SUCCESS OR BANKRUPTCY: THE RELATIONSHIP BETWEEN PERSONAL AND GOAL ORIENTATION AND SIMULATION PERFORMANCE

Robert R. Wharton, Western Kentucky University
Linda E. Parry, Western Kentucky University
Gabe Buntzman, Western Kentucky University

ABSTRACT

Computerized business simulations have become popular classroom tools because they give students a hands-on decision making experience in a realistic context. This study finds that two decision making biases, risk tolerance and financial conservatism, influence the success of teams in simulated business competitions. Intervention strategies are suggested to provide support to at-risk teams and to increase learning by all participants.

INTRODUCTION

Business simulations are not new. For the past twenty years, instructors have used simulations so students could have the "hands-on" experience of running a business. Implicit in the use of this technique is the hope that students will be successful and the learning process will be a positive experience.

Unfortunately, the experience is not always positive. There are some students who do well in traditional classes and yet do not perform well in simulations. This reduces the chance that students will transfer knowledge from the simulation to the workplace. As instructors, we wanted to know what factors contributed to performance in simulations. Previous research studies indicate that risk aversion, tolerance for ambiguity, locus of control, and a cosmopolitan orientation can influence decision-making and hence organization performance (Kedia & Bhagat, 1988). Research in strategic management also indicates that a manager's goal orientation will impact a firm's position (Evans & Lindsay, 1996).

If these personal and goal orientations are significant for successful businesses, could they affect performance in business simulations? This question became the driving force for this research. Specifically, in this study, we examine the relationship between performance in a business simulation and personal and goal orientations of students.

LITERATURE REVIEW AND RESEARCH HYPOTHESES

Risk is the possibility of incurring a loss. Both scholars and practitioners maintain that decision-makers ought not to be risk averse because their organizations will forego opportunities for large payoffs (Majer, Bailey, Censor, & Bassin, 1989). Even though there is evidence that under-performing firms sometimes take more risk (Lee, 1997), there is substantial research that the most successful executives are also the biggest risk takers (MacCrimmon & Wehrung, 1990).

The Business Strategy Game (BSG) is used in this study (Thompson & Stappenbeck, 1998). With the BSG, there is ample opportunity to risk capital to expand production capacity, increase advertising and promotion expenditures, and aggressively market product without any guarantee of success. Since risk-taking is associated with higher performance, we hypothesize: (*1*) *Students who have a high tolerance for risk will have a positive influence on their company's performance.*

Tolerance for ambiguity is often associated with risk aversion and risk-taking propensity. Many situations in organizations are inherently ambiguous. For example, some economic forecasts suggest that business conditions are likely to improve while others suggest decline. A

manager with low tolerance for ambiguity may waste precious time and other resources trying to collect additional information to eliminate ambiguity before making a decision. Since researchers, such as Schwenk and Mitroff (1982), have found that tolerance for ambiguity is associated with high performance, we hypothesize: (*2) Students who have a high tolerance for ambiguity will have a positive impact on their company's performance.*

Locus of control has also received significant attention in the management literature (Rotter, 1990; Boone , de Brabander & van Witteloostuijn, 1996). Locus of control is the belief of an individual that he or she can or can not control relevant outcomes. An individual who believes that she or he controls outcomes is said to have an internal locus of control whereas an individual who believes that outcomes are determined by others is said to have an external locus of control. A willingness to take charge and act proactively is associated with an internal locus of control. In empirical studies, internals are rated higher than externals on performance (Marks, 1988). Since successful management often requires active and proactive participation rather than passive acceptance or reactive behaviors, it follows that high performance should be associated with an internal locus of control. Therefore, we hypothesize: (*3) Students who have an internal locus of control will have a positive impact on their company's performance.*

Another individual difference variable is the relation between local versus cosmopolitan orientation (Gouldner,1957). Interestingly, there has been little research on this construct in business organizations (Wright & Larwood, 1997). "Local" individuals identify with their immediate organization, its norms and values. "Cosmopolitan" individuals identify with the norms of professional societies and other reference outside their focal organization (Wright & Larwood, 1997). In the case in the BSG simulation, we believe cosmopolitans will look outside their immediate company, which is originates in North America, and take a broader

view of the total market available. Locals, on the other hand, will be less likely to conceptualize the entire market. Because local orientation limits the access to customers, we hypothesize: (*4) Students who have a cosmopolitan orientation will have a positive impact on their company's performance.*

Goal orientation is also an important consideration when examining performance. In business, managers are becoming increasing aware of the necessity to incorporate continuous improvement into the manufacturing process. Indeed, total quality management guru, W. Edwards Deming, advocates a never-ending cycle of product design, manufacture, test, and sales (Evans & Lindsay, 1996). Such action can lead to higher quality that leads to higher productivity, which ultimately leads to competitive strength. This continuous striving to improve the company also allows managers to develop resources that discourages quick imitation by competitors and helps build up a sustainable advantage (Barney, 1997). In the simulation, some students explore incremental improvements over the ten decisions to improve their company. Other students focus on the end (e.g., having a high cash balance) throughout the simulation. Since research supports the belief that continuously improving a company can lead to success, we hypothesize: (*5) Students who focus on the on-going operations of the company will have a more positive impact on their company's performance than will students who focus on end results.*

METHOD

Sample

We used a written survey to obtain information on the attitudes of respondents. The sample included ninety-two students enrolled in capstone strategy classes of a mid-sized, state-supported university. Students represent a variety of majors within the College of Business Administration. Majors include management, human resources, accounting, finance, and marketing. Most students were 18-22 years old, and 53% were male. Most

were seniors and listed their primary occupational status as student.

All students received two days of instruction on the rules of the Business Strategy Game. The BSG is used by 2000 students in strategy classes across the country (Stone, 1995). The main objective of the simulation is to manage a shoe company over a period of ten decisions. Three to four students compose a company. Students self-select their own groups. Once the company has formed, students make strategic decisions about all aspects of the firm including finance, marketing, production, and human resources. As part of the simulation, students can decide to build and/or sell shoes in North America, Asia, and Europe.

Questionnaire

After two trial simulation runs, self-administered questionnaires were given to each of the students in five strategy classes. The 92 responses constituted approximately an 87% overall return rate. Even accounting for missing questionnaires, the sample appeared to be quite representative of students in the capstone course.

The survey elicited student attitudes toward a variety of factors. Section one measured locus of control. There were nineteen questions. Respondents chose between two alternatives, selecting the alternative that came closest to the their attitude. The locus of control scale was similar, but not identical, to the original locus of control scale developed by Julian Rotter (Whetten & Cameron, 1995).

Section two measured the student's tolerance of ambiguity. Based on a scale developed by Budner (1962), students indicated the extent to which they agreed to fourteen questions. The Likert-style, seven-point scale ranging from 7=strongly agree to 1=strongly disagree.
Section three focused on individual goal orientations. Students indicated on a four point Likert-style scale (1=not important to 4=very important) how important they felt certain factors were important to managing a business. There were seventeen items. Examples of the factors included: "keeping a large cash balance", "reducing reject rates", "becoming a global presence", and "providing a high quality product to our customers". Statements were chosen because they represented all aspects of running a business and were among the decisions made by students during the simulation.

The next section solicited students' attitudes toward risk. Twenty statements required a "yes" or "no" response. Examples of the types of statements included: "I would take the risk of starting my own business rather than to work for someone else." "Thinking of investing in stocks does not excite me." "A less secure job with a large income is more to my liking than a more secure job with an average income."

A cosmopolitan orientation scale contained ten statements (Berger & Grimes, 1973). Students indicated how closely they agreed with the statements using a 5 point scale ranging from 1= strongly disagree to 5=strongly agree. The survey ends with a brief set of questions on the respondents' name, simulation company name, gender, age, and occupational status.

Company performance was determined after ten decisions were completed. Success was determined by a number of factors – return on equity, net profit, stock value, bond rating, capacity planning, market share, earnings per share, measures of quality, service and value.

Data Analysis

The data analysis proceeded primarily through correlation analyses and multiple regression analysis. Confirmatory factor analysis was used to develop indices of individual goal orientations.

RESULTS

Team Goal Orientation and Team Performance

Before we examine how individual attitudes and goal orientations affected the performance of the group, we need to examine how the group performed and if there were any specific group orientations that were associated with success.

There was a wide variation in team performance among the thirty simulated companies. In each of the three "industries" there were companies competing for dominant status and others struggling to remain solvent. There were four distinct approaches to the competition that drove company performance. These drivers and their correlation with team performance are presented in Table 1.

Those companies that emphasized a more *global approach* to the market, as indicated by the extent of global employment, were among the most successful of companies in the competition. Global companies were generally among the more profitable operations, and there was a significantly positive correlation between globalization and measures of market share and stock market performance. These companies ended the competition in generally good financial health. Interestingly, they were also the most successful at growing their total employment in the U.S., even though the U.S. represented a smaller proportion of their total global capacity.

This was in contrast to teams trying to pursue a more *domestic approach* to the competition, as indicated by the extent to which a company maintained a larger percentage of its total capacity in the U.S. Domestic companies were among the least successful firms in the competition. Market share was significantly smaller, and there were also significantly negative correlations with total employment and worker compensation. These companies were also among the least successful at satisfying the demands of their investors.

A third approach to the market emphasized achieving *manufacturing efficiencies* as indicated by unit labor costs. These were the most productive firms. Firms achieving lower labor costs were significantly more profitable, and generally did a good job of satisfying investor demands, especially in building market value.

Finally, a fourth approach to the competition was suggested by firms with a *customer orientation*, as indicated by an index of product value. This index was calculated as the product of the company's average global quality and service ratings, divided by the average price of their products. Correlations are significant only for market share, which were positively associated with product value. However, the direction of the coefficients suggests a generally positive relationship between higher product value and measures of profitability and stock performance. Although these were smaller operations in terms of employment, they ended the competition in generally good financial condition.

Individual Goal Orientations

To what extent were these team orientations to the competition associated with the competitive goal orientations of individual respondents? A factor analysis was performed and six distinct factors or goal orientations emerged. These factors and their loadings with the seventeen items are presented in Table 2.

Four of the factors appear to correspond with the performance drivers presented in Table 1. There was clearly one factor associated with concerns for *global* operations, and a second associated strongly with *customer*-oriented concerns for quality, service, and affordability. A factor reflecting concern for maintaining *U.S. employment* also emerged; interestingly a lower concern for profitability was also associated with this factor. Manufacturing *efficiency* also emerged as the last factor to be extracted.

Two additional factors were identified, however both dealt less with concerns for excelling at the _means_ towards company success and more with the final _ends_ themselves. One of these factors was organized around concerns for *financial performance.* The other was characterized more by concerns reflecting *financial conservatism*, the desire to maintain a higher cash balance, lower debt, and better dividends.

The Effect of Individual Goal Orientation on Team Performance

To what extent is the goal orientation of an individual associated with the competitive direction taken by their team, and with the team's ultimate performance in the competition? Correlations between goal orientations and team performances are presented in Table 3.

The data suggests that individuals with a more global orientation did have some success moving their teams in a more global direction. The proportion of U.S. manufacturing capacity is lower, and market share is higher, reflecting the pattern of correlations in Table 1. Moreover, it was these teams that were most associated with customer value.

Other patterns of correlations between the other individual goal orientations and the performance of their teams are nonsignificant. Respondents with a concern for U.S. employment had no significant impact on the direction of their teams, nor did those with a concern for financial performance. Those with a concern for manufacturing efficiencies were associated with groups with higher market shares, but their groups did not enjoy higher productivity or lower labor costs.

However, there was a striking series of negative correlations between those respondents with a more conservative approach to finances and the performance of their teams. These teams were among the worst performing companies and paralleled, in many respects, the performance of

teams emphasizing U.S. employment and operations presented in Table 1. These individuals were associated with teams with the lowest profitability and credit ratings, the lowest market shares, and generally poor performance.

Personal Orientations

To what extent do one's personal orientation affect goal orientations? The correlations suggest a moderate but significant relationship between global orientations and an internal locus of control, and also with a more cosmopolitan orientation to the world. Somewhat surprisingly, there was a negative association with tolerance for ambiguity, and especially with the subscale for tolerance for insolvable problems, although not significantly so.

Those individuals most concerned with financial performance were also less tolerant of insolvable problems, however the remaining correlations between goal orientations and personal orientations were low and non-significant. Indeed, there were no significant correlations between tolerance for risk and any of the goal orientations.

The Effect of Personal Orientation on Team Performance

Is there then any correlation between personal orientation and the eventual performance of that team? Table 4 presents the results of this analysis. Although risk tolerance has little correlation with any of the goal orientations, it proves to be powerfully associated with team performance. Risk tolerant individuals had a broadly positive effect on the performance of their teams, and regression analysis suggests that risk propensity is the personal orientation most closely linked with lower labor costs – one key performance driver. Also as hypothesized, individuals with an internal locus of control also appeared to be positive assets for their companies, as did individuals with a greater tolerance for novel situations. An internal locus of control appears in regression analysis to be the personal orientation most associated with

the performance driver of global employment, although that link is a weak one.

More compelling is the indication that one of the individual goal orientations – financial conservatism – plays a major role in determining whether an individual's team will choose a domestic or global strategy. The least financial conservative individuals were on teams that pursued more global employment. The most conservative individuals were associated with teams that retained a more domestic focus, especially if those individuals also had a low tolerance for novel situations. Surprisingly, none of the other measures of personal orientation appeared to have any significant consequences for subsequent group performance.

DISCUSSION

Clearly, students who were less risk averse and who had an internal locus of control were associated with successful teams. This gave support to hypotheses one and three. There was only partial support for hypothesis two that focused on a student's tolerance for ambiguity and company performance. There was no support for cosmopolitanism affecting company performance. Hypothesis five addressed goal orientations. It was hypothesized that students who focus on the ongoing company operations will have a more positive influence on companies than students who focus on the final results. This hypothesis was supported. Students who were willing to spend money and continuously improve their companies finished the simulation in a much stronger position than did their peers who remained more conservative and concentrated on having a cash balance at the end.

This research was an exploratory study. We realize that some of our findings may be influenced by regional characteristics. Nevertheless, these findings raise a critical issue. Since some personal and goal orientations can adversely impact performance even for capable

students, what can we as instructors do to help make simulations a positive experience?

Since risk-averse students appear to be the most vulnerable to poor performance in the simulation and ultimately in the classroom, below are some suggestions to encourage risk taking.

1. Allocate only have a small portion of the grade to the performance of the company. We currently use company performance to determine 20% of the course grade, and instead give separate credit for being able to analyze how the company performed. This analysis is also worth 20% of our course grade.

2. Convene a consultative session if companies go bankrupt. Currently, we meet in "bankruptcy court" to confer with students and help them turn their companies around. We now realize that the fear of going to court actually made some students more risk averse. Convening a consultative session might be less threatening to students.

3. Make students aware of the disadvantages of being excessively risk averse.

For those financially conservative students who concentrate on the end result as opposed to the means to reach that end, we offer the following suggestions:

1. Meet with individual groups regularly throughout the semester. We meet with each group at least three times, always challenging them to focus their efforts on improving the competitiveness of their companies.

2. Set incremental rewards for risk associated attempts. For example, give an "entrepreneur of the year" award to a company that decides to go global first.
3. Present arguments why accumulating capital may not be in the best interest of the firm.

These few suggestions are made with the recognition that there are individual differences

among students. We cannot offer a teaching technique to accommodate all students but we can attempt to modify those techniques that we utilize in the classroom to increase the chances that students will have a positive learning experience.

Finally, simulations are popular learning tools but they do not exist in a vacuum. Instruction needs to be directed so that everyone has an opportunity to benefit. In order to accomplish this goal, further research needs to be done to assess the impact of learning styles on simulation performance. Also, more work needs to be done on the affect of individual differences on group decision-making. Such research will help us in developing teaching methodologies that improve student learning.

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Tables available upon request from the authors