

DOES BEING YOURSELF MATTER? AUTHENTICITY AS A MEDIATOR BETWEEN PSYCHOLOGICAL NEEDS AND AUTONOMOUS MOTIVATION IN POST-SECONDARY STUDENTS

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Abstract

The current study aimed to expand understanding of the associations between psychological needs, authenticity, and autonomous motivation in two domains relevant to post-secondary students: academics and friendships. Self-determination theory suggests that need satisfaction supports behaving consistently with one's authentic values. While research shows need satisfaction as an antecedent to autonomous motivation, authenticity's role in this relationship remains unexplored. We tested a conceptual model examining authenticity aspects (authentic living, self-alienation, accepting external influence) as mediators between need satisfaction and autonomous academic and friendship motivation, as well as the direct associations between variables. It was hypothesized that need satisfaction would relate positively to both types of motivation through authenticity aspects. Hypotheses were largely supported for friendship, but not for academics. Results suggest that living authentically plays a key role in explaining the relationship between need satisfaction and post-secondary students' autonomous friendship motivation, but that these processes may differ in other life contexts.

Keywords: self-determination theory, authenticity, psychological needs, autonomous motivation, academic motivation, friendship motivation

Résumé

La présente recherche visait à comprendre le lien entre les besoins psychologiques, l'authenticité et la motivation autonome dans deux domaines pertinents pour les étudiants postsecondaires : la vie académique et les amitiés. La théorie de l'autodétermination propose que la satisfaction des besoins favorise l'adoption d'un comportement qui est conforme aux valeurs authentiques de chacun. Bien que les études antérieures démontrent que la satisfaction des besoins constitue un antécédent de la motivation autonome, le rôle que joue l'authenticité dans cette relation demeure inexploré. Nous avons testé un modèle conceptuel dans lequel les facettes de l'authenticité jouent un rôle médiateur entre les besoins psychologiques et la motivation autonome dans les contextes académique et amical, en plus d'examiner leurs liens directs. Nous avons émis l'hypothèse que la satisfaction des besoins serait positivement liée aux deux types de motivation par l'intermédiaire des aspects de l'authenticité. Les hypothèses ont reçu un appui substantiel en contexte amical, mais n'ont pas été supportées en contexte académique. Les résultats suggèrent que vivre de manière authentique joue un rôle clé dans l'explication de la relation entre la satisfaction des besoins et la motivation autonome en contexte amical, mais que ces processus peuvent différer dans d'autres contextes de vie.

Mots-clés : théorie de l'autodétermination, authenticité, besoins psychologiques, motivation autonome, motivation académique, motivation amicale

INTRODUCTION

Students of all levels have experienced substantial disruptions in their learning experiences in recent years due to the COVID-19 pandemic. For many students, the abrupt shift to online learning and the suspension of on-campus activities and events resulted in challenges including “learning loss” (Appleby et al., 2022) and difficulties adjusting to the post-secondary experience (Sandner et al., 2023). Research has indicated that these challenges may have impacted students’ basic psychological needs, affecting both their friendships (Kulcar et al., 2022) and academic motivation (Holzer et al., 2021). Moreover, as post-secondary education offers a crucial opportunity for students to explore their identities, it is essential to consider the role of authenticity in this context. Authenticity, or the alignment between one’s actions and true self (Sedikides et al., 2019), is fundamental to stu-

dent well-being as it fosters a strong sense of self and supports meaningful relationships with others. This is especially important for students with marginalized identities (e.g., gender, race, developmental or mental health challenges) because these students encounter additional barriers to expressing their authentic identities due to concerns regarding stigma, stereotyping, and social exclusion (Verbree et al., 2025; Wolff et al., 2017).

While previous studies have explored the relationship between need satisfaction and motivation in post-secondary students, there is limited research on the role of authenticity in this relationship and its potential influence on how students interact with their peers. Given the detrimental effects of the pandemic on students’ educational experiences (Whitley et al., 2021), it is valuable to examine the relationship between need satisfaction, authenticity, and friendship and academic motivation. Understanding the in-

terrelations between these aspects can provide valuable insights into strategies for supporting students' holistic development and success in post-secondary education. The following section discusses how self-determination theory (Ryan & Deci, 2017) can help us understand the mechanisms behind friendship and academic motivation.

SELF-DETERMINATION THEORY

Self-determination theory (Ryan & Deci, 2017) has been applied extensively to the educational context to explore student motivations, understand learning behaviours and environments, and improve pedagogical approaches (Guay, 2022). It is a theory of motivation which demonstrates that humans have a natural inclination for personal growth and flourishing. Ryan and Deci (2017) highlight the importance of personal agency over one's behaviour and distinguish between different types of motivation based on their level of autonomy. The six subtypes of motivation are situated on a self-determination continuum, where self-regulation ranges from absent (amotivation) to controlled (extrinsic motives [external and introjected regulation]) to autonomous (extrinsic [identified and integrated regulation] and intrinsic motives). Autonomous motivation encompasses behaviour that is driven by pleasure experienced from the behaviour itself (intrinsic) or by extrinsic regulations that have been internalized so that the behaviour is aligned with one's personal values or identity. Controlled motivation describes extrinsically motivated behaviour that is driven by internal pressure, seeking external rewards, or avoiding punishments. Research consistently shows positive outcomes associated with students' autonomous motivation and negative outcomes with controlled motivation (Howard et al., 2021). Specifically, autonomous motivation has been associated with increases in self-regulated learning and critical thinking (Manganelli et al., 2019), increased engagement (Azila-Gbetor et al., 2021), and improved overall well-being (Nowell, 2017).

Self-determination theory also identifies three essential needs for students' flourishing: autonomy, relatedness, and competence (Ryan & Deci, 2017). Autonomy refers to the need to have control over one's own life and to make choices that align with one's own values and beliefs. Relatedness pertains to the need to have positive and meaningful connections with others. Competence involves mastery over one's environment and the ability to achieve goals. When these needs are met, students experience enhanced autonomous motivation, academic performance, and well-being (González-Arias et al., 2025). Conversely, when these needs are unmet, post-secondary students may experience negative outcomes such as apathy, controlled motivation, amotivation, and disengagement (Oram & Rogers, 2022).

Self-Determination Theory and Friendships

Relational motivation theory (a subtheory of self-determination theory; Deci & Ryan, 2014) suggests that individuals gain more fulfillment from caring for others autonomously, rather than being motivated by controlling factors. This theory can be valuable for understanding friendships among post-secondary students. Emerging research has found that autonomous motivation for friendships was associated with less loneliness and better conflict management in elementary school students (Richard & Schneider, 2005), as well as higher levels of secure attachment and positive relational self-schemas among post-secondary students (Larabie, 2015).

Moreover, research in the friendship domain has examined need satisfaction, although this literature is less extensive compared to work in the academic context (see Bureau et al., 2022 for a review). For instance, research showed that need satisfaction was positively associated with autonomous motivation in adult friendships (Milyavskaya & Koestner, 2011) and with friendship quality in adolescents (Putri & Muttaqin, 2022). Additionally, a study on close-friend dyads among post-secondary students found that friends had similar levels of need sat-

isfaction and that perceived autonomy support within a friendship predicted need satisfaction and well-being (Deci et al., 2006).

Overall, existing evidence suggests that need satisfaction benefits friendships (e.g., friendship quality, autonomous motivation, well-being). However, the role of authenticity in the relationship between needs and autonomous friendship motivation in post-secondary students has not been explored. Given the benefits that meaningful peer relationships have for post-secondary students, including lower drop-out intentions, improved self-regulated learning, and increased self-efficacy (Morelli et al., 2023), it is crucial that future research focus on gaining a better understanding of autonomous motivation in this context. While a recent qualitative study found that post-secondary students sometimes seek friendships simply to avoid being alone (i.e., controlled regulation), its most prominent finding was that students primarily desire friendships that enable them to express their individuality and authentic selves (Gravett & Winstone, 2022). Therefore, we propose that authenticity plays a critical role in students' autonomous friendships. When students' needs are satisfied, they may feel free to be their authentic selves, which, in turn, will increase the likelihood they will pursue friendships for autonomous rather than controlled reasons. Importantly, given the barriers to authenticity often faced by marginalized students, understanding the contribution of authenticity to this relationship is particularly crucial, and can inform how higher education institutions can better support their motivation and social relationships. If living authentically and holding a stable sense of identity help explain the relationship between need satisfaction and autonomous friendship motivation, then this highlights the importance of supporting students' identity development and creating opportunities for them to live authentically. This knowledge could inform whether supporting students' needs should be accompanied by opportunities for authentic living.

AUTHENTICITY

Authenticity has been conceptualized as engaging with one's true or genuine self (Sedikides et al., 2019). It is defined by behaviours and communications that are self-directed and willingly endorsed, as well as genuine actions that are reflective of one's own personal values and beliefs (Ryan & Ryan, 2019). The experience of authenticity is especially relevant for post-secondary students, as they are experiencing a major life transition that often requires adapting to new environments and forming new social relationships (Ball et al., 2024). In a person-centred conception of authenticity, Wood and colleagues (2008) differentiated between three aspects of authenticity: authentic living, self-alienation, and accepting external influence. Authentic living is defined as living in accordance with one's own values. Self-alienation involves the discrepancy between one's conscious awareness and one's actual experience and is indicative of not knowing one's true self. Accepting external influence is conceptualized as the degree to which an individual is influenced by others and conforms to others' expectations. From a self-determination theory perspective, one's social environment is key to supporting the expression of authenticity and certain social contexts can suppress it (Ryan & Ryan, 2019). Given the influence of higher education in shaping student experiences, this view highlights the importance of authenticity aspects in explaining the association between need satisfaction and autonomous motivation in post-secondary students. That is, when students' needs are fulfilled, they may feel a strong sense of identity and comfort in expressing their authentic selves, making them more likely to engage meaningfully in academic tasks and form genuine friendships. Conversely, when needs are unmet, students may be more prone to experience a weakened sense of identity and conform to others' expectations, resulting in lower autonomous motivation. Revealing these potential mediating roles of authenticity aspects would highlight how supporting students' needs should be accompanied by opportunities to develop individual identities to foster autonomous motivation.

Authenticity and Self-Determination Theory

Although research linking needs to authenticity in post-secondary students is limited, preliminary evidence from other populations provides valuable insights. Specifically, research suggests that there are positive associations between fulfillment for all three needs and authenticity in adults (Ionescu & Iacob, 2019), and that autonomy supportive environments lead to increases in authenticity in adolescents (Thomaes et al., 2017). Additionally, White et al. (2024) showed that work and family authenticity were positively related to need satisfaction within those respective domains. Relationships between authenticity and motivation have also been established in adults. For example, authenticity at work was shown to be positively associated with intrinsic motivation and identified regulation (Van den Bosch & Taris, 2018), and authenticity was linked to increases in approach-motivation within adult romantic relationships (Plasencia et al., 2016). However, the interrelations between needs, authenticity, and motivation in the higher education context remains unexplored.

In congruence with previous research, and given that autonomous motivation encompasses engaging in behaviour as an expression of oneself or of one's values, it is conceivable that authentic living would have a positive effect on autonomous motivation, while conversely, indicators of inauthenticity (i.e., self-alienation and accepting external influence) would have negative effects on autonomous motivation. Subsequently, we propose that authenticity may be a key mechanism through which basic psychological needs influence autonomous motivation in post-secondary students, since expressing oneself authentically should be central to feelings of autonomy (Ryan & Ryan, 2019). Moreover, we hypothesized that when needs are unmet, students may not truly know themselves (i.e., self-alienation) and will be more likely to conform to others' expectations, thereby leading to lower autonomous motivation since behaving autonomously requires an expression of one's own values and identity. Because they are central in the lives of post-sec-

ondary students, autonomous academic and friendship motivation are of particular interest in this study.

CURRENT STUDY

Previous researchers have suggested that additional work is needed to examine causal models that explore the contribution of basic psychological needs to authenticity (Ryan & Ryan, 2019). In higher education contexts, need satisfaction has been consistently linked to autonomous academic motivation, while needs are also critical for fostering meaningful peer connections. Thus, the main goal of the current study was to explore the potential mediating effects of authenticity aspects on these relationships. Moreover, the interrelations between need satisfaction, the three aspects of authenticity (authentic living, self-alienation, and accepting external influence), and autonomous academic and friendship motivation are unknown; thus, this study also aimed to examine the direct associations between these variables. The conceptual model developed to explore these relationships is displayed in Figure 1, and Table 1 presents a summary of the hypotheses.

METHOD

Participants

Undergraduate university students ($N = 635$) were recruited through a large Canadian university's research participant pool. Participants completed an online questionnaire on the Qualtrics website and received 1% of their final grade in their introductory psychology course as compensation for their participation. Approximately 82% of the sample were female ($n = 522$). The majority of participants (51%) indicated their ethnicity as White/Caucasian ($n = 322$), 22% as Asian ($n = 142$), 14% as other ($n = 86$), 10% as Black ($n = 65$), 3% as Latin ($n = 17$), and .5% as Indigenous ($n = 3$). Age of participants ranged between 17 and 41 years ($M = 19.28$, $SD = 2.34$).

Figure 1
The Hypothesized Conceptual Model of Associations

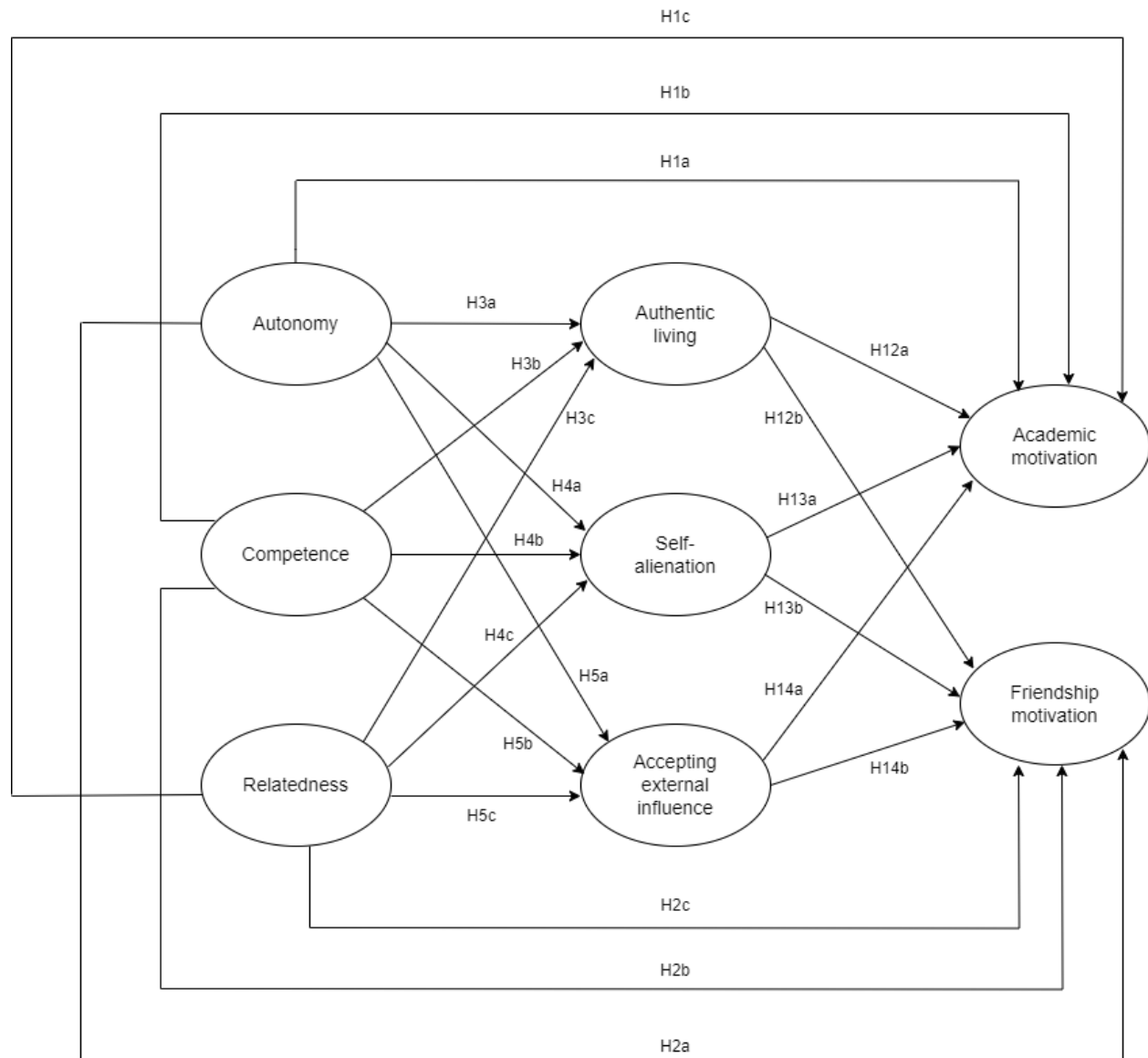


Table 1
Summary of Hypotheses for Direct and Mediating Effects

Effect type	Hypothesis	Hypothesis/Path
Direct effects	All three needs (autonomy[a], competence[b], relatedness[c]) will be positively associated with (H1) academic and (H2) friendship motivation.	H1a-c H2a-c
Direct effects	All three needs (autonomy[a], competence[b], relatedness[c]) will be positively associated with authentic living.	H3a-c
Direct effects	All three needs (autonomy[a], competence[b], relatedness[c]) will be negatively associated with self-alienation.	H4a-c
Direct effects	All three needs (autonomy[a], competence[b], relatedness[c]) will be negatively associated with accepting external influence.	H5a-c
Mediating effects	Authentic living will mediate the associations between all three needs (autonomy[a], competence[b], relatedness[c]) and (H6) academic and (H7) friendship motivation.	H6a: H3a-H12a H6b: H3b-H12a H6c: H3c-H12a H7a: H3a-H12b H7b: H3b-H12b H7c: H3c-H12b
Mediating effects	Self-alienation will mediate the associations between all three needs (autonomy[a], competence[b], relatedness[c]) and (H8) academic and (H9) friendship motivation.	H8a: H4a-H13a H8b: H4b-H13a H8c: H4c-H13a H9a: H4a-H13b H9b: H4b-H13b H9c: H4c-H13b
Mediating effects	Accepting external influence will mediate the associations between all three needs (autonomy[a], competence[b], relatedness[c]) and (H10) academic and (H11) friendship motivation.	H10a: H5a-H14a H10b: H5b-H14a H10c: H5c-H14a H11a: H5a-H14b H11b: H5b-H14b H11c: H5c-H14b
Direct effects	Authentic living (H12) will be positively associated with (a) academic and (b) friendship motivation.	H12a-b
Direct effects	Self-alienation (H13) will be negatively associated with (a) academic and (b) friendship motivation.	H13a-b
Direct effects	Accepting external influence (H14) will be negatively associated with (a) academic and (a) friendship motivation.	H14a-b

Measures

The measures used in this study were embedded within a broader questionnaire, which took approximately 45 minutes to complete.

The Basic Psychological Need Satisfaction and Frustration Scale

The satisfaction subscales of the Basic Psychological Need Satisfaction and Frustration Scale (Chen et al., 2015) were used to measure satisfaction of autonomy, competence, and relatedness (four items/need). Item examples include “I feel a sense of choice and freedom in the things I undertake” (autonomy satisfaction), “I feel capable at what I do” (competence satisfaction), and “I feel close and connected with other people who are important to me” (relatedness satisfaction). Participants responded to items using a scale ranging from *not true at all* (1) to *very true* (7). Internal consistency values of subscales (Cronbach’s α) ranged from .78 to .87 in the current study.

Academic Motivation Scale

The original Academic Motivation Scale (Vallerand et al., 1992) consists of one subscale for intrinsic motivation, three for extrinsic motivation, and one for amotivation (20 items total). For the present study, an integrated subscale (Green-Demers et al., 2013) was added to measure all self-determination theory motivation subtypes. Thus, participants completed subscales for intrinsic motivation; integrated, identified, introjected, and external regulation; and amotivation (four items each). Respondents answered the question, “Why do you go to university?” using a scale ranging from *does not correspond at all* (1) to *corresponds totally* (7). Examples of items include “for the pleasure I feel when I understand new information” (intrinsic motivation), and “because studying is an important part of who I am” (integrated regulation). Test-retest reliability of the Academic Motivation Scale over a one-month interval was shown to be high, ranging from $r = .71$ to $r = .83$ (Vallerand et al., 1992). Internal consistency values (Cronbach’s α) in this study ranged between .81 and .90.

Motivation Towards Friendship Scale

The Motivation Towards Friendship Scale (Larabie, 2015) consists of six subscales (four items/subscale) to measure the six subtypes of motivation in the friendship domain. Participants responded to the question, “Why are you in a relationship with your best friend?” by rating items on a scale ranging from *not at all* (1) to *totally* (7). Example items include “for the pleasure of doing things together” (intrinsic motivation), and “because I value this relationship” (identified regulation). Construct validity of the scale was established through correlations with self-schemas and attachment styles (Larabie, 2015). The measure showed good factor structure and internal consistency (Cronbach’s α) of all subscales were satisfactory in the current study (.77 to .92).

Authenticity Scale

The Authenticity Scale (Wood et al., 2008) is a 12-item scale that contains three subscales measuring self-alienation (e.g., “I don’t know how I really feel inside”), authentic living (e.g., “I always stand by what I believe in”), and accepting external influence (e.g., “Other people influence me greatly”). Items are rated on a scale that ranges from *does not describe me at all* (1) to *describes me very well* (7). The scale has demonstrated good reliability ($r = .76$ to $r = .87$; White & Tracey, 2011). Test-retest reliabilities have ranged from .78 to .91 (Wood et al., 2008). In the current study, internal consistency (Cronbach’s α) for all subscales was satisfactory ($r = .77$ to $r = .89$).

Data Analysis

The software program SPSS 27 was used to clean data and test statistical assumptions. Afterward, RStudio was used to provide the initial descriptive and correlation analyses, and to test the hypothesis with structural equation modelling (SEM) and bootstrapping using lavaan’s package (Rosseel, 2012).

RESULTS

Preliminary Analyses

Data Cleaning and Statistical Assumptions

Random missing data was replaced using linear interpolation (Collier, 2020). There were no cases with systematic missing data. To examine univariate outliers, standardized scores were computed ($Z > |3.29|$, $p < .001$) and Mahalanobis distances were evaluated to identify multivariate outliers. Five outliers were revealed and removed from the sample. To assess the assumption of normality, skewness and kurtosis values were examined. Values were within -2.00 and $+2.00$ for all variables ($-0.97 < \text{skewness} < 0.40$; $-0.81 < \text{kurtosis} < 1.50$; Tabachnick & Fidell, 2019). Bivariate scatterplots were observed for each pair of variables under study. No cases of heteroscedasticity nor curvilinearity were found. Bivariate correlations showed no correlations above $|.80|$, indicating no issues with multicollinearity (Tabachnick & Fidell, 2019). The final sample was 635 participants.

Descriptive Statistics and Correlations

For motivation variables, because self-determination theory's motivation subtypes are situated on a self-determination continuum, global autonomous motivation scores were obtained using the following formula: $[3 (\text{Intrinsic Motivation}) + 2 (\text{Integrated Motivation}) + \text{Identified Motivation} - (\text{Introjected Motivation}) - 2 (\text{External Regulation}) - 3 (\text{Amotivation})] / 6$. Because the Academic Motivation Scale and the Motivation Towards Friendship Scale have four items per subscale, this formula was applied to items four times, on four different subsets of items representing all six subtypes of motivation.

Descriptive statistics and correlations are presented in Table 2. Results demonstrated that all needs were moderately positively correlated. Similarly, the authenticity aspects were moderately correlated in the expected direction, with authentic living negatively correlated to both self-alienation and external influence, and self-alienation and external influence mod-

erately positively correlated. Finally, both types of motivation were negatively correlated with self-alienation and external influence, and positively correlated with every other variable.

Structural Equation Model

After confirming that all needs and authenticity aspects were significantly correlated with both academic and friendship motivation, lavaan's package (Rosseel, 2012) in Rstudio was used to test the hypothesized model (see Figure 1) using structural equation modelling and 5,000 bootstrapped samples. Model fit indices indicated good fit (Bentler & Bonett, 1980; Ghaleb & Yaslioglu, 2024; Hu & Bentler, 1999; Iacobucci, 2010), $\chi^2 = 1050.45$, $df = 409$, $\chi^2/df = 2.57 < 3$, $SRMR = 0.06 < 0.08$, $RMSEA = 0.05 < 0.08$, $CFI = 0.95 > 0.90$, and $TLI = 0.94 > 0.90$. The model explained 30% of variance in academic motivation and 34% of variance in friendship motivation.

Analysis of the Direct Effects

The standardized beta weights (see Figure 2) indicated that autonomy was the only need associated with academic motivation (supporting H1a, but not H2b-c), while relatedness was the only need associated with friendship motivation (supporting H2c, but not H2a-b). Moreover, as expected, all needs were associated with authentic living (supporting hypotheses H3a-b-c). However, only competence and relatedness were associated with self-alienation (supporting hypotheses H4b-c but not H4a) and only competence was associated with accepting external influence (supporting hypothesis H5b but not H5a and H5c). Contrary to our expectations, none of the mediators (i.e., authenticity aspects) were associated with academic motivation (not supporting hypotheses H12a, H13a, and H14a), while all mediators were positively associated with friendship motivation (supporting H12b, but contrary to H13b, and H14b).

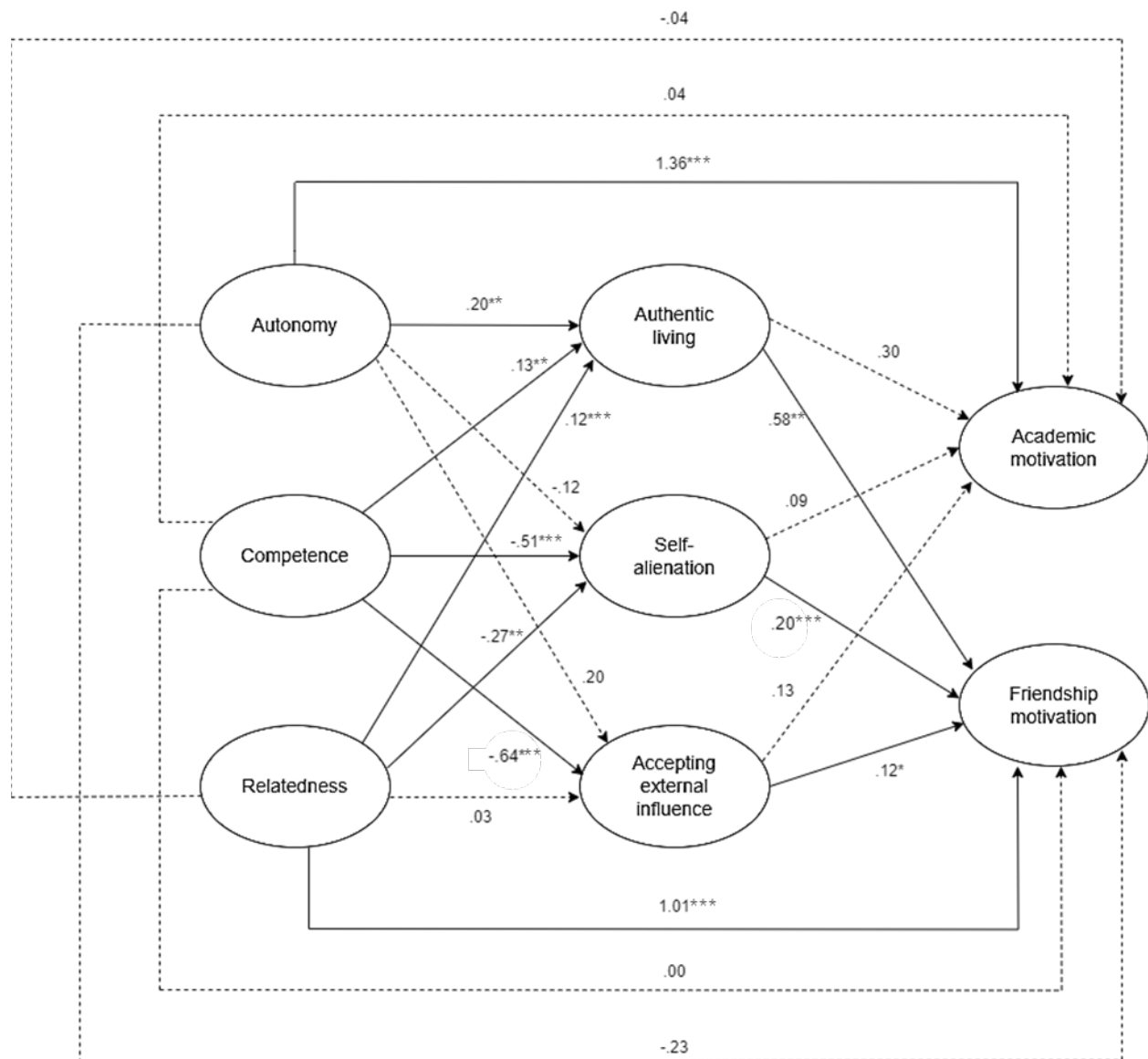
Table 2
Means, Standard Deviations, and Correlations with Confidence Intervals

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Autonomy satisfaction	4.86	1.05							
2. Relatedness satisfaction	5.47	1.15	.52*						
			[.46, .57]						
3. Competence satisfaction	4.97	1.17	.63**	.49*					
			[.58, .68]	[.42, .54]					
4. Authentic living	5.48	0.99	.47*	.44*	.49*				
			[.41, .53]	[.37, .50]	[.42, .54]				
5. Self-alienation	3.45	1.67	-.40*	-.39*	-.44*	-.31*			
			[-.46, -.33]	[-.45, -.32]	[-.50, -.37]	[-.38, -.24]			
6. Accepting external	3.80	1.50	-.21*	-.17*	-.34*	-.34*	.50*		
			[-.29, -.14]	[-.24, -.09]	[-.41, -.27]	[-.40, -.27]	[.44, .56]		
7. Academic motivation	1.42	1.55	.47*	.32*	.39*	.34*	-.36*	-.19*	
			[.41, .53]	[.24, .38]	[.33, .46]	[.27, .40]	[-.42, -.29]	[-.27, -.12]	
8. Friendship motivation	2.91	1.39	.17*	.45*	.20*	.33*	-.21*	-.15*	.34*
			[.09, .24]	[.38, .51]	[.12, .27]	[.26, .40]	[-.28, -.13]	[-.23, -.08]	[.27, .40]

Note. *M* = mean, *SD* = standard deviation. Accepting external = accepting external influence. Values in square brackets represent the 95% confidence interval.

**p* < .05.

Figure 2
Structural Equation Model



Note. Standardized regression weights estimated using 5,000 bootstrapped samples. Bold lines indicate statistically significant paths and dashed lines indicate non-significant paths.

* $p < .05$

** $p < .01$

*** $p < .001$

Analysis of the Indirect Effects

Results from the indirect effects of the SEM model (see Table 3) indicated that autonomy was the only need with a positive direct effect on academic motivation. However, the results did not support the mediating effect of authenticity on this relationship (H6a-c, H8a-c, and H10a-c). Furthermore, while relatedness was the only psychological need with a direct effect on friendship motivation, all needs had a partially mediated effect on friendship motivation through authenticity aspects. Specifically, authentic living mediated the effect of all three needs on friendship motivation (supporting H7a-c). Self-alienation mediated the effects of competence and relatedness on friendship motivation; however, these effects were contrary to the hypothesized direction (contrary to H9b-c, and not supporting H9a). Lastly, accepting external influence mediated only the effect of competence on friendship motivation, though this effect was also contrary to the hypothesized direction (contrary to H11b, and not supporting H11a and H11c).

DISCUSSION

Basic Psychological Needs and Autonomous Motivation

The present study aimed to examine the associations between basic psychological need satisfaction and autonomous academic and friendship motivation in post-secondary students, as well as the mediating effects of the three aspects of authenticity (self-alienation, accepting external influence, and authentic living) on those associations. Firstly, it was hypothesized that all three needs would be positively associated with both types of motivation. This hypothesis was partially supported. Autonomy was positively associated with academic motivation, while relatedness was positively associated with friendship motivation. Although previous research has revealed positive associations between the fulfillment of all needs and autonomous academic motivation (Wang et al., 2019), only autonomy was significant in the current study. Thus, when controlling for the other two needs, autonomy

was central to academic motivation, which is consistent with research establishing autonomy as the most critical need for student motivation (Bureau et al., 2022).

Similarly, although relational motivation theory (Deci & Ryan, 2014) suggests the satisfaction of all three needs supports the development of high-quality relationships, only relatedness was significantly positively associated with autonomous friendship motivation in the current study. However, since relatedness encompasses meaningful connection and feeling cared for by others, it is not surprising that while controlling for the other two needs, relatedness had the only significant association. These results present novel insights into friendships in post-secondary students, which have been found to be key in fostering student success and well-being (McCabe, 2023).

Authentic Living

As hypothesized, students' fulfillment of autonomy, competence, and relatedness were all positively associated with authentic living. This finding contributes to the self-determination theory literature, and researchers have highlighted the need to explore this model (Ryan & Ryan, 2019). Results are congruent with the theory, which emphasizes the importance of satisfaction of all needs to allow one to feel ownership over their behaviour. Moreover, this finding enhances our understanding of post-secondary students' need satisfaction by demonstrating that supporting all three psychological needs is key for encouraging students to express their authentic selves in daily life.

Additionally, authentic living was both positively associated with students' friendship motivation, and a significant mediator of the associations between all three needs and friendship motivation. Results show that living authentically is a key mechanism through which the satisfaction of all needs influences one's autonomous willingness to engage in friendships. Thus, although autonomy and competence were not directly associated with friendship motivation, significant indirect effects through authentic living were revealed. This offers support

Table 3
Standardized Direct and Indirect Effects for Academic and Friendship Motivation

Independent variable	Mediating variable	Dependent variable	Beta [95% CI]	p-value
Academic motivation (Direct)				
Autonomy (H1a)		Academic motivation	1.36 [.90, 1.82]	< .001
Competence (H1b)		Academic motivation	0.04 [-.28, .36]	.814
Relatedness (H1c)		Academic motivation	-0.04 [-.27, .19]	.718
Authentic living (H12a)		Academic motivation	0.30 [-.12, .72]	.154
Self-alienation (H13a)		Academic motivation	0.09 [-.04, .22]	.166
External influence (H14a)		Academic motivation	0.13 [.00, .26]	.057
Academic motivation (Indirect)				
Autonomy	Authentic living	Academic motivation	0.06 [-.02, .14]	.155
Competence	Authentic living	Academic motivation	0.04 [-.02, .10]	.204
Relatedness	Authentic living	Academic motivation	0.04 [-.01, .09]	.193
Autonomy	Self-alienation	Academic motivation	-0.01 [-.04, .02]	.530
Competence	Self-alienation	Academic motivation	-0.05 [-.12, .02]	.168
Relatedness	Self-alienation	Academic motivation	-0.02 [-.06, .02]	.190
Autonomy	External influence	Academic motivation	0.03 [-.01, .07]	.229
Competence	External influence	Academic motivation	-0.08 [-.17, .01]	.059
Relatedness	External influence	Academic motivation	0.00 [-.02, .02]	.736
Friendship motivation (Direct)				
Autonomy (H2a)		Friendship motivation	-0.23 [-.57, .11]	.183
Competence (H2b)		Friendship motivation	0.00 [-.25, .25]	.991
Relatedness (H2c)		Friendship motivation	1.01 [.81, 1.21]	< .001
Authentic living (H12b)		Friendship motivation	0.58 [.24, .92]	.001
Self-alienation (H13b)		Friendship motivation	0.20 [.10, .30]	< .001
External influence (H14b)		Friendship motivation	0.12 [.02, .22]	.029
Friendship motivation (Indirect)				
Autonomy	Authentic living	Friendship motivation	0.12 [.02, .22]	.018
Competence	Authentic living	Friendship motivation	0.08 [.02, .14]	.014
Relatedness	Authentic living	Friendship motivation	0.07 [.02, .12]	.007
Autonomy	Self-alienation	Friendship motivation	-0.02 [-.08, .04]	.442
Competence	Self-alienation	Friendship motivation	-0.10 [-.17, -.03]	.003
Relatedness	Self-alienation	Friendship motivation	-0.05 [-.09, -.01]	.021
Autonomy	External influence	Friendship motivation	0.02 [-.02, .06]	.268
Competence	External influence	Friendship motivation	-0.07 [-.14, .00]	.039
Relatedness	External influence	Friendship motivation	0.00 [-.02, .02]	.726

Note. Accepting external = accepting external influence. Standardized regression weights estimated using 5,000 bootstrapped samples. Values in square brackets represent the 95% confidence interval. Bolded coefficients indicate significant paths.

for relational motivation theory, which proposes that need satisfaction supports one's engagement in true self-expression, which can foster more positive, honest social interactions (Knee & Browne, 2023). This is the first study to present a model of the mediating role of authentic living on the associations between need satisfaction and autonomous friendship motivation. Our findings indicate that while competence and autonomy are not directly associated with autonomous friendship motivation, they are important only to the extent that students have opportunities to live authentically.

Contrary to hypotheses, none of the authenticity aspects had significant direct or mediating effects on students' academic motivation. A possible explanation for this finding is that students may not experience as many opportunities to express their authentic selves within their academic pursuits as they do within their social interactions with friends. This is supported by early research examining authenticity across different roles, which showed that participants felt most authentic in their friendships and least authentic in their roles as students (Sheldon et al., 1997). Thus, students' need satisfaction may enhance academic motivation even if they are not truly living authentically, as conceptualized by the person-centred approach to authenticity. Nevertheless, given the role of authentic living in explaining the connection between need satisfaction and autonomous friendship motivation, our findings emphasize the importance of higher education institutions embracing individuality and identity expression to strengthen peer relationships.

Inauthenticity: Self-Alienation and Accepting External Influence

Although negative associations were expected between the two measures of inauthenticity (self-alienation and accepting external influence) and friendship motivation, results showed positive relationships between these variables, and self-alienation also mediated the relationship between relatedness and friendship motivation. However, while the direct effect of relatedness on friendship motivation was positive,

the indirect effect through self-alienation was negative. This finding was unexpected since self-alienation involves a lack of knowing one-self, and it is proposed that one cannot express themselves authentically if they are not in touch with their true self (Wood et al., 2008). However, this result indicates that when students lack relatedness, they feel a sense of isolation and identity confusion that may actually encourage them to seek genuine connections with others to establish social support. Thus, students may personally value their friendships (i.e., autonomous motivation) because social support from friends can be fundamental to establishing their identities.

Similarly, while competence did not have a direct effect on friendship motivation, it did have significant negative indirect effects through self-alienation and accepting external influence. These findings were contrary to our hypotheses, as positive associations were expected. However, these results are plausible because when students lack feelings of mastery over their experiences, they may value seeking out friendships (i.e., autonomous motivation) to correct these feelings. In this case, self-alienation and accepting external influence are the mechanisms linking low competence to increased autonomous friendship motivation because low competence weakens one's sense of identity, prompting students to value friendships more strongly as a means of establishing their sense of self. Overall, the inauthenticity mediation results provide valuable insights for our understanding of post-secondary identity development and friendships. It is evident that when students experience challenges with their identity in university due to low need satisfaction, they can be driven to seek out genuine friendships.

Lastly, negative associations were hypothesized between all needs and both self-alienation and accepting external influence. These hypotheses were partially supported. Satisfaction of competence and relatedness, but not autonomy, were negatively associated with self-alienation, while satisfaction for competence, but not autonomy and relatedness, was negatively associated with accepting external influence.

These findings advance knowledge on the relationships between needs and inauthenticity in post-secondary students. When a student does not feel effective in their actions, they will be more likely to struggle with their identity and also question themselves and turn to others for influence. Likewise, if students struggle to feel genuine connections to others, it is probable that they will also feel disconnected from themselves. This highlights the importance that social support has for post-secondary students in establishing a sense of identity.

Implications

This research has important implications for post-secondary institutions and instructors. The finding that authentic living mediates the relationship between needs and friendship motivation emphasizes the importance of authentic self-expression in converting students' need satisfaction into healthy friendships. To support students' authentic living, post-secondary institutions can offer and encourage involvement in extracurricular opportunities, as extracurricular involvement has been linked to increased authenticity in post-secondary students (Verbree et al., 2025). Additionally, prior research demonstrated that students' authenticity is supported when they are genuinely seen and heard as individuals by their instructors (Gravett & Winstone, 2022). Consequently, educators can encourage individualism in the classroom through the inclusion of diverse perspectives in discussions and coursework. This may be especially valuable for vulnerable or disenfranchised populations who may feel unseen and unrepresented in higher education institutions. Moreover, the mediating role of self-alienation in the negative association between need satisfaction and autonomous friendship motivation suggests that students who experience self-alienation may place heightened value on their friendships. Thus, providing opportunities for peer connections by integrating group work in the classroom and providing extracurricular opportunities within higher education institutions may also be beneficial for students coping with identity-related challenges.

Furthermore, our findings indicated that competence and relatedness are associated with lower feelings of inauthenticity (self-alienation for both competence and relatedness, accepting external influence for competence). Accordingly, to help reduce feelings of inauthenticity, educators can implement established strategies to support these needs, such as providing clear guidelines for course activities to support competence, and opportunities to pursue meaningful goals with their peers to support relatedness (Reeve et al., 2022).

Limitations and Future Directions

Although the current study offers implications for higher education institutions, results should be generalized with caution. Datu and Reyes (2015) suggest that authenticity may contrast with cultural norms in collectivistic cultures. Moreover, Sutton (2020) found that as the level of collectivism in a culture increased, the relationship between authenticity and well-being was weakened. The current study represents an individualistic sample since students were recruited from a Canadian university, thus future research could benefit from exploring culture as a moderator of these associations. Additionally, the cross-sectional design of this study prevents any conclusions regarding causality. These relationships should also be examined using a longitudinal design in future research. Lastly, the present study used a general measure of need satisfaction rather than assessing needs within academic and friendship domains separately. While this measure provides an overall assessment of need fulfillment, it may overlook potential contextual differences in how needs are fulfilled across life domains, which, in turn, can influence their motivation within their respective contexts. For example, although a student may feel supported by friends, they may feel limited autonomy-support from their professors, and the general measure would not capture these differences. Employing domain-specific measures of need satisfaction in future research could clarify the insights into these relationships and strengthen the conclusions regarding the role of authenticity in each context.

AUTHOR NOTE

The authors have no conflicts of interest to disclose. Correspondence concerning this article should be addressed to Rebecca Sullivan, School of Psychology, University of Ottawa, Ottawa, Canada, at rsullivan2@uottawa.ca

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