ABSTRACT

This study is concerned with the effectiveness of Marketing Management Support Systems. With respect to these systems three research questions were formulated:

- 1. whether the use of a marketing decision support system increases the effectiveness of marketing decision-makers, and if so, under which conditions;
- 2. whether the effects of the use of a marketing decision support system are dependent on its quality, and if so, under which conditions; and
- 3. whether the use of a marketing knowledge-based system increases the effectiveness of marketing decision-makers, and if so, under which conditions.

To answer the research questions a laboratory experiment was carried out. Participants in the laboratory experiment were 160 marketing students and 80 real-life marketing decision-makers. This last group had, on average, eight years of marketing decision-making experience. During the experiment, the participants had to play a version of MARKSTRAT, a marketing management game. Research shows that MARKSTRAT reflects a real-life marketing management situation.

This book, in which the design and results of the experiment are reported, is divided into three parts. In Part I, the research model is developed and a description is given of the way the experiment was carried out. The proposition was that the effectiveness of a marketing management support system (MMSS) is dependent on four classes of variables: (1) characteristics of MMSS, (2) characteristics of the marketing decision-maker, (3) characteristics of the marketing problem, and (4) characteristics of the decision environment. In our study the effects of three types of marketing management support systems were investigated: two marketing decision support systems (MDSS) and one marketing knowledge-based system (MKBS). The two MDSS supported the marketing decision-makers in the design and choice phase of the decision-making process (Simon, 1977) by predicting the outcomes of alternative marketing decisions. They differed one from each other with respect to the predictive power of their simulation models. The first MDSS showed a mean absolute prediction error in its forecasts of 3% and was labelled as the "high-quality MDSS". The second MDSS, the "medium-quality MDSS", showed a mean absolute prediction error of 23%. The MKBS supported the decision-makers in the intelligence phase of the decision-making process (Simon, 1977) by monitoring and diagnosing the market. The MKBS was a relatively simple system which helped the decision-maker in determining the possible causes of events in

the market. Besides the effects of the three MMSS, the effects of a number of other specific variables (i.e. marketing decision-making experience, analytical capabilities, attitude towards MDSS-in-general and the degree of time-pressure) were also studied as these were expected to influence the effects of the MMSS. These specific variables all fitted into the classes of variables as distinguished above.

In Part II, the results of the study are presented. Our results show that both the high-quality and the medium-quality MDSS improved the performance of marketing decision-makers in all of the four decision-making periods which were included in the experiment. Furthermore, users of the high-quality MDSS significantly outperformed users of the medium-quality MDSS. MKBS improved the performance of decision-makers only in the beginning of the experiment. Probably, at this stage of the game, the environment was relatively unstructured in the minds of the decisionmakers and the MKBS could help them to structure it. Inexperienced and experienced marketing decision-makers benefited equally from using the high-quality MDSS although they differed in the way they used it: overall, experienced decision-makers made more simulations. With respect to the analytical capabilities of the decision-makers, it seems that these should be above a threshold level to really benefit from using the MDSS. When this is the case, MDSS seem to be able to compensate for a lack of analytical capabilities. Furthermore, we found that both under low time-pressure and under high time-pressure decision-makers benefited from using an MMSS.

Besides the improvement in performance we also found the MMSS to take more decision-making time. Users of all three types of systems needed more time to make their decisions than the unaided decision-makers. With respect to the amount of confidence decision-makers showed in their decisions, only small and mostly insignificant effects showed up. Users of the MMSS showed little more decision-confidence than the unaided decision-makers although they performed better. It appeared that the MKBS, which explained to the user what was happening in the market, was the most helpful system in increasing decision-confidence.

In Part III, this book finishes with the formulation of conclusions on the effectiveness of marketing management support systems and a discussion of the external validity of our study and of the implications of our findings for the use of MMSS in practice. Our conclusion is that MMSS can increase the effectiveness of marketing decision-makers. The actual amount of improvement is dependent on the characteristics of the MMSS which is used, the analytical capabilities of the user of the system and the degree of time-pressure the decision-maker is operating under. Furthermore, relative to the studies conducted so far, our study shows a high level of external validity. Finally, a number of directions for future research are presented. Interesting topics are, for example, the effects of so-called integrated systems, which support both "intelligence" and "design" and "choice" activities and furthermore, research on the process of using MMSS and its impact on marketing decision-making.