

Ranking Outstanding Sports Records

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Goal of Paper

1. Address several key questions --

- What makes a “great” sports record?
- What factors separate “good” records from “great” records?
- What are the “great” sports records?

2. Rank the greatest active sports records –

- season records
- career or multiple-year records
- daily or single-game records

Motivation

- 1. It's fun to argue the merits of your favorite sports records. E.g.,**
 - Ted Williams vs. Joe DiMaggio?
 - Eric Dickerson vs. O. J. Simpson?
 - Michael Jordan vs. Wilt Chamberlain?
 - Will Beamon's record fall by 1990?
- 2. It's a challenge since comparison of sports records must be carried out in a rigorous and comprehensive manner and employ a formal ranking method.**

Two Levels of Paper

- 1. Sports fans should find paper to be thought-provoking.**
- 2. Nontrivial application of analytic hierarchy process (AHP).**
 - data requirements are numerous
 - subjective judgments are required
 - each hierarchy is full
 - complicating issues

The Records Themselves

- 1. Measurable achievements**
- 2. Relatively recent (after 1920)**
- 3. Historical data available**
- 4. Professional athletes in team sports (primarily)**

Great Season Records

	Sport	Athlete	Year	Record
Hitting Streak	B	Joe DiMaggio	1941	56
Home Runs	B	Roger Maris	1961	61
Slugging Average	B	Babe Ruth	1920	.847
Runs Batted In	B	Hack Wilson	1930	190
Scoring Average	BA	Wilt Chamberlain	1961-62	50.4
Yards Gained Rushing	F	Eric Dickerson	1984	2105
Points Scored	F	Paul Hornung	1960	176
Points Scored	H	Wayne Gretzky	1985-86	215

B: Baseball

BA: Basketball

F: Football

H: Hockey

Great Career Records

	Sport	Athlete	Year	Record
Home Runs	B	Henry Aaron	1954-76	755
Stolen Bases	B	Lou Brock	1961-79	938
Hits	B	Pete Rose	1963-86	4256
Slugging Average	B	Babe Ruth	1914-35	.690
Strikeouts	B	Nolan Ryan	1966-86	4277
Points Scored	BA	K. Abdul-Jabbar	1970-86	36474
Points Scored	F	George Blanda	1949-75	2002*
Yards Gained Rushing	F	Walter Payton	1975-86	16193
Consecutive Games, Touchdown Passes	F	Johnny Unitas	1956-60	47
Points Scored	H	Gordie Howe	1947-80	2358**

* includes point totals from the AFL

** includes point totals from the WHA

Great Day/Game Records

	Sport	Athlete	Year	Records
Points Scored	BA	Wilt Chamberlain	1962	100
Yards Gained Rushing	F	Walter Payton	1977	275
Yards Gained Passing	F	Norm Van Brocklin	1951	554
Long Jump	TF	Bob Beamon	1968	29'2 ½"

TF: Track and Field

Data Collection Obstacles

- 1. Lots of data**
- 2. Different leagues (e.g., NFL & AFL)**
- 3. Different length seasons**
- 4. Degree of specialization**

Runs Batted In Data Set

Best Marks of All Time

1.	Hack Wilson	1930	190
2.	Lou Gehrig	1931	184
3.	Hank Greenberg	1937	183
4.	Lou Gehrig	1927	175
5.	Jimmie Foxx	1938	175

Runs Batted In Data Set -- continued

Best Marks Prior to 1930

1.	Lou Gehrig	1927	175
2.	Babe Ruth	1921	171
3.	Babe Ruth	1927	164
4.	Hack Wilson	1929	159
5.	Al Simmons	1929	157

Runs Batted In Data Set -- continued

1930 Contemporaries

1.	Lou Gehrig	174
2.	Chuck Klein	170
3.	Al Simmons	165
4.	Jimmie Foxx	156
5.	Babe Ruth	153

Comparison Methodology

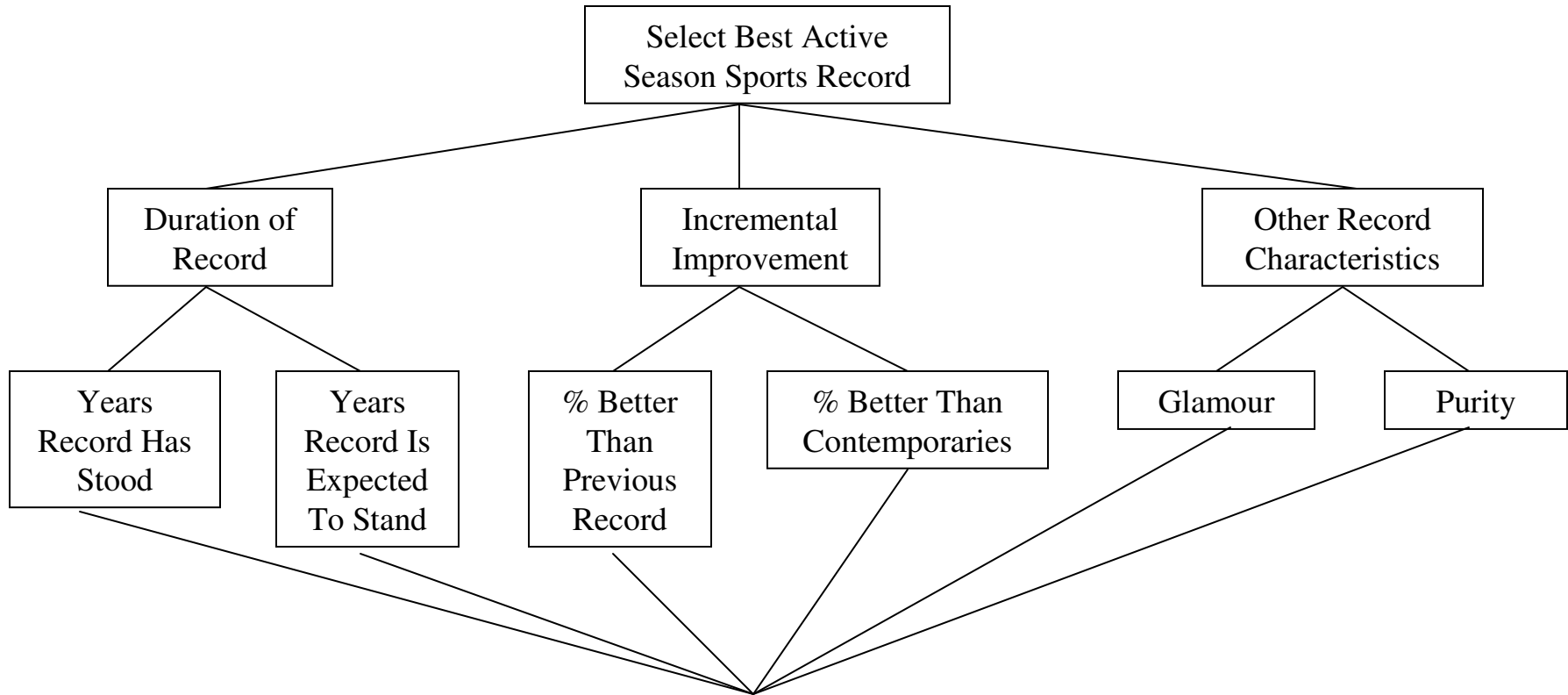
The Analytic Hierarchy Process

- Developed by TL Saaty
- Uses pairwise comparisons
- Eigenvalues lead to priorities on weights
- Allows the combination of subjective with objective judgments

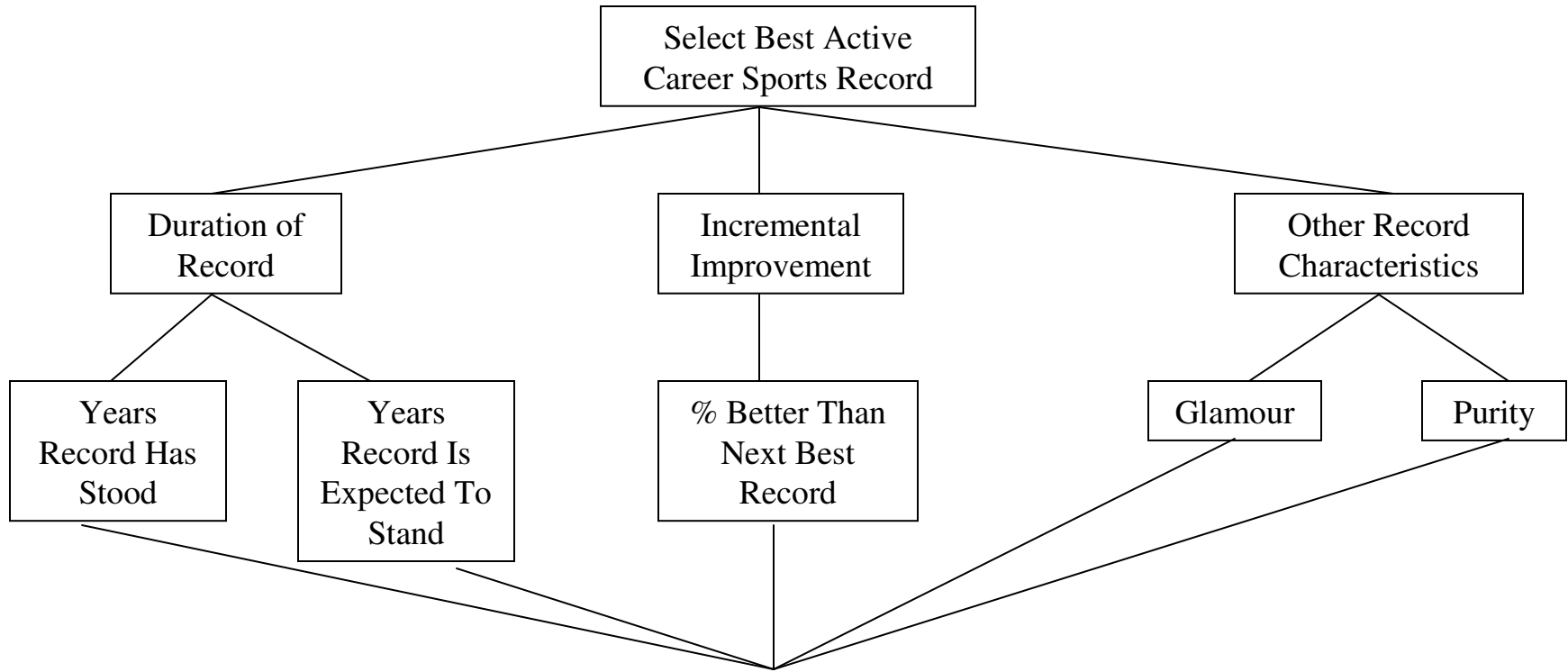
Comparison Methodology -- continued

Example:

	Duration	Improvement	Other
Duration	1	3/2	3
Improvement	2/3	1	2
Other	1/3	1/2	1

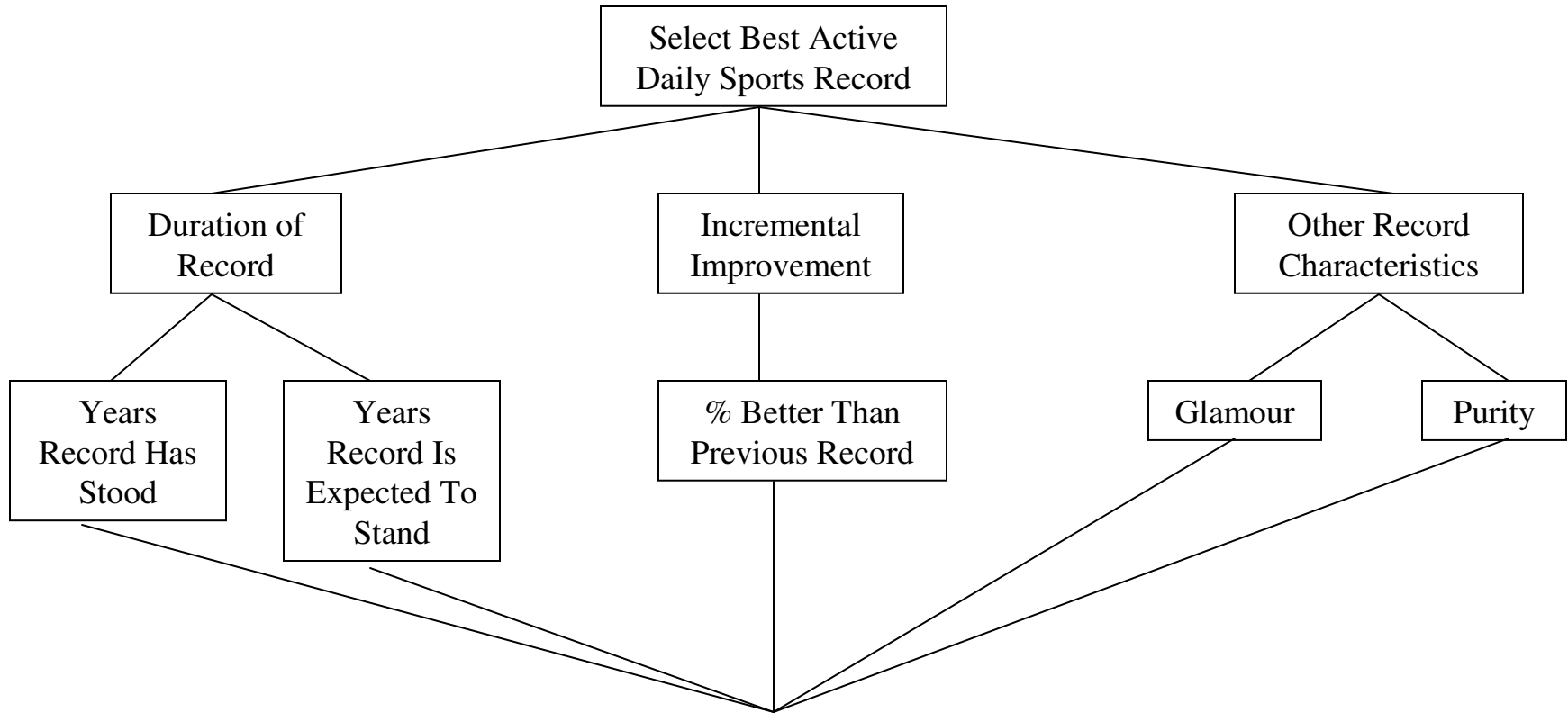


DiMaggio	56 game hitting streak
Maris	61 home runs
Ruth	.847 slugging average
Wilson	190 runs batted in
Chamberlain	50.4 scoring average
Dickerson	2105 yards gained rushing
Hornung	176 points scored
Gretzky	215 points scored

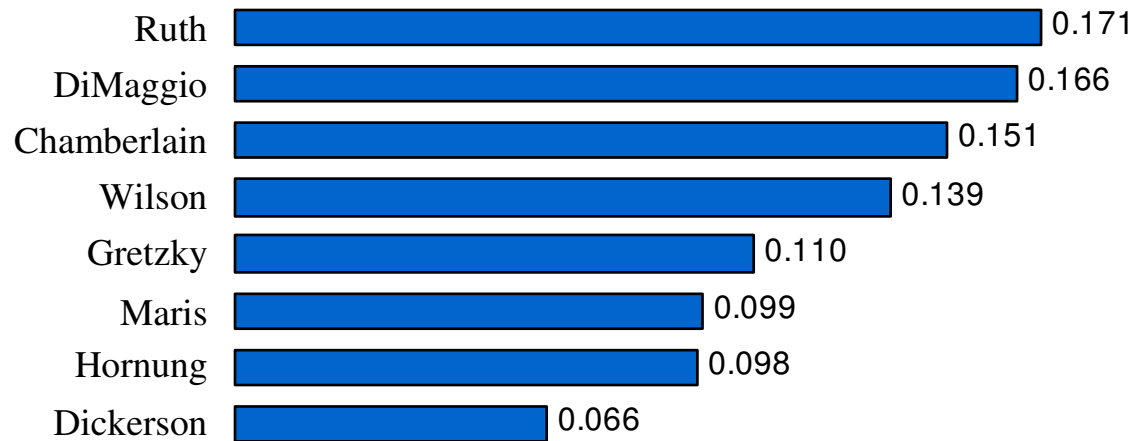
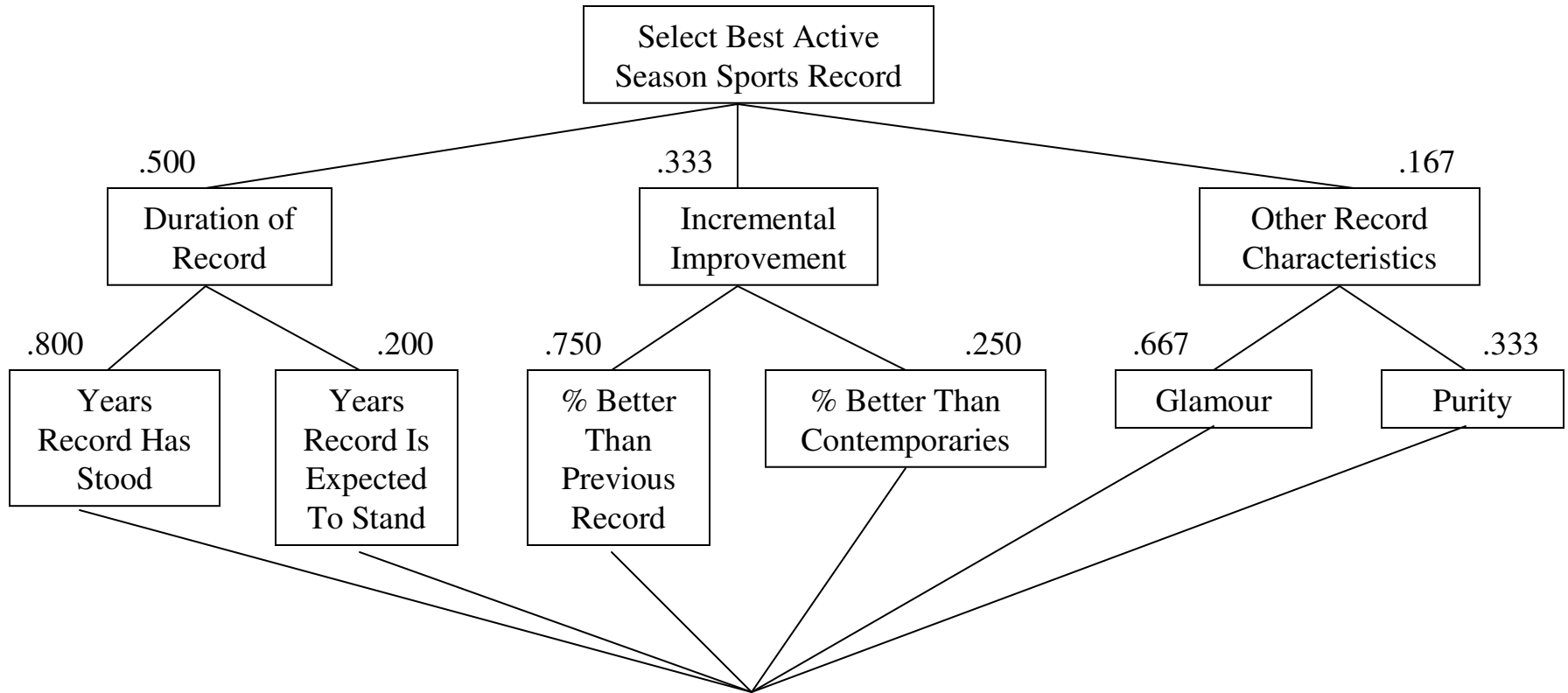


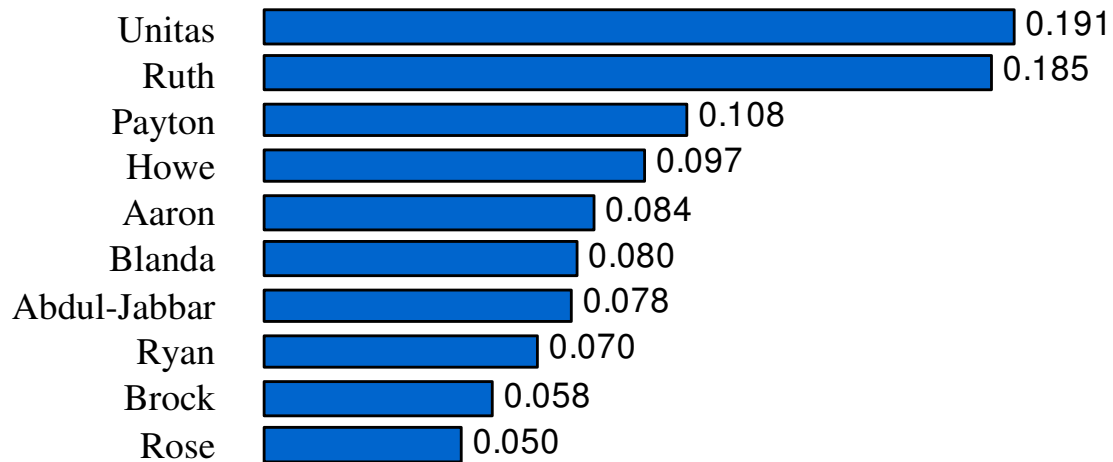
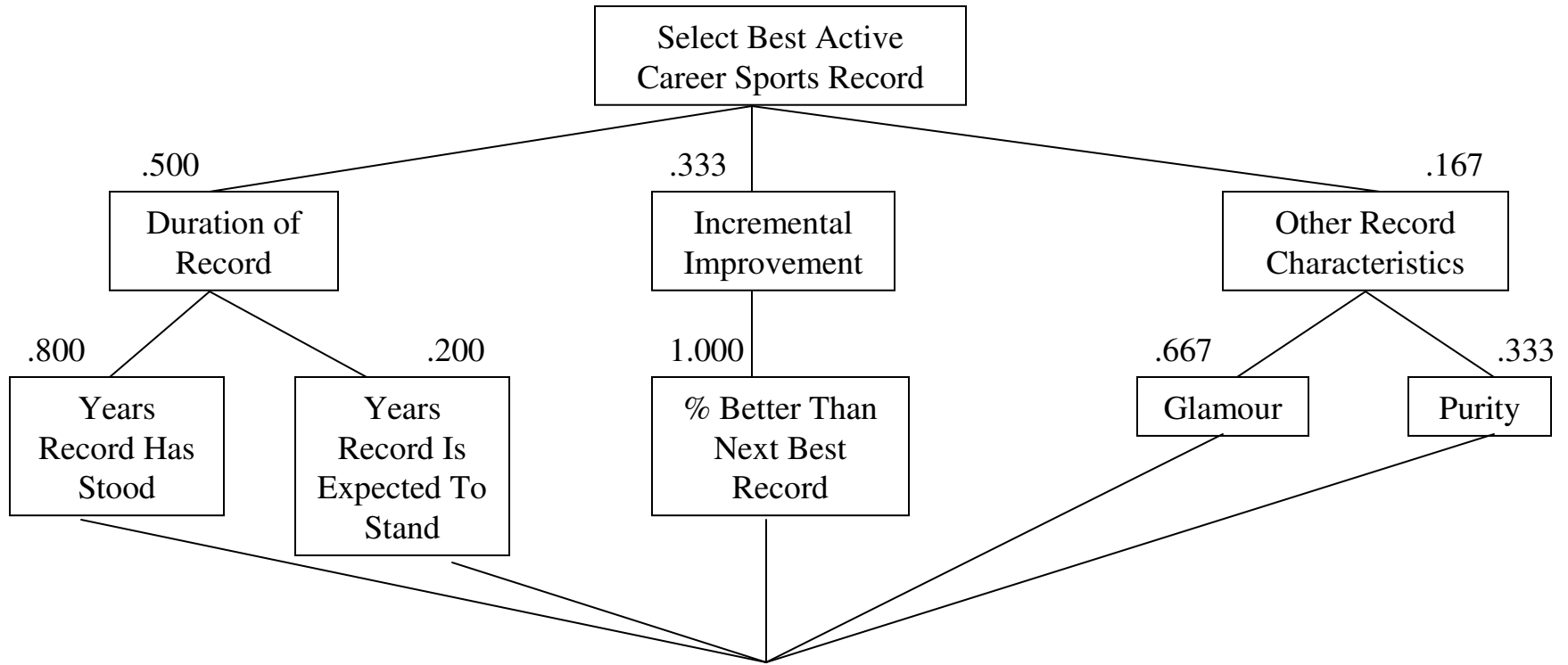
Aaron	755 home runs
Brock	938 stolen bases
Rose	4256 hits
Ruth	.690 slugging average
Ryan	4277 strikeouts*
Abdul-Jabbar	36474 points scored*
Blanda	2002 points scored
Payton	16193 yards gained rushing*
Unitas	47 consecutive games, touchdown passes
Howe	2358 points scored

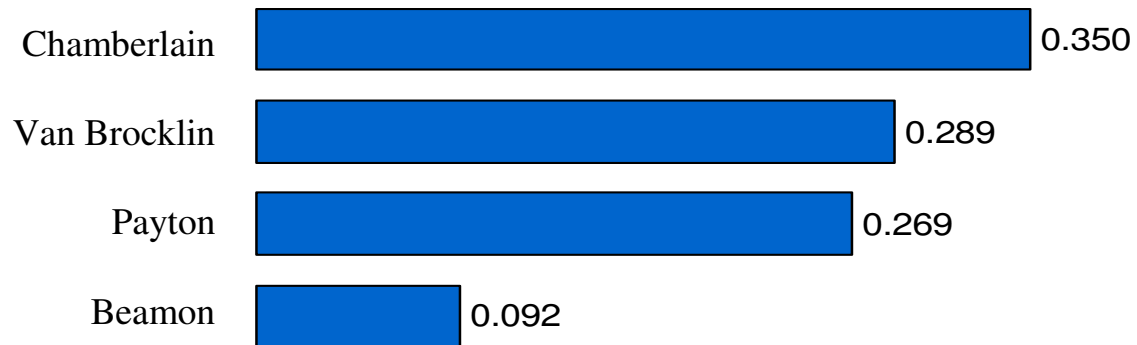
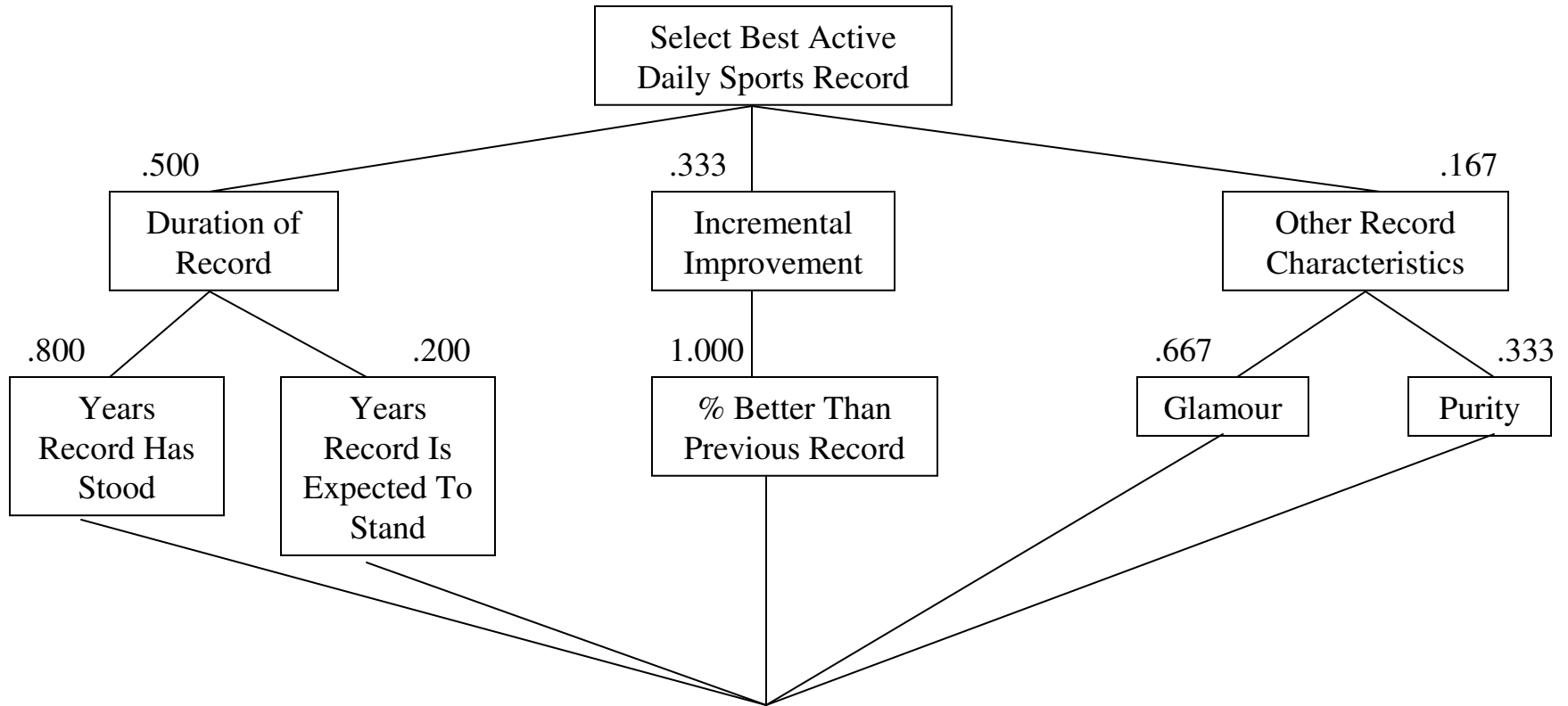
* athlete still active



Chamberlain	100 points scored
Payton	275 yards gained rushing
Van Brocklin	554 yards gained passing
Beamon	29' 2 1/2" long jump







Results of Comparison

- **Season Record**
 - Babe Ruth .847 slugging average
 - Joe DiMaggio 56 game hitting streak
- **Career Record**
 - Johnny Unitas 47 consecutive games, touchdown passes
 - Babe Ruth .690 slugging average
- **Daily Record**
 - Wilt Chamberlain 100 points scored