to experience a decrease in performance after the transfer in the form of national rank, conference division rank, and winning percentage.

On the other hand, for programs gaining in the transfer, it would be expected that the student-athlete would help the new program's performance through the addition of human capital. In CEO succession theory, common sense theory states that replacing a failing leader will have a positive impact on organizational performance (Pfeffer & Blake, 1986; Allen et al., 1979; Dohrn et al., 2015). In this case, the team acquiring an incoming transfer will gain additional human capital and in accordance with common sense theory and human capital theory, the acquisition would support an increase in performance for the team gaining the transfer. Hence, we hypothesize the following:

Hypothesis 3: Programs that gain a transfer player are likely to experience an increase in their performance after the transfer in the form of national rank, conference division rank, and winning percentage.

Finally, in response to our third research question, we aim to examine the impact of the transfer on the individual (quarterback). As previously indicated, prior research suggests that athletic factors play a role in Division I athletes' decisions to switch programs (Burgess & Cisneros, 2018; Pifer et al., 2021; Flowers et al, 2014; NCAA Goals study, 2019). If student-athletes are driven to find a better fit, which might include a program that allows them to have a bigger role on the team, then we would anticipate individual performance measures to increase. Pifer et al. (2018) measured playing time (minutes) and athletic performance in their study examining college basketball transfers' performance improvement. Minutes are not kept in college football statistics, but passing attempts is a similar statistic that keeps track of how many attempts a quarterback gets to impact his team and serves as a proxy for playing time. Further, outcome statistics from those passing attempts include pass completions, yards thrown, and touchdowns. Hence, we hypothesize the following:

Hypothesis 4a: The fewer the passing attempts for a quarterback the more likely a player is to transfer.

Hypothesis 4b: Quarterbacks will experience an increase in individual performance after a transfer in the form of pass completions, pass attempts, yards thrown, and touchdowns.

Method

Data

The research context used for this study was NCAA Division I football and specifically the quarterback position. Since the transfer portal began in the fall of 2018, we focused on 2019 transfers. This represented the most complete year since the student-athlete played in 2018 with their initial program (transfer from program), then transferred, and played in 2019 with their new program (transfer to program). This allowed two full years of data, before the transfer, and after the transfer. Due to the occurrence of COVID-19, the 2020 football season was impacted and was not a typical season; therefore the 2020 season was not included in the analysis.

The 247Sports website provided reliable information with regard to the transfer portal as the actual NCAA transfer portal is not public. This site comprises a list of transfers by sport (football and basketball), as well as details regarding position, high school recruiting star ratings, student-athlete hometown, and information about the school the student-athlete is transferring from and the school the student-athlete is transferring to. A quarterback was removed from the dataset if they transferred to a non-division I program or entered the portal but did not end up transferring.

To complete the data collection, coaching changes, individual player statistics, and team rankings were added to the information for the transfers from 247Sports. Sagarin rankings were utilized for team national rankings since it compiles all FBS and FCS institutions in the same list, rather than a top 25 list. Depth chart positions and player statistics were collected through either

school websites or sports-reference.com. Conference division ranks, team win-loss records, and conference membership were retrieved from either individual team websites or Stassen.com. Coaching changes also were collected through news reporting and team websites. Finally, Google Maps was utilized to determine the distance from the transfer's hometown to the location of the original school and transfer school.

Additionally, non-transfer quarterback individual statistics, hometown and distance to their school, and high school star rating information was compiled for comparison using the same sources: 247sports, sports-reference.com, and Google Maps. Division I quarterbacks in this comparison set were selected if they were on the team in 2018 and remained on the same team and did not transfer in 2019. Those players who had passing statistics in sports-reference.com, but were not quarterbacks, were removed from the dataset.

Results

Descriptive Statistics

Our data were comprised of 124 quarterbacks who transferred between the 2018 and 2019 NCAA football seasons. In examining the data, we looked to see whether coaching changes among the transfer student-athletes were comparable to the amount of coaching changes occurring overall within Division I football. A descriptive analysis of the data indicate that among the transfer portal data set, 12 out of the 124 transfers (9.7%) had a first year coach at the original school in 2018, 31 out of 124 transfers (25%) had a coach leave the quarterback's original team after the 2018 season, and 40 out of 124 transfers (32.3%) transferred to a new program that experienced a coaching change. In comparison to overall coaching changes outside of the transfer portal, we see that there were 52 coaching changes out of the 254 total programs (20.5%), 27 FBS changes out of 129 FBS programs (20.9%) and 25 FCS changes out of 125 FCS programs (20%). It appears that the student-athletes who joined the transfer portal were experiencing a higher number of coaching changes.

The data also indicates that more student-athletes from the transfer portal were transferring from the Power 5 conferences (ACC, Big Ten, Big 12, Pac-12, SEC) than transferring to the Power 5. Sixteen quarterbacks left the ACC, 6 joined the ACC, 13 left the Big Ten while 8 joined, 15 left the Big 12 while 10 joined, 10 left the Pac-12 while 6 joined, and 19 left the SEC while 9 joined. Fifty-nine percent of the quarterbacks represented Power 5 conferences in the transfer from school, but only 31% remained in the Power 5 after transferring. Finally, in terms of individual student-athletes within the transfer portal, quarterback star ratings were compared between transfer and non-transfer quarterbacks from the same institution (See Table 1).

Logistic Regression, Friedman ANOVA Tests, and Wilcoxon Signed-Ranks Tests

To test for differences in decisions to transfer as well as for differences between the programs involved before and after the transfer, we conducted tests involving logistic regression, Friedman ANOVA tests, and Wilcoxon signed-ranks tests. Initial analyses indicated a violation of the assumptions of normality of the data for several of the variables of interest, thereby requiring non-parametric tests for examining several of the proposed hypotheses.

A logistic regression analysis was performed to examine factors that may influence when a player is likely to transfer. The dichotomous dependent variable consists of whether the student-athlete transferred or stayed with their current program. The results of the logistic regression analysis are reported in Table 2. The Friedman test is a non-parametric alternative to the one-way ANOVA test. The Friedman test is used to detect differences in treatments across multiple test attempts. It is used to test for differences between groups when the dependent variable being measured is ordinal, or in this case, ranked data concerning national Sagarin ranking and conference division rank. Friedman test results are provided in Table 3. Finally, we also conducted Wilcoxon signed-ranks tests. The Wilcoxon signed-ranks test is also a non-parametric test and it is an alternative to the paired-samples t-test. A paired samples t-test is used to determine whether the mean difference between two sets of observations is zero. The measurement is taken at two different times (pre-transfer and post-transfer). The purpose of the test is to determine whether there is statistical evidence to indicate a significant difference between the two measurements. It is used to test for differences between groups concerning winning percentages and individual performance statistics. Wilcoxon signed-ranks test results are provided in Table 4.

Prior to testing our hypotheses, we examined whether the transferring student-athletes were transferring to programs that were perhaps closer to home, or possibly leaving a hometown school for one further away in hopes of gaining more playing time. Results indicate that the mean distances between their transfer from programs ($M = 620.46$, $SD = 651.51$) and the transfer to programs ($M = 649.77$, $SD = 630.17$) were not significantly different (Wilcoxon signed-ranks test: $Z = -1.156$, $p = .248$), and therefore, may not have been a driving factor in their decision making, or did not trend specifically in one direction or the other, moving closer or further from home. We also factored in the quarterback student-athletes who remained with the initial program to help determine whether distance from hometown influenced the overall decision to transfer for student-athletes, however, results of the logistic regression analysis indicate that distance from home was not significant in influencing players' decisions to transfer ($B = .000$, $p = .780$) (See Table 2), which is comparable to previous findings (Pifer et al., 2021).

Hypothesis 1a proposed that the worse a player's position on the depth chart, the more likely the player is to transfer. Results of the logistic regression analysis indicate that player position on the depth chart is a significant indicator of player transfer decisions ($B = .511$, $p < .01$). This result indicates that as a quarterback's depth chart value increases by 1 (meaning the player is listed in a worse position on the depth chart), then the probability that the player will transfer increases by 1.667 times. Therefore, the odds of that player being in the transfer category increase by 66.7%. These findings support hypothesis 1a.

Hypothesis 1b proposed that transfer quarterbacks are more likely to transfer to programs with lower national ranks, conference division ranks, and winning percentages than their previous programs. Results indicate partial support for hypothesis 1b with transfer quarterbacks transferring to programs with lower national Sagarin ranks ($\chi^2(1, N = 98) = 33.242$, $p < .05$), however there are no significant differences detected between the programs in conference division rank ($\chi^2(1, N = 95) = 3.753$, $p = .053$) and winning percentage ($Z = -1.472$, $p = .141$).

Hypothesis 1c proposed that transfer quarterbacks are more likely to transfer to programs that will improve their position on the depth chart. Results of the Wilcoxon signed-ranks test indicate support for hypothesis 1c with transfer quarterbacks transferring to programs resulting in a significantly improved position on the depth chart of their new program (a lower score indicates a higher/better/improved position on the depth chart) ($Z = -2.682$, $p < .01$).

Table 1

Star Rating Comparisons Between Transfer and Non-Transfer Quarterbacks^a

Star rating	Transfer Quarterbacks	Non-transfer Quarterbacks
5	1	3
4	24	29
3	60	59
2	16	21
1	*	*
0	23	9

^a Comparisons include only the schools that had quarterback transfers

* 1-star athletes are not provided by 247sports.com

Table 2

Logistic Regression Analysis^a

Variables in Equation	B	S.E.	Wald	df	Sig.	Exp(B)
Distance from hometown	.000	.000	.078	1	.780	1.000
Pass attempts	-.002	.002	2.140	1	.144	.998
Position on depth chart	.511	.136	14.005	1	.000**	1.667
Coaching change: First year coach	-.082	.484	.029	1	.866	.921
Coaching change: Coach is leaving	-.142	.340	.176	1	.675	.867
Constant	-1.103	.731	2.276	1	.131	.332

^aVariable(s) entered on Step 1: Distance from hometown, Pass attempts, Position on depth chart, First year coach, and Coach is leaving.

** $p < .01$

N = 238 cases analyzed

Table 3

Friedman ANOVA Tests

Variable	Mean Rank	N	Chi-Square	df	Sig	Kendall's W Test
Hypothesis 1b						
From National Sag Ranking 2018	1.22	98	33.242	1	.000	.339
To National Sag Ranking 2018	1.78					
From Conference Division Rank 2018	1.41	95	3.753	1	.053	0.40
To Conference Division Rank 2018	1.59					
Hypothesis 2b						
From National Sag Ranking 2018	1.55	123	1.200	1	.273	.010
From National Sag Ranking 2019	1.45					
From Conference Division Rank 2018	1.46	119	.890	1	.345	.007
From Conference Division Rank 2019	1.54					
Hypothesis 3						
To National Sag Ranking 2018	1.53	98	.258	1	.612	.003
To National Sag Ranking 2019	1.47					
To Conference Division Rank 2018	1.46	96	.690	1	.406	.007
To Conference Division Rank 2019	1.54					

Table 4
Wilcoxon Signed-Ranks Tests

Wilcoxon Signed-Ranks Tests						
Variable		N	Mean Rank	Sum of Ranks	Z	Sig
Hypothesis 1b						
To Program Winning Percentage 2018 –	Negative Ranks	56 ^a	57.91	3243.00	-1.472	.141
From Program Winning Percentage 2018	Positive Ranks	49 ^b	47.39	2322.00		
	Ties	11 ^c				
	Total	116				
Hypothesis 1c						
To Program Depth Chart –	Negative Ranks	54 ^a	44.06	2379.50	-2.682	.007
From Program Depth Chart	Positive Ranks	30 ^b	39.68	1190.50		
	Ties	18 ^c				
	Total	102				
Hypothesis 2b						
From Program Winning Percentage 2019 –	Negative Ranks	50 ^a	50.31	2515.50	-.141	.888
From Program Winning Percentage 2018	Positive Ranks	49 ^b	49.68	2434.50		
	Ties	24 ^c				
	Total	123				
Hypothesis 3						
To Program Winning Percentage 2019 –	Negative Ranks	45 ^a	48.60	2187.00	-.845	.398
To Program Winning Percentage 2018	Positive Ranks	53 ^b	50.26	2664.00		
	Ties	18 ^c				
	Total	116				
Hypothesis 4b						
To Program Pass Completions –	Negative Ranks	30 ^a	31.60	948.00	-2.811	.005
From Program Pass Completions	Positive Ranks	47 ^a	43.72	2055.00		
	Ties	32 ^c				
	Total	109				
To Program Pass Attempts –	Negative Ranks	32 ^a	34.19	1094.00	-2.667	.008
From Program Pass Attempts	Positive Ranks	49 ^b	45.45	2227.00		
	Ties	28 ^c				
	Total	109				
To Program Yards Thrown –	Negative Ranks	28 ^a	32.54	911.00	-2.858	.004
From Program Yards Thrown	Positive Ranks	48 ^b	41.98	2015.00		
	Ties	31 ^c				
	Total	107				
To Program Touchdowns –	Negative Ranks	23 ^a	24.37	560.50	-2.920	.004
From Program Touchdowns	Positive Ranks	39 ^b	35.71	1392.50		
	Ties	45 ^c				
	Total	107				

^a To Program < From Program^b To Program > From Program^c To Program = From Program

Hypothesis 2a proposed that a coaching change will increase the likelihood of a player's transfer. Results of the logistic regression indicate that coaching change, whether the change was made at the start of the 2018 season ($B = -.082$, $p = .866$), or whether the change takes place at the conclusion of the 2018 season ($B = -.142$, $p = .675$), does not significantly predict a player's decision to transfer. Therefore, hypothesis 2a is not supported.

Hypothesis 2b proposed that programs that lose a player to a transfer are likely to experience a decrease in performance after the transfer in the form of national Sagarin rank,

conference division rank, and winning percentage. Results do not support hypothesis 2b, indicating that there were no statistically significant differences in national Sagarin rank ($\chi^2(1, N = 123) = 1.200, p = .273$), conference division rank ($\chi^2(1, N = 119) = .890, p = .345$), or winning percentage ($Z = -.141, p = .888$) for the programs that lost a quarter to a transfer.

Hypothesis 3 proposed that programs that gain a transfer player are likely to experience an increase in their performance after the transfer in the form of national Sagarin rank, conference division rank, and winning percentage. Results do not support hypothesis 3, indicating that there were no statistically significant differences in national Sagarin rank ($\chi^2(1, N = 98) = .258, p = .612$), conference division rank ($\chi^2(1, N = 96) = .690, p = .406$), or winning percentage ($Z = -.845, p = .398$) for the programs that gained a transfer player.

Hypothesis 4a proposed that the fewer passing attempts made by a quarterback with their current program, the more likely the quarterback is to transfer. Results of the logistic regression do not support this hypothesis. Passing attempts is not significantly related to a quarterback student-athlete's decision to transfer ($B = -.002, p = .144$).

Lastly, hypothesis 4b proposed that transfer quarterbacks are likely to experience an increase in individual performance after a transfer in the form of increased pass completions, pass attempts, yards thrown, and touchdowns. Results of the Wilcoxon signed-ranks tests indicate support for hypothesis 4b with transfer quarterbacks experiencing increased individual performance in the form of pass completions ($Z = -2.811, p < .01$), pass attempts ($Z = -2.667, p < .01$), yards thrown ($Z = -2.858, p < .01$), and touchdowns ($Z = -2.920, p < .01$) with the new transfer program.

Non-transfer quarterbacks also experienced improvement from their 2018 to 2019 seasons. While these improvements were significant, results indicate that transfer quarterbacks saw bigger percentage increases in their before and after transfer statistics related to pass completions, pass attempts, yards thrown, and touchdowns (See Table 5).

Table 5
Comparison of Individual Performance Statistics Between Transfer and Non-Transfer Quarterbacks

Variable	Transfer Quarterbacks			Non-Transfer Quarterbacks		
	N	Mean	S.D.	N	Mean	S.D.
2018 Pass Completions	123	25.15	50.548	121	88.44	90.908
2019 Pass Completions	109	56.21	79.163	121	111.54	109.863
Percentage Change Increase		123.5%			26.1%	
2018 Pass Attempts	123	42.97	85.802	121	146.87	148.293
2019 Pass Attempts	109	94.16	129.607	121	179.08	168.500
Percentage Change Increase		119.1%			21.9%	
2018 Yards Thrown	122	301.07	598.812	121	1109.98	1164.528
2019 Yards Thrown	108	712.02	1037.235	121	1418.47	1400.095
Percentage Change Increase		136.5%			27.8%	
2018 Touchdowns	122	2.20	4.558	121	8.58	10.039
2019 Touchdowns	108	5.60	9.647	121	11.12	11.931
Percentage Change Increase		154.5%			29.6%	

Discussion

This study aimed to increase our understanding of the profile of the Division I quarterback in the NCAA transfer portal and the transfer impact on the teams that lost or gained human capital. Given the expressed concerns by coaches and programs surrounding the potential costs associated with student-athlete transfer, we set out to examine where Division I quarterbacks were transferring from and to, what were the impacts on the teams that experienced the transfer, and what was the impact on the individual, that is, are the transferring student-athletes able to improve their individual performance with the new program?

Overall, more transfer quarterbacks left Power 5 conferences (59%) than remained (31%), had more coaching changes than other schools without transfers. The data did not show a pattern, in either direction, if quarterbacks were transferring closer or further away from home. The high school star rating comparison between transfers and non-transfers from the same institutions were relatively equal except in the non-rated category where significantly more transfers (23 compared to 9) fit this category.

The first set of hypotheses (1a - 1c) examined the quarterback's depth chart position on the team in 2018 prior to the transfer, the transfer to school's national Sagarin ranking, conference division record, and winning percentage in that same year, and then the same quarterback's depth chart position on his new team in 2019. Support existed for each hypothesis in that the worse the quarterback's position on the depth chart the more likely he was to transfer, he would transfer to a team with a lower national Sagarin ranking, and would have an improved position on the depth chart on the new team. There were no significant differences in conference division rank and winning percentage. This could be explained by the competitive variation in each conference where more like teams can be found in the same conference versus an overall national ranking where all teams are compared by a rating score that takes into consideration other factors like margin of victory and strength of schedule.

The second set of hypotheses (2a and 2b) focused on the from school, the one losing the quarterback, as human capital theory and vicious cycle theory would argue that losing KSAs would have a negative impact. If there was a new coach at the helm in 2018, this would impact both returning and incoming players potentially influencing a decision to transfer. Or, if there was a new head coach set to start the 2019, this change could have a similar impact. However, there was no significant finding to support this hypothesis for the loss of a head coach in either year. This could be explained by the third CEO succession perspective of ritual scapegoating theory which proposes that leadership succession has no relationship to organizational performance.

Additionally, common sense theory would support that if human capital was lost, there would be a negative impact; however, there was no significant difference in national Sagarin rank, conference division rank, or winning percentage on the team losing the quarterback to the transfer. Of the 124 transfer quarterbacks in this study, 13 were starting quarterbacks. Since starting quarterbacks get the majority of the playing time and all others on the depth chart play a back-up or supporting role and are not as actively participating in games, their role on the team is harder to quantify and will not show up on the stat sheet if they are not on the field. However, this result does support Taylor and Bendickson's (2018) star performer findings in that the stars on the team who did not transfer can in effect eliminate the negative effects of the transfer on team performance. So, if a starter leaves and the back-up or incoming quarterback has similar

talent, or if a transfer quarterback on the depth chart is ranked two or greater, the starter can cover the gap left by the transfer.

It is important to note from Taylor and Bendickson's (2018) research that this accounts for a constant turnover rate and not a rate that is significantly different from the norm. Furthermore, Boncoeur (2019) argues that if there are too many star performers, there are diminishing returns since only one quarterback can play at a time. Similarly, Taylor and Bendickson (2018) found that the unique contribution of stars in major league baseball diminished when the number of stars increased and that after four stars, the influence leveled off. While teams do need to have back-ups to train to take over starting roles in the future, run the practice squads, and account for injuries; too many quarterbacks may result in a diminished or unmeasured statistical production.

Hypothesis 3 focused on the team gaining the transfer. Common sense and human capital theories would argue that the program gaining the talent would benefit; however, no significant difference existed in national Sagarin rank, division conference rank, or winning percentage. While there were 13 players who were starters in from-team schools, there were 31 quarterbacks who became starters in the to-school teams so there were significantly more starters, but they may have been replacing similar talent or there were other team factors that could have played a role in these findings (Taylor & Bendickson, 2018; Boncoeur, 2019).

Finally, the last set of hypotheses (4a and 4b) focused on the individual and if the quarterback improved performance from 2018 to 2019. Since a quarterback may transfer primarily due to athletic reasons (Burgess & Cisneros, 2018; Pifer et al., 2021; Flowers et al., 2014; NCAA Goals study, 2019), did the transfer pay off in terms of individual performance, measured by quarterback statistics (passing completions, passing attempts, yards thrown, and touchdowns)? There was support for this hypothesis and results indicated increased individual performance stats. As noted above in hypotheses 1b and 1c, quarterbacks significantly increase their position on the depth chart after the transfer and overall, transferred to programs that were nationally lower ranked, thus putting them in a better position and/or fit to gain those opportunities to play.

It cannot be certain if the increase in individual performance was due to the transfer, increase in playing time, or development over time; however, transfer quarterbacks increased their individual statistics at a greater percent increase than those who did not transfer from those same institutions (See Table 5). Furthermore, the transfer quarterbacks received fewer attempts than the non-transfer group in 2018 which may have led to the transfer initially; and there was no guarantee those transfers would have received an increase in attempts if they had stayed if they were lower on the depth chart. Although the performance level of the team may not be the same between the from and to school; if the reason for the transfer was playing time (Burgess & Cisneros, 2018; Pifer et al., 2021; Flowers et al., 2014) then this was supported by indication of a significant increase in attempts and other passing stats that resulted in those opportunities.

Implications for Theory

Our research contributes to theory in a couple of different ways. First, it begins by adapting human capital theory to the impact of the transfer portal and Division I football programs. Human capital theory brings attention to the critical role that a team's human capital plays in influencing the success of their programs. Human capital theory emphasizes the skill, knowledge, and expertise that presents student-athletes as productive assets who can increase

performance for their programs. Given increased competition in college athletics and the role that the transfer portal may play in increasing competition, it is important for programs and coaches to work to attract, select, develop, and retain personnel for current and future performance.

Second, our research adds additional support through quantitative analysis of other researchers' assertions (Burgess & Cisneros, 2018; Flowers et al., 2014) that student-athletes transfer for athletics reasons (i.e., playing time) as our research found significant findings that players worse off on the depth chart were more likely to transfer, transferred to a lower ranked school, and increased the position on the depth chart and increased individual productivity by improving passing statistics.

Third, our research adds depth to the star performer findings by Taylor and Bendickson (2018) and Boncoeur (2019) in that teams that lost the transfer quarterback did not see performance decreases in terms of national Sagarin rank, conference division rank, or winning percentage. This ran counter to vicious cycle and human capital theory that assumes the teams would be worse off and common sense theory that assumes that the team gaining the human capital would be better off after the transfer.

Fourth, our research adapts the employee turnover literature toward specifically examining transfer behavior in sport contexts, making our study broader in scope. Our study focuses on transfer decisions of student-athletes and the impact on program performance and individual performance. Results of this study indicate that turnover influences and effects are present with regard to student-athlete transfer decisions.

Implications for Practice

Coaches need to attract, select, develop, and ideally retain their talent for current and future performance. Despite the time and effort coaches spend to recruit and train, student-athletes may still transfer to another school. According to the NCAA Goals study (2019), student-athletes primarily transfer due to issues with playing time, coaching issues, desire to play professionally in their sport, and a sense of "mismatch" between their expectations and their experience with their current program. In order to decrease unwanted transfers and capitalize on human capital, coaches can recruit based on fit and enhance engagement once recruited to increase retention to build affective commitment to the program longer term.

Researchers have focused on the increasing importance of athlete well-being in the form of examining their satisfaction, health, leisure time, family time, and economic support (Wicker et al., 2020). Coaches can be vigilant for signs of dissatisfaction from student-athletes, which can occur in behavior changes, physical withdrawal, and psychological withdrawal (Rosse, 1988). Behavior changes include voicing concerns internally, increasing conflict, filing grievances, and eventually taking these public. If these complaints, real or perceived, are not heard or acted upon in a timely manner, psychological withdrawal can occur which includes lower levels of involvement that could manifest itself in decreased effort in practice or in the classroom. Finally, physical withdrawal can occur by missing practice or eventually leaving the program. It is important to note that dissatisfaction and withdrawal is based on frame of reference or comparison to others so the competitive landscape of sport could heighten the potential for dissatisfaction, especially with limited options for playing time (Silverman, 2013).

According to Chui et al. (2020), student-athletes are more likely to leave programs when they have a lower quality relationship with their coach. Coaches can foster motivation and

engagement using Self-Determination Theory to support student-athletes' basic psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 1985). Relatedness comes in the form of the bond between the coach and athlete, competence comes in the form of the athlete having skills necessary to feel effective, while autonomy is the allowance of the athlete to have the freedom to apply what has been learned and be part of the process. Coaches need to find ways to make personal connections, mentor based on goals, and partner to work on skills they want and need to develop to increase engagement and help decrease unwanted transfer intentions (Rezania & Gurney, 2014; Hall, 2019).

A realistic job preview, or in the case of athletics, setting realistic expectations during the recruiting and onboarding process are important (Schroth, 2019). Onboarding can help facilitate communication, establish and reinforce culture, and provide feedback channels so student-athletes know what is expected and who to turn to with questions or concerns. Taking time to clearly explain and communicate expectations may help to reduce lack of fit and potentially program transfer.

However, given the various factors that can influence the potential for transfer despite the actions of the coaching staff, and the NCAA's recent moves toward providing student-athletes with greater empowerment over their collegiate careers, the transfer portal eventually may grow to play an even larger role in student-athlete transfer. With easier access for student-athletes, continued discontent with their current programs might be less inhibiting for individuals. In conclusion, given the potential for the portal's use with helping to place quarterback transfers seeking more playing time and the opportunity to address lack of fit, the portal's use, based on the findings of this study, could result in minimal disruption in terms of on-field performance measures for the programs while potentially increasing opportunities for the individual student-athlete.

Limitations

A limitation to this study is that the true reason for the transfer is unknown. There are a multitude of reasons why a student-athlete may decide to transfer to another institution. While there could be non-athletic reasons for the transfer, research has indicated that transfers are significantly related to athletic reasons (Burgess & Cisneros, 2018; Flowers Luzynski, & Zamani-Gallaher, 2014; NCAA Goals study, 2019). There may have been quarterbacks who initially entered the portal, but removed themselves and did not transfer.

Additionally, this study looked only at college football quarterbacks, other sports or positions within football that require less coordination with other players may yield different results. We were limited by the scope of the study with two years of data due to the newness of the transfer portal in 2018 and the disruption of the 2020 season due to COVID-19.

Directions for Future Research

Analysis of different types of team dynamics, sports, other positions within a sport, or years of eligibility of the student-athletes are potential studies to build off this initial research. Conducting a longitudinal study to determine if the 2018-2019 results are comparable from season to season is recommended. With the onset of the one-time transfer rule, a comparison before and after this new rule should be studied to determine if it weakens or increases the rate of transfers. Finally, a cost of transfer analysis on programs to better quantify the impact of transfer,

impact on others on the team who did not transfer, and other similar constructs could be helpful as well.

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