

The impact of university students' commitment on in- and extra-role performance

Jörg Felfe*

Helmut-Schmidt-University, Germany

Birgit Schyns

Durham University, UK

Alex Tymon

University of Portsmouth, UK

* Please address correspondence to

Prof. Dr. Jörg Felfe
Professur für Organisationspsychologie
Helmut-Schmidt-Universität
Universität der Bundeswehr
Holstenhofweg 85
22043 Hamburg
Tel. 040 6541 2575
felfe@hsu-hh.de

Abstract

Research has shown that employee commitment is an important factor in performance.

Research into student commitment in the university context is less common and only few studies explore the different components and foci of commitment. This study examines the meaning of students' commitment in the university context. Based on a survey of 530 students, our results confirmed that, similar to the work context, different components and foci of commitment exist. Commitment to the university is primarily positively related to extra-role performance. Commitment to the study subject is positively related to both in-role and extra-role performance. Affective commitment to the university shows the strongest relationship with extra role-performance. However there is a potential conflict between the two types of performance. The relationship between affective commitment to the university and extra-role performance decreases for students with a high intention to study efficiently as an indicator of in-role performance. We conclude that universities should strive to improve their students' commitment, especially affective commitment to encourage a balance of both in-role and extra-role performance.

KEYWORDS: COMMITMENT; EXTRA-ROLE PERFORMANCE; ORGANIZATIONAL CITIZENSHIP BEHAVIOR; ACADEMIC ACHIEVEMENT; HIGHER EDUCATION; STUDENTS; UNIVERSITY

Introduction

A lot of organizational research demonstrates potential benefits of highly committed employees including increased performance and citizenship behaviors as well as decreased turnover and reduced absenteeism (Meyer & Herscovitch, 2001). Similarly, research indicates that commitment is a meaningful variable within the context of higher education, for example with respect to the retention of students (Strauss & Volkwein, 2002, 2004) and intentions to graduate (Sanchez, Bauer & Paronto, 2006). Therefore exploring the concept of commitment within the higher education context has potential benefits to multiple stakeholders. For higher education institutions, student drop-out rates can negatively affect reputation and thus recruitment and funding, and under-performing students are more likely to leave an institution before completing their degree than high performers (e.g., Kirby & Sharpe, 2001; Le, Casillas, Robbins, & Langley, 2005; Ryland, Riordan, & Brack, 1994). Students who leave without completing of their degrees contribute to a loss resources, which for most universities in the current economic times are becoming increasingly scarce and valuable.

Research into organizational in-role and extra-role performance has found that organizational and occupational commitment are related to performance (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Meyer, Allen, & Smith, 1993). Yet much less is known about student commitment to their university or their study subject and to what degree it relates to in-role and extra-role performance. If commitment is also meaningful in the university context, it is possible that the positive steps taken by organizations to foster employee commitment may be transferable into the university setting. We concur with McNally and Irving (2010) who suggest student commitment is worthy of research.

We base our theoretical framework on organizational commitment. The underlying rationale is that students' commitment (to the university and/or to the study subject), similar to employee commitment (to the organization and /or the occupation, respectively), is an attitudinal variable that influences behavior such as in-role and extra-role performance. However, the contexts are not the same and the student-university relationship differs from that of the employee and the organization. In the organizational setting, the role of commitment in either in-role or extra-role performance at the expense of each other may cause tensions. However, both outcomes can be seen to be beneficial to both employee and employer. In the university setting, this mutuality of benefit is less clear. Students may focus solely on in-role behaviors, with little or no attention on extra-role performance, assuming (possibly correctly) that this will lead to better grades and shorter study duration. However, a focus on extra-role performance may produce other, equally valuable, outcomes which are less obvious to students, such as employability skills. We propose that a focus on both in-role and extra-role performance is important to higher education institutions, employers, governments, and society in general as well as students, and that commitment is an important factor in encouraging both types of performance. However, universities need to make informed choices about where to target their limited resources and knowing about the impact of different components and foci of commitment may be beneficial in this decision making process.

The aim of this study is to investigate the role of different components (affective, continuance, and normative) and different foci of commitment (to the university and the study subject) in in-role and extra-role performance in the education context. Our study goes beyond previous research on student commitment in several ways: First, to our knowledge, only two studies have investigated different components of commitment in the context of higher education (McNally & Irving, 2010; Wessel; Ryan, & Oswald, 2008). Despite the

wealth of research in the organizational context, the McNally and Irving study is the only one that has looked at extra-role performance in an educational environment, in this case, citizenship behavior. Secondly, we have found no prior research within the education context into the relationship between different foci of commitment and performance. Finally, we highlight the issue of a potential conflict between in-role and extra-role performance, which although it exists for employees in organizations, may raise different challenges for university students. In the following, we will outline in more detail the theoretical background of our study.

Commitment in organizations

Organizational commitment can be seen as the “psychological bond” between an individual and an organization. It has been defined as: “the decision to participate” Koster (2011, p. 2838) and “a force that gives direction to behavior” (Meyer & Herscovitch, 2001, p. 301). In the work context, people can be committed to different entities, including their organization, occupation, team, or career (Meyer & Herscovitch, 2001).

There is a wealth of literature that demonstrates the potential benefits of employee commitment. Organizational commitment appears to be an important predictor of performance outcomes (Lee, Carsfeld, & Allen, 2000; Meyer et al., 2002). Saving resources, helping others, and supporting change is more likely to occur when employees are committed to their organization (Meyer et al., 2002). Organizational commitment is negatively linked to turnover and turnover intentions (e.g., Meyer et al., 2002; Organ, Podsakoff, & MacKenzie, 2005).

An increasing number of scholars use Meyer and Allen’s (1991) three-component model of commitment to better understand the relationship between an individual and an organization. The three components represent different mind-sets or reasons why people are

committed to certain targets. Specifically, people can be committed because they feel emotionally attached to the commitment target (affective commitment), because they feel a moral obligation towards the commitment target (normative commitment) and/or because they perceive a lack of alternatives (continuance commitment).

Research in organizations has also shown that employees often develop commitment to targets that are more proximate than the organization, such as commitment to the occupation, the workgroup, or the department. Commitment to targets or foci other than the organization was found to explain unique variance in outcome criteria, above and beyond organizational commitment (Meyer et al., 1993; Felfe, Schmook, Schyns, & Six, 2008).

In-role and extra-role performance within organizations

In the work context, in-role performance, or task performance, comprises activities defined by a job description (Bergeron, 2007) and is often explicitly linked to individual reward. In contrast, extra-role performance involves: “behaviors that support the organization but that are not normally found in an individual’s job description” (Bergeron, 2007, p. 1078). Extra-role performance is more generic and is often similar across jobs. It is carried out for the greater good, with softer outcome measures and no explicit individual benefit. In the literature, this type of behavior is often labeled organizational citizenship behavior (Bergeron, 2007). According to Organ (1988), organizational citizenship behavior “represents individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization” (p. 4). It comprises different dimensions of extra-role behavior that are favorable to the organization, such as, altruism, conscientiousness, courtesy, sportsmanship, and civic virtue.

Both types of behavior, in-role and extra-role behavior, are necessary for optimal organization effectiveness and success. However, there is a risk of conflict between the two.

According to Bergeron (2007, p. 1090), “If individuals spend time on behaviors that benefit the organization, it may be at the expense of their task performance”, which can impact on individual reward and career prospects. However, in the work context this conflict can be, and often is, managed via integrated performance management systems, because the mutual benefits of both types of performance are recognized by both employee and employer.

Commitment within the university context

In the context of university students, we differentiate different foci and components of commitment similar to the organizational context. This differentiation may allow universities to make more selective use of strategies to encourage and maintain higher levels of student commitment. Commitment to the university, also called institutional commitment (Tinto, 1987), reflects attachment to the institution as a whole. Although most students are likely to leave the university after graduation, we argue that students can develop commitment towards their university similar to employees. University alumni initiatives work because they build on this type of commitment of graduates towards their alma mater. Several factors can contribute to students’ commitment to their university, such as, a positive image of the institution, well-known academic staff, scientific reputation, or peer mentoring (Sanchez et al., 2006). Thus, the university may have a personal meaning to students and they may be proud to attend this university (affective commitment). Moreover, students might feel some kind of obligation to stay at their university in order not to disappoint their parents, peers, or professors (normative commitment). Students may also feel tied to the university because they have few other opportunities to enroll somewhere else or a change would be too costly (continuance commitment). Strauss and Volkwein (2002, 2004) demonstrated that institutional commitment is related to measures of student intellectual and social growth and campus experiences such as classroom vitality and peer support. McNally and Irving (2010)

demonstrated that affective and normative commitment to the university was positively related to extra-role or citizenship behaviors.

Similar to occupational commitment in the organizational context, commitment to the study subject is more proximate and refers to the mindset that students have developed towards their subject area. Again, students may be committed to their study subject for different reasons, reflecting the components of affective, normative, and continuance commitment. Students high in affective commitment to their subject (Wessel et al., 2008) may stick to their subject because they want to rather than because they have to. They would not change their subject even if there was an easier alternative to earn a degree or if teaching was problematic. On the other hand, students high in continuance commitment will primarily continue with the subject because of the time already invested or a perceived lack of alternatives. Their bond with their subject is based on a cost-benefit analysis. Normatively committed students may feel they need to continue with their subject because they feel some obligation towards teachers, peers, or parents, or would feel guilty if they did not finish what they have started. As with the organizational context, commitment to the study subject or department may be even more relevant for student performance than commitment to the university. For students, their study subject is relevant for their future career and their occupational identity.

In-role and extra-role performance in the university context

In line with organizational literature, we refer to in-role performance as behaviors related to the task of individual study, for example, efficient assignment completion and participation in lectures and seminars. Resulting performance measures are excellent grades and short study duration (e.g., Aitken, 1982; Chemers, Hu, & Garcia, 2001; Koh, Steers, & Terborg, 1995). Research has shown that in-role performance is important to both students

and universities. For example, study performance is positively related to degree success and completion rates (e.g., Kirby & Sharpe, 2001; Le et al., 2005; Ryland et al., 1994). Students who focus on in-role performance are more likely to be interested in studying quickly and efficiently. Therefore, the intention to study efficiently may be one indicator of in-role performance. In a similar way as intention to quit is a relevant antecedent for turnover behavior in the organizational context (Meyer et al., 2002), the intention to study quickly and efficiently may result in short study duration and efficient degree completion. The understanding of intentions may be even more relevant than results (turnover and study duration, respectively) as they can be measured at an earlier point of time and thus be influenced during the students' presence at the university. Moreover, intentions reflect psychological processes and the willingness to show a specific behavior whereas results are also determined by situational factors.

Extra-role performance by students in the university context can be defined as “voluntary help or assistance of others or extra engagement for the organization without either an explicit or implicit promise of reward” (Conway, 1999, p. 3). Therefore, examples of extra-role performance in students could include activities such as help in improving teaching quality, serving as mentors for younger students, or engagement in committees that are involved in the administration and governance of the university (Schmitt, Oswald, Friede, Imus, & Merritt, 2008). However, citizenship behaviors have rarely been studied in the higher education context (McNally & Irving, 2010). Citizenship behavior is similar to student engagement which includes activities such as “class participation, saying positive things about their school and helping others” (McNally & Irving, 2010, p. 204). The commonality is that these extra-role behaviors and citizenship appear to result mainly in benefits to other students and the university as opposed to the individual student, at least on the surface level. We believe that these behaviors can and do also benefit the individual, but unlike employees

within organizations, it is potentially more difficult for students to see these benefits, as they are more likely relevant to their future employment than for immediate study success. This could result in potential conflict between extra-curricular activities associated with extra-role performance and in-role performance in terms of short study duration and efficient degree completion.

In-role and extra-role performance conflict for students

Some researchers highlight that fostering citizenship is an important part of the role of universities (McCowan, 2012; Munck, 2010). Historically higher education has developed citizenship performance alongside task performance (Ng & Feldman, 2009). McCowan (2012) attests that participating at university has the potential for significant impact on a person's capabilities and participation as a citizen. In other words, traditionally, the university experience encouraged students to focus both on in-role study performance and extra-role citizenship behaviors. There will always have been those who chose not to participate in extra-role performance for personal reasons, that is, those who are less interested and feel no obligation to invest time and energy in activities beside their own studies. However, arguably recent changes in the higher education sector are causing a greater number of students to choose to focus more or even solely on in-role performance at the expense of extra-role behaviors. Three main factors may be contributing to this tendency.

First, the last thirty years has seen a significant increase in the numbers of students attending university and an expansion in the diversity of courses offered, many being more vocational than traditional university subjects (Tymon, 2011). According to Betts (2004, p. 240) "universities are becoming places of applied learning". This has been accompanied by a rise in student instrumentality and a decrease in the number of students who go to university because they enjoy learning (Massingham & Herrington, 2006; Yorke, 2007). In some

circumstances, for example with business degrees, employment prospects are a key reason for students when choosing their degree subject (Jackson, 2009). Indeed it is hard to decide whether the rise in the number of vocational degrees seen in the last three decades (Wilton, 2011) is a driver or consequence of this instrumentalism. There are those who believe that these changes are not necessarily good, that vocational subjects are over-emphasized and that they threaten academic freedom and curiosity driven learning (Bowers-Brown & Harvey, 2004; Kreber, 2006; Moreau & Leathwood, 2006). Students who are instrumentally motivated are more likely to adopt a surface approach to learning with a focus on efficiency, degree classification, and in-role performance, which is unhelpful for themselves, employers, and other stakeholders such as society at large (Massingham & Herrington, 2006; Vince, 2011).

Secondly, there have been moves towards shorter degree durations. In some cases, most notably the UK and the US, this is being driven by cost issues and some universities are now even offering two-year Bachelor degrees to reduce student fees. However, shorter degrees are also being seen in European countries even where funding is still predominantly provided by the state due, in the main, to the Bologna Process. Two of the key stated aims of this reform program, involving 40 European countries, are the desire to have a European wide compatible tiered structure of degree programs and curricular reforms to make degree programs more labor market relevant (Kehm & Teichler, 2006). This has led to many European countries changing their Diploma programs into shorter degrees and to separate Bachelor and Masters programs. Higher workload may lead to students struggling to engage simultaneously in both in-role and extra-role activities alongside tight schedules and a high workload. These students may hesitate to engage in extra-role performance even if they appreciate this kind of activity. Though they might feel committed to their university, they

would refuse to engage in any extra activity because they want to optimize their input-output relationship with regard to studying.

Finally, there have been changes for some students in funding arrangements. This is most notably the case in the US and the UK where the increasing costs of university attendance are now predominantly borne by the student. This may be challenging the relationship students have with their university. The management literature variously describes students in relation to universities as service or product consumers, clients, employees, organizational members, and junior partners (McNally & Irving, 2010). It is possible that historically students may have seen themselves more towards the partnership end of this spectrum. However, perhaps now students may see themselves more as customers. As such students may be expecting a product (a good degree) and a service (the resources they need to gain their degree) and anything that appears on the periphery of this is not valued. Again, this may lead to an increased focus on efficient study as a key in-role behavior.

A focus on both in-role and extra-role performance

Universities need well-performing students, who complete their degrees and achieve good grades, to guarantee positive evaluations and ultimately secure funding. Moreover, high achievement students are more likely to continue their studies in a Master or PhD program, thus further strengthening scientific output and the academic reputation of the university. Therefore, a focus on in-role performance is desirable but extra-role performance is also valuable because of its links to graduate employability as we will outline below.

Employability is defined as the possession of skills and attributes above and beyond a good degree (Yorke, 2007). An increased number of graduates on the labor market have enabled employers to become more selective and demanding. For many employers a degree

was once a bonus (Tomlinson, 2008; Tymon, 2011) but now organizations are able to attract hundreds of applicants per vacancy who have the highest degree classifications. The degree becomes a convenient short-listing tool. However, extra-role performance focuses on many of the transferable skills and attributes required at work, such as collaboration, networking, bonding, team work, and oral communications (Jackson, 2009), and critical/independent thinking, reflection, and political awareness (McCowan, 2011). Even students themselves recognize that the best opportunities to learn such generic skills and cultural values are provided in extra-curricular activities (Stiwne & Jungert, 2010). In addition, students who engage in extra-role performance are more likely to build identification with the university and their study subject, which, in turn, can increase commitment and may create a positive spiral, leading to increased extra-role performance (McCowan, 2011). Thus, while students feel the need to differentiate themselves from others by achieving the best grades in the shortest times, extra-role performance maybe what ultimately increases their employability.

University students' commitment and in- and extra-role performance - The Hypothesis

Organizational commitment has been shown to predict both in-role and extra-role performance (e.g., Meyer et al., 2002; Organ et al., 2005). In line with research in the work-context, we assume that the components of affective and normative commitment are positively related to both in-role and extra-role performance. As pointed out above, the intention to study efficiently can be seen as a relevant indicator of in-role performance in terms of the willingness to study without wasting time and energy on efforts that do not directly lead to timely completion. We also assume that, similar to results in the organizational context (Meyer et al. 2002,), affective commitment will be more strongly correlated to performance than normative commitment. We do not have any specific

hypotheses regarding continuance commitment in this context, and therefore will only focus on affective and normative commitment here.

Many studies have reported that university commitment is a predictor of study persistence and turnover intention (e.g. Braxton, Milem, & Sullivan, 2000; Cabrera, Nora, & Castaneda, 1993; Mallette & Cabrera, 1991; Nora & Cabrebra, 1993; Rickinson & Rutherford, 1995). As discussed earlier, we hypothesize a potential conflict between in-role and extra-role performance, suggesting that in-role behavior may have a negative relationship with university commitment, that is, students high in affective commitment will put less emphasis on in-role behavior in terms of fast degree completion as contributing to their university (their commitment target) is more important to them than achieving a degree within a short period of time (in-role performance). We propose that affective commitment, as above, will be more strongly related to the intention to study efficiently than normative commitment.

As mentioned earlier, it is possible that a focus on the intention to study efficiently comes at the expense of extra-role performance. Therefore a high intention to study efficiently may negatively impact on the relationship between affective university commitment and extra-role performance. Conversely, students who do not show a high intention to study efficiently may show higher extra-role performance if they are affectively committed to the university.

Commitment and citizenship behavior research provide evidence that in addition to organizational commitment (Meyer et al., 2002; Organ & Ryan, 1995), more proximate targets such as occupational commitment also contribute to organizational citizenship behavior (OCB). The relationship between OCB and occupational commitment is even stronger than the relationship between OCB and organizational commitment (Felfe et al., 2008; Meyer et al., 1993). It seems that a strong attachment to the occupation not only fosters

task performance but also extra-role behavior. One explanation is that occupational commitment has a more direct influence on the direct work context (e.g., helping colleagues, supporting innovation) than the more distal organizational commitment.

Individuals with a strong attachment to their occupation are more prone to helping others and engaging in extra activities that improve their working context. Similarly, it is possible that students who like their study subject (affective commitment) or feel morally obliged towards their study subject (normative commitment) are willing to engage in extra-role performance. Again we propose that the affective components will show a stronger relationship with performance than normative commitment. In line with research into organizational commitment (Meyer & Herscovitch, 2001), we hypothesize that emotional attachment as reflected in affective commitment has stronger effects than attachment due to moral obligations (normative commitment).

In their study on subject commitment, Wessel, Ryan, and Oswald (2008) found that affective subject commitment is positively related to in-role performance, whereas normative commitment is not. However, based on research among employees (e.g., Meyer et al., 2002), we wonder whether students who feel a high moral obligation towards their study would violate their own norms if they perform badly. Thus, to avoid cognitive dissonance, it is postulated that students high in normative subject commitment also show a higher intention to study efficiently, but perhaps less so than those high on affective commitment. Thus we hypothesize:

H1a: *Affective commitment to the university is positively related to extra-role performance.*

H1b: *Normative commitment to the university is positively related to extra-role performance.*

H1c: *The affective component of commitment will be more strongly related to extra-role performance than normative commitment.*

H2 a: *Affective commitment to the university is negatively related to the intention to study efficiently.*

H2 b: *Normative commitment to the university is negatively related to the intention to study efficiently.*

H2 c: *The affective component of commitment to the university will be more strongly related to the intention to study efficiently than normative commitment.*

H 3: *The relationship between affective commitment to the university and extra-role performance is moderated by the intention to study efficiently. The relationship will be lower for students high in the intention to study efficiently whereas the relationship will be higher for students with a low intention to study efficiently.*

H4a: *Affective commitment to the study subject is positively related to extra-role performance.*

H4b: *Normative commitment to the study subject is positively related to extra-role performance.*

H4c: *The affective component of commitment will be more strongly related to extra-role performance than normative commitment.*

H5a: *Affective commitment to the study subject is positively related to the intention to study efficiently.*

H5b: *Normative commitment to the study subject is positively related to the intention to study efficiently.*

H5c: The affective component of commitment will be more strongly related to the intention to study efficiently.

Method

Design and sample

The study was conducted using a cross-sectional survey design. Participants from a middle sized German university were informed and recruited via mail lists, online teaching tools, and in person at the end of lectures. The students were informed that the aim of the study was to examine their experiences with studying. They were assured that their participation was anonymous and confidential. Data were collected using an on-line questionnaire in the middle of the academic year, so that students had been at least studying for a couple of months and thus had enough experience to be able to answer the questions in a meaningful way. All in all, $N = 530$ students from different subject areas took part in the study ($N = 322$ men and $N = 207$ women). The average age was 24 years ($SD = 3.07$). 20.4% studied economic subjects, 35.3% studied varied subjects in the field of humanities (philosophy, sociology, politics, and media science), 9.8% studied natural science and engineering and 34.4% were pursuing teaching certification with different majors (math, language, physics etc.). 17.8% were in their first year, 50.2% were in their second or third year, 25.8% were in their fourth or fifth year, and 7.2% have been studying for six or more years.

Instruments

Two foci of commitment were assessed in this study using adapted versions of existing organizational/occupational commitment instruments. Some items had to be deleted as they were unsuitable for a university context (for details see: reference deleted for blind review).

University Commitment. All questions were based on organizational commitment scales by Meyer, et al. (1993). *Affective university commitment* comprised of four items, for example: “I am proud to study at the University of [name university]”. *Normative university commitment* comprised of four items, such as: “I would feel guilty if I left the University of [name university] now”. We also assessed *continuance university commitment* although we did not have any specific hypotheses on this component in order to assess the full commitment model and to control for the influence of this component. This component comprised of five items. A sample item reads: “There would be too many costs if I left ... [name university] now”. The reliabilities were $\alpha = .84$, $\alpha = .68$, and $\alpha = .71$, respectively.

Subject commitment. Our instrument was based on the assessment of occupational commitment of Meyer and colleagues (1993). *Affective subject commitment* comprised of four items such as: “I am proud of my study subject”. *Normative subject commitment* comprised of three items including: “I would feel guilty if I left my study subject”. *Continuance subject commitment* comprised of three items, one derived from a German commitment assessment by Felfe, Schmook, Schyns, and Six (2008): “I feel that I have too few options to consider changing my study subject now”. The reliabilities were $\alpha = .85$, $\alpha = .72$, and $\alpha = .73$, respectively.

Performance. *Extra-role performance* was assessed using three items that were adapted by the authors reflecting engagement for other students and the university from a questionnaire for organizational citizenship behavior (OCB) by Podsakoff, Ahearne, and MacKenzie (1997). The items were: “When I become aware of problems in my university, I will stand up for improvement”; “It is very important for me to participate in university committees and activities in addition to my courses”; “I am interested in spending more time and energy than expected in order to improve things in my university”. The reliability was $\alpha = .87$.

Intention to study efficiently was measured as an indicator for in-role performance. We used a single item “I am striving to complete my degree quickly and efficiently”. The item frames efficiency in terms of an uninterrupted degree completion without wasting time and spending too much effort. As this indicator does not reflect a psychological construct but a specific behavioral intention, the use of single item measure is justified (Sanchez et al., 2006).

Control variable. There is a considerable theoretical and conceptual overlap between commitment and satisfaction. Both variables are attitudinal concepts with cognitive and affective components, and due to their mutual influence, conceptually they are correlates rather than antecedents or consequences of each other (Meyer & Allen, 1997). Satisfaction and organizational commitment are known to be correlated (Cooper-Hakim & Viswesvaran, 2005; Meyer et al., 2002) and the correlation with occupational commitment is even stronger (Felfe et al., 2008). Moreover they show similar relationships with outcomes, for example organizational citizenship behavior and performance. Acknowledging the similarity of the concepts, the specific contribution of commitment may be questionable without controlling for the effect of satisfaction. Therefore, study satisfaction was also assessed and used as a control variable. Again because single item measures of job satisfaction have been proven to be valid (Wanous, Reichers, & Hudy, 1997), we used a single item measure: “All in all I am satisfied with my studies.”

Results

In order to test our hypotheses, we conducted regression and correlation analyses. For a thorough examination of the relative effect of university and subject commitment, we performed regression analyses controlling for socio-demographic variables and overall satisfaction with studying. We compared the correlations between affective and normative

university commitment and OCB using a program provided by Hahn and Stöber (1999) based on Meng, Rosenthal, and Rubin (1992). The test examines if two correlated correlations are different. As can be seen in Table 1, OCB and the intention to study efficiently are negatively correlated ($r = -.15, p < .01$). Satisfaction is positively related to OCB ($r = .19, p < .001$) but negatively related to the intention to study efficiently ($r = .19, p < .001$). Satisfaction is also correlated with affective university and study commitment ($r = .47, p < .001, r = .51, p < .001$, respectively). Sex is related to OCB and the intention to study efficiently ($r = .11, p < .01, r = -.24, p < .001$, respectively). Age is related to efficiency ($r = -.26, p < .001$). Age, sex and satisfaction are used as controls.

----- insert Table 1 about here -----

H1a - c: As shown in Table 1, and in line with H1a and H1b affective and normative university commitment are positively related to extra-role performance ($r = .32, p < .001$, and $r = .23, p < .001$, respectively). The relationship between affective university commitment is indeed stronger ($Z = 2.04, p < .05$) than the correlation between normative university commitment and extra-role performance, lending support to H1c. The regression analysis revealed that affective ($\beta = .22, p < .001$) and normative ($\beta = .13, p < .01$) university commitment are relevant predictors for extra-role performance after controlling for sex, age, and overall satisfaction with studying (Table 2).

----- insert Table 2 about here -----

H2a - c: After controlling for demographics, satisfaction, and subject commitment, the relationship between affective commitment to the university and the intention to study

efficiently is negative ($\beta = -.14, p < .01$), therefore H2a is supported. However, there is no significant relationship for normative commitment ($\beta = -.04$), thus H2b is not supported. The affective component of commitment is more strongly related to the intention to study efficiently than the normative component which supports H2c.

In order to test **H3**, we conducted a moderated regression analysis. As shown in Table 3, the main effects were entered in step 2 and the interaction term was entered in step three. Predictors and interaction term were centered to their mean. As expected, the interaction term is negative ($\beta = -.09, p < .05$), indicating that students high in commitment do not show increased extra-role performance if their intention to study efficiently is also high. H3 is thus supported. The simple slopes analysis for the intention to study efficiently as the moderating variable revealed that the slope for individuals low in intention (-1 standard deviation) is stronger ($B = .30, t = 4.42, p < .001$) stronger than the simple slope for individuals high in intention (+1 standard deviation) ($B = .12, t = 1.63, n.s.$). The slopes for high and low intention to study efficiently are shown in Figure 1.

----- insert Table 3 about here -----

----- insert Figure 1 about here -----

H4a-c: As postulated in H4a, affective subject commitment is positively related to extra-role performance. The regression analysis revealed affective subject commitment as a relevant predictor for extra-role performance after controlling for sex, age, university commitment, and overall satisfaction ($\beta = .15, p < .01$). Thus, H4a is supported. However, the effect of normative subject commitment is negative ($\beta = -.10, p < .05$), meaning that H4b is not supported. As predicted, there is a stronger positive relationship for affective subject commitment than for normative subject commitment, thus supporting H4c.

H5a-c: As postulated in H5a and H5b, respectively, affective and normative subject commitment are positively related to the intention to study efficiently, but to a similar degree ($\beta = .14, p < .01$; $\beta = .16, p < .001$). Therefore H5a and H5b are supported but H5c is not. A summary of the hypotheses and the extent to which they are supported is provided in table 4.

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Summary and discussion

In the organizational context, commitment is generally regarded as a positive attitude that leads to positive results (e.g., Meyer et al., 2002). However, this may be too simplistic when considering different components (affective, continuance, and normative) and foci of commitment within the higher education context (university and study subject). There is a potential for in-role and extra-role performance to be conflicting goals for university students and therefore the aim of this study was to investigate the role of different components and foci of commitment in in-role and extra-role performance. Indeed, the results confirmed that there may be a conflict between extra-role behavior and the intention to study efficiently as an indicator of in-role performance.

Our results lend support to the notion that affective and normative commitment towards the university are positively related to extra-role performance but they were negatively related to the intention to study efficiently. In contrast, affective commitment to the study subject is positively related to both the intention to study efficiently and extra-role performance. This result confirms prior studies in the organizational context (e.g., Riketta & Van Dick, 2005).

We hypothesized that the component of affective commitment towards the university would be negatively related to in-role performance. We also argued that in-role performance

would moderate the relationship between affective university commitment and extra-role performance because students who are highly committed to their university would be willing to engage in extra-role behavior that benefits other students and the university, which might be hindered by the intention to study efficiently. Thus, we assumed that this behavior would only be shown when students are not concerned about a loss of in-role performance. Our results support this hypothesis and have the potential to encourage universities to focus attention on activities designed to foster students' university commitment. However, the effect will be limited if students are pushed too much to study efficiently. Instead, they could be advised and encouraged not only to focus on efficiency and short study duration.

Various studies have found that many students lack clarity as to why they are studying their subject or what they would like to do in the future when they start their courses and this can be a key factor in drop-out rates (Stiwne & Jungert, 2010; Wessel et al., 2008; Wilcoxson, Cotter, & Joy, 2011). Therefore activities aimed at fostering commitment to the study subject would seem to be a univocally good idea and even more so if the activities are designed to target the component of affective commitment.

As in organizational studies, while normative commitment is positively related to some forms of performance, the relationships between affective commitment and all types of performance are stronger (Meyer & Herscovitch, 2001). This is interesting in the educational context, as a number of students seem to choose their subject out of normative commitment and this felt moral obligation based on parents' expectations seems to influence study success negatively (Times Higher Education, 2010). However, if a university succeeds in turning this normative commitment into affective commitment, performance can be enhanced. Ways to achieve this aim may be transferred from the organizational commitment literature (Meyer et al., 2002). For example, Jaros (1997) suggests that organizations should focus on the classic job satisfaction factors such as task significance, identity and autonomy, skill variety, and

feedback. Transferring these ideas into the educational context, universities could stimulate affective commitment to the study subject by highlighting the importance and demonstrating the value of the subject area to the student, engaging the students in participative and applied learning, increasing the quality and quantity of feedback, employing enthusiastic teaching staff, and providing extra-curricular activities related to the study subject (e.g., conferences, additional lectures by well-known scholars, and voluntary study trips). Moreover, these efforts might – at the same time – influence university commitment positively.

One of the most interesting results of our study is the negative relationship between affective university commitment and in-role performance as well as the result that in-role performance moderates the relationship between commitment and extra-role performance. This indicates that there may be some conflict in the minds of students between in-role and extra-role performance. Universities may want to consider this issue because of the links between both types of performance and the employability agenda. As there is little research into the antecedents of university commitment, we can only speculate as to how this can be achieved but making students more aware of the benefits of both types of performance is a starting point. The organizational commitment literature (Bergeron, 2007) suggests reward and recognition of citizenship behaviors and strategies to enhance identification. This might equally apply in the university setting. Higher education suggestions provided by Sanchez and colleagues (2006) include high quality teaching by committed professors, reputation of the university, good technical resources, participation, flexibility to adapt schedules to individual needs, and mentoring programs.

Limitations, future research and implications

Our study provides evidence that commitment is meaningful for different performance indicators in the university context. However some limitations should be mentioned. From a

methodological perspective, we have to consider that single source and single method bias may have inflated our results. In order to reduce the risk of misinterpreting our results, we controlled for satisfaction as an attitudinal concept similar to commitment and examined different commitment components simultaneously. Therefore, we are confident that the remaining effects are meaningful, even though they are relatively low. Nevertheless, future studies should replicate the results with independent measures such as actual grades, peer or teacher assessments.

As this is a cross-sectional study, we cannot rule out alternative directions of causality to the one proposed here. Rather than showing extra-role performance because they are committed, students who show extra-role performance caused by other reasons as third variables may also develop commitment as a result. Only longitudinal studies can address the problem of directionality.

From a theoretical perspective, the scope of performance measures is limited. Our study exclusively highlighted surface measures of students' in-role performance but neglected in-depth or underlying measures of in-role performance (e.g., analytic competences, complex problem solving, and grades). Moreover, although intentions and performance are often closely related they are not identical and, therefore, actual performance measures should be included in future studies in order to compare effect sizes. When discussing which measure is more appropriate, however, we hesitate to recommend using only objective performance measures. We would argue that there is a strong justification to use intention measures as they reflect the psychological orientation better whereas objective performance measures may be more strongly influenced by situational factors. For example, some students may fail to achieve good grades and short duration due to more or less favorable context factors, though they strived for efficiency.

A similar shortcoming can be identified for the extra-role performance measures of this study: We did not distinguish different dimensions of extra-role performance (e.g., altruism, conscientiousness, courtesy, civic virtue and sportsmanship). Future research should try to overcome these limitations by differentiating further extra-role performance measures. Though in the organizational context there seem to be a high overlap between these dimensions, in the university context specific relationships may be found.

Though we found some evidence for a conflict between in-role and extra-role performance as assessed here, the degree of conflict may also depend on other individual variables, such as, academic skills and preparation. Students with strong academic capabilities may be more "efficient" in their study than their counterparts. Hence, among the former group, the intention to study efficiently (in-role) and extra-role activities may not conflict to the same extent as it does for student whose are less academically skilled. Further research should examine the effect of these skill-related variables.

Though the focus of our study was on attitudes and behavior of students, the findings may also be relevant for University alumni initiatives. Future research could examine the relationship between the commitment of current students and their later commitment as alumni. This perspective may be relevant because we assume that those with high commitment during their studies will show higher commitment as alumni and may be more willing to give back what they once received from their university.

Conclusion

Our study supports the findings of McNally and Irving (2010, p. 212) who state "at least in the terms of the outcomes of student commitment, students' behavioral intentions closely match those of traditional workplace employees". However, we expand previous work by looking into different foci and components of commitment and the potential for conflict

students experience between in-role and extra-role performance. Our study has shown that commitment to the university and to the study subject likely enhances students' in-role and extra-role performance; both of which are important to numerous stakeholders in the education context. As in other contexts, affective commitment has been shown to be the most powerful predictor of performance. This knowledge can help universities target their resources when trying to foster student commitment. However, because students might feel that extra-role performance in-role performance constitute conflicting aims, universities might want to emphasize the benefits of both types of performance.

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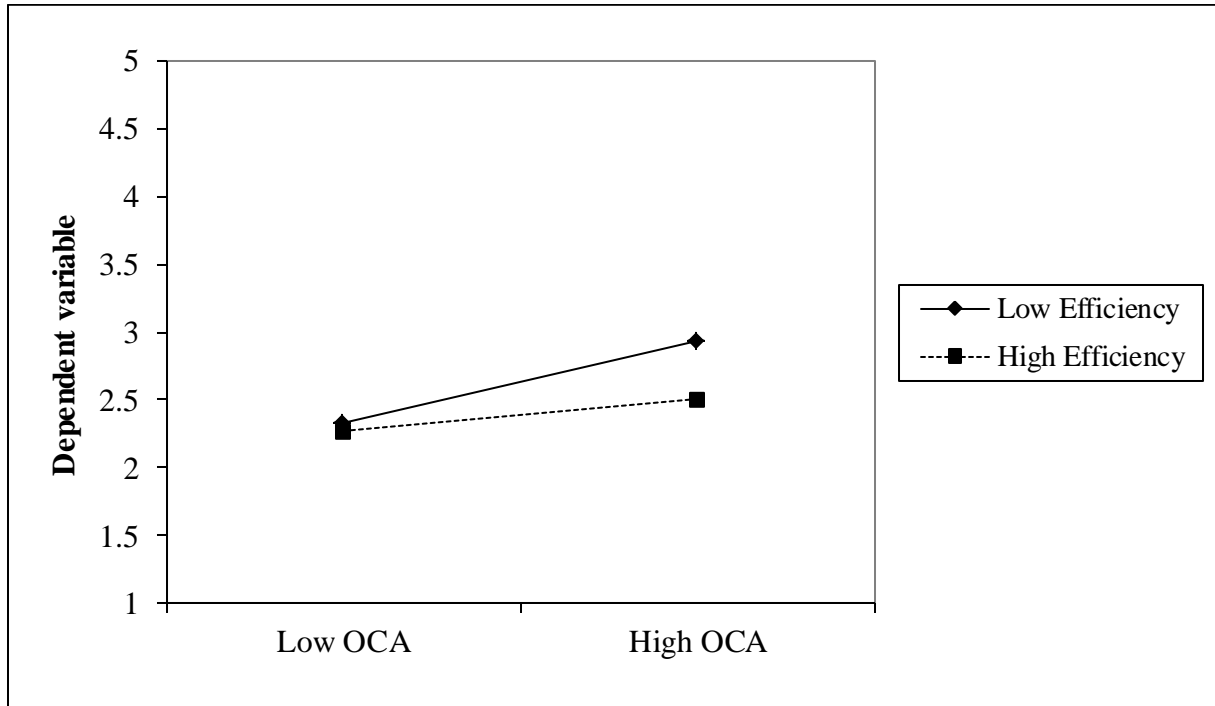


Figure 1: Moderated regression predicting OCB

Table 1: Correlations between commitment, antecedences and outcomes

	M	S D	1	2	3	4	5	6	7	8	9	10
1) sex	1.39	.49										
2) age	24.07	3.7	.27									
3) OCA	2.52	.95	.04	.06								
4) OCC	3.44	.94	-.05	.14	.15							
5) OCN	2.13	.87	-.03	-.07	.43	.24						
6) BCA	3.89	.87	-.04	-.20	.28	.05	.15					
7) BCC	3.62	1.05	.01	.13	-.04	.39	.07	.06				
8) BCN	2.27	.98	.06	-.09	.10	.10	.22	.07	.14			
9) OCB	2.51	1.0	.11	.02	.32	.01	.23	.21	-.06	-.04		
10) Efficiency	3.91	1.9	-.24	-.26	-.08	-.01	-.01	.18	-.02	.15	-.15	
11) Satisfaction	3.79	.93	-.05	-.06	.47	.10	.25	.51	.08	.02	.19	.10

Note: OCA = Affective university commitment; OCC = Continuance university commitment; OCN = Normative university commitment; BCA = Affective subject commitment; BCC = Continuance subject commitment; BCN = Normative subject commitment; sex: female =1, male = 2; $r > .08$ $p < .10$, $r > .09$ $p < .05$; $r > .12$ $p < .01$; $r > .15$ $p < .001$, $N = 530$.

Table 2: Regressions predicting Performance

	OCB		Intention Efficiency	
	beta	ΔR^2	beta	ΔR^2
Step 1		.06***		.11***
Sex	.12*		-.19***	
Age	.02		-.15**	
Study Satisfaction	.01		.10+	
Step 2		.10***		.05***
OCA	.22***		-.14**	
OCC	-.04		.02	
OCN	.13**		-.04	
BCA	.15**		.14**	
BCC	-.05		-.04	
BCN	-.10*		.16***	
Overall R^2		.15***		.16***

Note: N = 530; sex: female = 1, male = 2; *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$.

Table 3: Moderated regression predicting OCB

	OCB	
	beta	ΔR^2
Step 1		.05***
Sex	.08	
Study Satisfaction	.08	
Step 2		.09***
OCA	.21***	
OCN	.12*	
OCC	-.04	
Intention Efficiency	-.12**	
Step 3		.01*
OCA x Efficiency	-.09*	
Overall R^2		.15***

Note: N = 530; sex: female = 1, male = 2; *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$.

Summary of support for the hypotheses (Table 4)

Hypothesis		Supported
H1a	Affective commitment to the university is positively related to extra-role performance.	Yes
H1b	Normative commitment to the university is positively related to extra-role performance.	Yes
H1c	The affective component of commitment will be more strongly related to extra-role performance than normative commitment.	Yes
H2a	Affective commitment to the university is negatively related to the intention to study efficiently.	Yes
H2b	Normative commitment to the university is negatively related to the intention to study efficiently.	No
H2c	The affective component of commitment will be more strongly related to the intention to study efficiently than normative commitment	Yes
H3	The relationship between affective commitment to the university and extra-role performance is moderated by the intention to study efficiently. Extra-role performance will be lower for students high in the intention to study efficiently.	Yes
H4a	Affective commitment to the study subject is positively related to extra-role performance.	Yes
H4b	Normative commitment to the study subject is positively related to extra-role performance.	No
H4c	The affective component of commitment will be more strongly related to extra-role performance than normative commitment	Yes
H5a	Affective commitment to the study subject is positively related to the intention to study efficiently.	Yes
H5b	Normative commitment to the study subject is positively related to the intention to study efficiently.	Yes
H5c	The affective component of commitment will be more strongly related to the intention to study efficiently.	No