

Motivation, learning strategies and performance: An empirical study on business students

Elias Bengtsson & Britta Teleman

Högskolan i Halmstad

1 Introduction

This study seeks to contribute to the understanding of how motivation relates to learning and academic performance. While this topic is widely recognized and has attracted considerable empirical research (c.f. Newby 1991), the context of our study – academic students of business and management at a Swedish university college - offers new insights in several ways.

First, there is relatively little research on the link between motivation, learning strategies and academic performance among business students (Vantournout et al. 2012). Second, the limited research on this link among business students has predominantly focused on accounting students (Everaert et al. 2017) and in the US (Duff 2004). Understanding of the topic may therefore be particular and specific to those contexts. Third, most research on motivation, learning strategies and performance is based on university students. Very few examples (e.g. Vantournout et al. 2012) tackle the topic in a university college setting, which itself may raise particular challenges relating to student motivation for academically (as opposed to more vocationally) oriented studies. Finally, most research on motivation, learning and performance is relatively dated in relation to the structural changes towards an

increasing number and increasingly diverse body of students that has been ongoing and perhaps reinforced in recent years across Europe (c.f. European Commission 2013).

Our study thus brings new material to the study of inter-linkages between motivation, learning and performance of business students at a Swedish university college. In line with this, our study seeks to answer the following research questions:

- Q1: How do students' degree and type of motivation relate to their learning strategies?
- Q2: How do students' learning strategies relate to their academic success?
- Q3: How do student characteristics in terms of age, experience and gender influence the nature and strength of these relationships?

The remainder of this paper is outlined as follows: Section 2 provides an overview of the relevant literature; Section 3 presents the data and methodology; Section 4 accounts for the empirical results and analysis; Section 5 concludes.

2 Literature review: Motivation, learning and academic performance

2.1 Motivation

There are various conceptualisation on how academic students' motivation influence their learning, performance, adjustment and well-being (Vansteenkiste et al. 2005). One such conceptualization is self-determination theory (SDT), which emphasises extrinsic and intrinsic motivation categories. *Intrinsic motivation* is marked by pursuing goals that are valued by their own significance without any other rewards. This also implies that behaviour is self-determined and regulated without external pressures (Deci 1975). *Extrinsic motivation* includes a range of subcategories which all relate to the pursuit of extrinsic goals, but vary in the extent to which goals and behaviour is autonomous and whether it is motivated by coercion or external rewards.

In research in academic contexts, differentiating between intrinsically and extrinsically motivated students is common (Biggs 2011). Intrinsically motivated students study their chosen topics primarily to gain knowledge, understanding and satisfying their natural curiosity. In contrast, extrinsically motivated student study to attain other goals than simply the learning itself (Vansteenkiste et al. 2006), which may in turn differ depending on the type of goals pursued and how behaviour is regulated. Within business and management studies, DeMarie and Aloise-Young (2003) compared motivation between graduate students within business and educational studies. Business majors were significantly *less* likely to explain their choice of studies because of “interest in the area” or “interest in the classes” and significantly *more* likely to say they picked their major because it would help them “find a job easily” and lead to a “high salary.” McEvoy (2011) also suggests that business students may generally be more externally than internally motivated.

H1: Business students are more extrinsically than intrinsically motivated

2.2 Motivation and learning approaches

Our study relies on the well-established concepts of *deep* and *surface learning approaches* (Biggs 2001; Entwistle and Tait 1990). Adopting a surface approach means learning by memorizing and focusing on the essentials to meet examination requirements. Deep approaches, on the other hand, are oriented towards a deeper understanding of the topic, by

critical thinking and by relating the course content to other areas, experiences or concepts (Ballantine et al. 2008).

The link between motivation and learning approaches is generally conceptualized as follows: extrinsic motivation is associated with surface learning, while intrinsically motivated students tend to adopt a deep learning approach (Lucas and Meyer 2005). The latter tend to be more dedicated and more genuinely engaged in the materials to be learned (Vansteenkiste et al. 2004).

General educational research theories seem to support that extrinsic motivation weakens deep learning (c.f. Vansteenkiste et al. 2004). This is also supported by recent research in business studies contexts. Accounting students with high intrinsic *and* extrinsic motivation tend to be more engaged in deep learning (Everaert et al. 2017). In a study on first-year accounting undergraduates, intrinsically motivated students were found to have a slightly higher score for deep learning compared to surface learning (Duff 2004).

H2: Intrinsic motivation among business students is positively related to deep learning approaches

H3: Extrinsic motivation among business students is positively related to surface learning approaches

2.3 Learning approaches and academic performance

Studies on the link between learning approaches and learning outcomes are numerous (c.f. Duff 2004). In general, the relationship between learning approaches and outcomes (measured as examination scores) is positive, but sometimes mixed and perhaps lower than expected (Byrne et al. 2002). In a business studies context, Davidson (2003) found that deep learning increases academic performance, whereas surface learning does the opposite. Everaert et al. (2017) report similar findings among accounting students, even when controlling for time spent and ability.

Prior research also demonstrates that the link between intrinsic motivation and academic performance in higher education is positive (c.f. Robinson et al. 2011). However, Everaert et al. (2017) found that both intrinsic motivation and extrinsic motivation have a significant

positive influence on deep learning among accounting students, which in turn is positively related to academic performance.

H4: Deep learning is positively related to academic performance among business students

H5: Surface learning is negatively related to academic performance among business students

2.4 Control variables

The topic of differences in motivation between genders is extensively studied. Severiens and ten Dam's (1994) meta-analysis of the topic suggests that males tend to report higher extrinsic motivation or similar conceptualizations than females. The general pattern regarding age and learning approaches suggest that deep approaches increase with age whereas surface approaches diminish, due to reasons of cognitive sophistication or experience in handling complex situations (Biggs 1987). Indeed, similar patterns are established in research focusing on learning approaches for business students (Duff 2004; Sadler-Smith 1996). The impact from academic and work experience on motivation, learning approaches and academic performance is less studied. Research on grade-school students suggest that intrinsic motivation drops as students move up the grades, whereas extrinsic motivation remains stable (Lepper et al. 2005).

3 Data and methodology

3.1 Data sample and collection

This study is based on business administration students at a university college in western Sweden (Halmstad University). The total number of students participating in the study amounted to 135. The participating students filled out a survey consisting of 56 questions relating to their background characteristics, their motivation for pursuing academic studies and their learning strategies. In addition, data on academic performance was collected through the centralized system of reporting and archiving academic results ('Ladok'). In order to enable a cross match between motivation, learning strategies and academic performance, the questionnaire was not anonymous. However, students were only asked to report their social security system number (and not their names) and were promised complete confidentiality.

Variables on motivation

Students' motivation was measured using a Swedish translation of the Academic Motivation Scale (AMS-C 28) College (CEGEP) version (Vallerand et al. 1993). All items were rated on a seven-point Likert scale. Based on this information, a number of motivational variables used in previous research were constructed. The simplest ones included composite scores for intrinsic and extrinsic motivation by averaging the values of students' responses on questions pertaining to particular motivational forms (c.f. Vansteenkiste et al. 2004).

Variables on learning approaches

Students' learning strategies were measured using a Swedish translation of the 'Revised Two Factor Study Process Questionnaire' (R-SPQ-2F) (Biggs et al. 2001). R-SPQ-2F provides scores relating to students' deep and surface learning strategies. The questionnaire consists of 20 questions to which answers are provided on a five-point Likert scale. Students were asked to indicate how often they agree with a particular statement or perform a particular activity, answers ranging from "I seldom or never do this" to "I almost always/always do this". The

results from the survey showed acceptable Cronbach's alpha values for the computed variables (0.711-0.641).

Variables on academic performance

Performance measurement in prior research has often been operationalised in terms of grades, or grade point averages, final exam grades (Sadler-Smith, 1996) or drop-out rates (Bennet 2003). In this study, we measure ECTSs earned in relation to the number of potential ECTSs for each student, based on the courses any particular student had registered for (HP). In addition to total ECTSs, we also include a measure of the relative amount of high pass grades (VG), and for both these variables we distinguish between ECTSs on written exams and ECTSs on other forms of examinations (such as group assignments, essays etc.).

Control Variables

The survey also included six questions on student characteristics: Gender: with three options (male; female; other); age; academic experience (number of semesters in higher education); work experience (years). Short descriptions of all variables are provided in Table 1.

Table 1 Variables

Variables	Description
DSS	Deep study strategy
SSS	Surface study strategy
INTMEAN	Intrinsic motivation
EXTMEAN	Extrinsic motivation
INTEXSUM	General motivation ((INTMEAN+EXTMEAN)/2)
Age	Age in years
Semesters	No. of semesters in higher education
Work exp.	No. of years of work experience
HP	No. of ECTSs/no of semesters in higher education
VG	No. of ECTSs with high pass/Sum of ECTSs registered for
HPT	No. of ECTSs from written exams/Sum of ECTSs registered for
VGT	No. of high pass ECTSs from written exams/Sum of ECTSs registered for
HPO	No. of ECTSs excluding those from written exams/Sum of ECTSs registered for
VGO	No. of high pass ECTSs excluding those from written exams/Sum of ECTSs registered for

3.2 Data overview and empirical methods

Table 2 reports data descriptives. The hypotheses were tested using standard statistical methods. Difference in proportion tests were used to determine whether there were any differences in motivational forms, and to see whether these differences also appeared between students based on the control variables. OLS regressions were applied to investigate the relationships between independent and dependent variables. All variables were tested for

multicollinearity, which led to the exclusion of the variable age due to too strong correlation with work experience. No regressions displayed heteroscedasticity. Correlation data between all variables is available on request.

Table 2 Data descriptives

Variables	Mean	Median	Minimum	Maximum	Std. Dev.	Skewness	Ex. kurtosis	Missing obs.
DSS	28,72	29,00	10,00	45,00	6,52	-0,03	-0,27	0
SSS	25,08	24,00	11,00	46,00	7,03	0,29	-0,40	0
INTMEAN	4,03	4,19	1,50	6,47	1,01	-0,32	-0,40	0
EXTMEAN	5,29	5,42	3,08	7,00	0,83	-0,46	-0,03	0
INTEXSUM	4,66	4,76	2,38	6,44	0,80	-0,52	0,14	0
Age	23,11	22,00	19,00	35,00	2,78	1,60	3,33	0
Male	0,36	0,00	0,00	1,00	0,48	0,57	-1,68	0
Semesters	1,43	1,00	1,00	2,00	0,50	0,27	-1,93	1
Experience	2,76	2,00	0,00	13,00	2,70	1,26	1,54	0
HP	0,69	0,73	0,18	0,92	0,16	-0,96	0,47	0
VG	0,29	0,30	0,00	0,71	0,20	0,36	-0,93	0
HPT	0,55	0,55	0,08	0,86	0,16	-0,61	-0,03	0
VGT	0,26	0,24	0,00	0,67	0,19	0,41	-0,89	0
HPO	0,14	0,10	0,00	0,58	0,08	2,68	10,76	0
VGO	0,03	0,03	0,00	0,35	0,04	4,78	33,76	0

4 Results and analysis

4.1 Differences in motivation

Beginning with within-group motivational characteristics, table 4 displays differences between intrinsic and extrinsic motivation. The results supports the hypothesis that business students are more extrinsically than intrinsically motivated (H1) for both the whole sample and for all subsamples. In terms of gender, the female students in the sample were more motivated in general (INTEXSUM). They also had higher value for many individual motivational variables such as intrinsic motivation (INTMEAN) and extrinsic motivation (EXTMEAN). These results are statistically significant.

Our results support the hypothesis (H1), that business students are more extrinsically than intrinsically motivated, as suggested by McEvoy (2011). Thus, the findings are similar to those of DeMarie and Aloise-Young (2003), who discovered that business students are motivated by career prospects and high salaries rather than an interest in their area of studies.

Table 4 Differences between genders

	Variable	Mean	± SD	Δ	t-value	p-value	n
Full sample	INTMEAN	4.025	1.009	-1.268***	-11.257	0.000	135
	EXTMEAN	5.293	0.832				
Male	INTMEAN	3.814	1.115	-1.250***	-6.257	0.000	49
	EXTMEAN	5.064	0.843				
Female	INTMEAN	4.146	0.928	-1.277***	-9.658	0.000	86
	EXTMEAN	5.423	0.802				

Note: ***/**/* denote significance at 10%/5%/1% levels

4.2 Motivation and learning

Table 5 outlines the results of the regressions that were applied to test the hypotheses that links motivation with learning approaches. Regression 1 tests whether the control variables relating to gender and experience in work or studies affect the dependent variable relating to learning. Regressions (2-3) test whether adding motivational variables enhances the explanatory power compared to the regressions based on control variables only. Both these variables were found to be statistically significant at the 1%, with INTMEAN displaying a much stronger impact on DSS, thus confirming H2. Also, regression 4 confirms the hypothesis H3 - that extrinsic motivation among business students is positively related to

surface learning approaches. Gender and experience displayed statistically significant relationships with surface and deep study strategies respectively.

The results thus confirm findings in earlier general studies on the link between motivation and learning (Lucas and Meyer 2005; Vansteenkiste et al. 2004), as well as more specific studies on business students (Everaert et al. 2017; Duff 2004).

Table 5 Motivation and learning strategies

Dep. variable Regression #	DSS 1	DSS 2	SSS 3
n	135	135	135
Intercept	29.616*** 0.000	13.858*** 0.000	17.165*** 0.000
INTMEAN		4.217*** 0.000	
EXTMEAN			1.585** 0.033
Male	-1.611 0.174	-0.092 0.920	3.231** 0.012
Semesters	0.237 0.266	0.139 0.396	-0.122 0.589
Experience	-0.310 0.484	-0.793** 0.023	-0.420 0.045
Overall F-test	1.047	24.275***	0.370
Overall p-value	0.374	0.000	2.594**
Adj R ²	0.001	0.410	0.074

Note: ***/** denote significance at 10%/5%/1% levels

4.3 Learning and academic performance

Table 6 reveals the empirical results from the regressions of motivation and learning approaches on academic performance. In regressions 4-9, deep study strategy is revealed to have a significant positive impact on academic performance when measured as percentage high passes in general and on written exams (VG and VGT), but not for other academic performance variables. Regressions 10-15 show the results on the relationship between surface study strategy and academic performance. While the signs and significances for the control variables remain unchanged, the independent variable fails to achieve statistical significance for all academic performance variables. Taken together, these results confirm that deep learning is positively related to academic performance (H4), but offer little support for the hypothesis that surface learning is negatively related to academic performance (H5). Overall, our findings on the relationship between study strategies and academic performance paint a somewhat mixed picture, which itself is not uncommon (Byrne et al. 2002). Our results thereby shares characteristics of the large amount of research that fails to establish

clear links between intrinsic motivation, learning strategies and academic performance (c.f. Biggs 2001).

In terms of control variables, the lack of relations between work experience and performance counters some prior research that documents that younger students are performing better than their older co-students (Dockweiler and Willis 1984; Koh and Koh 1999). However, our results lend support to both general findings that female students tend to perform better (Gledhill and Van der Merwe 1989; Biggs 1987), and specific research in business studies contexts (Lange and Mavondo 2004).

Table 4 Academic performance and deep/surface learning strategies

Dep. Variable	HP	VG	HPT	VGT	HPO	VGO
Regression #	4	5	6	7	8	9
n	135	135	135	135	135	135
Intercept	0.491*** <i>0.0000</i>	0.066 <i>0.450</i>	0.508*** <i>0.0000</i>	0.085 <i>0.322</i>	-0.017 <i>0.533</i>	-0.0192 <i>0.2765</i>
DSS	0.001 <i>0.7337</i>	0.005** <i>0.038</i>	-0.001 <i>0.7298</i>	0.005* <i>0.063</i>	0.001 <i>0.109</i>	0.0006 <i>0.2283</i>
Male	-0.079*** <i>0.0015</i>	-0.104*** <i>0.0027</i>	-0.085*** <i>0.0021</i>	-0.105*** <i>0.002</i>	0.006 <i>0.568</i>	0.0063 <i>0.9708</i>
A6ArbErf	-0.002 <i>0.6625</i>	-0.0021 <i>0.7285</i>	-0.005 <i>0.331</i>	-0.002 <i>0.698</i>	0.003 <i>0.151</i>	0.0028 <i>0.8556</i>
A5Terminer	0.069*** <i>0.0000</i>	0.038*** <i>0.0034</i>	0.034*** <i>0.0009</i>	0.029** <i>0.0238</i>	0.034*** <i>0.000</i>	0.0345*** <i>0.0004</i>
Overall F-test	16.916***	5.8579	5.6096	4.8815	19.800***	3.6618***
Overall p-value	<i>0.0000</i>	<i>0.0002</i>	<i>0.0003</i>	<i>0.0011</i>	<i>0.0000</i>	<i>0.0073</i>
Adj. R ²	0.3221	0.1266	0.1210	0.1038	0.3595	0.0736
Dep. Variable	HP	VG	HPT	VGT	HPO	VGO
Regression #	10	11	12	13	14	15
n	135	135	135	135	135	135
Intercept	0.523*** <i>0.000</i>	0.289*** <i>0.000</i>	0.479*** <i>0.000</i>	0.308*** <i>0.000</i>	0.044* <i>0.072</i>	0.007 <i>0.647</i>
SSS	-0.001 <i>0.734</i>	-0.003 <i>0.271</i>	0.000 <i>0.859</i>	-0.002 <i>0.417</i>	-0.001 <i>0.237</i>	0.000 <i>0.512</i>
Male	-0.078*** <i>0.002</i>	-0.106*** <i>0.003</i>	-0.085*** <i>0.002</i>	-0.098*** <i>0.005</i>	0.007 <i>0.552</i>	0.007 <i>0.987</i>
A6ArbErf	-0.002 <i>0.667</i>	-0.001 <i>0.821</i>	-0.005 <i>0.321</i>	0.002 <i>0.757</i>	0.003 <i>0.135</i>	0.003 <i>0.803</i>
A5Terminer	0.068*** <i>0.000</i>	0.035*** <i>0.007</i>	0.035*** <i>0.001</i>	0.022* <i>0.086</i>	0.034*** <i>0.000</i>	0.034*** <i>0.001</i>
Overall F-test	16.915***	4.962***	5.584***	4.458***	19.333***	3.378**
Overall p-value	<i>0.000</i>	<i>0.001</i>	<i>0.000</i>	<i>0.001</i>	<i>0.000</i>	<i>0.012</i>
Adj. R ²	0.322	0.106	0.120	0.114	0.354	0.066

Note: ***/**/* denote significance at 10%/5%/1% levels

5 Discussion

Our findings confirm many notions found in prior research, such as high intrinsic motivation being associated with deep study strategies, while extrinsic motivation leads to surface study strategies. However, our study also reveals more novel findings or shed additional light on areas where prior research has yielded mixed results: that business students are more extrinsically than intrinsically motivated; that deep study strategies lead to higher grades for particular examination forms but not for others, and that female students are typically more intrinsically motivated, engage more in deep study strategies and perform better than their male counterparts.

Our findings yield a number of practical implications. One is that practitioners in higher education have good reasons to stimulate motivation generally, and intrinsic motivation in particular. However, it is important that such stimulation is complemented by examination forms that promote deep learning. While it is beyond the scope of this paper to provide practical solutions, our results draw attention to the research that demonstrates that motivation is changeable, and that various strategies exist on how to achieve this. Similarly, a number of strategies have been shown to stimulate deep learning, in particular through active learning, group learning and by leveraging on technological support, for instance through computer-based simulations.

This study also points to areas of future research that would deepen insights on the link between motivation, learning and academic performance. Our results indicate that the framing of academic performance, and how this is operationalised, could shed additional light. Other areas where future research could shed additional light include a more granular approach to the dimensions covered by this study's control variables.

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