An Empirical Test of Strategic Groups: Predicting Organizational Performance

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Abstract

The concept of strategic groups was tested using payroll data to classify NFL teams into four strategic groups and multiple measures of on-the-field and financial performance data. These groups were then examined to see whether spending on player talent was related to organizational performance as measured by winning percentage, points, and yards, and to financial performance as measured by revenues, operating income, and current value. The results show that strategic groups based on talent investment, do exist. Strategic groups were only a moderate predictor of on-the-field performance, but were a significant predictor of financial performance.

Keywords: Strategic Groups, Organizational Performance, Financial Performance

Introduction

The term strategic groups has been used in the strategic management literature to describe sub-groupings of firms within a single industry that pursue similar or identical strategies as it relates to relevant distinguishing variables such as product diversification, vertical integration, product differentiation, etc. (Hunt, 1972; Porter, 1979). While the early development of this stream of literature faced a number of challenges regarding its legitimacy and value as an appropriate construct within which the strategic management of firms can be understood (Barney & Hoskisson, 1990; Dornier, Selmi, & Delécolle, 2012; Schimmer, & Brauer, 2012; Wiggins & Ruefli, 1995), there appears to be a resurgence of interest in this phenomenon (e.g., Anand, Joshi, & O'Leary-Kelly, 2013; Dornier & Selmi, 2011; Dornier, Selmi, & Delécolle, 2012; Flint & Van Fleet, 2011; Murthi, Rasheed, & Goll, 2013; Schimmer & Brauer, 2012).

Strategic groups were originally conceptualized by Hunt (1972) and quickly refined by Porter (1979). According to Porter (1979) strategic groups (as defined by specific structural characteristics within an industry) exist as *clusters or groups of firms where each group of firms is following similar strategies in terms of its key decision variables*. Within his conceptualization of strategic groups, firms within a particular group are able to anticipate and react to actions taken by other firms within the group and are likely to respond to conditions in the external environment in the same or similar ways. Further, since industries can be comprised of multiple strategic groups, a firm's presence within a particular group has the potential to impact its profitability relative to other strategic groups.

This relationship between a firm's presence in a particular strategic group and performance differences between strategic groups has been studied by a number of researchers (see Dornier, Selmi, & Delécolle (2012) for a review of this body of work). The results, however, have been mixed in terms of empirically establishing the existence of strategic groups (as determined by structural characteristics within an industry). Indeed, this body of work has at times faced criticism in this regard (Barney & Hoskisson, 1990; McGee & Thomas, 1986; Wiggins & Ruefli, 1995).

Barney and Hoskisson (1990) in particular, challenged two of the key assumptions in the strategic groups literature: that strategic groups exist as an independent construct and that firm performance (at least in part) depends on the groups to which a firm belongs. They proposed instead that in its efforts to forge a compromise position between traditional Industrial Organization (I/O) economic perspectives on the relationship between industry structure and firm performance and strategic management theory (which tends to focus on the firm as the primary level analysis), this body of literature has relied on methods (i.e., cluster/factor analysis) which in and of themselves have the potential to "create" groups as opposed to detecting the presence of groups (Wiggins & Ruefli, 1995). They further argue that a common methodological choice, mainly relying on a researcher's intuitive understanding of an industry to establish the appropriate weights for the variables used in these methods, is not sufficient to escape the tautological nature of these methods when applied to this research context.

Along the same vein, McGee, Thomas, and Pruett (1995), highlight the following limitations of strategic groups as a predictive theoretical framework:

a. strategic groups studies seem to be dominated by I/O assumptions and perspectives (in terms of the level of analysis),

b. the possibility of globalization creating significant confounding effects when it comes to understanding the industry and market boundaries within which groups are (or should be) formed,

c. a lack of uniformity in terms of the variables used to test for the presence of groups has led to inconsistency in strategic group characteristics and descriptive clarity, and

d. weak empirical evidence regarding differences in performance across strategic groups.

Wiggins and Ruefli (1995) sought to overcome some of these aforementioned methodological challenges and examined the predictive validity of strategic groups across five industries represented in other studies of strategic groups. Instead of relying on the clustering techniques used in previous work, they used Kolmogorov-Smirnov tests and discriminant function analysis to assess the presence of groupings within the data. Nevertheless, even though they were able to establish the presence of stable "strategic groupings" over a 19-year time period they were not able to find any predictive validity of strategic group theory with regard to performance.

In total, while these studies seem intended to steer the field away from its primary focus on a basic classification of groups, as one examines the literature it appears that some of the fundamental issues concerning the evolution of this stream of literature have more to do with the source (i.e., an individual researcher or expert) and perspectives used to determine groups and the context within which the framework is applied (Reger & Huff, 1993). In response to these concerns there have been a number of studies that have sought to define strategic groups from a cognitive perspective rather than one based on an industry's structural characteristics.

Unlike strategic groups that are studied from an Industrial Organization economics perspective, early work in cognitive strategic groups was grounded in social identity theory (Ashforth & Mael, 1989), social learning theory (Bandura, 1986; Peteraf & Shanley, 1997), and management's perceptions of relevant groupings within their industries (cf. Reger & Huff, 1993). Building on and deepening this body of literature, Peteraf and Shanley (1997, p. 166) developed a theory of strategic group identity which first defined said identity as: *"a set of mutual understandings, among members of a cognitive intra-industry group, regarding the central, enduring, and distinctive characteristics of the group."*

Peteraf and Shanley (1997) further clarify the conditions which must exist for a strategic group identity to be present. Specifically, there must be mutual understandings among group members (i.e., members of specific groups have an understanding of the logic governing strategic decisions), the central traits of a particular group must be both identifiable (e.g., product quality, firm size, overlapping social networks) and enduring, and finally, the characteristics undergirding a strategic group identity must be distinctive, thereby allowing one group to be distinguished from another. Peteraf and Shanley (1997, p. 170) also posit that *"firms identify with a group when the association is valuable or when it clarifies their relationship with the broader business environment."* Finally, they suggest that identification with a strategic group can lead to internalization, which in turn has the potential to impact group norms, hiring practices or comfort with risk.

The existence and predictive power of cognitive strategic groups has been empirically studied by a number researchers (e.g., Cheng & Chang, 2009; Ferguson, Deephouse & Ferguson, 2000; Osborne, Stubbart, & Ramaprasad, 2001; Porac, Thomas, & Baden-Fuller, 2011; Porac, Thomas, Wilson, Paton, & Kanfer, 1995; Reger & Huff, 1993). Porac, Thomas and Baden-Fuller (1989) used a qualitative research design within the Scottish knitwear industry and found that the firms within the Scottish sector of a much broader industry possessed (and were able to articulate) beliefs and other cognitive structures that enabled them to understand each other's actions and make sense of the broader competitive environment (including distinguishing between direct and indirect competitors). Reger and Huff (1993) assessed the presence of strategic groups within the U.S. banking industry and found cognitive data could be used to determine the presence and boundaries of various strategic groups. Not only did they find evidence that strategic groups as a cognitive construct existed within their data set, they also found some degree of homogeneity among members within particular groups and that organizations may actually perceive themselves as members of more than one grouping (Anand, Joshi, & O'Leary-Kelly, 2013). Finally, Cheng and Chang (2009) used cluster analysis to determine the presence of cognitive strategic groups in the Taiwanese semiconductor industry. By examining the messages communicated in firms' annual reports they were able to identify five different strategic groups based on specific themes communicated by top management.

While the authenticity and strength of strategic groups as an appropriate lens within which the strategic behavior of firms can—or should—be understood remains controversial

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(Barney & Hoskisson, 1990; Dornier, Selmi, & Delécolle, 2012; Wiggins & Ruefli, 1995), cognitive strategic groups, as one sub-stream within this literature, continues to experience theoretical and empirical development (Anand, Joshi, & O'Leary, 2013). Further, it is important to acknowledge the various controversies around the manner in which strategic groups are best identified. In the next section of this paper, we will attempt to add to this growing body of work by examining the National Football League (NFL) through the lens of strategic groups. In a longitudinal study of strategic groups, Osborne, Stubbart and Ramaprasad (2001) found that the strategic groups originally found in Cool and Schendel (1987) could also be substantiated using cognitive measures (in this case top managements' mental models).

The current study closely follows the work of Osborne, Stubbart, & Ramaprasad (2001) but in reverse. In other words, while there is anecdotal evidence that NFL teams are cognitively perceived as being either strong defensive or offensive teams by various stakeholders, we seek to determine if NFL teams can be first classified into strategic groups based on their objective investment decisions and consequently, if these groupings lead to differences in on-the-field performance or financial performance. As an example of teams being perceived as offensive or defensive, the *Sports Illustrated* 2012 season preview (Banks, 2012a, 2012b) first describes first the Baltimore Ravens as a defensive team ("With Baltimore's still-stout defense, you know you're going to get nine or 10 games a year where the opponent just can't do much damage against the Ravens."), and then describes the New England Patriots as an offensive team ("For the third time in five seasons, the Patriots topped 500 points scored last year (513), joining the Greatest Show on Turf St. Louis Rams of 1999-2001 as the only other club to accomplish that feat."). Finally, this paper also seeks to avoid a common criticism within the strategic groups literature of too much reliance on cluster analysis in the creation of strategic groups (Barney and Hoskisson, 1990).

The NFL consists of thirty-two privately-owned teams (except for the Green Bay Packers, which is a community-owned nonprofit organization) in two conferences playing over 250 games in the regular season plus playoff games to determine a champion. As such, this collection of sports organizations (which make up the NFL) can loosely be considered an industry (Grant, 2008). An industry can be understood as a group of firms which supply a particular market. In the case of the NFL, the market's boundaries are defined by supply-side substitutability. In other words, because only other NFL sports organizations can produce the same or similar products (i.e., professional football), natural market boundaries exists around this collection of organizations. As a collection of sports organizations (or industry), the NFL has a set of mutual understandings around strategic decision making. One example of a mutual understanding governing strategic decisions involves the rules surrounding the acquisition and management of player talent. In this case, all NFL teams follow specific policies such as the use of player salary caps (to limit the money teams can spend on player salaries), a reverse order drafting process for new players (to give earlier draft picks to teams with worse records) and limits on the size of the player roster (i.e., every team is limited to 53 players on the active roster, and can use only 45 for game day, plus an emergency quarterback, if the team has a third quarterback). The intent (or logic) underlying these policies is the creation of competitive balance, which makes the teams of equal "size," which in turn creates greater uncertainty in the outcomes of individual games and who will win the championship (Grier & Tollison, 1994; Zimbalist, 2002).

Further, an NFL team's development as a "strong offense" team or "strong defense" team is not merely the result of happenstance. Rather, it should be viewed as a deliberate strategic

choice, wherein each team decides whether to invest more of their payroll in defensive or offensive players. Unlike many other sports, in the NFL most players are designated as defensive or offensive specialists. In baseball, basketball, and hockey, players must play both offense (score runs or points or goals) and defense (prevent runs or points or goals), except in the American League of Major League Baseball where one player—the Designated Hitter—hits for the pitcher and the pitcher does not bat. Some teams may choose to spend more on defensive player talent, while other teams choose to spend more on offensive player talent. This choice of how to allocate payroll resources not only impacts the balance of superior defensive or offensive skills in either one direction or another, it also serves to crystalize a team's distinctive character as either a "strong defense" team or a "strong offense" team. Collectively, these characteristics also serve to develop a team's reputation further associating the team with a particular group.

Indeed, Ferguson, Deephouse, and Ferguson (2000) assert that individual firms (and their management teams) are not the only stakeholders that are familiar with what is considered the distinct and enduring characteristics of a firm, rather, strategic positioning, strategic group identity, and a strategic group's reputation are inextricably connected. Specifically, they state that core strategy is one of the embodiments of strategic group identity that is projected to the external environment. External stakeholders view this image of each strategic group's identity and form reputations based upon it.

Finally, NFL teams also have a clear measure of on-the field performance, differentiating more from less successful teams (and consequently strategic groups): winning percentage. Teams can also be compared on other measures of on-the-field performance, points allowed and points for, yards allowed and yards gained. NFL teams can also be compared on financial measures of organizational performance: revenues, operating income, and current value. By examining teams' on-the-field performance and financial performance one should be able to see if strategic groups of NFL teams differ on these performance measures.

In the next section of this paper, we will explore whether a specific strategic decision (resource allocation as measured by payroll) has an impact on on-the-field performance and financial performance of NFL teams.

Method

NFL team payroll data was obtained from Sportrac.com, a website that tracks NFL player contract terms by team. The "Average Salary" data for the 2012 season were used; contracts are typically described as a total sum of money over a number of years although player contracts vary on the amount of guaranteed money and what year of the contract that money is due. Total team payrolls ranged from $81.3 million to $151.5 million, with a mean of $127.7 million, and a median of $126.3 million. Players were classified as playing on Offense (e.g., quarterback, wide receiver) or Defense (e.g., Cornerback, Linebacker). Special Teams players (e.g., punters, kickers) were excluded. Team on-the-field performance data on Winning Percentage, Points Allowed, Points For, Yards Allowed, and Yards Gained was obtained from Pro-Football-Reference.com, which has extensive data on team performance. Team financial data on Revenues, Operating Income, and Current Value was obtained from Forbes.com (Ozanian, Badenhausen, & Settimi, 2012).

The product that NFL teams sell is NFL football games. To create a team, the primary resource is player talent, and different teams may use systematically different strategies for investing in player talent. The team payroll data were used to distinguish potential differences

among the teams based on two ideas: 1) overall team spending on player talent; and 2) the type of talent teams choose to acquire. In other words, teams that have a more defensive strategy will spend more money on defensive players, and teams that have a more offensive strategy will spend more money on offensive players. Teams which spent above the median ($126.3 million) of the NFL for the 2012 season and spent more money on defense than offense were put into the "Defense Wins Championships" strategic group. Teams which spent above the median and spent more money on offense than defense were put into the "Offense is the Best Defense" group. Teams which spent below the median of the NFL and spent more money on defense were put into the "Keep the Games Close to Win" strategic group, and those that spent more money on offense were put into the "Give the Fans a Show" group. The two dimensions used here indicate different strategies for managing NFL teams' most important resource, namely total investment in player resources (total payroll) and differing priority for investment (in defense or offense). The list of NFL teams by strategic group is shown in Table 1.

Table 1

Strategic Groups for NFL Teams

	Total Payroll 2012	
Payroll Priority	Below the Median	Above the Median
Spend more on Offense	**Give the Fans a Show** *Arizona Cardinals* *Atlanta Falcons* *Carolina Panthers* *Minnesota Vikings* *New York Jets* *Oakland Raiders* *San Diego Chargers* *St Louis Rams* *Tampa Bay Buccaneers*	**Offense is the Best Defense** *Chicago Bears* *Dallas Cowboys* *Denver Broncos* *Detroit Lions* *Houston Texans* *New England Patriots* *New Orleans Saints* *New York Giants* *Philadelphia Eagles* *Seattle Seahawks* *Tennessee Titans* *Washington Redskins*
Spend more on Defense	**Keep the Games Close** *Buffalo Bills* *Cincinnati Bengals* *Cleveland Browns* *Green Bay Packers* *Jacksonville Jaguars* *Miami Dolphins* *Pittsburgh Steelers*	**Defense Wins Championships** ***Baltimore Ravens**** *Indianapolis Colts* *Kansas City Chiefs* ***San Francisco 49ers***
Note. In the 2012 NFL season, the two teams in the Super Bowl were the Baltimore Ravens and the San Francisco 49ers, won by the Baltimore Ravens.		

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Results

As a manipulation check, the above-the-median total payroll teams were compared to the below-the-median teams, on total payroll. There should be a significant difference in total payroll; if there is not it would mean that all of the teams spent about the same on payroll. There was a significant difference between high and low payroll teams on total payroll, $F(1, 30) = 44.61$, $p < .001$, with means of \$139 million and \$116 million. As a second manipulation check, the 10 teams that spent more in total payroll on defense were compared to the 22 teams that spend more in total payroll on offense, to see if there was a significant difference in total payroll. There was no significant difference, $F(1, 30) = 0.09$, $p = .761$. Teams with a defense priority had a mean payroll of \$126 million compared to teams with an offense priority of \$128 million. This indicates that payroll priority (defense or offense) is a different dimension from total payroll.

The categorization of the 32 NFL teams into four strategic groups was based on two dimensions: how much money was invested in player talent, and whether more was invested in defense or offense. Total Payroll, Defense Payroll, and Offense Payroll for the four strategic groups are shown in Table 2. In the 2012 season, the San Francisco 49ers and the Baltimore Ravens played in the Super Bowl (the NFL championship game), won by the Baltimore Ravens. Both of these teams were in the Defense Wins Championships strategic group, spending above the median in total payroll, and spending more for defense than offense. The Baltimore Ravens total payroll was \$129.9 million, \$65.7 million for defense and \$64.2 million for offense; the San Francisco 49ers total payroll was \$134 million, \$70.0 million for defense and \$64.1 million for offense.

Table 2

Means and Standard Deviations for Total Payroll, Defense Payroll, and Offense Payroll by Strategic Groups

Strategic Group	Total Payroll ($Millions)	Defense Payroll ($Millions)	Offense Payroll ($Millions)
All	$127 (14.9)	$61 (9.8)	$66 (11.1)
Offense is the Best Defense	$140 (8.2)	$63 (6.6)	$76 (4.7)
Defense Wins Championships	$137 (7.9)	$73 (6.0)	$64 (3.8)
Give the Fans a Show	$115 (13.6)	$51 (7.0)	$64 (10.2)
Keep the Games Close	$118 (7.4)	$65 (7.9)	$52 (4.6)
Note. Dollar values in table are in millions of dollars.			

Hypothesis 1: Strategic Groups and On-the-Field Performance

To test for the presence of strategic groups, we first tested for on-the-field performance differences. An ANOVA was calculated using strategic group as the classification variable and

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Winning Percentage as the dependent variable. There was no significant difference among the four strategic groups, $F(3, 28) = 0.68$, $p = .571$. Levene's Test for Homogeneity of Variances Based on Mean was not statistically significant, 0.66, $p = .583$, so an equal variances post hoc test could be used. Tukey's tests were calculated to test for differences between each pair of the four strategic groups, and none of the paired comparisons were statistically significant.

Winning Percentage is the best measure of organizational performance for NFL teams, because their goal is to win games and championships. To win a game, of course, one team must score more points than the other team (no matter how many points they score or how many points they allow), so we used two additional measures of on-the-field performance to test for differences among the strategic groups, Points Allowed and Points For. The two correlations between Winning Percentage and Points Allowed and Points For are high, indicating that these measures of on-the-field performance are correlated with winning percentage, but they are not measuring the same thing. The correlation between Winning Percentage and Points Allowed was $r(32) = -.74$, $p < .001$, and between Winning Percentage and Points For was $r(32) = .79$, $p < .001$. The correlations among the on-the-field performance measures are shown in Table 3.

Table 3

Correlations Among the On-the-Field and Financial Performance Measures

On-the-Field Measures	Winning Percentage	Points Allowed	Points For	Yards Allowed
Winning Percentage	-			
Points Allowed	-.74*	-		
Points For	.79	-.39	-	
Yards Allowed	-.27	.63*	.06	-
Yards For	.46	.00	.78*	.21
Financial Measures	Revenues	Operating Income		
Revenues	-			
Operating Income	.94*	-		
Current Value	.96*	.89*		
Note. * < .05. Bonferonni corrected probabilities.				

The ANOVA showed that there was no significant difference among the four strategic groups in Points Allowed, $F(3, 28) = 0.03$, $p = .992$, but there was a significant difference in Points For, $F(3, 28) = 2.98$, $p = .049$. Levene's Test for Homogeneity of Variance Based on Mean for Points Allowed was not statistically significant, 2.72, $p = 0.063$, and not statistically significant for Points For, 0.22, $p = .881$, so the Tukey equal variance post hoc test could be used to test for pairwise comparisons, and none of the paired comparison tests were statistically significant for Points Allowed or Points For.

Still more basic measures of on-the-field performance are Yards Allowed and Yards Gained. In general, to win games the offense must gain some yards to score points (Yards Gained), and the defense must not give up many yards to prevent points from being scored (Yards Allowed). The two correlations between Winning Percentage and Yards Allowed and Yards Gained were moderate, again indicating that there is some association between these on-

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the-field performance measures and winning percentage, but they are not identical. The correlation between Winning Percentage and Yards Allowed was $r(32) = -.27$, $p = .133$, and between Winning Percentage and Yards Gained was $r(32) = .46$, $p = .009$.

The ANOVA showed that there was no significant difference in Yards Allowed, $F(3, 28) = 0.15$, $p = .931$, but there was a significant difference in Yards Gained, $F(2, 28) = 4.08$, $p = .016$. Levene's Test for Yards Allowed was not statistically significant, 1.39, $p = .266$, and not statistically significant for Yards Gained, 1.26, $p = .309$, so Tukey post hoc tests were used for pairwise comparisons. There was one significant pairwise difference in Yards Gained between the "Offense is the Best Defense" and "Give the Fans a Show" groups. The means of the on-the-field performance measures by strategic group are shown in Table 4, and the results of the ANOVAs are shown in Table 5.

The four strategic groups were also compared on the set of five on-the-field performance measures. A MANOVA was calculated using strategic groups as the classification variable and Winning Percentage, Points Allowed and Points For, Yards Allowed and Yards Gained as dependent variables. The MANOVA was not statistically significant, $F(15, 66) = 1.25$, $p = .262$, and none of the paired comparisons were statistically significant. These results are shown in Table 6. A summary of the post hoc paired comparison tests for the on-the-field performance measures are shown in Figure 2.

Based on the ANOVAs on winning percentage, points against and points for, yards allowed and yards for, and all five on-the-field performance measures taken together in a MANOVA, we found little support for Hypothesis 1, the four strategic groups did not differ in on-the-field performance.

Hypothesis 2: Strategic Groups and Financial Performance

As a second test for the presence of strategic groups in the NFL, we tested for differences in three financial performance measures. The correlation between Revenues and Operating income was $r(32) = .94$, $p < .001$, between Revenues and Current Value was $r(32) = .96$, $p < .001$, and between Operating Income and Current Value was $r(32) = .89$, $p < .001$. The means for the three financial performance measures, Revenue, Operating Income, and Current Value by strategic group are shown in Table 4.

ANOVAs were calculated using strategic groups as the classification variable, and either Revenues, Operating Income, or Current Value as the dependent variable. There was a significant difference among the four strategic groups, $F(3, 28) = 3.72$, $p = .023$ on Revenues. Levene's Test for Homogeneity of Variances Based on Mean was statistically significant, 4.15, $p = .015$, so an unequal variances post hoc test was used. Games-Howell tests were calculated to test for differences between each pair of the four strategic groups, and none of the paired comparisons were statistically significant. There was also a significant difference among the four strategic groups on Operating Income, $F(3, 28) = 3.72$, $p = .023$. Levene's Test was statistically significant for Operating Income, 3.12, $p = .042$, and the Games-Howell tests showed a significant difference between the "Give the Fans a Show" and "Defense Wins Championships" strategic groups. There was also a significant difference and on Current Value, $F(3, 28) = 4.24$, $p = .014$. Levene's Test was statistically significant for Current Value, 3.27, $p = .036$, and the Games-Howell tests showed a significant difference between "Give the Fans a Show" and "Offense is the Best Defense." The results of the ANOVA's are shown in Table 5.

On-the-Field Performance Measure	Post Hoc Differences Among Strategic Groups	
Winning Percentage	Give the Fans a Show	Offense is the Best Defense
	Keep the Games Close	Defense Wins Championships
Points Allowed and Points For	Give the Fans a Show ⟷	Offense is the Best Defense
	Keep the Games Close	Defense Wins Championships
Yards Allowed and Yards Gained	Give the Fans a Show ⟷	Offense is the Best Defense
	Keep the Games Close	Defense Wins Championships
Winning Percentage Points Allowed and Points For Yards Allowed and Yards Gained	Give the Fans a Show	Offense is the Best Defense
	Keep the Games Close	Defense Wins Championships
Note. Arrows indicate significant differences between the two strategic groups.		

Figure 1. Summary of Statistically Significant Post Hoc Differences between Strategic Groups for On-the-Field Performance Measures

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Table 4

Means of On-the-Field Performance and Financial Performance by Strategic Groups

	On-the-Field Performance				
Strategic Group	Winning Percentage	Points Allowed	Points For	Yards Allowed	Yards Gained
Offense is the Best Defense	.552	367.6	410.4	5,633.3	5,945.4
Defense Wins Championships	.539	357.3	340.8	5,504.3	5,584.0
Give the Fans a Show	.462	364.1	334.9	5,534.7	5,266.9
Keep the Games Close	.438	362.0	335.6	5,477.0	5,240.6
	Financial Performance				
Strategic Group	Revenues ($mil)	Operating Income ($mil)	Current Value ($mil)		
Offense is the Best Defense	312.8	68.8	1297.3		
Defense Wins Championships	262.8	46.9	1123.5		
Give the Fans a Show	249.0	15.5	955.6		
Keep the Games Close	254.0	23.2	964.9		

The four strategic groups were also compared on the set of three financial performance measures. This MANOVA was statistically significant, $F(9, 63) = 3.23$, $p = .003$, and four of the paired comparisons using all three financial performance measures were also statistically

Table 5

Analysis of Variance on Strategic Groups for On-the-Field Performance and Financial Performance

On-the-Field Performance Measure	F	df	p
PCT	0.68	3, 28	.571
Points Allowed	0.32	3, 28	.992
Points For	2.98*	3, 28	.049
Yards Allowed	0.15	3, 28	.931
Yards Gained	4.08*	3, 28	.016
Financial Performance Measure	F	df	p
Revenues	3.72*	3, 28	.023
Operating Income	3.72*	3, 28	.023
Current Value	4.24*	3, 28	.014
Note. * $p < .05$.			

Table 6

MANOVA and Post Hoc Tests for Differences Among Strategic Groups on On-the-Field Performance and Financial Performance

Performance Measures	F	p	Paired Comparison	Hotelling's T-Square	p
On-the-Field	1.25	.262			
Winning Percentage Points Allowed Points For Yards Allowed Yards Gained			Keep the Games Close & Defense Wins Championships	7.31	.588
			Keep the Games Close & Offense is the Best Defense	9.02	.294
			Keep the Games Close & Give the Fans a Show	0.73	.989
			Defense Wins Championships & Offense is the Best Defense	11.22	.245
			Defense Wins Championships & Give the Fans a Show	4.98	.685
			Offense is the Best Defense & Give the Fans a Show	11.05	.185
Financial Performance	3.23	.003			
Revenues Operating Income Current Value			Keep the Games Close & Defense Wins Championships	16.79*	.050
			Keep the Games Close & Offense is the Best Defense	9.01	.087
			Keep the Games Close & Give the Fans a Show	0.38	.954
			Defense Wins Championships & Offense is the Best Defense	13.39*	.039
			Defense Wins Championships & Give the Fans a Show	19.07*	.023
			Offense is the Best Defense & Give the Fans a Show	11.67*	.039
Note. * $p < .05$.					

Discussion

Although the concept of strategic groups within a single industry has a long history, and has been tested in various ways, it has been hampered by the methods used to assign organizations to strategic groups (e.g., based either on expert judgments or statistical methods such as cluster analysis). Within the current study we tested the concept of strategic groups using an objective method to assign the various organizations in the NFL to strategic groups (i.e., the organizations' investment decisions regarding player talent) and clear performance measures

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Financial Performance Measure	Post Hoc Differences Among Strategic Groups		
Revenues	Give the Fans a Show	Offense is the Best Defense	
	Keep the Games Close	Defense Wins Championships	
Operating Income	Give the Fans a Show	Offense is the Best Defense	
	Keep the Games Close	Defense Wins Championships	
Current Value	Give the Fans a Show	Offense is the Best Defense	
	Keep the Games Close	Defense Wins Championships	
Revenues & Operating Income & Current Value	Give the Fans a Show	Offense is the Best Defense	
	Keep the Games Close	Defense Wins Championships	
Note. Arrows indicate significant differences between the two strategic groups.			

Figure 2. Summary of Statistically Significant Post Hoc Differences between Strategic Groups for Financial Performance Measures

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used by all of the organizations to measure on-the-field performance (winning percentage, points, and yardage) and financial performance (Revenues, Operating Income, and Current Value). The NFL provides an appropriate context to study this phenomenon because it is one example of an industry whose boundaries are clear; in other words, from a supply substitutability perspective, there are no other firms (with the exception of those belonging to other professional football leagues) that should be included within the boundaries of this market. If strategic groups are a useful concept, performance differences should be found in this market, which has natural market boundaries and mutual understandings around strategic decision making.

Our data revealed that strategic groups do exist in the NFL and can be distinguished based on total level of payroll investment in player resources and differing priority for investment in defense or offense. We found mixed evidence of performance differences among the strategic groups. There was some evidence of on-the-field performance differences, and stronger evidence of financial performance differences. While this study provides some additional empirical evidence for the strength of strategic group membership as a significant predictor of performance, given the nature of the current data context the results may not be broadly generalizable to industries where boundaries are more easily blurred.

For the five on-the-field performance measures, we found no significant difference in Winning Percentage among the four strategic groups, and the post hoc tests showed no significant difference between any pair of strategic groups. Further, we found no significant difference among the strategic groups in Points Allowed or Yards Allowed. We did find an overall significant difference in Points For, although the post hoc tests showed no significant difference between any pair. We also found an overall significant difference in Yards Gained, with one of the post hoc tests showing a significant difference between the "Offense is the Best Defense" and "Give the Fans a Show" strategic groups. Finally, when the set of five on-the-field performance measures (Winning Percentage, Points Allowed, Points For, Yards Allowed, and Yards Gained) was used to test for differences among the strategic groups, there was no overall significant difference, although there was one post hoc test that was significant, again between the "Offense is the Best Defense" and "Give the Fans a Show" strategic groups.

When we tested for differences among the strategic groups on the financial performance measures, the results gave stronger support for the existence of strategic groups. We found significant differences in Revenues, Operating Income, and Current Value. There were significant differences between some pairs of strategic groups, none on Revenues; between "Defense Wins Championships" and "Give the Fans a Show" and between "Offense is the Best Defense" and "Give the Fans a Show" on Operating Income; and between "Offense is the Best Defense" and "Give the Fans a Show" on Current Value. Finally, when the set of three financial performance measures was used to test for differences among the strategic groups, there was an overall significant difference, and four of the paired comparisons were significant "Defense Wins Championships" and "Keep the Games Close," between "Defense Wins Championships" and "Offense is the Best Defense," between "Defense Wins Championships" and "Give the Fans a Show," and between "Give the Fans a Show" and "Offense is the Best Defense."

The data used here provided an ideal opportunity to test the idea of strategic groups having performance differences. Some evidence of on-the-field performance differences was found, and stronger evidence of financial performance differences was found, using multiple measures. Prior researchers sometimes found evidence of performance differences among strategic groups, and sometimes not. The concept of strategic groups may work better in an industry with clear boundaries such as the NFL. Future research might examine another industry

with similarly clear boundaries to test for the presence of strategic groups, or compare multiple industries with either clear or less clear boundaries.

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