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OVERALL DOMINANCE IN TOTAL ENTERPRISE SIMULATION PERFORMANCE

Alan L. Patz, University of Southern California

ABSTRACT

The results presented here confirm that small samples of full-time student undergraduates in a capstone total enterprise (TE) simulation will show a pattern of performance where the dominant teams at the end on the competition will have established and maintained an early lead. Second, combined samples of full-time student undergraduates, *a fortiori*, will show a pattern of total enterprise simulation performance where the dominant teams at the end of the competition will have established and maintained an early lead.

HYPOTHESES

Earlier studies, using full-time employed MBAs (Patz, 1990, 1992), and a later one, using both full-time employed and full-time student BBAs (Patz, 1995), confirmed the following two hypotheses:

H1: Small samples of full-time employed MBAs and BBAs, as well as full-time student BBAs will show a pattern of TE simulation performance where the dominant teams at the end of the competition will have established and maintained an early lead.

H2: Combined samples from the same populations, *a fortiori*, will show a pattern of TE simulation performance where the dominant teams at the end of the competition will have established and maintained an early lead.

Three well-known TE simulations, MICROMATIC (Scott & Strickland, 1985); the Multinational Management Game (Edge, Keys & Remus, 1985); and CORPORATION (Smith & Golden, 1989) were used in these studies and the results were the same. Yet, Anderson & Lawton (1993) and Washbush (1992) question their veracity. Similarly, Gosenpud & Washbush (1996) ignore them.

METHOD

Therefore, **H1** and **H2** were investigated again in a six-industry, 53-team, 258-subject investigation using an entirely different TE simulation—The Business Strategy Game (Thompson & Stappenbeck, 1997, 1998).

Subjects

All participants were full-time student seniors majoring in the various fields of business administration. The Business Strategy Game was used in all sections; each section was an independent industry; and each team within each industry was self-selected.

Simulation Procedures

After one class session devoted to the clarification of simulation rules, evaluation procedures, and decision-making mechanics, a two-year practice decision sequence was completed. Questions pertaining to the results of each session were answered, and the evaluation procedure was restated. That is, students were reminded that the cumulative scores at the end of the simulation were the figures of merit.

The importance placed on ending cumulative scores rather than current period results emphasized long- rather than short-term strategies. Moreover, attention was direction to three specific conditions. First, the actual ending period of the simulation would remain unknown. (Each period is a year in the Business Strategy Game, and the length of the semester allowed for a maximum of ten periods of play.) Second, all teams were expected to end their management tenure with a going concern, not a firm stripped of long term po-

tential in order to gain short-term ranking enhancements. Third, 20% of the semester grade for the course depended on ending cumulative score rankings.

The participants were privy to the algorithm that determines cumulative scores in the simulation. These scores depended upon how each team's cumulative results compared with the leading team's results on each of six dimensions: sales revenue, total profit or earnings per share (EPS was used in all cases), return on equity, bond rating, stock value, and strategy rating. The percentage weights, respectively, were 5, 15, 20, 20, 20, and 20.

RESULTS

In four of the six, small sample industry cases, **H1** is confirmed. A fifth one is close, and the last one shows the same behavioral pattern even though its results are not statistically significant. These results are shown in Table 1

TABLE 1
ANALYSES OF VARIANCE

Industry	# Teams	*F*	*p*
1	7	24.7	0.00
2	10	5.14	0.05
3	9	7.95	0.03
4	9	4.87	0.06
5	9	28.6	0.00
6	9	2.47	0.16

More important, when comparing the six industries, two each for each of three semesters over seven decisions periods using a repeated measure analysis of variance, there are no differences among them (F=.29, p=.75).

Therefore, a pooled repeated measure analysis of variance test was performed, using not just the dichotomist first and last teams for each industry, but analyzing the first 17, middle 19, and last 17 performing teams over the six industry sample. The results, shown in Table 2, indicate no doubt that **H2** is confirmed. High performing, full-time student BBA teams establish an early lead and maintain it throughout a TE simulation competition (F=52.9, p<.0001). In addition, as to be expected, the performance of all groups varied by year (F=33.0, p<.0001). Also, the year by year differences between teams (the teams by year interaction) is significant (F=11.4, p<.0001).

ANALYSIS OF VARIANCE
FIRST 17-MIDDLE 19-LAST 17 TEAMS

Source	df	MS	*F*	*p*
Between Ss	52			
Teams (T)	2	55325	52.9	<.0001
Ss w. T	50	1046		
Within Ss	318			
Years	6	4777	33.0	<.0001
T x Yrs.	12	1655	11.4	<.0001
Yrs x Ss w. T	300	145		

DISCUSSION

These results are not spurious. They have been demonstrated over and over again with four different simulations and different populations. Full-time employed BBAs and MBAs exhibit the same results, as do full-time student BBAs. Dominant teams at the end of a TE competition will have established and maintained an early lead. Team personality composition, as measured by the MBTI instrument, helps understanding with the superior performance of full-time employed MBAs and BBAs (Patz, 1992, 1995). But it clearly is not important in the overall performance dominance of teams in TE simulations. This phenomenon simply occurs whatever the information processing and decision making characteristics of the participants.

REFERENCES

Available upon request.