

Time Management and Achievement Striving Interact to Predict Car Sales Performance

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Recent research (T. H. Macan, 1994) questioned the importance of time management in predicting performance. The authors tested the hypothesis that time management behaviors interact with achievement striving to predict car sales performance. On the basis of data from 102 salespeople, moderated regression analyses supported that hypothesis. There was a significant interaction between short-range planning and achievement striving. Results show how time management is related to job performance under conditions of high motivation.

Despite a large literature lauding the benefits of time management behaviors in general (e.g., Warshaw, 1978) and for sales performance in particular (e.g., Berkowitz & Ginter, 1978; Feiertag, 1991; Friedman, 1993), the available literature suggests some controversy regarding whether the expected benefits of time management are realized in practice (Macan, 1994). Empirical findings suggest that positive time management practices are associated with self-evaluations of academic performance (Macan, Shahani, Dipboye, & Phillips, 1990), objective grade point average (Britton & Tesser, 1991), job satisfaction (Landy, Rastegary, Thayer, & Colvin, 1991), and self-perceived organizational performance (Lim, 1993). However, there are also data suggesting that time management behaviors may have little effect on objectively measured job performance (Macan, 1994).

One explanation for these inconsistent findings is the focus on the main predictive effects of time management behaviors. Previous investigations have consistently assessed the direct or indirect effects of time management on job performance (e.g., Macan, 1994). In contrast, we suggest that time management behaviors may interact with other predictors of job performance. This hypothesis is consistent with the notion that job performance is a multiplicative function of both skill level and motivation (Pinder, 1984). Engaging in time management behaviors may be viewed as an individual difference in skills and is unlikely to be reflected in a direct increase in performance for all individuals. Rather, increasing time management behaviors is likely to enhance the effectiveness of motivated employees and have little consequence for employees who are not motivated to perform. Our hypothesis is also consistent with Macan's (1994) suggestion that engaging in time management behaviors may be beneficial to the job performance of certain types of people. The current study was designed to test this hypothesized interaction of time management and other predictors of performance.

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The achievement striving dimension of the Type A behavior pattern is one such individual difference in motivation that has been linked to job performance. Type A behavior has been studied as a possible predictor of diverse behaviors in organizations. Findings based on a unidimensional conceptualization of Type A behavior are inconsistent, with Type A behavior positively (Jamal, 1985; Matthews, Helmreich, Beane, & Lucker, 1980; Taylor, Locke, Lee, & Gist, 1984) and negatively (Strube, Turner, Patrick, & Perrillo, 1983) related to organizationally relevant outcomes. Type A individuals have even

been shown to perform both more and less productively within the same study (e.g., Fazio, Cooper, Dayson, & Johnson, 1981; Matthews & Brunson, 1979).

One possibility for these inconsistent findings is that Type A behavior is more appropriately conceptualized as consisting of distinct components. When Spence, Helmreich, and Pred's two-dimensional conceptualization is used, with Type A behavior comprising achievement striving and impatience-irritability, findings are more consistent (see Helmreich, Spence, & Pred, 1988; Spence, Helmreich, & Pred, 1987; Spence, Pred, & Helmreich, 1989). Achievement striving is the extent to which individuals take their work seriously, are active, and work hard (Bluen, Barling, & Burns, 1990). Studies have shown that achievement striving is associated consistently with positive organizational outcomes such as job satisfaction (Bluen et al., 1990), escalating commitment to a course of action for individuals who perceive a high responsibility (Schaubroeck & Williams, 1993), and job performance (Bluen et al., 1990; Helmreich, Spence, & Pred, 1988; Northam, 1994). In analogue studies, achievement striving has been associated with students' grade point average (Barling & Charbonneau, 1992; Spence, Helmreich, & Pred, 1987; Spence, Pred, & Helmreich, 1989). In contrast, impatience-irritability reflects intolerance, anger, and hostility (Bluen et al., 1990). The impatience-irritability component regularly predicts poor psychosomatic health (Barling & Charbonneau, 1992; Spence et al., 1987), poor psychological well-being (Bluen et al., 1990; Northam, 1994), and poor marital relationships (Barling, Bluen, & Moss, 1990; MacEwen & Barling, 1993).

We suggest that this multidimensional conceptualization of Type A behavior is particularly appropriate for the prediction of car sales performance. Thus, individuals high in achievement striving are likely to be hard-working, involved in their jobs, and ambitious. These are all characteristics that are particularly suited to sales success (Lee & Gillen, 1989), and results show consistently that achievement striving is associated with sales performance (Bluen et al., 1990). Achievement striving is the effective ingredient of Type A behavior for predicting work performance, as there are no data to suggest that impatience-irritability is associated with sales performance. Accordingly, we excluded impatience-irritability from any further consideration in this study.

Our focus on achievement striving is also consistent with the proposition that Type A behavior results from the individual's attempt to control the environment (Glass, 1977). Thus, individuals work harder or more intensely as a result of their high need to control the environment. Consistent with the interactive model of performance outlined earlier, we suggest that engaging in time management behaviors offers one means of effectively

controlling the environment and is likely to have its greatest effect for individuals with a strong desire to exert such control.

There are also data suggesting that time management is a multidimensional construct. Britton and Tesser (1991) identified three dimensions of time management: short-range planning, long-range planning, and time attitudes. Short-range planning was defined as time management activities within a daily or weekly time frame and encompassed activities such as setting goals at the beginning of the day, planning and prioritizing daily activities, and creation of "to do" lists (Britton & Tesser, 1991, p. 407). Long-range planning referred to having long-range goals (i.e., over a quarter) and having well-organized work habits (Britton & Tesser, 1991, p. 408) and is similar to Macan's (1994) notion of a preference for organization. In contrast to these behavioral aspects of time management, Britton and Tesser (1991, p. 408) also defined a third dimension of time management that related to the individual's perceptions and attitudes about time management and is similar to Macan's construct of perceived control over time. Thus, time attitudes include the perception that the individual is in control of time, the perception that the individual is effectively managing his or her time, and the perception that the individual is making constructive use of time. Britton and Tesser suggested that these time attitudes reflect a sense of self-efficacy, which is plausibly an outcome of engaging in time management behaviors.

In Britton and Tesser's (1991) study of academic performance, both short-range planning and time attitudes predicted grade point average over the next 4 years; long-range planning did not. However, given that time attitudes do not reference specific behaviors and are quite likely to be an outcome of engaging in effective time management behaviors, we focused our analysis on the two behavioral components identified by Britton and Tesser: short-range and long-range planning. Specifically, we evaluated the way in which these two dimensions of time management behavior predict car sales performance and, more specifically, whether the dimensions of time management interact with achievement striving to predict sales performance.

For several reasons, we focused specifically on the sales performance of car salespeople as our operational measure of job performance. First, previous studies have demonstrated that achievement striving predicts sales performance (e.g., Bluen et al., 1990), and engaging in time management behaviors has been cited in trade journals as a means of enhancing the performance of sales personnel (Berkowitz & Ginter, 1978; Feiertag, 1991; Friedman, 1993). Second, reliance on assessments of job performance based on supervisory ratings may result in a restricted criterion, thereby limiting the potential for

significant prediction. For example, Macan (1994) noted that supervisory job performance ratings were restricted to the high end of the scale. In contrast, there is considerable variation in individual-level sales data, and our study procedures were specifically designed to ensure an adequate scale range in the criterion.

Thus, the current study was designed to assess the interaction of two forms of time management behaviors and achievement striving as predictors of sales performance. Specifically, we predicted that both short-range and long-range planning would interact with achievement striving to predict car sales performance.

Method

Participants

We explained the goal of the study to general managers at 60 car dealerships across Canada and asked whether they would participate in this study. All 60 dealerships agreed to participate. The general managers were then asked to identify their top salesperson and one average salesperson, making sure that both had at least one year of car sales experience so as not to bias the sample because of early attrition of less successful sales staff (Seligman & Schulman, 1986).

Of the 120 questionnaires distributed to the salespersons, 105 were returned (87.5% response rate); the responses from the 3 female respondents were excluded because of insufficient data. The average sales experience for the remaining 102 respondents was 8.14 years ($SD = 6.41$; range = 1–35 years), and their mean age was 37.27 years ($SD = 9.31$, range = 22–58 years). On average, annual vehicle sales for the sample was 131 units ($SD = 60.22$, range = 41–400 units).

Questionnaires

We used a shortened form of Britton and Tesser's (1991) time management questionnaire to assess the two components of time management behavior: short-range planning (four out of the original seven items) and long-range planning (three out of

the original five items). In each case, items were chosen on the basis of their factor loadings from Britton and Tesser's (1991, p. 407) analysis. All items are rated on a 5-point scale (*always, frequently, sometimes, infrequently, never*) with 1 reflecting the lowest achievement striving. Internal reliability for the two subscales was adequate (short-range planning, $\alpha = .85$; long-range planning, $\alpha = .73$). Initial inspection of the data suggested a strong correlation, $r(100) = .66, p < .01$, between the short-range and long-range planning scales.

We conducted a confirmatory factor analysis, using maximum likelihood estimation as implemented in LISREL VIII (Jöreskog & Sörbom, 1993) to assess the dimensionality of the shortened scales. An oblique two-factor model corresponding to the short-range planning and long-range planning distinction described by Britton and Tesser (1991) provided a reasonable fit to the data, $\chi^2(13, N = 102) = 40.49, p < .01$, goodness-of-fit index (GFI) = .90, normed fit index (NFI) = .88, comparative fit index (CFI) = .92, and a significantly better fit than a model specifying one factor on which all items were allowed to load, $\chi^2(14, N = 102) = 54.72, p < .01$, GFI = .88, NFI = .84, CFI = .87; $\chi^2_{\text{difference}}(1) = 14.23, p < .01$. Standardized parameter estimates for the two-factor model are presented in Table 1.

To assess achievement striving, we used six items from Spence et al.'s (1987) seven-item measure; we excluded their last item about respondents' approach to life in general. All six items were based on a 5-point rating scale. The internal consistency of this scale was high ($\alpha = .87$).

In assessing achievement striving and the time management components, we used shortened scales to maximize the likelihood that respondents would participate. In both cases, the unweighted sum of responses was divided by the number of items to derive scale scores.

Results

Descriptive statistics and intercorrelations for all study variables are presented in Tables 2 and 3. Years of experience was significantly correlated with both car sales and achievement striving and was included as a control variable in all subsequent analyses. As shown, individuals

Table 1
Standardized Parameter Estimates for Short- and Long-Range
Planning With the Two-Factor Model

Item	Planning	
	Short range	Long range
Do you make lists of the things you have to do each day?	.72**	
Do you plan your day before you start it?	.70**	
Do you make a schedule of the activities you have to do on work days?	.83**	
Do you write a set of goals for yourself each day?	.83**	
Do you usually keep your desk clear of everything other than what you are currently working on?		.53**
Do you have a set of goals for the entire quarter?		.79**
The night before a major project is due, are you usually still working on it? ^a		.78**

^a Reverse scored.

** $p < .01$.

Table 2
Descriptive Statistics and Intercorrelations for Average Performers

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Years	5.66	5.05	—				
2. Sales	85.49	16.26	.40*	—			
3. Short-range planning	3.39	0.72	-.02	.11	—		
4. Long-range planning	3.25	0.61	-.01	.21	.52*	—	
5. Achievement striving	3.25	0.61	.18	.27	.51*	.57*	—

Note. $n = 50$.

* $p < .05$.

identified as high performers by their general managers differed significantly from those identified as average performers on all study variables, Wilks's $\Lambda = .36$, $F(5, 95) = 34.02$, $p < .01$. Individuals identified as high performers reported greater sales ($M = 175.19$ vs. $M = 85.49$), $F(1, 99) = 125.91$, $p < .01$, and more experience in sales ($M = 10.38$ years vs. $M = 5.66$ years), $F(1, 99) = 14.98$, $p < .01$, than did those identified as average performers. Moreover, those identified as high performers reported higher achievement striving ($M = 4.39$ vs. $M = 3.25$), $F(1, 99) = 99.56$, $p < .01$, more frequent short-range planning ($M = 4.29$ vs. $M = 3.39$), $F(1, 99) = 38.69$, $p < .01$, and more frequent long-range planning ($M = 4.40$ vs. $M = 3.25$), $F(1, 99) = 53.91$, $p < .01$, than did those identified as average performers.

To assess the proposed interactions, we conducted a moderated multiple regression (Aiken & West, 1991). The criterion (car sales) was regressed on years of sales experience (as a control variable), achievement striving, short-range planning, and long-range planning on the first step, on the 3 two-way interactions on the second step, and on the three-way interaction on the third step. At each step in the analysis, the change in R^2 was evaluated with the ΔF statistic to assess the contribution of the terms entered at that step to the prediction.

Table 3
Descriptive Statistics and Intercorrelations for High Performers

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Years	10.39	6.78	—				
2. Sales	175.19	16.26	-.12	—			
3. Short-range planning	4.29	0.70	.48*	-.15	—		
4. Long-range planning	4.40	0.54	.55*	.30	.05	—	
5. Achievement striving	4.39	0.52	.61*	.53*	.44*	.15	—

Note. $n = 52$.

* $p < .05$.

Table 4
Results of the Moderated Regression Analyses From Models 1, 2, and 3 (Data Weights and R^2 s)

Variable	Main effect	Interaction	
		2-way	3-way
Years	.21*	.19*	.19*
Planning			
Short range (SRP)	.17	.17	.13
Long range (LRP)	.04	.12	.13
Achievement striving (AS)	.49**	.52**	.48**
AS \times SRP		.32**	.31**
AS \times LRP		.10	.13
SRP \times LRP		-.07	-.03
AS \times SRP \times LRP			.11
Overall R^2	.535**	.642**	.645**

* $p < .05$. ** $p < .01$.

Table 4 presents the results of three regression analyses—a model including only the main effects, a second model with both the main effects and the two-way interactions, and a third model incorporating the main effects, two-way interactions, and the three-way interaction of short-range planning, long-range planning, and achievement striving. With only the main effects entered (Model 1), the model accounted for 53.5% of criterion variance, $F(4, 97) = 27.92$, $p < .01$. Both years of experience and achievement striving emerged as significant predictors. Neither short-range nor long-range planning significantly predicted the criterion.

The addition of the second-order interactions (Model 2) accounted for an additional 10.7% of the variance, $\Delta F(3, 94) = 9.33$, $p < .01$. Only one of the two-way interactions (Achievement Striving \times Short-Range Planning) made a significant independent contribution (10.1% of criterion variance) to the prediction. On the final step (Model 3), the addition of the three-way interaction did not make a significant contribution to the variance. Moreover, the three-way interaction accounted for less than 1% of criterion variance (frequently cited as the criterion for a meaningful effect in moderated multiple regression analyses; Aiken & West, 1991).

Discussion

The purpose of this study was to assess the hypothesis that time management interacts with achievement striving to predict car sales performance. Some support for the hypothesis was obtained, with the short-range planning dimension of time management interacting with achievement striving to predict sales. These findings support our original hypothesis and are consistent with Macan's (1994) suggestion that the effects of time management behavior may vary across individuals; in the cur-

rent case, the effects varied according to individual levels of motivation. Contrary to our hypothesis, long-range planning did not interact with achievement striving to predict sales performance.

Taken together, these results suggest that different aspects of time management behavior may have different effects in predicting performance. Consistent with Britton and Tesser's (1991) conclusions with respect to academic performance, we found that short-range but not long-range planning interacted with achievement striving to predict job performance. Britton and Tesser suggested that their results might reflect an environmental influence; short-range planning may be more effective than long-range planning in environments that are characterized by rapid change and unpredictable demands.

Although we find this explanation plausible, the differential results we obtained might also be related to the actual behaviors composing each dimension (i.e., daily goal setting vs. long-term goal setting; prioritizing daily activities vs. generally being organized). Future research could be profitably directed at identifying which time management behaviors are effective in enhancing individual job performance.

In this regard, it is important to note that we focused on only a subset of time management dimensions identified in the literature. We did not include a measure of time attitudes (Britton & Tesser, 1991) or perceived control over time (Macan, 1994). Our rationale for this exclusion was our interest in focusing on time management behaviors as opposed to perceptions of time or attitudes toward time use. Nonetheless, previous research (e.g., Britton & Tesser, 1991; Macan, 1994) has identified these attitudinal variables as being important to a diverse array of outcomes, and future research could profitably investigate a fuller array of time management constructs as predictors of job performance.

An additional direction for future research emerges from our identification of a significant interaction between short-range planning and achievement striving in predicting sales performance. In particular, our data do not allow us to conclusively identify one variable as the moderator and another as the predictor. It is possible that engaging in short-range planning moderates the effect of achievement striving on sales performance. However, it is equally plausible that achievement striving moderates the effect of short-range planning on performance. Future research could be directed to disentangling the nature of the interaction.

Several additional avenues for future research are also apparent from the current study. First, we only investigated the total number of sales. However, a more accurate measure of sales performance should take account of both the quantity and the quality of sales performance (e.g., repeat business, sale of service packages, dollar

value of sales; Bluen et al., 1990). Second, future research should control for the nature and size of the dealership, as well as the city or region in which the dealership is situated, as these local factors might affect sales performance. Third, our findings are postdictive in that information on the outcome variable preceded collection of the predictor variables. Future research should include longitudinal analyses in which data on achievement striving and time management behaviors are obtained prior to sales performance. Finally, although our results suggest the importance of short-range and not long-range planning, it is important to note that the two forms of time management were significantly related ($r = .66$) in the current study and are possibly a function of multicollinearity. Replication of these findings in different samples and with different measures would substantially mitigate this concern.

Taken at face value, our results, suggesting that time management skills do contribute to sales performance for some individuals, might be taken as support for the continued practice of implementing time management training for employees. We suggest that no such conclusion is warranted. We did not assess the role of time management training, and previous studies have questioned the effectiveness of such training in enhancing time management behaviors (Macan, 1994). Thus, contrary to Macan's conclusions, we suggest that time management behaviors do contribute, albeit indirectly, to job performance for some people. However, we also agree with and repeat Macan's call for more research on the determinants of time management behaviors and the effectiveness of interventions designed to increase such behaviors. Should effective means of increasing time management behaviors be identified, our results suggest that there would be a concomitant increase in job performance for highly motivated individuals.

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