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Influences of Creative Personality and Working Environment on the Research Productivity of Business School Faculty

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Previous research on creative working environments has focused on business organizations. This study examined the influence of creative personality and creative working environment on the research productivity of business faculty. It was hypothesized that creative personality, family support, colleague support, research resources, and workload pressures would all have a positive association with research productivity. Management faculty people (N = 247) employed in business schools with a doctoral program participated in an online survey. Research productivity was assessed using both objective counts of journal publications across a 5-year period and self-report. Support from colleagues and workload pressures were positively associated with total self-reported publications. Research resources and workload pressures were positively associated with publications in top management journals. Implications for future research and practice are discussed.

Modern organizations face turbulence and change on a continuous basis due to a host of factors, including new technologies, competitor strategies, and changes in customer tastes and preferences. Under turbulent business environment, creativity has been recognized a critical contributor to the success of organization, so scholars have made extensive efforts to identify personal and workplace characteristics that promote or hinder creativity (see Shalley, Zhou, & Oldham, 2004). Recent studies found workplace characteristics that foster employee creativity such as support from supervisor (Oldham & Cummings, 1996; Rego, Sousa, Marques, & Cunha, 2012; Yoshida, Sendjaya, & Cooper, 2014), coworkers (Hülseger, Anderson, & Salgado, 2009; Zhou & George, 2001), and family (Madjar, 2005, 2008); appropriate resources (Cohen & Levinthal, 1990; Damapour, 1991); and complex and challenging tasks (Tierney & Farmer, 2002, 2004). Other studies discussed inhibitors of creative performance including close monitoring of employee performance (Zhou, 2003), aversive leadership, unsupportive organizational climate (Choi, Anderson, & Veillette, 2009), and judgmental evaluation (Shalley & Perry-Smith, 2001).

For most universities’ research, productivity of faculty members is one of important performance measures, requiring creativity. The working environment of a university and the creative personality of faculty may play a crucial role in determining the creativity-related productivity and performance. There have been efforts to reveal institutional and personal factors to influence the research productivity of faculty. Rushton and his colleagues (1983) investigated major personality traits associated with creative researchers and effective teachers, and identified that the cluster of traits defining them are approximately orthogonal. In the study of marketing faculty, Runyan, Finnegan, Gonzalez-Padrón, and Line (2013) found that department ranking, adviser productivity, and length of time in the new job were positive indicators of research productivity. Betsey (2007) studied the research productivity of Black and White faculty members, demonstrating that faculty rank, the number of dependents, source of research...
funding, and teaching load influenced the faculty’s research performance. Long, Bowers, Barnett, and White (1998) found that the faculty’s academic affiliation was strongly associated with research productivity while academic origin wasn’t. Most studies on the effect of creative environment and personality on creative performance have been done in the context of business organizations. Although a few researchers have explored the effect of personal and institutional factors on research performance in the context of an academic organization, there have been few systematic studies that examine the effect of creative environment and personal creativity on the research productivity of faculty.

In our research, we sought to address these gaps in knowledge by examining the effect of both creative personality and creative working environment on the research productivity of management faculty. Specifically, we studied the impact of creative personality, support from family and friends, support from colleagues, research resources, and workload pressures on the research productivity of management faculty.

INDIVIDUAL CREATIVITY WITHIN ORGANIZATIONS

Consistent with prior treatments (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Ford, 1996; Woodman, Sawyer, & Griffin, 1993), creativity is defined as the production of novel and useful ideas and products. Several researchers have discussed that creativity is closely related to individuals’ value (Rice, 2006), cognitive ability or style (Carrol, 1985; Ford, 1996; Guilford, 1984); personality (Amabile, 1988; Barron & Harrington, 1981; Chiang, Hsu, & Hung, 2014); and knowledge (Ford, 1996), independence, and high aspiration (Helson, 1996). Specifically, Oldham and Cummings (1996) described highly creative people as capable, clever, intelligent, inventive, and reflective, and described less creative people as cautious, conservative, and mannerly.

Simonton (2000) identified four major issues associated with creativity: cognitive process, personality, social context, and lifespan development. In particular, he discussed that creative people were likely to have wide interests, greater openness to new experiences, a more conspicuous behavioral and cognitive flexibility, and more risk-taking boldness (p.153). Unlike other scholars who focused on either people or process aspect of creativity, Simonton (2003) suggested that creativity be understood from the perspectives of product, process, and person and be integrated into a unified view. Creativity has three core components: (a) the products that contain the creative ideas, (b) the persons who conceived those ideas, and (c) the process those persons used to do so (p. 490).

According to Zhou and George (2001), creative people suggest new ideas for achieving goals, improving performances, and developing new products; have abundant sources for creative ideas; and do not hesitate to take risks. Several empirical studies found that creative personality had a positive impact on the creative performance of employees (Dul, Ceylan, & Jaspers, 2011; Oldham & Cummings, 1996; Unsworth, Brown, & McGuire, 2000). Schei (2013) found that creative personality was positively associated with negotiation outcomes.

Creative personality is also likely to be especially important for unstructured, nonroutine tasks that require cognitive elaboration and insight. Given that successful research requires faculty members to generate original ideas, develop innovative research designs, analyze complex data, and deal with unpredictable outcomes, we predicted that faculty members with a highly creative personality would show better research productivity than those with a less creative personality.

Hypothesis 1: The individual creative personality of faculty members will be positively associated with research productivity.

CREATIVE WORKING ENVIRONMENT

Some organizational contexts may promote or support intrinsic motivation to enhance creative performance, whereas others may restrict or constrain interest and reduce creativity (e.g., Shalley et al., 2004). From the extensive literature review, Helmin and colleagues (2008) identified a variety of environmental factors that have impacts on creative performance including group characteristics, general work situation for individuals, and physical and extra organizational environment. Amabile et al. (1996) demonstrated that perceptions that work environments provide resources that stimulate creativity and avoid obstacles that hamper creativity were related to the creativity of organizational projects. Although extrinsic motivation such as incentives and bonuses has some positive impact on employees’ creativity (Yoon, Sung, Choi, Lee, & Kim, 2015), individuals are expected to be most creative when they experience a high level of intrinsic motivation, such that they are excited about a work activity and enjoy doing it for its own sake (Amabile, 1983, 1988; Shalley, 1991). Under these conditions, individuals are free of extraneous concerns and are likely to take risks, explore new cognitive pathways, and be playful with ideas and materials (Amabile, Goldfarb, & Brackfield, 1990). They are also likely to stay focused on the internal nature of the task and to work longer on an idea or problem. Situations that encourage this exploration and persistence should increase the likelihood of creative performance. Prior research has identified a variety of organizational contexts that may promote intrinsic motivation and creativity, such as support from the organization, supervisor, and colleagues; support from family and friends; resources; workload; and autonomy (e.g., Amabile et al., 1996; Chong & Ma, 2010; George & Zhou, 2007; Gong, Kim, Lee, & Zhu, 2013; Hirst, Knippenberg, Chen, & Sacramento, 2011; Oldham & Cummings, 1996; Scott & Bruce, 1994; Zhou, 2003). In our research, we examine the
influence of these variables, previously documented to influence creativity in business organizations, on creative performance in the academic environment in terms of research productivity.

Support From Family and Friends

Support from family members and friends outside of the employing organization can help people either avoid or cope with negative influences arising from the workplace that might otherwise lead to burnout or turnover intentions. Ryan and Miller (1994) demonstrated that help from family members outside of the organization influenced the level of emotional exhaustion from work. Other studies have also suggested that such support has an impact on employees’ creative performance. For example, Koestner, Walker, and Fichman (1999) suggested that family and friends’ support had a direct impact on individuals’ creative responses. Similarly, Madjar and his colleagues found that nonwork support from family and friends influenced people’s creative performance (Madjar, 2005, 2008; Madjar, Oldham, & Pratt, 2002). Walberg, Rasher, and Parkerson (1980) suggested that individuals who show high creativity had received support from their parents when they were children. We expected these more general findings to also apply to the academic research context, and predicted that social and psychological support from family and friends would have a positive impact on the research productivity of faculty members.

Hypothesis 2: Support from family and friends will be positively associated with research productivity.

Support From Colleagues

Although the generation of a creative idea within an organization may be seen as a solitary activity, in many cases an individual’s creative performance is the result of collaboration with work group members and peers. Work group cohesion influences employees’ creative performance because they feel that they can voice their ideas and opinions without personal censure (Hülshgeger et al., 2009; Scott & Bruce, 1994). In particular, information exchange is critical to innovation because it allows employees to share their perspectives and experiences and discuss and generate new ideas (Gong et al., 2013). In addition, a mutual openness to ideas may operate on creativity by exposing individuals to a greater variety of unusual ideas (Parnes & Noller, 1972). Madjar (2008) found that both emotional and informational support from a work-related group more significantly and positively influence on employees’ creative performance than a nonwork related group did. Therefore, we reasoned that support from colleagues would help faculty members attain higher levels of research productivity.

Hypothesis 3: Support from colleagues will be positively associated with research productivity.

Research Resources

Allocating appropriate resources to one’s working environment should also support creativity (Cohen & Levinthal, 1990; Damanpour, 1991; Delbecq & Mills, 1985). Aside from the obvious practical limitations that extreme resource restrictions place on what people can accomplish, perceptions of adequate resources can also influence individuals’ beliefs about the intrinsic value of projects and assignments (Farr & Ford, 1990; Kanter, 1983; Payne, 1990; Tushman & Nelson, 1990). Indeed, some prior research in the context of business graduate school has found that resource availability influenced research performance. Brewer and Brewer (1990) found that faculty perceptions about the availability of adequate research supports such as research assistants, secretarial help, computers, and libraries were critical to their research productivity. Similarly, a survey of accounting professors by King and Henderson (1991) found that faculty perceived that the availability of resources such as research assistants, computers, time, and editorial help contributed to enhancing their research performance. Therefore, we predicted that research resources would be positively related with research productivity.

Hypothesis 4: Research resources will be positively associated with research productivity.

Workload Pressures

Only a few studies have examined whether workload pressures have an effect on creative performance in organizations. Some of this research has suggested that extreme workload pressures can undermine creativity, but that small to moderate amounts of pressure could actually have a positive effect when viewed as natural byproducts of problems that are intellectually challenging and time urgent (Amabile, 1988; Amabile & Gryskewicz, 1989; Baer & Oldham, 2006; Durham, Locke, Poon, & McLeod, 2000). Andrews and Farris (1972) found that time pressure was generally associated with high creativity in R&D scientists, except when that pressure reached an undesirably high level. Excessive workload pressure would be expected to undermine creativity, especially if that time pressure were perceived as imposed externally as a means of control (Amabile, 1983). Management departments all have requirements related to research, teaching, and service that faculty members should meet. We reasoned that individuals who have attained management faculty status at universities with doctoral programs would likely view these workload pressures as challenging and expected elements of the work environment rather than as excessive and unreasonable attributes. Thus, we predicted that workload pressures would be positively associated with research productivity among management faculty.
Hypothesis 5: Workload pressures will be positively associated with research productivity.

In summary, this study predicted that creative personality and four factors contributing to a creative work environment—support from family and friends, support from colleagues, research resources, and workload pressures—would all be positively associated with research productivity. We tested these hypotheses using an Internet survey of management faculty employed at business schools that had a doctoral program. The study used established, previously validated measures to assess all predictor variables and assessed research productivity based on the number of publications, proceedings, conference presentations, books, and chapters produced during a 5-year period.

METHOD

Setting, Participants, and Procedures

Our study recruited faculty in business schools that provide doctoral program in management as potential participants. Using the 2000 Carnegie Mellon Classification (Carnegie Foundation for the Advancement of Teaching, n.d.), we identified 103 Association to Advance Collegiate Schools of Business (AACSIB)-accredited business schools with management doctoral programs. In classifying departments as containing or not containing management faculty, the study included departments labeled (by the business school in question) as management departments or labeled as departments of traditional management areas such as organizational behavior, organization theory, strategy or policy, personnel or human resource management, international business, and entrepreneurship. It also included faculty in departments labeled as areas related to management, such as industry and organizational psychology, industrial and labor relations, small business, and project management, provided that these departments were housed in a business school. This study targeted full, associate, and assistant professors, as well as lecturers or instructors with doctoral degrees, and excluded emeritus faculty and lecturers or instructors who did not hold doctoral degrees. Using university, college, and department web sites for these 103 business schools, the study identified a total of 1,900 e-mail addresses of faculty members meeting our criteria as prospective participants.

The questionnaire was administered in the form of a survey that was housed on an online server. We contacted prospective participants by e-mail in two waves. In the first wave, an invitation to participate and a link to the online survey was sent to all prospective participants. In the second wave, 6 weeks later, a follow-up invitation and link to the online survey was sent to all prospective participants who didn’t respond to the first wave (excluding nonparticipants who indicated in the first wave that they did not wish to be contacted again). Respondents were informed that their e-mail addresses were saved, under strict confidentiality, by the survey program to allow future matching of questionnaire responses with potential objective or archival information regarding publications. The first wave produced 166 responses, with 133 useable (i.e., complete) responses. The second wave produced an additional 123 responses, with 114 useable. Thus, the final sample size constituted 247 participants (68% men, 32% women), representing a response rate of 13% which is acceptable as previous studies (Jin & Drozdenko, 2010, 9%; Valentine & Fleishman, 2008, 9.3%) have used online survey. Although this rate of return was modest, this did not adversely affect the study’s effectiveness because the sample itself was large and included many different personnel and organizations. Within this final sample, 81% of respondents were married with a mean of 1.6 children. Regarding status, 43% (n = 103) were full professors, 25% (n = 59) were associate professors, 24% (n = 58) were assistant professors, 5% (n = 12) were visiting or adjunct professors with doctoral degrees, and 3% (n = 7) were instructors with doctoral degrees. The mean tenure at one’s present school was 12 years.

Measures

Creative personality

Creative Personality Score (CPS) index (Gough, 1979) was used to measure creative personality. The CPS is composed of 30 adjectives and asks respondents to check all adjectives that describe themselves well. When using the CPS, the score of +1 is assigned to adjectives typical of creative people, and the score of −1 is assigned to the adjectives atypical of creative people, with possible total scores ranging from −12 to 18. Reliability of the CPS is calculated using a weighted composite technique (Lord & Novick, 1968; Oldham & Cummings, 1996). The reliability of CPS index in this study was .67, which is a little bit lower than acceptable level (.70). However, the CPS index, itself, is a sound measure adopted by many creativity studies. For example, Oldham and Cummings (1996) reported reliability of .70 for the CPS within two samples of manufacturing employees. Madjar et al. (2002) reported reliability of .82 for the measure in the study of employees’ creativity.

Support from colleagues

Support from colleagues was measured using a seven-item scale from Podsakoff, Ahearne, and Mackenzie (1997; α = .95). The items ask respondents how much their colleagues are helpful in work. Example items are “Willingly share their expertise with others”, and “Help each other out if someone falls behind in his/her work.” Slight wording changes were made to some items to make them appropriate to an academic organization. Items were assessed on 7-point scales ranging from strongly disagree to strongly agree. The items were measured on a 7-point scale, with “1” representing “strongly disagree” and “7” representing “strongly agree.” We averaged these seven items to produce scale scores (α = .91 in the current study).
Support from family and friends

The four-item scale developed by Caplan, Cobb, French, Harrison, and Pinneau (1975, α = .81) was employed to measure the variable. Items asked respondents how much their family and friends are willing to support them and help them accommodate work responsibilities. An example item is “How much do your family and friends go out of their way to do things to make your work life easier for you?” The items were measured by 5-point scales anchored as follows: 1 = don’t have such person, 2 = not at all, 3 = a little, 4 = somewhat, and 5 = very much. The four items were averaged to produce an index of support from family and friends (α = .80 in the current study).

Research resources

Our study employed a six-item scale from Scott and Bruce’s study (1994, α = .77). The items ask respondents whether their organizations provide adequate time, funding, personnel, and assistance for creative work. The items were measured on a 5-point scale, with “1” representing “strongly disagree” and “5” representing “strongly agree.” A sample item is “Personnel shortages inhibit innovation in this organization” (reverse scored). Slight wording changes were made to some items to make them appropriate to an academic organization. We averaged the six items to produce scale scores (α = .80 in the current study).

Workload pressures

Workload pressures were measured using a five-item scale from Hamel and Bracken (1986, α = .81). The items were measured on a 7-point scale, with “1” representing “rarely” and “7” representing “frequently.” An example item is “How often does your job require you to work very hard?” We averaged the five items to produce scale scores (α = .88 in our study).

Demographic and control variables

This study also included questionnaire items to assess gender, marital status, number of children, teaching load (defined as courses taught per semester), years at one’s current university, and status (full professor versus other level). We included these factors as control variables in our multiple regressions. Regarding the status variable, initial analyses revealed that alternate scorings of this construct (full vs. others, full or associate vs. others, etc.) produced the same general pattern of results, so we present our final analyses using the full professor versus other level scoring for that variable.

Research Productivity

This study assessed research productivity in terms of peer-reviewed scholarly products using both self-reported data and objective counts of publications. Regarding self-reported data, we asked participants to report how many journal articles, conference proceedings or presentations, books, and chapters in edited books they had published over the past five years. Initial analyses showed the same pattern of results (with the exception of some results becoming non-significant when examining only books published) regardless of whether these measures were considered individually or in indices that combined across different types of research productivity. Thus, we present self-report results in terms of a total research productivity index that adds journal articles, conference papers, books, and book chapters.

Our study also used two objective research productivity measures based on the number of publication in academic journals over the past 5 years, and the number of publication in four top management journals (Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly, and Strategic Management Journal) during the same 5-year period. We used the Academic Search Premiere and Business Source Complete database within EBSCO to identify publications for each faculty member within our sample.

Although accuracy is a concern with self-reported data, we included the self-report data to provide information on conference presentations, book chapters, and other scholarly output not reflected in journal databases. In addition, the self-report measure was highly correlated with total objective publications (r = .80, p < .001), providing some evidence for convergent validity. The inclusion of all three productivity indices added richness to our analyses and allowed us to explore convergence across measures and identify predictors distinct to each type of productivity.

RESULTS

Table 1 presents descriptive statistics and correlations. This study tested our hypotheses using multiple regression analyses. Specifically, we first entered demographic variables as a control model in Step 1, then entered creative personality at Step 2 to see if personality explained significant variation in research productivity over and above demographic variables. Finally, we added the creative environment variables in Step 3 to examine both whether each environment variable explained significant variation over and above the demographics variables and personality, and to determine the proportion of explained variance in research productivity that creative environment factors added to the prior predictors.

Table 2 presents our multiple regression analyses for the self-reported research productivity variable. Model 1 showed that demographic variables explained 19% of the total variance in research productivity. Teaching load and years at current university were both negatively associated with research productivity, whereas status was strongly and positively
associated with research productivity. Model 2 examined the
effect of creative personality on research performance
(Hypothesis 1), controlling for demographic variables.
Creative personality did not explain significant variability in
research performance, nor did the addition of CPS to control
variables add any incremental contribution to $R^2$. Hence,
Hypothesis 1 was not supported. Model 3 tested the influence
of family and friend support (Hypothesis 2), colleague support
(Hypothesis 3), research resources (Hypothesis 4), and work-
load pressures (Hypothesis 5) on research productivity, con-
trolling for creative personality and demographic variables.
The results show that neither family and friend support nor
research resources had any significant relationship with
research productivity, indicating that Hypotheses 2 and 4
were not supported. However, colleague support and workload
pressures both had significant, positive relationships with
research productivity, providing support for Hypotheses 3 and
5. The addition of creative environment variables also pro-
duced a significant increase in $R^2$ (from 17% to 19%,
$p < .01$), indicating that environmental factors add significant
explanatory power and explained an additional 7% of total
variance in research productivity.

Table 3 presents multiple regression results using the
objective measurement of journal publications as the depen-
dent variable. In Model 1, status was positively associated
with research productivity, whereas years at current univer-
sity and teaching load were negatively associated with
research productivity. In Model 2, creative personality was
not a significant predictor, and the addition of creative

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<tbody>
<tr>
<td>Gender(^a)</td>
<td>.32</td>
<td>.47</td>
<td>1</td>
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<tr>
<td>Marital status(^b)</td>
<td>.81</td>
<td>.39</td>
<td>-.15(^*)</td>
<td>1</td>
<td></td>
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<tr>
<td>Number of children</td>
<td>1.57</td>
<td>1.31</td>
<td>-.21(^*)</td>
<td>.32(^*)</td>
<td>1</td>
<td></td>
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<tr>
<td>Teaching load(^c)</td>
<td>1.97</td>
<td>.92</td>
<td>.01</td>
<td>-.11</td>
<td>-.16(^*)</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>Years at current univ</td>
<td>12.00</td>
<td>9.88</td>
<td>-.20(^*)</td>
<td>.07</td>
<td>.23(^*)</td>
<td>-.05</td>
<td>1</td>
<td></td>
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<tr>
<td>Status(^d)</td>
<td>.42</td>
<td>.50</td>
<td>-.16(^*)</td>
<td>.12</td>
<td>.17(^*)</td>
<td>-.19(^*)</td>
<td>.57(^*)</td>
<td>1</td>
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<tr>
<td>Creativity (CPS)</td>
<td>6.62</td>
<td>3.77</td>
<td>-.05</td>
<td>-.01</td>
<td>-.08</td>
<td>-.10</td>
<td>.02</td>
<td>.11</td>
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<td></td>
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<tr>
<td>Family support</td>
<td>4.26</td>
<td>.73</td>
<td>.01</td>
<td>.18(^*)</td>
<td>.08</td>
<td>.03</td>
<td>.01</td>
<td>.02</td>
<td>.07</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Research resources</td>
<td>3.37</td>
<td>.79</td>
<td>-.16(^*)</td>
<td>.07</td>
<td>.03</td>
<td>-.09</td>
<td>.00</td>
<td>.12</td>
<td>.10</td>
<td>.23(^*)</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Workload pressures</td>
<td>4.88</td>
<td>1.03</td>
<td>-.20(^*)</td>
<td>-.09</td>
<td>-.08</td>
<td>-.15(^*)</td>
<td>-.15(^*)</td>
<td>.02</td>
<td>.03</td>
<td>.26**</td>
<td>-.10</td>
<td>1</td>
<td></td>
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<td></td>
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<tr>
<td>Colleague support</td>
<td>4.84</td>
<td>1.24</td>
<td>-.00</td>
<td>.05</td>
<td>.01</td>
<td>-.06</td>
<td>.03</td>
<td>.11</td>
<td>.00</td>
<td>.36**</td>
<td>.33**</td>
<td>.20**</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>Subj Total Pubs(^f)</td>
<td>19.59</td>
<td>16.63</td>
<td>-.12</td>
<td>.06</td>
<td>.01</td>
<td>-.17(^*)</td>
<td>-.02</td>
<td>.31**</td>
<td>.10</td>
<td>.04</td>
<td>.06</td>
<td>.25**</td>
<td>.19**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obj Journal Pubs(^g)</td>
<td>4.75</td>
<td>4.94</td>
<td>-.12</td>
<td>.11</td>
<td>.10</td>
<td>-.22**</td>
<td>.04</td>
<td>.31**</td>
<td>.03</td>
<td>.06</td>
<td>.08</td>
<td>.16*</td>
<td>.08</td>
<td>.70**</td>
<td>1</td>
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</tr>
<tr>
<td>Obj Top Pubs(^g)</td>
<td>.46</td>
<td>.95</td>
<td>-.07</td>
<td>.04</td>
<td>.08</td>
<td>-.21**</td>
<td>-.04</td>
<td>.12</td>
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<td>.25**</td>
<td>.19**</td>
<td>.10</td>
<td>.27**</td>
<td>.38**</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^a\)male = 0, female = 1
\(^b\)0 = not married, 1 = married
\(^c\)Courses taught per semester
\(^d\)1 = full professor, 0 = all others
\(^e\)Subjective Measurement of Total Combined Publications (Conference, Journal, Book, Book chapter)
\(^f\)Objective Measurement of Journal Publication
\(^g\)Objective Measurement of Top Management Journal Publication

\(p < .05\)
\(**p < .01\)
**TABLE 2**

Multiple regression analyses for self-reported total publications

<table>
<thead>
<tr>
<th>Predictor or Statistic</th>
<th>Control Model</th>
<th>Controls + CPS</th>
<th>Model 3: Full Model</th>
</tr>
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<tbody>
<tr>
<td><strong>Control Variables:</strong></td>
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<td>Beta(^b)</td>
<td>Beta(^c)</td>
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<tr>
<td>Gender</td>
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<td>−1.10</td>
<td>−1.15(^*)</td>
</tr>
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<td>Marital status(^d)</td>
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<td>−0.02</td>
<td>−0.02</td>
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<td>−0.02</td>
<td>−0.01</td>
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<td>−1.14(*)</td>
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</tr>
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<td>−0.27(*)</td>
<td>−0.24(*)</td>
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<tr>
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<td>.44(*)</td>
<td>.40(*)</td>
</tr>
<tr>
<td>CPS</td>
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<td>.09</td>
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<tr>
<td><strong>Environment Vars:</strong></td>
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<tr>
<td>Family support</td>
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<tr>
<td>Research resources</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Workload pressures</td>
<td>.21(*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleague support</td>
<td>.16(*)</td>
<td></td>
<td></td>
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<tr>
<td>R(^2)</td>
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<td>.19</td>
<td>.26</td>
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<tr>
<td>Adjusted R(^2)</td>
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<td>.17</td>
<td>.22</td>
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<td>F value</td>
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<td>7.22(*)</td>
<td>6.54(*)</td>
</tr>
<tr>
<td>Incremental R(^2)</td>
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</tr>
<tr>
<td>Incremental F</td>
<td>.55</td>
<td>4.52(*)</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)standardized regression coefficients
\(^b\) 0 = male, 1 = female
\(^c\) 0 = not married, 1 = married
\(^d\) Courses taught per semester
\(^e\) 1 = full professor, 0 = all others
\(^f\) \(p < .05\)
\(^*\) \(p < .01\)
\(^**\) \(p < .001\)

**DISCUSSION**

The results demonstrate clearly that specific aspects of the work environment are significantly associated with the research productivity of management faculty in doctoral-granting institutions. Hence, our work takes the important step of showing that aspects of the creative work environment are significant influences on the creative output of management scholars, and that such work environment influences on creativity are not restricted solely to business and manufacturing organizations. Regarding specific work environment factors, workload pressures showed significant relationships with all three productivity measures, support from colleagues was significant related with self-reported total research output, and research resources were strongly and significantly related with publications in top management journals. We also found that, on all three measures, full professor status was associated with higher research productivity and teaching load was associated with lower research productivity. Finally, years at current university was negatively related with two of the three productivity measures. Taken as a whole, these results and the patterns of relative convergence or lack thereof across our three research productivity measures provides valuable insights into some of the dynamics of work environment and creativity in general, and of work environment and research productivity among management scholars in particular.

Specifically, the results showed converging support across all three measures for the hypothesis that workload pressures are positively related with research productivity (Hypothesis 5). This finding is consistent with previous studies in nonacademic contexts that modest, but not excessive, workload-related pressures can enhance creative performance (Amabile, 1988; Amabile & Gryskewicz, 1989; Andrews & Farris, 1972). The study notes that initial regression analyses, as well as an examination of scatterplots, showed no evidence of any curvilinear relationships in our data on any of the three research productivity measures. Also, the mean for workload pressure in our study variable was 4.97, which corresponds to an anchor of often on the seven-point scale (with 7 representing always). This moderate pressure may challenge faculty members’ creativity, leading to better performance. In interpreting these results, our sample characteristics are also worth considering. Because we studied business schools with doctoral programs, these schools have well-qualified faculty capable of accommodating high research productivity standards and

**TABLE 3**

Multiple regression analyses for objective measure of journal publications

<table>
<thead>
<tr>
<th>Predictor or Statistic</th>
<th>Control Model</th>
<th>Controls + CPS</th>
<th>Model 3: Full Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control Variables:</strong></td>
<td>Beta(^a)</td>
<td>Beta(^b)</td>
<td>Beta(^c)</td>
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<td>.03</td>
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<tr>
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<td>.01</td>
<td>.01</td>
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<tr>
<td>Teaching load(^e)</td>
<td>−.17(*)</td>
<td>−.17(*)</td>
<td>−.15(*)</td>
</tr>
<tr>
<td>Year at current univ</td>
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<td>−.20*</td>
<td>−.18*</td>
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<td>Status(^f)</td>
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<td>.38(*)</td>
<td>.35(*)</td>
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<tr>
<td>CPS</td>
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<td>.10</td>
<td></td>
</tr>
<tr>
<td><strong>Environment Vars:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research resources</td>
<td>.02</td>
<td></td>
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<tr>
<td>Workload pressures</td>
<td>.15(*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleague support</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R(^2)</td>
<td>.17</td>
<td>.17</td>
<td>.19</td>
</tr>
<tr>
<td>Adjusted R(^2)</td>
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<td>.14</td>
<td>.15</td>
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<tr>
<td>F value</td>
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<td>6.03(*)</td>
<td>4.39(*)</td>
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<tr>
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<td>.04</td>
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</tr>
<tr>
<td>Incremental F</td>
<td>.00</td>
<td>.02</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)standardized regression coefficients
\(^b\) 0 = male, 1 = female
\(^c\) 0 = not married, 1 = married
\(^d\) Courses taught per semester
\(^e\) 1 = full professor, 0 = all others
\(^f\) \(p < .05\)
\(^*\) \(p < .01\)
\(^**\) \(p < .001\)
TABLE 4
Multiple regression analyses for objective measure of publications in top management journals

<table>
<thead>
<tr>
<th>Predictor or Statistic</th>
<th>Model 1: Control Model</th>
<th>Model 2: Controls + CPS</th>
<th>Model 3: Full Model</th>
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</thead>
<tbody>
<tr>
<td>Control Variables:</td>
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<td></td>
</tr>
<tr>
<td>Genderb</td>
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<td>−.06</td>
<td>−.06</td>
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<tr>
<td>Marital statusc</td>
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<td>−.03</td>
<td>−.04</td>
</tr>
<tr>
<td>Number of children</td>
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<td>.05</td>
<td>.05</td>
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<tr>
<td>Teaching loadd</td>
<td>−.17**</td>
<td>−.17**</td>
<td>−.13*</td>
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<tr>
<td>Year at current univ</td>
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<td>−.13</td>
<td>−.07</td>
</tr>
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<td>.15†</td>
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<tr>
<td>Environment Vars:</td>
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<tr>
<td>Family support</td>
<td>.07</td>
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<td></td>
</tr>
<tr>
<td>Research resources</td>
<td>.23**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workload pressures</td>
<td>.21**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleague support</td>
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</tr>
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<td>R²</td>
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<td>.08</td>
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<tr>
<td>Adjusted R²</td>
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<td>.05</td>
<td>.11</td>
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<tr>
<td>F value</td>
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<td>2.52*</td>
<td>3.54****</td>
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<tr>
<td>Incremental R²</td>
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<td>.08</td>
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</tr>
<tr>
<td>Incremental F</td>
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<td>5.01**</td>
<td></td>
</tr>
</tbody>
</table>

*a: standardized regression coefficients
b: male, 1 = female
c: not married, 1 = married
d: courses taught per semester
1: full professor, 0 = all others
*p < .05
**p < .01
***p < .001

high, but not excessive, amounts of workload pressure. It is possible that similar workload pressures might detract from research productivity in other academic contexts. In any case, the convergence across our three measures is compelling, and suggests that workload pressures may spur research productivity in doctoral-granting management departments.

The results also show that support from colleagues (Hypothesis 3) was positively associated with total self-reported scholarly output (on all types of publications, books, chapters, proceeding, and presentations), but had no significant relationships with either total journal publications or with publications in top management journals. The self-report results support previous findings on creative working environment in non-academic businesses (e.g., Hülshge et al., 2009; Zhou & George, 2001) and shows that colleague support can also play an important role in academic, business school contexts. This result suggest that developing a supportive collegial environment, perhaps by encouraging faculty to provide information, feedback, and encouragement, may enhance some aspects of research productivity within a department.

Yet, the lack of an impact on objective publications and on publications in top management journals suggests that such collegial support may only go so far in fostering research outcomes, and that performance of exceptional quality (such as that required to publish in top journals) may require additional resources. Consistent with this reasoning, although research resources (Hypothesis 4) showed no significant relationships with either self-reported productivity or with total articles, they did have a strong, significant relationship with recent publications in top management journals. One interpretation of this latter finding is that basic research resources at doctoral-granting institutions are likely good enough to provide the ability to publish generally, write chapters, present at conferences and so on, but that additional or higher quality research resources may be important to one’s ability to produce work competitive enough to land in the very best journals in the field. Similarly, selection processes at doctoral-granting schools are also likely to ensure that only research-capable faculty land positions at such institutions, such that productivity differences would be more likely to manifest themselves among the very top group of performance (those who publish in the most elite journals) than in the rest of our sample.

Given that past studies on creative personality (Hypothesis 1) have shown the CPS index to be a significant predictor of work-related creativity (e.g., Madjar et al., 2002; Oldham & Cummings, 1996), it is intriguing that the creative personality had no impact on research productivity in the current study. Range restriction may again provide a possible explanation for these null findings. Specifically, researchers become viable candidates for faculty positions at research schools and are selected for those positions from large applicant pools based partially on their creativity, personality fit with a research environment, research capabilities, and prior research performance. Thus, our sample likely bears many similarities in terms of having a creative personality and ability to deploy research tools in an adequate or better environment. Stated differently, our sample likely has less range on these variables than a more variable sample of employees in work organizations, limiting the predictive power of these variables relative to prior work on broader samples. Indeed, the mean of CPS, 6.93, was somewhat higher for our sample than those reported in prior research (e.g., Madjar et al., 2002, Mean = 0.15; Oldham & Cummings, 1996, Mean = 4.26). Of course, an alternate possibility is that these variables are simply not important to research productivity of management faculty teaching in doctoral-granting universities. A promising area for future research is to examine these same predictors in a wider variety of academic settings and university environments.

Support from family and friends (Hypothesis 2) had no significant impact on any of our three research productivity measures. This suggests that prior findings on social support in other settings may not generalize to research productivity in doctoral-granting management departments. Perhaps there is again less variability on this dimension in our sample of generally highly-paid individuals in a profession and organization in which good basic resources are provided.
than might be found in a broader or more diverse organizational sample. Another possibility is that some of the needed support is coming from friends and colleagues in the workplace, which would be consistent with the significant relationship found between colleague support and self-reported total research output.

The results also shed light on the role that certain demographic variables may play in research productivity. Our study found converging evidence across all three measures that teaching load is negatively associated with research productivity and that full professor status is positively associated with research productivity. Perhaps these findings are not surprising, as additional teaching responsibilities would obviously detract from available research time, and full professors typically benefit from greater research experience and higher status within the organization, as well as a likely greater ability to attract top doctoral students as research assistants and collaborators. Nevertheless, the consistency of these findings across measures reinforces the importance of these two factors. The number of years at one’s current university was negatively associated with research productivity on two of the three measures (and trending nonsignificantly in the same direction on the third). One possible explanation is that more productive scholars may be more mobile on the job market. Another possible explanation may be that senior scholars may take on more service, administrative, or consulting responsibilities that curtail research time. Finally, it is interesting to note that gender, marital status, and number of children had no consistent, significant impact on any of the research productivity measures. Hence it appears that, at least within our sample, these factors had little to no impact on scholarly output.

Although this research takes an important first step of examining creative personality and creative work environment influences on research productivity among management scholars, it also has some limitations. First, the response rate of 13% raises the possibility that the sample may not be representative of all management scholars at research schools. Second, although environmental factors explained significant incremental variability in research productivity, this addition to $R^2$ was small (7% for self-reported total research output, 2% for publications, and 8% for publications in top journals). Overall, all predictors explained between 16% and 26% of variance (depending on the productivity measure). Thus, it is important to acknowledge that a large amount of variability is explained by factors that were not examined in the current research.

Third, the measure of creative personality showed a weak reliability. Third, the study strategically focused our sample on management scholars at doctoral-granting business schools to draw clear conclusions about that context, but doing so does not allow us to draw broader conclusions about the full scope of research productivity in all management programs or to wider university contexts that transcend disciplines.

There are several promising areas for future work. Future studies might look for further elements of environments that may influence creativity performance such as internal strife, conservatism, and rigid, formal management structures (Kimberley, 1981). Additional environmental variables implicated in the productivity and stress literatures, such as role conflict, role ambiguity, and time pressure, could also be studied. Future work might also attempt to measure additional or more specific aspects of the academic context, such as administrative workload, outside consulting responsibilities, and the nature of research assignments and norms in the department. For example, Brewer and Brewer (1990) suggested that monetary incentives may be an important driver of research productivity. Finally, it would be valuable to explore the impact of creative working environment on research productivity in teaching universities or colleges in other fields such as engineering, natural science, social sciences, and education.

REFERENCES


