Motivators and Inhibitors for University Faculty in Distance and e-learning

Ruth Gannon Cook, Kathryn Ley, Caroline Crawford and Allen Warner

Ruth Gannon Cook is an assistant professor in the DePaul University School for New Learning; Kathryn Ley and Caroline Crawford are associate professors in the School of Education, Instructional Technology Program at the University of Houston-Clear Lake; Allen Warner is a professor at the University of Houston. Address for correspondence: Dr Ruth Gannon Cook, DePaul University School for New Learning, 25 E. Jackson Blvd., Chicago, IL 60604, USA. Tel: +1 (312) 362-5120; email: rgannonc@depaul.edu

Abstract
This article reports on four United States studies of how rewards systems, extrinsic and intrinsic, could play an important role in providing incentives for university faculty to teach (or remain teaching) electronic and distance education courses. The first three studies conducted prior to 2003 reported faculty were inherently motivated to teach e-learning and distance education. The fourth study in 2003 reported key findings that differed from the earlier studies. Using a principal components analysis, the researchers found nine indicators of motivation to participate or not participate in electronic or distance education. The implications from the fourth study indicated that, while faculty members were inherently committed to helping students, faculty members wanted their basic physiological needs met by university administration through extrinsic motivators, such as salary increases and course releases.

The success of electronic, web-based, courses (e-courses) depends not only upon the schools and universities, but also on the faculty and adjunct instructors who teach these courses. Yet few studies have addressed what motivates or deters the faculty who create and teach e-courses beyond the acknowledgment of their overarching intrinsic motivation to help others achieve an education. Two studies conducted prior to 2002 and two conducted after 2002 were assessed in order to look at which factors were identified by faculty members as influencing their participation or nonparticipation in electronic learning (e-learning) and distance education (DE) courses (Beggs, 2000; Betts, 1998; Gannon-Cook, 2003; Schifter, 2000). These studies used the same (in three instances) or similar (in one study) self-report instrument to measure the intrinsic and extrinsic faculty motivators and demotivators in four university settings. The
findings of these surveys indicate that faculty motivation and DE participation are closely aligned. Faculty are intrinsically motivated to help students, but extrinsically motivated to meet their physiological needs through incentives, such as salary increases, course releases and technology support derived from teaching e-learning and DE courses. So, while studies prior to 2003 indicate intrinsic motivation as sufficient to enlist faculty participation in DE, studies conducted since 2003 indicate that extrinsic motivators play an increasing role in DE faculty participation.

**Literature review**
Because of the growth in DE and e-learning courses, there has been a growing clamour for more DE from both the academic and public communities. Studies point to faculty as a key component in the growth and unprecedented success of DE (American Council on Education, 2003; Brewer, Potter, Jannasch-Pennell & DiGangi, 2004; Colbeck, Cabrera & Marine, 2002; Crumpacker, 2001; Giannoni & Teson, 2003; Husmann and Miller, 2001; McKenzie, Mims, Bennett & Waugh, 2000; National Center for Education Statistics, 2002; Parker, 2003; Alfred P. Sloan Foundation. 2004; United States Distance Learning Association, 2001; Web-based Education Commission to the President and the Congress of the United States, 2000). As demand for more DE continues, the study of what can motivate faculty to teach DE courses becomes more crucial. An analysis of DE studies conducted in the USA and published between 1996 and 2005 provides inferences of why faculty participate (or not) in distance education.

**Motivation theory**
The theoretical underpinnings for the studies mentioned herein centre around motivation theory, which looks at factors influencing ‘an individual’s willingness to exert effort to achieve the organization’s goals, conditioned by this effort’s ability to satisfy individual needs’ (DeCenzo & Robbins, 1994, p. 327). The origins of motivation theory emanate from the field of behavioural psychology, which focuses upon specific human responses in order to replicate precise conditions and achieve specific outcomes (Deci & Ryan, 1985; Ellis, 1984; Herzberg, 1964; Lepper & Cordova, 1992; Maslow, 1970; Medved, 1982; Rogers & Shoemaker, 1971; Rogers, 1983). Motivation theorists, such as Rogers (1983), proposed that there were stages of acceptance and rejection of innovations. Subjects were identified as early adopters (enthusiasts who immediately used the innovation); adapters (those who accepted the innovation), late adopters and resisters to innovations.

One of the most well-known behavioural psychologists for his work in motivational theory was Abraham Maslow (1954). His hierarchy of needs theory was based on the basic motivations that govern human behaviour. Needs are prioritised, ranging from the most basic needs of food, water and sleep; to self-actualization needs that include the desire for self-fulfilment and the realisation of one’s potential (French, 2001). Once the person’s basic physiological needs are met, food shelter, safety and money, then one moves on to desire the next level of needs, those of acceptance, love, higher self-esteem and self-actualisation. The final levels of needs intrinsically motivate a person to perform
actions that will result in rewards of acceptance, love, higher self-esteem and self-actualisation (Maslow, 1970; Rogers & Shoemaker, 1971; Rogers, 1983).

The major implications of Maslow are that all of these needs must be met.

Making managers work such long hours that they do not get enough sleep probably reduces their desires for achievement ... being arbitrary and capricious about employees’ job security interferes with cooperation, initiative, and other desirable behaviors ... but paying exclusive attention to the more basic physiological and security needs and ignoring the needs for achievement and self-esteem would also defeat organizational purposes. (French, 2001, p. 124)

Faculty participation in distance education
At least nine studies on faculty distance education participation published prior to 2001 indicated faculty used distance education because they wanted to help their students. They perceived distance education as a vehicle for students to attend classes (Beggs, 2000; Betts, 1998; Bonk, 2001; Dillon & Walsh, 1992; Ellis, 2000; Olcott & Wright, 1995; Schiffer, 2000; Wolcott & Betts, 1999; Wolcott & Haderlie, 1995). Those faculty ‘early adopters’ (Rogers & Shoemaker, 1971) were seeking the opportunity to try something new, which was a motivator as powerful as money or tangible rewards.

But tangible rewards are influencing later adopters of DE. Motivators, such as stipends, course releases, technology training, administrative support and recognition for their DE efforts offer attractive incentives for faculty to participate in DE (Gannon-Cook, 2003; Giannoni & Teson, 2003; Husmann & Miller, 2001; McKenzie et al, 2000; Parker, 2003; Twigg, 2005; Wolcott, 2002). Interestingly, several studies showed extrinsic motivators not only as being incentives to participation in DE, but as demotivators or disincentives to participation in DE (Bower, 2002; Gannon-Cook, 2003; O’Quinn & Corry, 2002; Schiffer, 2002; Wolcott, 2002). Deterrents for teaching DE, such as increased time commitments for DE classes, lack of tenure considerations, lack of course releases and lack of training and technology support, were among the most common disincentives found in the post-2000 DE and e-course studies.

The following sections will look at four university studies that addressed intrinsic and extrinsic faculty motivation to teach (or not teach) DE. Two studies conducted in the eastern United States will be distinguished as Eastern University One and Eastern University Two, the other two universities as Southeastern University and Southwestern University.

Eastern University One
The first study (Betts, 1998) was mailed to faculty and deans, with 54% (n = 539) responding to the survey, of which 82% (440) considered themselves to be nonparticipants in DE. The first section contained 34 Likert-scale questions with responses ranging from 1 (strongly disagree) to 5 (strongly agree) on which factors would motivate respondents to participate in DE. Twenty-four of those questions were external
motivators to participate in DE, and 10 questions were about intrinsic motivators to participate in DE. These two sections were followed by a section that contained 19 Likert-scale questions. (See Appendix A.)

The top five intrinsic motivators to participate in DE were

1. Ability to reach new audiences that could not attend classes on campus;
2. Opportunity to develop new ideas;
3. Personal motivation to use technology;
4. Intellectual challenge; and
5. Overall job satisfaction.

The top five inhibitors to DE were

1. Lack of technical support provided by the institution;
2. Concern about faculty workload;
3. Lack of release time;
4. Lack of grants for materials/expenses; and
5. Concern about quality of courses.

There was no significant difference between motivating factors (such as technical support, intellectual challenge, and increase in salary) by faculty and deans responding to the survey, but there were differences in the significance of choices between the faculty and deans. Inhibiting factors, such as lack of release time, lack of technical support and concern about faculty workload ‘had a greater negative effect on faculty participation than the deans had perceived’ (Betts, 1998, p. 192). The study concluded that

- Faculty who are not involved in the tenure and promotion process ‘are more likely to participate than faculty with less experience in higher education and/or faculty who are vying for tenure’ (Betts, 1998, p. 190)
- Intrinsic factors, such as intellectual challenge, personal motivation to use technology and ability to reach new audiences, positively influence faculty in DE. Inhibiting factors, such as lack of release time, lack of technical support, concern about faculty workload and lack of grants for materials, negatively influence participation.
- Extrinsic motivators like credit towards promotion and tenure, merit pay and royalties on copyrighted materials, do not significantly influence faculty participation. Faculty already participating in DE are more intrinsically motivated to participate than non-participants, but more faculty would be likely to participate if inhibiting factors “were eliminated by the administration” (Betts, 1998, p. 191).
- University administration should consider eliminating inhibitors to faculty participation in DE.

Eastern University Two

The second study (Schifter, 2000) used a modified version of the Eastern University One (Betts, 1998) survey (several extrinsic motivator items were deleted: increase in salary, course assignments, royalties on copyrighted materials, recognition and awards and...
opportunity to influence social change). The survey was mailed to all full-time faculty, deans and senior administrators. Twenty per cent ($n = 263$) of the survey recipients responded, of which 38 (14%) considered themselves to be participants in DE, which meant that 86% (225) of the respondents considered themselves to be nonparticipants (Schifter, 2000). The data were analysed utilising an analysis of variance.

The top five motivating items were

1. Intellectual challenge;
2. Opportunity to diversify programme offerings;
3. Opportunity to develop new ideas;
4. Overall job satisfaction; and
5. Opportunity to improve my teaching

The top five inhibitors were

1. Lack of release time;
2. Lack of support and encouragement from institution’s administrators;
3. Lack of merit pay;
4. Lack of support and encouragement from departmental colleagues; and
5. Lack of monetary support for participation (eg, stipend, overload).

All three participating groups rated extrinsic factors as inhibiting factors to DE participation. While faculty also expressed concerns related to inadequate financial rewards and workload concerns, the study concluded that faculty members were intrinsically motivated to participate in DE.

Southeast University

A third study (Beggs, 2000) used a survey that was similar to the Eastern University One (Betts, 1998) survey. The survey was mailed to 348 full-time faculty, of which 157 responded (45%). The methodology used in this survey was a multiple regression.

This survey ranked the following top five items in the order of importance:

1. Improved student learning;
2. Advantage (of DE) over traditional teaching;
3. Equipment availability;
4. Increased student interest; and
5. Ease of use.

The 5 barriers or inhibitors to adoption were:

1. lack of time received to do DE;
2. lack of easily accessible equipment;
3. lack of training;
4. lack of contribution to professional development (less important); and
5. lack of relevance to a faculty’s discipline.
The Southeastern University had a commitment to technology; there was a commitment of significant funds to technology development, as well as extensive training programmes and a strong distance learning department. More than half of the faculty who responded said technology is essential (53.2%). But in the open-ended questions included in this survey, faculty cited the amount of time needed was a disincentive to do DE. Lack of other incentives, such as money or course releases, were also deterrents to DE.

The study’s author concluded that the adoption of technology had passed the self-sustaining point, ‘the early adopters have blazed the trail ... the early majority has proven that instruction technology is effective, and instructional technology is simply being integrated by the late majority as part of their (the university) pedagogy’ (Beggs, 2000, p. 9).

Southwestern University

The fourth study (Gannon-Cook, 2003) Southwestern University adapted the Northeastern One University survey (Betts, 1998) for electronic delivery to faculty. There were 217 respondents (16%), of which 121 (56%) had participated in DE. Several of the prior DE studies utilised multiple regressions (Beggs, 2000; Betts, 1998), which provided adequate data analysis, but, did not obviate potential problems of multicollinearity and reliability. The Southwestern University study used a principal components analysis (PCA) to reduce the number of predictors in a multiple regression.

This survey ranked the following top five items in the order of importance:

1. Traditional service;
2. Monetary rewards;
3. Insufficient rewards;
4. Technical and administrative support; and
5. Professional prestige

The barriers or inhibitors to adoption were

1. Insufficient rewards (includes lack of salary increase, merit pay; promotion, release time, royalties and recognition);
2. Lack of technical support (from dean, colleagues);
3. Lack of technology background;
4. Concern over professional quality (of DE); and
5. Concern over quality of students work.

The study concluded that, while faculty members’ foremost inclinations were intrinsic, to teach and provide student services, such as DE, this factor was inherent in all faculty; it should not be singled out by university administration as an incentive to teach DE. The remaining top four motivating factors were extrinsic and should be considered by administration as incentives to faculty to teach DE.

Methodology

The four studies utilised the same (or similar) survey, which helped data interpretation and allowed the researchers to analyse variances in each study. Two studies used the
same survey, the Eastern University One and Southwestern University; and two used slightly different surveys, the Eastern University Two and the Southeastern University. The findings of the surveys varied according to the application of the methodology utilised in each, and any alterations made to the surveys. The first and third studies used multiple regression analysis; the second, an analysis of variance, and the fourth, a principal components analysis.

**Principal components analysis**

If the number of predictors is too large, a PCA is one way of attacking the multicollinearity problem (Stevens, 1996; Houle, Mezey & Galpern, 2001; McDonald, 1985; Merenda, 1997; Tabachnick & Fidell, 1996). In the fourth study, the researchers found that a PCA provided the most parsimonious solution of the four studies, based on the number of predictors, sample size, nonlinearity and dichotomous variables (Gannon-Cook, 2003; Shiarella, McCarthy & Tucker, 2000).

The PCA reduced the 53 survey variables to nine factors (See Appendix B): traditional staff service; monetary rewards; insufficient rewards; technical and administrative support; job advancement requirements; professional quality; professional prestige; bad press; and personal benefits.

A scree test (Cattell, 1966; Stevens, 1996) plotted the magnitude of eigenvalues (the ‘consolidated variance in a matrix’ [Tabachnick & Fidell, 2001, p. 915]) against their ordinal numbers (first eigenvalue, second eigenvalue, etc.). The magnitude of successive eigenvalues on the graph dropped off sharply after the ninth factor, so the researchers followed the practice of retaining all factors prior to the sharp drop, retaining the first nine factors (Stevens, 1996).

In a PCA, at least 70% of the total variance should be accounted for by the retained factors (Stevens, 1996; Tabachnick & Fidell, 2001) and in this study, 70% of the variance was accounted for by the nine retained variables. The Cronbach alpha levels were set at 0.80 or greater to assure internal consistency and, of the nine factors, six had Cronbach alphas of 0.78 or greater: traditional staff service, monetary rewards, insufficient rewards, technical and administrative rewards, job advancement requirements and professional quality.

The first factor, traditional service, was intrinsic and accounted for 20% of the variance (it contained 12 intrinsic motivators, but also two extrinsic motivators, support from administrators and technical support). (See Appendix C.) But a total of 50% of the variance was accounted for by the remaining extrinsic factors.

1. Monetary rewards (extrinsic), 15% of the variance
2. Insufficient rewards (extrinsic), 12% of the variance
   (Both Factor 2 and 3 are mirror-opposite representations of each other, with Monetary Rewards the motivator and Insufficient Rewards the inhibitor. These two items, if combined, account for 27% of the total variance)
3. Technical and administrative support (extrinsic), 7% of the variance
4. Professional prestige (intrinsic), 5% of the variance
5. Job advancement requirements (extrinsic), 3% of the variance;
6. Professional quality (intrinsic), 3% of the variance
7. Bad press (extrinsic), 3% of the variance
8. Personal Benefits (extrinsic), 2% of the variance

Comparison of the four studies’ findings
A comparison of the top five motivator items in the four studies (Table 1) indicated there were similarities in first three studies, although not always in the same order. Some similar items were also found in Traditional Service, the first factor of the fourth study.

Summary of results
The first three studies conducted prior to 2003 (Beggs, 2000; Betts, 1998; Schifter, 2002), emphasise intrinsic motivation as enough incentive to participate in DE. The fourth study (Gannon-Cook, 2003) agrees that, while most faculty members are inherently motivated to help students, second-generation (or later) adopters of DE are
motivated by extrinsic incentives, such as technology support, salary increases, merit pay, course releases, royalties and tenure considerations (Brewer et al., 2004; Gannon-Cook, 2003; Giannoni & Teson, 2003; Maguire, 2005; Twigg, 2005; Wolcott, 2004).

Because all four studies use quantitative surveys, there are no ‘soft’ data analyses available that could explore faculty responses in greater detail, such as whether they were required to participate in DE, whether technology was already considered a part of ongoing faculty education, or whether DE was already included in tenure consideration.

**Recommendations and implications**

Most faculty motivation studies of DE and e-learning courses point out that intrinsic motivators, such as the desire to help and teach, are key drivers of faculty participation. Faculty members express a desire to be of service which consistently reflects their career choice of the teaching profession (Maguire, 2005). On the other hand, more recent surveys that include second-generation DE faculty find they are less enthusiastic of teaching DE than first-generation DE faculty (Bower, 2002; Brewer et al., 2004; Brown & Floyd, 1998; Gannon-Cook, 2003; Maguire, 2005; Sloan Foundation, 2004; Twigg, 2005; Wolcott & Betts, 1999).

Studies of universities that successfully implement DE programmes indicate faculty participation and low attrition in DE; faculty receive both extrinsic incentives and demonstrated administrative support from the university administration for DE participation (Beggs, 2000; Bonk, 2001; Bower, 2002; O’Quinn & Corry, 2002; Twigg, 2000; Twigg, 2005; Wolcott, 2002). DE faculty feel intrinsically valued for their contributions in DE and e-learning.

What tend to be recurrent themes from nonadopters and second-generation DE faculty (onward), are concerns over DE technical support and the increased time necessary to do DE, both of which need to be addressed and supported by their home institutions. Many faculty members already carry full or overloaded teaching and administrative workloads, so pride of accomplishment teaching DE may not sustain ongoing commitments to DE or to new faculty enlistments without the reinforcement of some type of external motivation.

Recommendations for future research include the need for additional studies to go beyond quantitative methodologies and do in-depth interviews to sort out motivating and inhibiting factors as they continue to emerge. What motivates faculty now and in the future is of greater importance than what may have motivated them in the past (such as the novelty of the approach). Certainly the growth of proprietary, for-profit online institutions of higher learning (eg. Walden University, Capella University and the University of Phoenix) suggests that money is becoming an increasingly powerful factor in distance and e-learning.
Because DE is now firmly in the general operating plans for the vast majority of universities in the USA and in many other countries, administrators of these universities need to understand the integral role faculty plays in these DE and e-learning plans in order to achieve their DE goals. Universities can take the stance that DE will be integrated into traditional curricula, requiring faculty to teach DE and e-courses as a part of their teaching load. However, the results of this position will need to be measured on second-, third- and fourth-generation DE faculty and learners. Future studies of DE and e-learning faculty participation may need to include factors, such as attrition, sabotage and the effects of stress as a result of increased workloads.

This study was conducted to speak to the question of e-learning and faculty needs by obtaining feedback on faculty motivation to participate in DE from at least four university DE studies. The next steps must be taken by university administration. If faculty members feel they are valued with both intrinsic and appropriate extrinsic rewards, there may greater likelihood of voluntary participation and satisfaction by faculty in DE programmes.

References


© 2008 The Authors. Journal compilation © 2008 Becta.


Twigg, C. A. (2005). Faculty support for online course development. Paper presented at the annual ELearning Conference, Dallas, TX.


**Appendix A**

**Survey Items**

The first section contained 34 Likert-scale questions, with responses ranging from 1 (strongly disagree) to 5 (strongly agree), on which items would motivate respondents to participate in DE:

**Motivators**

1. Personal motivation to use technology
2. Graduate training received
3. Opportunity for scholarly pursuit
4. Reduced teaching load
5. Opportunity to use personal research as a teaching tool
6. Requirement by department
7. Support and encouragement from dean or chair
8. Working conditions (e.g., hours, location)
9. Increase in salary
10. Opportunity to influence social change
11. Job security
12. Monetary support for participation (e.g., stipend, overload)
13. Expectation by university that faculty participate
14. Opportunity to develop new ideas
15. Visibility for jobs at other institutions/organizations
16. Professional Prestige and status
17. Grants for materials/expenses
18. Support and encouragement from departmental challenges
19. Intellectual challenge
20. Overall Job satisfaction
21. Course assignments
22. Technical support provided by the institution
23. Career exploration
24. Credit toward promotion and tenure
25. Release time
26. Distance education training provided by the institution
27. Merit pay
28. Royalties on copyrighted materials
29. Greater course flexibility for students
30. Opportunity to diversify programme offerings
31. Recognition and awards
32. Ability to reach new audiences that cannot attend classes on campus
33. Opportunity to improve my teaching
34. Support and encouragement from institution administrators

The second section contained 19 Likert-scale questions, with responses ranging from 1 (strongly disagree) to 5 (strongly agree), on which items would inhibit faculty from participating in DE:

**Inhibitors**
1. Concern about faculty workload
2. Negative comments made by colleagues about distance education teaching experiences
3. Lack of distance education training provided by the institution
4. Lack of support and encouragement from departmental colleagues
5. Lack of release time
6. Lack of professional prestige
7. Lack of a technological background
8. Lack of support and encouragement from dean or chair
9. Lack of grants for materials/expenses
10. Concern about quality of courses (Internal)
11. Lack of technical support provided by the institution
12. Lack of merit pay
13. Lack of support and encouragement from institution’s administrators  
14. Lack of royalties on copyrighted materials  
15. Lack of monetary support for participation (e.g., stipend, overload)  
16. Concern about quality of students (Internal)  
17. Lack of recognition and awards  
18. Lack of salary increase  
19. Lack of credit toward tenure and promotion  

**Appendix B**  
*Factors Extracted from the Principal Components Analysis*

<table>
<thead>
<tr>
<th>Factors</th>
<th>Variance %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Traditional staff service</td>
<td>18.62</td>
<td>18.62</td>
</tr>
<tr>
<td>2 Monetary rewards</td>
<td>15.34</td>
<td>33.96</td>
</tr>
<tr>
<td>3 Insufficient rewards</td>
<td>11.80</td>
<td>45.77</td>
</tr>
<tr>
<td>4 Technical and administrative support</td>
<td>7.35</td>
<td>53.12</td>
</tr>
<tr>
<td>5 Professional and personal prestige</td>
<td>5.42</td>
<td>58.54</td>
</tr>
<tr>
<td>6 Job advancement</td>
<td>3.22</td>
<td>61.75</td>
</tr>
<tr>
<td>7 Professional quality</td>
<td>3.09</td>
<td>64.85</td>
</tr>
<tr>
<td>8 Bad press</td>
<td>2.50</td>
<td>67.35</td>
</tr>
<tr>
<td>9 Personal benefits</td>
<td>2.41</td>
<td>69.77</td>
</tr>
</tbody>
</table>
### Appendix C

**Principal component analysis factor correlations, coefficient alphas, means and standard deviations**

<table>
<thead>
<tr>
<th>Factors</th>
<th>M</th>
<th>SD</th>
<th>Traditional staff service</th>
<th>Monetary rewards</th>
<th>Insufficient rewards</th>
<th>Technical and admin. support</th>
<th>Job advance. requirements</th>
<th>Profes. quality</th>
<th>Professional and personal prestige</th>
<th>Bad press</th>
<th>Personal benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional staff service</td>
<td>3.6</td>
<td>1.1</td>
<td>0.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(15 Items, 12 IntMot)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monetary rewards</td>
<td>3.2</td>
<td>1.2</td>
<td>0.88</td>
<td>0.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(14 Items, ExtMot)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insufficient rewards</td>
<td>3.5</td>
<td>1.0</td>
<td>0.87</td>
<td>0.88</td>
<td>0.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8 Items, IntInhib)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical and administrative support</td>
<td>3.4</td>
<td>1.1</td>
<td>0.83</td>
<td>0.87</td>
<td>0.90</td>
<td>0.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6 Items, ExtInhib)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job advancement requirements</td>
<td>3.2</td>
<td>1.1</td>
<td>0.83</td>
<td>0.85</td>
<td>0.87</td>
<td>0.76</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3 Items, ExtMot)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional quality</td>
<td>3.1</td>
<td>1.1</td>
<td>0.73</td>
<td>0.84</td>
<td>0.81</td>
<td>0.76</td>
<td>0.84</td>
<td>0.78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2 Items, IntInhib)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional and personal prestige</td>
<td>3.3</td>
<td>1.1</td>
<td>0.73</td>
<td>0.79</td>
<td>0.80</td>
<td>0.75</td>
<td>0.77</td>
<td>0.77</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2 Items, ExtMot)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bad press</td>
<td>3.6</td>
<td>1.0</td>
<td>0.71</td>
<td>0.70</td>
<td>0.79</td>
<td>0.69</td>
<td>0.69</td>
<td>0.76</td>
<td>0.77</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>(1 Item, ExtInhib)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal benefits</td>
<td>3.0</td>
<td>1.1</td>
<td>0.70</td>
<td>0.68</td>
<td>0.76</td>
<td>0.68</td>
<td>0.44</td>
<td>0.29</td>
<td>0.76</td>
<td>0.57</td>
<td>0.68</td>
</tr>
<tr>
<td>(1 Item, ExtMot)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Coefficient Alphas and reliabilities appear on the diagonal.

Item responses were on a 5-point Likert-scale: 1 (strongly disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), 5 (Strongly Agree).

**Note.** ExtMot = Extrinsic Motivator, IntMot = Intrinsic Motivator, ExtInhib = Extrinsic Inhibitor, IntInhib = Intrinsic Inhibitor.