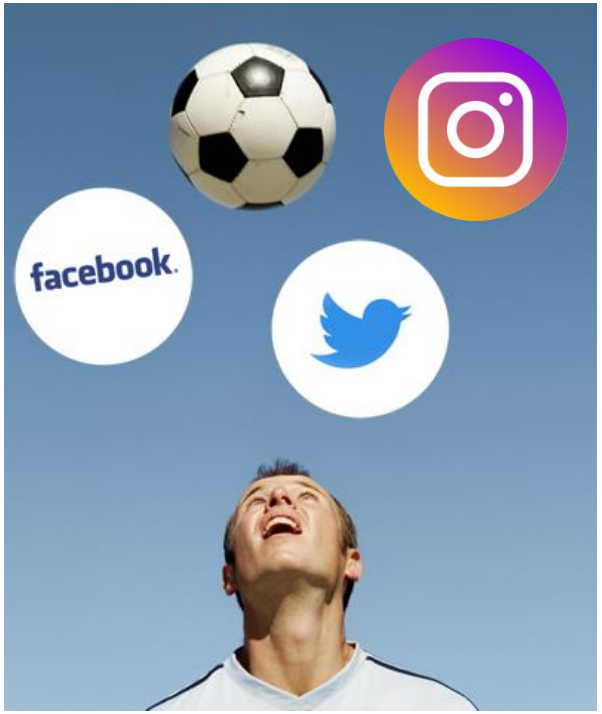
“FOLLOWER AND LIKES PAIRED WITH GOALS AND TACKLES” – SOCIAL MEDIA BRAND VALUE ON FOOTBALL PLAYER MARKETS

27th EASM Conference 2019

Work in progress



Credits: https://www.agovvmuseum.nl

Dr. Christoph Buck
Sebastian Ifland
Dr. Michael Renz

University of Bayreuth

michael.renz@uni-bayreuth.de

Sevilla 04.09.2019

1. Motivation

The case of James Rodriguez (Bayern Munich)

© dpa / Matthias Balk

- **92 Mio. Followers** (June 2018) on FB, IG, TW
- **4th** behind Ronaldo, Messi and Neymar
- Actual SM reach 15% of followers, **CPM ≈ 20€** (web-netz, 2019)
- Advertising value (3 channels): 278.400 €/post, **67.929.600 €/season**
- Option to **buy** from Real Madrid for **42 Mio. €**

Research Question:

- Is the social media advertising value adequately reflected in players market values ?
- Is the social media advertising value adequately reflected in clubs transfer activities ?

2. Theoretical Considerations

Player´s market value

- **Market value:** represents the monetary amount a club is **willing to pay** in order to contractually bind this athlete (Herm, et al. 2014)
- Sum of the discounted **marginal revenue product** (MRP)
- MRP= revenue the **club** can generate from **player's** marginal productivity (Rosen & Sanderson 2001)
- Player`s related revenue is related to **different** aspects (Gerrard, 2014):

MRP = (PWC x MWR) + PBV

PWC *Player´s* ***w****in* ***c****ontribution*
MWR *Marginal* ***w****in (club related)* ***r****evenue*
PBV *Player´s* ***b****rand* ***v****alue*

- Additional and often disproportionate revenues merely due to the player brand value often referred to so called **super star effects** (Nüesch 2007)

2. Theoretical Considerations

Player´s market value

- Social media (SM) **platforms** such as Twitter, Instagram and Facebook disrupt marketing world and increase the player related value creation potentials
- Player´s values become **more complex** and less connected to sporting value

© ap

- Empirical work already validated the influence of player´s **popularity and media coverage** on his market value (Müller et al., 2017)
- Research gap regarding the empirical analysis of **social media induced brand value**

3. Methodology and Results

Dataset

- 619 officially registered players from German Bundesliga season 2018/19
- Individual player characteristics:
  - 10 variables regarding social media reach (SM) (Instagram, Facebook, Twitter)
  - 8 player characteristics (PL) (age, position, height, strong foot)
  - 20 performance characteristics (PC) (Bundesliga.de)
  - Market value of the player (transfermarkt.de) -> crowd judgement (Herm et al. 2014, Gerhards et al. 2014, Surowiecki 2004)
  - In total 23.5222 data points
- Criterion: only players > 30 minutes playing time during season -> **n= 430** players

3. Methodology and Results

Dataset – performance and player characteristics (selection)

Variable	N	Maximum		Mean	Std. Deviation
age	439	39	Claudio Pizarro (Werder Bremen)	24,90	4,18
height	439	1,98	Naldo (Schalke)	1,83	0,06
market value (Juli 2018)	429	90.000.000	Robert Lewandowski (Bayern Munich)	7.652.596,62	10.947.149,79
crosses	439	111	Nico Schulz (Hoffenheim)	14,12	20,58
successful_passes_%	101	95	Niklas Süle (Bayern Munich)	80,58	8,98
assists	439	14	Jadon Sancho (Borussia Dortmund)	1,50	2,27
goals	439	22	Robert Lewandowski (Bayern Munich)	2,09	3,40
shots	439	141	Robert Lewandowski (Bayern Munich)	18,06	20,84
aerialduelswon	439	205	Sebastian Haller (Frankfurt)	28,14	30,28
duelswon	439	459	Sebastian Haller (Frankfurt)	137,35	104,38
shotssaved_gk	32	156	Michael Esser (Hannover)	60,75	47,68
distance_in_km	439	409,20	Maximilian Eggestein (Werder Bremen)	160,05	107,02
fouls	439	70	Ondrej Duda (Hertha Berlin)	15,14	12,69
intensive runs	439	2.841	Wout Weghorst (Wolfsburg)	794,36	691,72
possession	439	3.369,00	Joshua Kimmich (Bayern Munich)	809,30	668,26
sprints	439	967,00	Thorgan Hazard (Mönchengladbach)	285,66	228,43
yellow	439	10	Ayhan (Düsseldorf), William (Wolfsburg), Ascacibar (Stuttgart)	2,22	2,09
penalties scored	439	4	Caligiuri (Schalke), Lukebakio (Hertha), Weghorst (Wolfsburg)	0,16	0,62
shotsagainstpostbar	439	5	Ishak Belfodil (Hoffenheim)	0,46	0,86
points per game	439	3,00	Marvin Hitz (Dortmund)	1,34	0,67
playing time in min	439	3.060	Joshua Kimmich (Bayern Munich	1.357,84	913,59
contract_duration	421	60,00	Weston McKennie (Schalke)	24,29	14,94
in_team_since_months	434	143,00	Franck Ribery (Bayern Munich)	33,49	27,49

3. Methodology and Results

Dataset – social media reach (selection)

		IG_Follower	FB_Follower	TW_follower	SM_total_reach
N		430	430	430	430
Mean		407.659	300.768	157.191	865.619
Std. Deviation		2381.049	1926.800	1.006.594	5.237.138
Maximum		42.700.000 (James Rodriguez)	31.985.904 (James Rodriguez)	18.300.000 (James Rodriguez)	92.985.904 (James Rodriguez)
Percentiles	10	0	0	0	0
	20	4.096	0	0	7.717
	30	12.200	0	0	14.438
	40	20.800	0	0	24.920
	50	30.350	0	0	42.550
	60	45.860	145	0	64.722
	70	76.930	9.981	2.251	122.120
	80	161.400	36.670	21.920	276.851
	90	518.700	160.982	155.700	913.046
no professional SM-profile (<10.000 Follower)		116 (26,4%)	308 (70,2%)	330 (75,2%)	106 (24,1%)

3. Methodology and Results

OLS Regression models – dependent variable: player`s market value

$$Y = \alpha_0 + \varphi \cdot SM + \beta \cdot PL + \delta \cdot PE\ (+\gamma \cdot CL) + \varepsilon$$

SM = **S**ocial **M**edia total reach

PL, PC = matrices contain **PL**ayer characteristic variables (PL) and **PE**rformance variables (PE) corrected by factor playing time

CL = **CL**ub fixed effects

Prospensity Score Logit Regression model –
treatment variable: Professional SM profile, dependent variable: market value

$$D_{Treat} = \alpha_0 + \beta \cdot PL + \delta \cdot PE + \gamma \cdot CL + \varepsilon \ ; \ ATE = \frac{1}{N} \sum_{i=1}^{N} Y_{DTreat1i} - Y_{DTreat0i}$$

D_{Treat} = „Treatment Effect“, 1 = At least one SM-profile (>10.000 Followers), 0= No SM-profile

PL, PC = matrices contain **PL**ayer characteristic variables (PL) and **PE**rformance variables (PE) corrected by factor playing time

CL = **CL**ub fixed effects

3. Methodology and Results

UNIVERSITÄT BAYREUTH

OLS-Regression analysis – DV: Market Value (Juli 2018) in Mio. € (source: Transfermarket.com)

Model	MV Striker (FE)	MV Midfielder (FE)	MV Defender (FE)	MV Striker	MV Midfielder	MV Defender
Points per game	4.057.698.0	698122.3	821757.4	3.011.792	2.670.867	**1.880.196**
	(0.369)	(0.856)	(0.597)	(0.278)	(0.174)	**(0.067)***
playing time in min	**3.773,8**	**3232.5**	**4713.3**	**3380,2**	**2987.8**	**4.493.1**
	(0.012)**	**(0.007)*****	**(0.000)*****	**(0.013)****	**(0.004)*****	**(0.000)*****
SM_total_reach	**2.4**	**0.6**	**2.2**	**2.4**	**0.6**	**2.1**
	(0.000)***	**(0.000)*****	**(0.014)****	**(0.000)*****	**(0.000)*****	**(0.010)*****
crosses_time	1.69e+08	2.06e+07	-3.895.913	1.33e+08	-2.67e+07	-2.83e+07
	(0.166)	(0.901)	(0.967)	(0.223)	(0.818)	(0.719)
assists_time	-4.49e+08	**-1.34e+09**	-1.58e+08	-4.83e+08	-7.34e+08	-3.81e+08
	(0.679)	**(0.071)***	(0.908)	(0.647)	(0.268)	(0.743)
goals_time	-4,33e+08	-5.83e+08	-2.54e+09	-4.68e+08	**-8.25e+08**	-2.01e+09
	(0.469)	(0.272)	(0.116)	(0.350)	**(0.064)***	0.164
shots_time	**2.71e+08**	-8.85e+07	1.28e+08	1.78e+08	2.22e+07	1.26e+08
	(0.057)*	(0.626)	(0.431)	(0.135)	(0.878)	(0.430)
duelswon_time	7.88e+07	8.64e+07	-6.85e+07	5.57e+07	7.28e+07	-3.32e+07
	(0.101)	(0.172)	(0.072)*	(0.209)	(0.176)	(0.371)
distance_time	-9.143.363	1.03e+08	1.69e+08	-2.569.281	7.27e+07	1.49e+08
	(0.880)	(0.338)	(0.229)	(0.965)	(0.461)	(0.201)
fouls_time	**-3.94e+08**	1.18e+08	-2.25e+07	-2.22e+08	3.07e+07	-2.970.472
	(0.067)*	(0.570)	(0.811)	(0.229)	(0.869)	(0.974)
posession_time	-1.95e+07	-3.319.207	1.970.272	-1.10e+07	-1.315.228	2.823.887
	(0.159)	(0.639)	(0.643)	(0.386)	(0.827)	0.422
sprints_time	2.776.209	-1.80e+07	-261441	-4.322.400	-1.32e+07	6.840.738
	(0.854)	(0.294)	(0.986)	(0.768)	(0.312)	(0.626)
age	-249.468.9	**-395.545**	**-415.070.6**	-188.036.6	**-500.239**	**-388911**
	(0.344)	**(0.066)***	**(0.076)***	(0.435)	**(0.008)*****	**(0.035)****
height	2.340.000,0	-6.232.410	9.057.616	-2.32e+07	-1.553.004	1.58e+07
	(0.210)	(0.748)	(0.637)	(0.188)	(0.919)	(0.326)
FE_Bayern_Munich	6881185	**1.78e+07**	1.15e+07	6.153.825	1.61e+07	**1.68e+07**
	(0.483)	**(0.077)***	(0.247)	0.556	(0.155)	**(0.055)***
N	**106**	**99**	**120**	**106**	**99**	**120**
R^2	**0.745**	**0.759**	**0.737**	**0.713**	**0.731**	**0.710**

3. Methodology and Results

PSM-Regression analysis – DV: Market Value (Juli 2018) in Mio. € (source: Transfermarket.com)

Treatment-effects estimation
Estimator: propensity-score matching
Outcome model : matching
Treatment model: logit

Number of obs = 355
Matches: requested = 1

AI Robust Market_Value	Coef.	Std. Err	z	P>|z|
ATE SM_Availability				
1 : at least one professional SM-profile (>10.000)	4.490.563	804.014.4	5.59	0.000***
vs				
0 : no professional SM-profile (>10.000)				

Comparing two similar players in performance data (season 2018/19) and individual characteristics (age, height, position, etc.), the effect of having professional SM-profiles in average is a **higher transfer market value of 4.5 Mio €**

4. Conclusion

- Professional Social Media profiles not obligatory in German Bundesliga – Great **variance** of reach/follower (Superstar effects)
- Strong **relationship** between **Social Media reach** and **individual player market value** in professional (German) club football
- **Early evidence** for market value added through professional social media activities/profiles in case of similar player characteristics
- Clubs management decisions should adress the value of SM in their **transfer acitivities** – Business model
- Alternatives and **niche strategies** for smaller clubs as long as the transfer market does not fully consider value added SM

5. Limitations and outlook

- **Size** of the dataset -> Extension (more variables, time periods, other leagues) -> more reliable matching process
- Consideration of actual **transfer sums**
- **Efficiency** of transfer markets:
  - Player agents
  - Speculation in player‘s development, deterioriation of market value and transfer sums
  - Exogenous shocks (e.g. tv deals)
- **Dynamics** of prices (market value, transfer sums) and SM follower figures
- Economic rationality in European football ? **(win-maximising clubs)**

Literature

Gerhards, J., Mutz, M. & Wagner, G. G. (2014). Die Berechnung des Siegers: Marktwert, Ungleichheit, Diversität und Routine als Einflussfaktoren auf die Leistung professio-neller Fußballteams / Predictable Winners. Market Value, Inequality, Diversity, and Routine as Predictors of Success in European Soccer Leagues. Zeitschrift für Soziolo-gie, 43 (3), 231-250.

Gerrard, B. (2014). Achieving transactional efficiency in professional team sports: the theory of and practice of player evaluation, in: J.A. Goddard, P.J. Sloane (Eds.), Handbook on the economics of professional football, Edward Elgar, Cheltenham, UK, pp. 189–202.

Heckman, J.J., Ichimura, H., and Todd, P. (1998). Matching as an Econometric Evaluation Estimator, The Review of Economic Studies 65 (2), pp. 261-294.

Herm, S.; Callsen-Bracker, H.M.; Kreis, H. (2014). When the crowd evaluates soccer players' market values: Accuracy and evaluation attributes of an online community, Sport Management Review 17 (4), pp. 484-492.

Müller, O.; Simons, A.; Weinmann, M. (2017). Beyond Crowd Judgments: Data-Driven Estimation of Market Value in Association Football, European Journal of Operational Research, 263(2), pp. 611-624.

Nüesch, S. (2007). The economics of superstars and celebrities, DUV Deutscher Universitäts-Verlag, Wiesbaden.

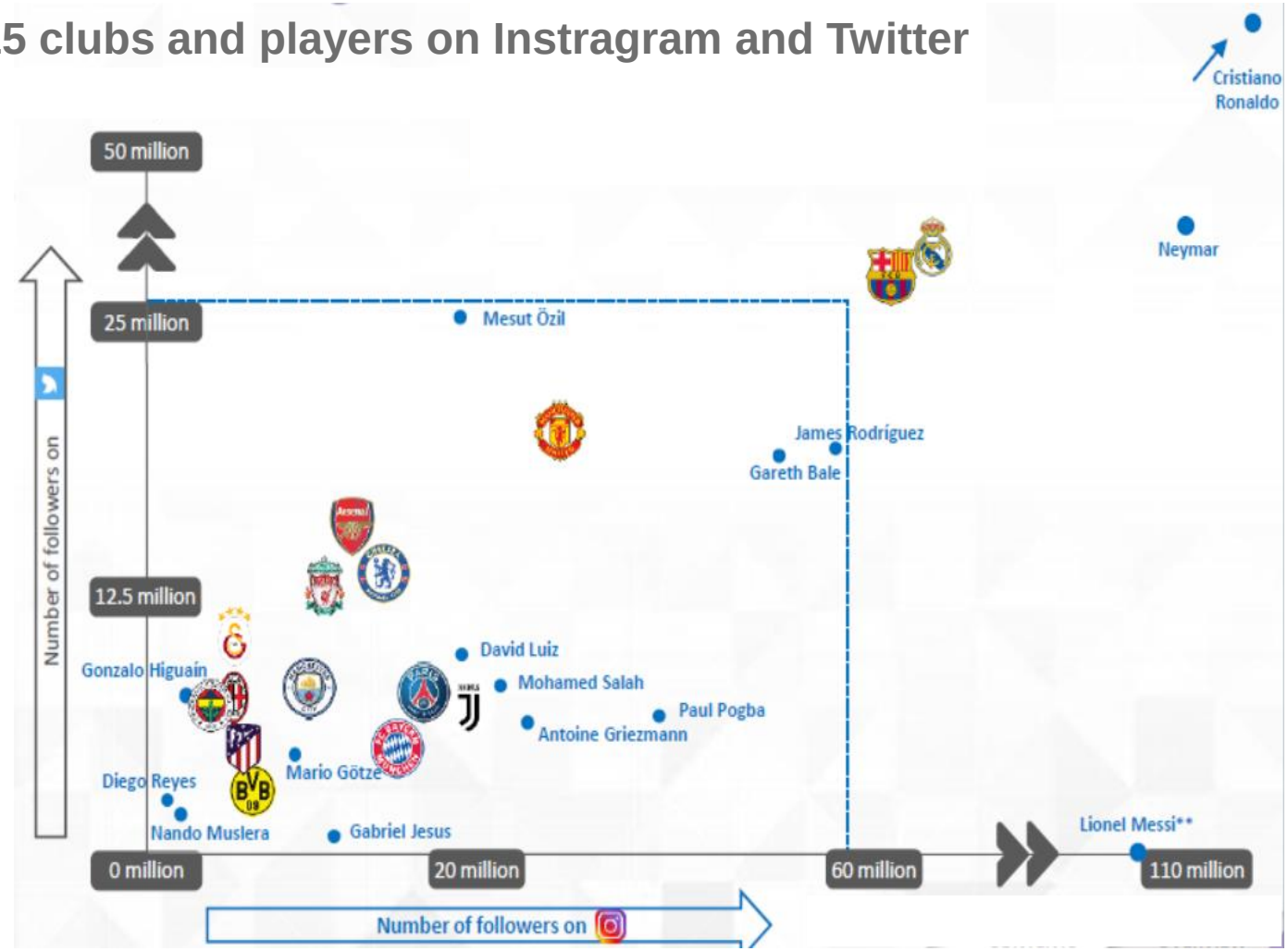
Rosen, S.; Sanderson, A. (2001). Labour Markets in Professional Sports, The Economic Journal 111 (469), pp. 47–68.

Surowiecki, J. (2004). The wisdom of crowds. Why the many are smarter than the few and how collective wisdom shapes business, economies, societies, and nations (1st ed.). New York: Doubleday.

Web-netz (2019): „Bild" zieht web-netz-Experten hinzu: Abschied von Superstar James Rodriguez kostet FC Bayern mindestens 20 Millionen Euro. https://www.web-netz.de/presse/james-abschied-kostet-dem-fc-bayern-mindestens-20-millionen-euro/.

Backup

Top 15 clubs and players on Instragram and Twitter



Source: UEFA 2019, p. 39

Backup

Dataset – performance characteristics (PC) corrected by factor playing time

Variable	N	Maximum		Mean	Std. Deviation
crosses_time	439	0.07	Sebastian Jung (Wolfsburg)	0.0108	0.0125
assists_time	439	0.01	Jadon Sancho (Borussia Dortmund)	0.0009	0.0012
goals_time	439	0.02	Corentin Tolisso (Bayern Munich)	0.0015	0.0025
shots_time	439	0.06	Pascal Köpke (Hertha Berlin)	0.0138	0.0126
aerialduelswon_time	439	0.10	Isaac Kiese Thelin (Leverkusen)	0.0204	0.0161
duelswon_time	439	0.24	Paulinho (Leverkusen)	0.1042	0.0455
shotssaved_gk_time	32	0.06	Sahin-Radlinger (Hannover)	0.0355	0.0124
distance_in_km_time	439	0.18	Pascal Köpke (Hertha Berlin)	0.1205	0.0351
fouls_time	439	0.07	Dennis Jastrzembski(Hertha Berlin)	0.0122	0.0087
intensive runs_time	439	24.49	John Yeboah (Wolfsburg)	0.8038	1.5497
possession_time	439	1.21	Thiago (Bayern Munich)	0.5840	0.2173
sprints_time	439	0.63	Alphonso Davies (Bayern Munich)	0.2282	0.1308
yellow_time	439	0.03	Ivo Ilicevic (Nuremberg)	0.0020	0.0027
penalties scored_time	439	0.00	Emil Forsberg (Leipzig)	0.0001	0.0003
shotspostbar_time	439	0.00	Yevhen Konoplyanka (Schalke)	0.0003	0.0006