The Impact of Human and Social Capital on Organisational Performance: Evidence from English Premiership Soccer

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Recent research in strategic management on the drivers of organisational performance has increasingly focused on internal factors as the source of sustainable competitive advantage (SCA) in contrast to the traditional emphasis on external market-positioning factors. The resource-based view (RBV) of the firm suggests that SCA is derived from the firm's exclusive property rights over rare and difficult to imitate strategic resources (Wernerfelt, 1984). One such type of strategic resource is the tacit knowledge acquired through their learning-by-doing experience within the firm. Berman, Down and Hill (BDH) have attempted to test this hypothesis using data from the NBA (Berman et al. 2002). We provide a critique of the BDH model and develop a more general approach to explaining organisational performance.

BDH propose that tacit knowledge can be measured by the amount of shared experience that the members of a work group have of working within that specific group. BDH test their hypothesis using data on team performance in the NBA over the period 1980/81 - 1993/94. After controlling for other determinants of team performance (measured as regular season wins) such as player age, player quality and coaching experience, BDH find a significant positive but declining effect of shared experience. There are two important criticisms of the BDH study. First, shared experience will capture the effects of not only non-codified tacit knowledge but also codified formal knowledge. Second, organisational performance is likely to be highly time-dependent with important dynamic effects arising from the effects of continuity and change in organisational membership as well as momentum effects from previous performance. These dynamics are likely to impact on shared experience creating endogeneity. The results of BDH show evidence of significant time dependency but this is interpreted as purely an estimation problem. We adopt an alternative interpretation that the model requires a dynamic respecification.

We propose a more general human and social capital (HSC) model of group performance. Group Performance = f(General Human Capital, Group Social Capital, Group Diversity, Group Continuity, Group Momentum)
The HSC model suggests the following six hypotheses to be tested empirically:
H1: The sum of a group's general human capital will be positively related to group performance.
H2: The manager's general human capital will be positively related to group performance.
H3: The group members' group-specific and management-specific social capital, as measured by group shared experience, will be positively related to group performance.
H4: Group emotional conflict, as measured by members' diversity in age and general human capital, will be negatively related to group performance.
H5: Group continuity will be positively related to group performance.
H6: Previous group performance and group-specific human capital will interact positively on current group performance.

The research site to test our hypotheses is English Premiership soccer. The initial database contains data for teams and players from five seasons, 1997/98 - 2001/02. During the sample period, the FA Premier League (FAPL) consisted of 20 teams per season with each team having a 38-game schedule. Our sample consists of 100 team-season observations. The FAPL operates a merit-hierarchy system with promotion and relegation that maximises effort and innovation incentives for all teams, providing an appropriate research context for investigating the impact of human and social capital on competitive advantage and team performance. The dependent variable measuring team performance is Points Rate defined as the total number of points gained by a team during the season (based on three points for a win, one point for a tied game and no points for a loss) divided by the maximum attainable points.

The full model of team performance consists of four groups of independent variables:
(i) General human capital: Player Quality measured by the PQI approach suggested by Gerrard (2001); Player Utilisation measuring the proportion of the team's total PQI that is utilised in the starting line-up over the season; Average Age calculated as the weighted average of players' ages at the start of the season; Player Experience measured as the weighted average of players' total career league appearances for all teams; (Log) Team Coaching Experience defined as the head coach's total number of games in charge at the current team at the start of the current season; and Log Career Coaching Experience defined as the
natural log of the head coach's career total number of games as head coach of any professional soccer team.

(ii) Team stability: Shared Experience measured as the weighted average of the players' total number of career league appearances with the current team; Shared Experience Squared capturing possible quadratic effects; and Experience Interaction representing the interaction (i.e. product) of Shared Experience and Team Coaching Experience.

(iii) Team diversity: Player Quality Diversity, Player Age Diversity, Player Experience Diversity and Shared Experience Diversity defined as the standard deviation of player quality, player age, player career league experience and shared team experience, respectively.

(iv) Team dynamics: Team Continuity defined as the proportion of starting league appearances in the previous season provided by players making at least one starting league appearance in the current season; Player Continuity defined as the correlation between starting league appearances by current players in the current and previous seasons; Shared Success defined as the product of Shared Experience, Log Team Coaching Experience and Previous Points Rate; and two continuity-success interaction variables, Team Continuity-Success Interaction and Player Continuity-Success Interaction.

Four models are estimated using OLS and IV regression:
Model 1: The basic BDH model replicated using the current sample (i.e. excludes player experience, career coaching experience and team dynamics effects)
Model 2: The augmented BDH model defined as Model 1 plus team dynamics effects (but excluding shared success).
Model 3: The full dynamic HSC model defined as Model 2 plus player experience, player utilisation, career coaching experience and shared success variables.
Model 4: The restricted HSC model eliminating insignificant variables.

Summary goodness-of-fit and diagnostic test statistics are set out in Table 1. In common with the original BDH results, it is found that there is some evidence of time dependency in the basic BDH model as shown by the adjusted DW statistic. The autocorrelation problem is removed if a full dynamic specification is employed as in Models 2-4. The full and restricted HSC models all exhibit better goodness-of-fit properties than the BDH model supporting the proposition that a fuller specification of human and social capital effects is required in order to explain group/team performance. All four groups of independent variables are found to have a significant explanatory power. The IV estimates of Model 4 to allow for endogeneity show a slight deterioration in the goodness-of-fit and diagnostic test statistics as would be expected with the principal impact on the estimated coefficients for the dynamic variables.

The mean elasticities of one per cent changes in the determinants of team performance from the OLS estimates of Model 4 are presented in Table 2. The principal finding is that team social capital effects are relatively small overall in the highly competitive context of English Premiership soccer. Team momentum is the largest social capital effect. Traditional general human capital effects are much more important than social capital effects as are player age effects. Interestingly team diversity effects are also significantly larger than social capital effects on team performance.

References