



# Alumni loyalty drivers in higher education

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## Abstract

Alumni can be of enormous value for higher education institutions because of the time and money they can spend on their former institution. Going beyond prior research that has as yet mostly considered alumni giving, this study focuses on exploring drivers for non-monetary alumni behavior (i.e., alumni loyalty). Modeling analysis was conducted on 152 alumni responses from two Dutch universities of applied sciences. Based on social exchange theory, a structural equation model was tested in which relationship quality dimensions were associated with student engagement, which in turn were related to alumni loyalty. Findings showed that the relationship quality dimensions of trust in benevolence and affective commitment had a statistically significant positive association with the student engagement dimensions absorption, dedication and vigor, and with alumni loyalty. The findings of this study support the importance of relationship quality dimensions in higher education for initiating long-lasting relationships with students even after their graduation, and for establishing non-monetary contributions in terms of alumni loyalty.

**Keywords** Alumni loyalty · Student engagement · Relationship quality · Higher education · Social exchange · Partial least squares

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# 1 Introduction

Strong alumni relations can be of enormous value to a university. Alumni may assist the university from which they have graduated, resulting in non-monetary or monetary support. Therefore, they form an interesting and important group (Iskhakova et al. 2017). Their involvement can contribute to current students' higher educational experience, such as by their reflection on current curricula and future job opportunities (Ebert et al. 2015; Moore and Kuol 2007). In addition, "engaging with higher education institutions in designing and delivering curriculum not only allows businesses to influence the education of the future workforce but to engage with prospective future employees throughout their educational experience" (Plewa et al. 2015, p. 36). Other examples of alumni support are, for instance, financial sponsorship, offering internships, giving guest lectures, and participation in advisory boards (Ebert et al. 2015; Moore and Kuol 2007). Due to their more prominent role, alumni could be regarded as among the primary stakeholders of higher education institutions (Barnard and Rensleigh 2008). As a result, alumni loyalty has become an increasingly important strategic theme for (European) universities (Iskhakova et al. 2017). Alumni loyalty can even be called a key factor for higher education institutions' survival and success (Schlesinger et al. 2016), because of alumni non-monetary and monetary support, such as alumni giving.

In some countries such as the United States (US), alumni giving is considered to be essential to the funding of public higher education institutions as a result of decreasing governmental financial support (Lambert and Miller 2014; Newman and Petrosko 2011). Therefore, the importance of alumni has long been recognized (Newman and Petrosko 2011). Much of the previous literature on alumni loyalty has been based on studies from the US, with a focus on monetary contributions (Guzman 2015; Koenig-Lewis et al. 2016) such as donations and buying the universities' merchandise. While US-based alumni often automatically become alumni association members, in European countries such as the Netherlands, Belgium, and Germany, this practice is not common. Following the American example, most Dutch universities nowadays have started to invest in building relationships with former students and regional businesses. Nevertheless, compared to the US, the majority of higher education institutions in the Netherlands still do not have a structured and sustainable alumni policy (Jadnanansing 2015). In Europe, and more specifically in Dutch higher education, alumni involvement occurs more often in the form of non-monetary 'membership', that is, voluntary contributions such as serving on advisory boards (Weerts et al. 2010).

Further research is needed to contribute to the limited knowledge on alumni loyalty drivers (Weerts and Ronca 2008), including non-monetary alumni involvement. This study begins to address this knowledge gap (Iskhakova et al. 2017) by exploring new possible factors that could predict whether students remain loyal after graduation, that is, drivers of non-monetary alumni loyalty. We assume that alumni will report higher (retrospective) engagement when they perceive their past educational experiences positively in terms of the relationship they had with

their former educational faculty and staff. Consequently, after their graduation, such former students might become (more) loyal, in terms of positive intentions (e.g., positive word of mouth) and behavior after their graduation (e.g., becoming part of an educational advisory board). Using the lens of social exchange theory (SET; Blau 1964; Emerson 1976), we based this assumption on several ideas from the service/relationship management field, in combination with educational research literature. In service and relationship management, the philosophy is on keeping and improving relationships with key stakeholders (Zeithaml et al. 2009). In higher education, former students are among the key stakeholders. The educational literature also stresses the importance of building positive student–faculty relationships (e.g., Bowden 2009; Kahu 2013; Parsons and Taylor 2011). Higher education institutions may benefit from positive student–faculty relationships, as they might result in (higher) student involvement during their studies, for example, positive recommendations by students, and students being engaged in studying within and outside the classroom. Benefits could also include former students’ involvement after graduation, such as giving guest lectures and being part of an educational advice committee. How former students perceive the quality of the relationship they had with their educational faculty/staff might be an important predictor for how former students perceived their studies, that is, how they were engaged in studying, and consequently, how they now (still) feel connected to their former university and show their loyalty. This study aims to add to the theoretical and practical understandings of alumni loyalty in higher education. The following research question guided this research: What are the associations between alumni perceptions of the quality of the relationship they had with their former educational faculty/staff (i.e., relationship quality), their perceptions of their student engagement, and alumni loyalty?

Building on previous work on the dynamics of students’ relationships with their university (e.g., Kahu 2013, Zeithaml et al. 1996), we developed and tested a hypothesized model (see Fig. 1, Hypothesized model).

Hence, we propose the following hypotheses:

**H1** Relationship quality dimensions a–e, are positively associated with student engagement.

**H2** Student engagement dimensions a–c, are positively associated with alumni loyalty.

Mediation of the relation between relationship quality dimensions and student loyalty by student engagement dimensions is also tested. Drawing upon the ideas of Farrow and Yuan (2011), who imply that the strength of ties between faculty/staff and former students may influence alumni loyalty in terms of attitude and behavior, this study also tests direct effects of relationship quality dimensions on alumni loyalty, with the following hypothesis:

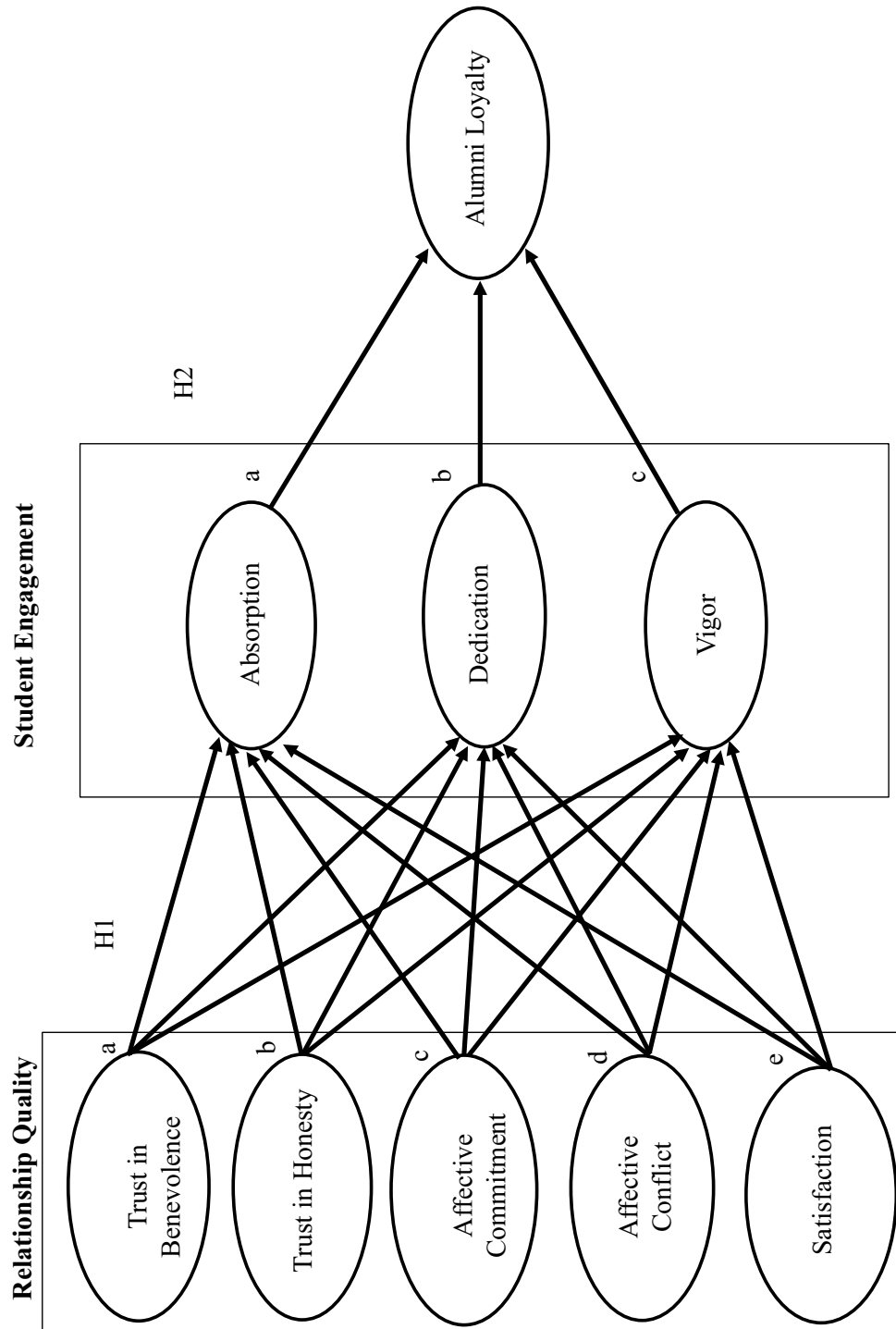


Fig. 1 Hypothesized model

**H3** Relationship quality dimensions a–e are positively associated with alumni loyalty.

For reasons of clarity, direct relations between relationship quality dimensions and alumni loyalty are not depicted in Fig. 1.

## 2 Aim of the present study

The aim of this study is to explore possible drivers of alumni loyalty, including non-monetary alumni involvement. With this study we intend to assist higher education practitioners and institutions in their pursuit of maintaining student–faculty relationships after graduation. By examining the effect of different dimensions of relationship quality on engagement and alumni loyalty, insights from this study can provide a broader view of how to build and sustain positive student–faculty relationships. These relationships can be fruitful in the short as well as the long run for higher education institutions.

## 3 Theoretical background

### 3.1 Alumni loyalty

Student loyalty in general refers to the extent to which students feel connected to the educational institution in which they are enrolled, expressed by their attitudinal and/or behavioral actions (Hennig-Thurau et al. 2001). Loyalty can refer to the time the student was formally enrolled as well as the time after the student has completed his/her formal education at the institution (Neset and Helgesen 2009). In other words, it can be considered “a multiple concept that stretches from enrolment to graduation and beyond” (Koenig-Lewis et al. 2016, p. 59), that is, alumni loyalty. Alumni loyalty is also referred to as the faithfulness or devotion of alumni (Iskhakova et al. 2017). Two interrelated components form the basis for that loyalty: attitudinal and behavioral aspects (Hennig-Thurau et al. 2001). Attitudinal alumni loyalty intentions can be defined as “a desire to implement financial support, a desire to keep in touch with the university, interest in obtaining university news, and a willingness to be a member of the alumni association” (Iskhakova et al. 2016, p. 302). Behavioral alumni loyalty is often expressed in monetary (i.e., financial) support. Newman and Petrosko (2011) also mentioned other forms of alumni contributions. Expressions of non-monetary alumni behavior could be wearing universities’ merchandise (Fogg 2008), and offering their expertise and skills, such as in the form of serving on advisory boards (Weerts et al. 2010).

Although its importance has been acknowledged (Schlesinger et al. 2016), little research has been conducted on possible drivers of alumni loyalty (Brown and Mazzarol 2009). Based on the relationship and service management literature, to achieve positive academic outcomes such as alumni loyalty through students’ bonds with

their university (Bowden 2009; Sung and Yang 2009), student engagement might be crucial.

### 3.2 Student engagement

Student engagement is a broad concept (Di Battista et al. 2014; Farr-Wharton et al. 2018). Promoting engagement is a global issue and of educational importance for developed countries (Coates 2010; Zepke 2015). The concept is widely theorized and researched (Kahu 2013). Although multiple definitions have been used in student engagement research in the past years, student engagement can be considered a variety of constructs that measure both the time and energy students devote to educationally purposeful activities, and how students perceive different facets of the institutional environment that facilitate and support their learning (Kuh 2001). Therefore, student engagement can be seen as a meta-construct (Fredricks et al. 2004).

In line with recent studies (e.g., Farr-Wharton et al. 2018), in this study the definition by Schaufeli et al. (2002) that focuses on students' studying experience is adopted. In these terms, student engagement is a positive, fulfilling, study-related state of mind that is characterized by vigor, dedication, and absorption. Schaufeli et al. (2006) defined the student engagement sub-dimensions as follows: vigor is characterized by high levels of energy and mental resilience while studying, the willingness to invest effort in one's studies, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one's studies and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, absorption is characterized by being fully concentrated and, happily engrossed in one's studies, whereby time passes quickly and one has difficulties with detaching oneself from studying. Schaufeli et al. (2002) conducted research within a higher educational context, examining the student engagement dimensions of vigor, dedication, and absorption. In line with previous research (Bakker et al. 2014), within the present study we expect that the more students are engaged, the more positively they experience their education. A recent study by Xerri et al. (2018) indicated that the stronger the teacher–student relationships were, the higher student engagement was in academic activities. Therefore, it is important to examine the associations between student engagement and loyalty, and the role of relationship quality (Bowden 2011).

### 3.3 Relationship quality

Relationship quality in general can be defined as the overall strength of a relationship between two parties, such as the relationship between students and faculty/staff (Bowden 2011). Previous studies (e.g., Pascarella and Terenzini 1980) have already indicated that student/faculty relationships are important in higher education. Social relations during one's time at university may even lead to improved school attachment (Li and Frieze 2016). Recent research has suggested that the conceptualization and measurement of relationship quality as defined in consumer services is also applicable to a higher educational context (Hennig-Thurau et al. 2001; Snijders et al.

2018a, b). Previous research (Snijders et al. 2018a) based on the relationship quality study by Roberts et al. (2003) indicated that relationship quality in higher education can be considered a five-dimensional construct. The five dimensions are trust in honesty, trust in benevolence, affective commitment, affective conflict, and satisfaction. *Trust in honesty* means the trust students have in the educational faculty/staffs' credibility, that they are sincere, and that they will perform their role effectively and reliably. *Trust in benevolence* refers to the extent to which students believe faculty and staff are concerned about students' welfare, including having intentions and motives beneficial to students, and avoiding acting in a way that will result in negative outcomes for students. Students' feelings of wanting to belong or be connected to their educational faculty/staff represent *affective commitment*. *Affective conflict* is a negative indicator of relationship quality, that is, lack of trust. Last, *satisfaction* is the cumulative student satisfaction with the overall quality of the student-faculty/staff relationship.

Qualitative research by Cotten and Wilson (2006) suggested that the frequency and quality of interactions between students and their faculty/staff could stimulate positive relationships between all parties. Recent research (e.g., Pianta et al. 2012; Xerri et al. 2018) has pointed out that students' perceptions of the relations between students and their faculty/staff can positively influence students' engagement, and in turn, students' current loyalty (Snijders et al. 2018b; Sung and Yang 2009). For instance, in an earlier study (Snijders et al. 2018b), findings indicated that affective commitment and affective conflict are important relationship quality dimensions that positively link with the student engagement of enrolled students. Furthermore, Farrow and Yuan (2011) suggested that the strength of ties between faculty/staff and former students may positively relate to loyalty in terms of attitude and behavior. In sum, as a result of the interactions between students and educational faculty and staff, the quality of their relationship might improve, which in turn could positively influence student/alumni (intentional and behavioral) involvement. However, so far little is known about how student loyalty after graduation can be established, for instance, in terms of non-monetary alumni loyalty (Iskhakova et al. 2017).

## 4 Methods

### 4.1 Participants and procedure

Participants were based on a convenience sample consisting of 152 alumni from two Dutch universities of applied sciences located in the south of the Netherlands. Alumni to whom a questionnaire was administered ( $M_{\text{age}} = 32.58$ ,  $SD_{\text{age}} = 9.69$ ; 82.20% female) all hold a degree from a Social Work study program (see the "Appendix" for sample characteristics).

Alumni from the two Dutch universities of applied sciences were approached by email. Email addresses were obtained from the educational administration office. Approximately 1000 former students were sent an email invitation with a link to a questionnaire to participate in the research; however, the majority of emails sent were undeliverable. Respondents were told that there were no right or wrong



answers to the items, as long as the answers reflected their personal opinions. Completing the online survey took approximately 15 min. Students were given a 2 month-period to respond. A reminder was sent after a 2 to 4-week period to the alumni who did not respond.

Ethical approval for this study was obtained in accordance with the policy of the institutions under study. Furthermore, the research project was covered by the Netherlands Code of Conduct for Research Integrity and reviewed by a committee from the Dutch Organization for Scientific Research that funded the research project. Participants were asked for informed consent via a question at the end of the online survey. Only participants who gave their permission to use their answers for research were included within this study. The responses from alumni were treated anonymously and their responses were not traceable by their former institution to individual former students.

## 4.2 Materials

To measure relationship quality, student engagement, and alumni loyalty, a survey instrument using existing scales (that were adapted to fit our context as necessary) had been validated in previous research (Snijders et al. 2018a, b; see Table 1). All items regarding relationship quality and student engagement were formulated in the past tense, as respondents were to recall their past educational experiences; those for their current loyalty were in the present tense. The questionnaire also included an open-ended question to give alumni the opportunity to give their thoughts about the questionnaire, either about specific parts of the questionnaire or the questionnaire in general. Alumni were also asked some general questions related to their age, gender, ethnicity, graduation year, and current job status to get a broader picture of alumni who responded.

### 4.2.1 Relationship quality

Questionnaire items for relationship quality were based on previous research by Roberts et al. (2003), using a forward–backward translation procedure to put them in Dutch. The items had been found suitable for a higher educational context in earlier studies (Snijders et al. 2018a, b). Relationship quality (RQ) was measured by a 15-item questionnaire, based on an existing relationship quality scale with a five-factorial structure: trust in honesty, trust in benevolence, affective conflict, affective commitment, and satisfaction. Students had to indicate on a 7-point Likert scale how much they agreed with the provided statements, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

### 4.2.2 Student engagement

Student engagement was measured by 9 items from the Utrecht Work Engagement Scale-Student version (Shortened version UWES-S; Schaufeli and Bakker 2003; Schaufeli et al. 2006). A Dutch version of the UWES-S had already been tested in



**Table 1** Scales and items for constructs included in measurement model

Scale constructs	Outer loadings
<i>Relationship quality dimensions<sup>a</sup></i>	
Trust in faculty/staff's benevolence (CR = .91, CA = .85, AVE = .76)	
My university <sup>d</sup> was concerned about my welfare ( <i>RQT_B01</i> )	.86
When I confided my problems to my university, I knew they would respond with understanding ( <i>RQT_B02</i> )	.94
I could count on my university considering how their actions affected me ( <i>RQT_B03</i> )	.92
Trust in faculty/staff's honesty (CR = .93, CA = .87, AVE = .81)	
My university was honest about my problems ( <i>RQT_H01</i> )	.85
My university had high integrity ( <i>RQT_H02</i> )	.95
My university was trustworthy ( <i>RQT_H03</i> )	.90
Affective commitment (CR = .91, CA = .85, AVE = .77)	
I felt emotionally attached to my university ( <i>RQACOMM01</i> )	.82
I continued to interact with my university, because I liked being associated with them ( <i>RQACOMM02</i> )	.91
I continued to interact with my university, because I genuinely enjoyed my relationship with them ( <i>RQACOMM03</i> )	.90
Affective conflict (CR = .93, CA = .91, AVE = .82)	
I was (sometimes) angry with my university ( <i>RQACON01</i> )	.79
I was (sometimes) frustrated with my university ( <i>RQACON02</i> )	.97
I was (sometimes) annoyed with my university ( <i>RQACON03</i> )	.95
Satisfaction (CR = .97, CA = .95, AVE = .90)	
I was delighted with the performance of my university ( <i>RQSAT01</i> )	.95
I was happy with my university's performance ( <i>RQSAT02</i> )	.95
I was content with my university's performance ( <i>RQSAT03</i> )	.95
<i>Student engagement dimensions<sup>b</sup></i>	
Absorption (CR = .90, CA = .83, AVE = .74)	
Time flew when I was studying ( <i>AB01</i> )	.84
When I was studying, I forgot everything else around me ( <i>AB02</i> )	.85
I was immersed when I was studying ( <i>AB03</i> )	.89
Dedication (CR = .91, CA = .85, AVE = .76)	
I found the studying that I did full of meaning and purpose ( <i>DE01</i> )	.89
My studies inspired me ( <i>DE2</i> )	.86
I was proud of the studying that I did ( <i>DE03</i> )	.87
Vigor (CR = .90, CA = .84, AVE = .75)	
While at the university, I felt bursting with energy ( <i>VI01</i> )	.85
While at the university, I felt strong and vigorous ( <i>VI02</i> )	.87
When I got up in the morning, I felt like going to school ( <i>VI03</i> )	.88
<i>Alumni loyalty<sup>c</sup> (CR = .93, CA = .91, AVE = .57)</i>	
I would recommend my course of studies to someone else ( <i>SL01</i> )	.83
I would recommend my university to someone else ( <i>SL02</i> )	.76
I am very interested in keeping in touch with "my faculty" ( <i>SL03</i> )	.59
If I were faced with the same choice again, I would still choose the same course of studies ( <i>SL04</i> )	.76

**Table 1** (continued)

Scale constructs	Outer loadings
If I were faced with the same choice again, I would still choose the same university (SL05)	.72
I found value in my education from ... (AL01)	.85
I am proud to be an alumnus/a of ... (AL02)	.83
I have positive feelings about ... (AL03)	.90
I want others to know I am a ... alumnus/a (AL04)	.48
My ... education has improved my life (AL05)	.74

CR composite reliability, CA Cronbach's alpha, AVE average variance extracted

<sup>a</sup>Adapted from Roberts et al. 2003. <sup>b</sup>Adopted from Schaufeli and Bakker 2003. <sup>c</sup>Adopted from Hennig-Thurau et al. 2001 (first five items) and partially from the survey by Newman and Petrosko 2011 (positive alumni feelings, last five items). <sup>d</sup> 'My university' is short for 'students' educational faculty/staff'

a previous study (Schaufeli and Bakker 2003). Students had to indicate how they experienced their education in terms of vigor, dedication, and absorption on a 7-point Likert scale, ranging from 1 (*almost never/a few times a year or less*) to 7 (*always/every day*).

#### 4.2.3 Alumni loyalty

To measure loyalty, an existing five-item scale by Hennig-Thurau et al. (2001) was used that measured attitudinal and behavioral loyalty aspects, along with five items from Newman and Petrosko (2011) that measured alumni positive feelings. Items were to be rated on a 7-point Likert scale ranging from 1 (*do not agree*) to 7 (*do agree*; see Table 1). Within the questionnaire, students were asked about intentions related to financial support as well as behavioral loyalty aspects (e.g., alumni's willingness to recommend, maintain contact, and select the institution again for future study or join an alumni organization; Brown and Mazzarol 2009). Hence, both loyalty intentions and behavioral loyalty aspects were taken into account within the current study.

#### 4.3 Analyses

Partial least squares structural equation modeling (PLS-SEM) using SmartPLS (Ringle et al. 2015) was used to analyze the data based on the hypothesized model (see Fig. 1). The primary objective of the current study was to predict alumni loyalty and student engagement and help to further develop theory on relationship quality in higher education. Therefore, the PLS-SEM method was found to be appropriate (Hair et al. 2017).

A structural equation model with nine latent constructs was composed. The model consisted of two components: first, the structural (inner) model showed the relationships (paths) between the latent constructs. Second, the measurement (outer) model included the unidirectional predictive relationships between each latent construct

and its associated observed indicators (Hair et al. 2014). Within the measurement models used for this study, all indicators were reflective, and were well represented by its outer loadings. A two-stage approach was followed in examining the structural equation model. First, the latent construct scores of relationship quality dimensions, student engagement dimensions, and alumni loyalty were estimated via a four-step process as suggested by Hair et al. (2014). Second, the structural equation model's path coefficients were estimated. In addition, a mediator analysis was conducted to investigate whether student engagement dimensions mediated the relation between relationship quality dimensions and alumni loyalty.

#### 4.3.1 Measurement model

Assessment of the reflective measurement model was based on construct reliability and validity, and discriminant validity (Hair et al. 2017). All indicator outer loadings were above the recommended 0.70, except for two alumni loyalty items AL04 ('I want others to know I am an ex-alum') and SL03 ('I am very interested in keeping in touch with "my faculty"'). However, these items were not deleted because composite reliability as well discriminant validity were above threshold values (Hair et al. 2017). Cronbach alpha values and composite reliability values all exceeded the threshold value of 0.70. AVE-values were 0.5 or higher, therefore establishing convergent validity. The Fornell–Larcker criterion was assessed for evaluating discriminant validity of the measurement model; the square root of AVE values should be higher than the maximum value of construct's correlations with any other construct involved in the hypothesized model (Hair et al. 2017).

#### 4.3.2 Structural model

The procedure suggested by Hair et al. (2017) was followed for the assessment of the structural model. First, a bootstrapping procedure was applied to assess the significance of path coefficients using 5000 bootstrap samples, no sign change included. Evaluation of the structural model was assessed by  $R^2$ , significance of estimated values for path relationships, and effect sizes for each effect (Cohen 1988; see Fig. 1 and Table 2). Following Hair et al. (2017),  $R^2$  values were assessed, considering  $R^2$  values of .25, .50, or .75 as weak, moderate, and substantial, respectively. To indicate the exogenous constructs' contribution to the endogenous latent variables'  $R^2$  value, effect sizes ( $f^2$ ) were examined.

## 5 Results

### 5.1 Measurement model

Assessment of the measurement model indicated outer loadings for relationship quality that ranged from .79 to .97. Thus, all items corresponding to each relationship quality sub-dimension loaded on the intended constructs.

**Table 2** Construct correlations

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Alumni loyalty	.76								
2. RQT_B	.54	.87							
3. RQT_H	.53	.80	.90						
4. RQ_ACOM	.55	.47	.46	.88					
5. RQ_ACON	-.19	-.18	-.18	-.16	.90				
6. RQ_SAT	.52	.56	.59	.45	-.33	.95			
7. SE_Absorption	.50	.39	.25	.43	-.14	.26	.86		
8. SE_Dedication	.74	.46	.39	.52	-.09	.37	.72	.87	
9. SE_Vigor	.46	.33	.22	.36	-.13	.33	.72	.66	.87
Mean	5.07	5.30	5.31	5.00	5.18	4.97	4.11	5.00	4.38
SD	1.06	1.04	1.06	1.25	1.21	1.16	1.29	1.13	1.13

The italicized numbers on the diagonal represent the square root of the AVE for each construct. All correlations are statistically significant ( $p < .05$ )

*RQ* relationship quality, *T\_B* trust in benevolence, *T\_H* trust in honesty, *ACOM* affective commitment, *ACON* affective conflict, *SAT* satisfaction, and *SE* student engagement

$N = 152$ , responses range from 1 to 7, with a higher score indicating a greater level of the construct

In line with recent studies (e.g., Hodge et al. 2018), the UWES-S-9 shortened version suggested by Schaufeli and Bakker (2003) was used for the analysis of the measurement model for student engagement. Each of the nine items loaded on its intended construct, with outer loadings ranging from .84 to .89. Alumni loyalty was conceptualized as a one-dimensional construct. Outer loadings ranged from .48 to .90.

Construct reliability was acceptable for all latent variables (i.e., relationship quality, student engagement, and alumni loyalty), as indicated by composite reliability and Cronbach's alpha values exceeding .70. Convergent validity was verified with AVE values for all constructs that were greater than the threshold value of .50 (Fornell and Larcker 1981). Therefore, no indicators with outer loadings  $< .70$  (AL04 = .48 and SL03 = .59) were deleted. AVE values, outer loadings of construct items in the measurement model, and composite reliabilities for each scale are included in Table 1.

By comparing the square root of the AVE of each construct to its correlations with the other latent constructs (i.e., the Fornell-Larcker criterion), discriminant validity was tested. For an exploratory study, acceptable discriminant validity for every pair of latent variables was indicated by the square root of the AVE being higher than the correlation between the variables (Fornell and Larcker 1981; see Table 2).

## 5.2 Structural equation model

Considering the exploratory nature of this study, assessment of the structural equation model showed  $R^2$  values that are reasonable. The structural equation model explained 53% of the variance in student loyalty, 23% of the variance in absorption, 30% of the variance in dedication, and 20% of the variance in vigor.

Within the sample, *trust in benevolence* had a statistically significant association with all student engagement sub-dimensions, that is, vigor, dedication, and absorption (H1a). *Trust in honesty* also had a statistically significant association with student engagement's absorption and vigor (H1b), but not with dedication. *Affective commitment* had a statistically significant effect on all student engagement dimensions (H1c). *Affective conflict* did not have a statistically significant association with any student engagement dimensions (H1d). Last, *satisfaction* had a statistically significant association with student engagement's dimension of vigor. However, no statistically significant association was found with student engagement's dimensions of absorption and dedication (H1e).

Further examination of the structural model indicated that *absorption* (H2a) and *vigor* (H2c) did not have a statistically significant association with alumni loyalty, in contrast to *dedication*, which did have a statistically significant association with alumni loyalty (H2b).

Figure 2 shows the path model diagram including statistically significant path loadings and significance levels.

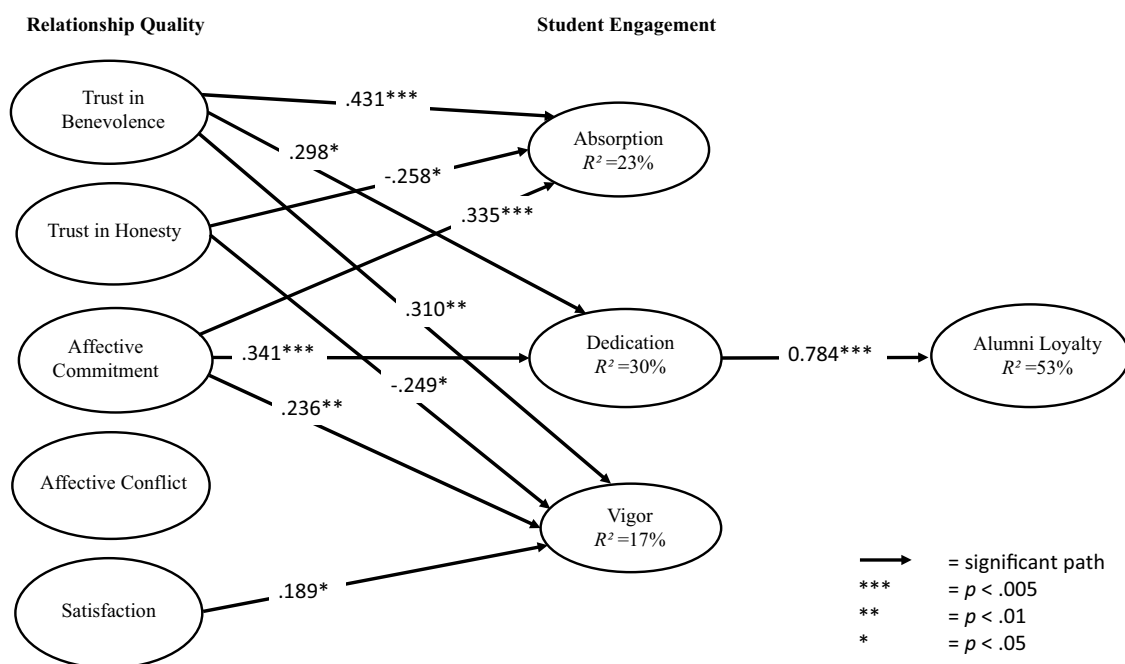


Fig. 2 Path model and PLS-SEM estimates.  $N = 152$

### 5.3 Effect sizes

Effect sizes  $f^2$  ranged from small ( $> .02$ ) to medium (.10) to large (.35; Cohen 1988). Small effect sizes were found for the paths between relationship quality trust in benevolence's role and student engagement absorption (.09), dedication (.04), and vigor (.04); for trust in honesty's and absorption (.03), and vigor (.03); for affective commitment and vigor (.05), and for satisfaction and vigor (.03). Medium effect sizes were found for the paths between affective commitment and absorption (.11) and dedication (.12). A large effect size was found for the path between student engagement dedication and loyalty (.60).

### 5.4 Mediator analysis

For the mediator analysis, further assessment of the structural model was conducted following Hair et al.'s procedure (Hair et al. 2017). First, we examined the specific indirect effects, i.e., the paths between relationship quality dimensions (independent variables) and student engagement dimensions (mediating variables; H1 a–e), and the paths between student engagement dimensions (mediating variables) and alumni loyalty (dependent variable; H2 a–c). Statistically significant positive paths were found for the paths between relationship quality dimensions trust in benevolence and affective commitment, and the path between dedication and alumni loyalty.

Second, we examined the total indirect effects, i.e., the direct paths between relationship quality dimensions and alumni loyalty. Significant positive paths were found for trust in benevolence and affective commitment, with alumni loyalty.

In conclusion, based on the paths between the variables that were used within the hypothesized model and those that were found statistically significant, dedication partially mediates the relation between trust in benevolence and alumni loyalty. Also, dedication partially mediates the relation between affective commitment and alumni loyalty.

## 6 Discussion

The present study investigated associations of alumni perceptions of the quality of their relationship with their former educational faculty/staff, their (former) student engagement, and their alumni loyalty. The aim of this study was to explore whether relationship quality dimensions (in)directly predict student engagement, and (in turn) non-monetary alumni loyalty. Previous research has examined some of the reasons why alumni do or do not feel involved with the institution from which they have graduated. Former educational experiences and personal benefits (Thoits and Hewitt 2001), and in line with ideas from SET (Kelly and Thibaut 1959), the quality of students' former relationships with their educational faculty and staff (Koenig-Lewis et al. 2016) have been found to be indicative of future alumni loyalty. The findings of this study add that in order to establish alumni loyalty, one should also focus on relationship quality dimensions, such as students' affective commitment and trust

in benevolence, although effect sizes range from small to large. These relationship quality dimensions can be seen as important predictors of student engagement and student/alumni loyalty.

Most of the hypotheses within this study were supported. In the hypothesized and tested model, trust in benevolence had a statistically significant association with absorption, dedication, and vigor. In previous research (Snijders et al. 2018b), where the sample consisted of enrolled students, trust in benevolence did not have a statistically significant association with student engagement. Perhaps alumni's perception of their former trust in faculty and staff's helpfulness changes over time. In retrospect, alumni might feel different towards faculty and staff's benevolence, compared when they were enrolled. A direct association was also found between trust in benevolence and alumni loyalty, albeit with a small effect size, which is in line with a study by Schlesinger et al. (2016) that also captured trust as an antecedent of loyalty in a higher educational context.

For trust in honesty, a negative association with absorption and vigor was found. However, that these relations are inverse is—given the expectations within this study—puzzling since one would expect that students as well as alumni appreciate educational faculty/staff's honesty. Within the sample used for this study, though, the results imply that perceptions of their former trust in honesty did not positively contribute to the way alumni regarded their former student engagement. Therefore, replicating this study can be of interest to determine whether this was coincidental. Furthermore, no statistically significant positive associations were found between the relationship quality dimension of trust in honesty and dedication or alumni loyalty. It could be that students' recollection of trust in their former educational faculty/staff's honesty does not necessarily evoke positive feelings by alumni toward their former university. Hence, educational faculty/staff can be honest in their responses to students, however, honesty does not always involve favorable educational replies, and therefore, could be not always stimulating for students' studying experience in general. For instance, an honest though disappointing reply (e.g., feedback from a lecturer on a student's assignment) can be demotivating, which affects students' engagement negatively.

A statistically significant positive association was found between affective commitment and all student engagement dimensions. Affective commitment acted as a predictor for the student engagement dimension of dedication. In turn, dedication had a statistically significant positive association with loyalty, therefore, suggesting that affective commitment through dedication might positively influence loyalty during students' enrollment and after graduation. This is in line with ideas from service/relationship management research, in which commitment is discussed as a precursor for loyalty (Dick and Basu 1994). Commitment could be needed in order to eventually evolve loyalty feelings, intentions, and perhaps behavior.

For relationship quality satisfaction, a statistically significant positive association (total effect, direct-only) was found with alumni loyalty. This is in line with previous research by Rojas-Méndez et al. (2009) among enrolled students, with results showing positive associations between student loyalty and trust, satisfaction, and commitment (Rojas-Méndez et al. 2009). In our study, satisfaction did not have a statistically significant positive association with absorption and dedication, only



with vigor. Although alumni perceptions of their overall satisfaction with the quality of their relationship with their former educational faculty/staff are important, these perceptions presumably do not affect their recollection of their educational experience in terms of their former dedication to study, nor the way they were engaged in absorbing their studies. Hence, remembering how and that they really enjoyed studying or got excited about what they learned did not depend on how satisfied students were about the relationship they had with their (former) educational faculty/staff.

Affective conflict did not have a statistically significant positive association with any of the three student engagement dimensions, nor with alumni loyalty. A possible explanation could be that the degree of irritation and frustration concerning the quality of the relationship with educational faculty/staff is more related to the actual moment when this occurs (i.e., educational service encounter). In retrospect, those moments, if any did occur, were not of significance for recollecting students' student's engagement and current alumni loyalty.

As expected, a statistically significant positive association was found between student engagement dedication and alumni loyalty. Previous research (Snijders et al. 2018b) explained this association by presuming that there might be a strong connection between students' commitment to their educational faculty/staff, and their dedication to their studies. Based on commitment-trust theory (Morgan and Hunt 1994), commitment acts through dedication as a precursor for loyalty. In contrast, student engagement's dimensions of absorption and vigor did not have a statistically significant positive association with alumni loyalty. Apparently for alumni it was not necessary to have been engaged with one's studies to afterwards share loyalty intentions and show loyal behavior towards their former university and educational faculty/staff. This might be due to the fact that, in retrospect, alumni regarded their former relationship quality with educational faculty/staff positively, for instance, by their trust in the degree of educational faculty/staff's benevolence. Alumni perceptions of their relationship quality had a stronger positive (and statistically significant) association with their current loyalty than it had with their perceptions of their former study engagement.

## 6.1 Limitations

Although the hypotheses of this study were mainly supported, the findings are limited. First, the sample predominantly consisted of female alumni from a social work program; therefore, a direction for further research is to include alumni from other kinds of educational programs (e.g., economic and/or technical departments), and also a mixture of male and female alumni. Second, the nature of the data is cross-sectional and only concerning perceptions and no behavioral measures that were included in the model; therefore, true causality could not be demonstrated. Further research applying a longitudinal design could overcome this issue. Future studies that consider a qualitative approach could provide a broader view on (the importance of) relationship quality in relation to alumni loyalty, for example, data collected during alumni events that focuses on social ties and other recollections

of former educational experiences that are critical to student and alumni feelings. Within our study sample we used alumni who were willing to respond. Therefore, it could be informative to also investigate alumni who did not respond, because they might have a different view of the relationship quality and engagement they experienced and different feelings about their loyalty. Last, we only focused on former students' perceptions and for data triangulation, it would be worthwhile to include measures from various informants such as teachers' perceptions or other sources.

## 6.2 Conclusions

In conclusion, results from this study indicated that relationship quality dimensions are important predictors of student engagement and (non-monetary) alumni loyalty. More specifically, the findings show that the relationship quality dimensions of trust in benevolence and affective commitment are positively associated with the student engagement aspects of absorption, dedication, and vigor. Relationship quality satisfaction is also positively associated with dedication. Student engagement in the form of dedication is positively associated with alumni loyalty.

This study contributes to the existing literature on alumni loyalty in higher education. To date, alumni research has predominantly focused on research on monetary support, that is, alumni giving behavior. The present findings shed new light on the drivers that can initiate long-lasting relationships with former students in terms of non-monetary alumni loyalty. Therefore, this study provides necessary and useful insights into the importance of building relationships between higher education institutions as represented by faculty/staff, and their students and alumni. The former relationship quality experienced by students is important for establishing positive alumni loyalty intentions and feelings, particularly for European universities where loyalty is based on student and alumni non-monetary contributions. The findings of this study could therefore be relevant for educational practitioners who want to build and establish relationships among former students, teachers, and educational faculty and staff. This can be done by focusing on the helpfulness of educational faculty/staff, such as providing guidance and support regarding students' progress in their studies and choices for internships. Other ways are by stimulating and rewarding students' affective commitment, for instance, by recommending them for a place on a students' advisory board, asking them to participate during open days, and participating in extracurricular activities. To induce students' satisfaction with the educational faculty/staff's overall performance, and to express educational faculty/staff's understanding and empathy for students, it is necessary to start by understanding individual students' needs. Needless to say, building relationships between students (i.e., future alumni) and higher education institutions can, in the short and long run, be fruitful for all parties: students, alumni, regional businesses, (local) government, and higher education institutions.

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## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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## Appendix

Sample characteristics ( $N = 152$ )

Characteristics	Sample frequency
Graduation year	
2016	13
2015	16
2014	26
2013	29
2012	29
2011	6
2010	6
2009	3
Before 2009	24
Paid job	
Yes	140
No	12
Job satisfaction in relation to studies	
Very bad	8
Bad	12
Neutral	32
Good	68
Very good	32
Alumni membership	
Yes	55
No	97
Willingness to financially support	
Yes	1
No	151

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