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Motivation and psychological need fulfillment on the pathway to identity resolution

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Abstract

Developing a personal identity is an important developmental task throughout emerging adulthood. Drawing upon the identity capital model (Côté in The identity capital model: A handbook of theory, methods, and findings. Unpublished manuscript, Department of Sociology, The University of Western Ontario, London, ON, 2016) and self-determination theory (Ryan and Deci, in Leary and Tangney (eds) Handbook of self and identity, Guilford Press, New York, 2012), we examined how motivation toward study or work and psychological need fulfillment are associated with identity resolution. In a sample of 397 Georgian emerging adults (62% women), we examined whether emerging adults' motivation for study or work predicted their subjective sense of themselves as an adult and their sense of being accepted as a member of society. We also tested whether fulfillment of three psychological needs (autonomy, relatedness, competence) played an intervening role in the relationship between motivation and identity resolution. Structural equation models indicated that self-determined motivation related positively, and amotivation negatively, to adult and societal identity resolution. Associations of controlled motivation with identity resolution were not significant. The links of self-determined motivation and amotivation appeared to be partly explained by psychological need fulfillment. Competence fulfillment was most strongly associated with adult identity resolution, whereas relatedness fulfillment was most strongly associated with societal identity resolution. Implications and suggestions for future research are discussed.

Keywords Identity resolution · Need fulfillment · Motivation

Introduction

One's identity represents a set of coherent and unique commitments that reflect "who one is." These commitments provide people with a sense of sameness and continuity and allow them to organize their aspirations in a purposeful manner (Erikson 1968). Although identity formation comes to the forefront when children enter adolescence, it remains a central developmental task during emerging adulthood, that

is, the life stage lasting until the mid to late twenties (Arnett 2000). Drawing upon the identity capital model (Côté 2016) and self-determination theory (Ryan and Deci 2012), the aim of the present study was to examine how motivation for one's occupation and psychological need fulfillment are associated with identity resolution. Emerging adults' identity resolution is defined as progress towards adulthood and integration into society (Côté 2016). In the present study, we investigated whether one's motivation for study or work predicted adult and societal identity resolution. Indeed, during this life stage, most emerging adults are involved in education or employment, and these domains are central to identity development (Arnett 2000; Meca et al. 2015). We focused on both study and work motivation considering that, in the Georgian context, many students study and work at the same time. Further, we also examined whether the association between motivation and identity resolution was explained by emerging adults' fulfillment of their needs for autonomy, relatedness, and competence.

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Identity resolution trajectories in emerging adulthood

Finding an answer to the central question of identity formation—"who am I"—is a challenging and continuous process that comes to the forefront throughout adolescence and emerging adulthood. Following a number of biological, social, and cognitive changes (e.g., development of formal operational thinking; Moshman 1998), adolescents and emerging adults increasingly engage in identity construction through the processes of exploration, reflection, and commitment (Moshman 1998). According to Erikson (1968), core characteristics of a sense of identity are "a feeling of being at home in one's body, a sense of 'knowing where one is going' and an inner assuredness of anticipated recognition from those who count" (p. 165). Côté (2002, 2016), in his identity capital model drawing upon Erikson's writings, describes identity resolution as consisting of two main components: (1) adult identity resolution, which involves considering oneself as an adult, feeling fully matured, and feeling recognized as an adult by others; and (2) societal identity resolution, which involves finding a place in the adult world, creating a lifestyle compatible with one's aspirations, and finding a community in which one aims to live for the rest of one's life.

The identity capital model enumerates a number of potential ingredients of identity resolution (Schwartz 2007). These ingredients involve identity capital, defined as both tangible and intangible resources. Tangible resources include financial assets, educational credentials, group memberships, and parents' social status and investments in young people (Côté 1997; Côté and Schwartz 2002). However, perhaps the most important part of the model pertains to intangible resources. Intangible resources help to determine which emerging adults are more versus less successful in the identity resolution process, beyond the effects of tangible resources. Intangible resources refer primarily to positive assets reflecting personal agency, such as self-esteem, purpose of life, internal locus of control, and ego strength (i.e., resilience). Numerous studies, conducted in various national settings, over the last couple of decades have provided evidence for these resources as predictors of successful identity resolution (e.g., Côté 2002; Côté et al. 2016; Morsünbül 2013; Schwartz 2006; Schwartz et al. 2009; Tikkanen 2016; Yuan and Ngai 2016). Further, another study (Luyckx et al. 2008) indicated that a sense of coherence and lower levels of rumination regarding identity-related issues serve as additional psychological pre-requisites for successful identity resolution.

Intangible identity capital resources have become increasingly important in late modern societies, where traditional normative structures have become less prominent and, consequently, the life course has become more "individualized", that is, more self-directed and less reliant on familial and societal standards (Côté and Levine 2014). This individualization of the life course may unfold either in a developmental (adaptive) or in a default (maladaptive) way. Developmental individualization is proactive and involves reflection and strategic planning, whereas default individualization passively follows courses of action dictated by family, friends, or popular culture (Côté 2016). Young people following a developmental individualization trajectory adopt a more agentic approach, that is, they seek and follow goals that are concordant with their sense of self, whereas those using a default individualization trajectory tend to depend on others' opinions and expectations, or lack direction altogether (Schwartz et al. 2005).

It is important to specify the domains in which individualization and identity processes operate. Identity unfolds in domains such as education, relationships, work, and religion, among others. Scholars emphasize the importance of considering these domains separately to capture the whole picture of identity development (McLean et al. 2016). A number of empirical studies have focused on identity formation processes in different domains and found that associations between corresponding processes (e.g., exploration) across domains are quite small (e.g., Luyckx et al. 2014; Skhirtladze et al. 2019). Given that education and work represent important identity domains for most emerging adults, we argue that one's motivation underlying these content areas may represent an important intangible resource (or barrier) in the context of the challenges posed by individualization.

Motivation from a self-determination theory perspective

Self-determination theory distinguishes among different types of human motivation. These motivational types fall along a continuum, varying in their degree of autonomy (i.e., the degree to which these motivations emanate from the self; Ryan and Deci 2012), which has important implications for one's psychosocial functioning (Deci and Ryan 1985; Ryan and Deci 2012, 2017). When self-determined motivation is present, one's behavior is congruent with one's personal values, goals or interests. One type of self-determined motivation is *intrinsic motivation*, which fuels activities that are enjoyable, interesting, and/or challenging in and of themselves. For instance, students are intrinsically motivated when they are curious about the subject matter, and are unaware that time is passing by, when engrossed in reading about the subject. The second type of self-determined motivation is *identified motivation*, which involves engaging in an activity because one endorses the importance and value of that activity. For instance, students may understand the

importance of specific skill development for their careers and may engage in a training course, even though there are other activities that are also appealing to them. The third type of self-determined motivation is *integrated motivation*, in which case the activity is fully congruent with one's personal goals and values. For instance, students may be fully involved in the process of studying and do not experience any tension with other goals (such as leisure). Overall, intrinsic, identified, and integrated motivation are all characterized by high levels of self-determination, as one *chooses* to engage in the activity (Ryan and Deci 2012).

In contrast, people also may have *controlled motivation*, where they feel pressured to engage in certain activities (Deci and Ryan 2000). In the case of *introjected motivation*, people pressure themselves to engage in certain activities in order to avoid feelings of guilt, shame, or anxiety. For instance, a young person may decide to continue university studies only to avoid an undesirable image of "doing nothing", for which he/she would feel ashamed. In the case of *external motivation*, engagement in the activity is motivated by external pressure, such as obtaining rewards or avoiding punishments or criticism. For instance, young adults may feel forced by their parents to start a job, because the parents believe higher education is a waste of time. Overall, introjected and external regulation both involve controlled motivation, as people feel forced (by either an internal or external pressure) to engage in the activity.

Finally, people also may vary in terms of the intensity of motivation they have. *Amotivation* involves the absence of any desire or motivation to exert control coupled with a lack of purpose (Ryan et al. 2011). Amotivated individuals feel detached from their actions, may feel a lack of control over the present situation or their behavior, and therefore are likely to invest little time or energy into their behavior. For instance, a student may not be interested in a course and only attends the class because no other options were available. In other words, amotivation involves an absence of motivation for the activity.

Studies focusing on different life domains have indicated that self-determined motivation is positively associated with favorable outcomes. For example, self-determined motivation fosters persistence in goal attainment and greater learning benefits in education (e.g., Evans and Bonneville-Roussy 2015; Vansteenkiste et al. 2018), is associated with higher behavioral automaticity in a variety of real-life behaviors and positive performance work outcomes (Güntert, 2015; Howard et al. 2016; Radel et al. 2017; Trépanier et al. 2013), and is linked with higher levels of experienced satisfaction and competence in parenting (Jungert et al. 2015). Further, highly self-determined types of motivation appear to reflect higher levels of personal agency, which is a key component of intangible identity capital (Côté 2016). Drawing upon the identity capital model, we argue that the motivation

underlying one's engagement with life domains (i.e., study and/or work) may facilitate or hinder the identity resolution task, as more self-determined motivation would set the stage for a developmental individualization trajectory (as opposed to a default individualization trajectory). We also expected that the fulfillment of one's basic psychological needs would explain this association between motivation and identity resolution.

Basic psychological needs

According to self-determination theory, there are three universally important psychological needs that are conceived as essential for optimal psychological growth and well-being (Deci and Ryan 2000). The need for *autonomy* involves the desire to self-organize life experiences and stems from the involvement in activities that are concordant with one's self. The need for autonomy is fulfilled when one's behavior is experienced as volitional, and not directed by a sense of pressure or coercion by inner or outer forces. The need for *competence* involves the desire to influence one's social (and perhaps physical) environment and to attain valued outcomes. The need for competence is fulfilled when one experiences a sense of self-efficacy and mastery vis-à-vis different tasks. The need for *relatedness* involves the desire to feel connected to others. This need is fulfilled when one cares for, and feels cared for by, important others, and does not experience loneliness, isolation, or disconnection (Deci and Ryan 2000).

Theoretically, motivation and need fulfillment are assumed to be reciprocally related (e.g., Soenens et al. 2018). Indeed, need fulfillment may serve as the *basis* of one's motivation and behavior, yet may also represent the very *result* of engaging in activities for autonomous reasons (e.g., Chen et al. 2013). In line with the latter, in a longitudinal study of university students, Sheldon and Elliot (1999) found that self-determined goal striving at the start of a semester was predictive of more need fulfillment throughout the semester. Drawing upon such evidence, we expected that a higher degree of self-determined motivation for study or work would foster a sense of self-direction in one's life (autonomy fulfillment), would increase experiences of self-mastery and efficacy (competence fulfillment), and would facilitate connections with peers (relatedness fulfillment).

Fulfillment of these three basic needs is an important predictor of adjustment outcomes in various life domains such as education (Emery et al. 2015; Sheldon et al. 2009), interpersonal relationships (Costa et al. 2015; Milyavskaya and Koestner 2011; Patrick et al. 2007), health (Kasser and Ryan 1999), meaning in life and experience of vitality (Martela et al. 2017; Ryan et al. 2010) and even aesthetic perceptions of spaces (Weinstein et al. 2013). Moreover, the association of need fulfillment with optimal functioning

and well-being outcomes appears consistent across cultures (Chen et al. 2015a) and across socio-economic conditions (Chen et al. 2015b). Further, need fulfillment is also associated with optimal identity development both in terms of identity processes and identity profiles (Cordeiro et al. 2016; Luyckx et al. 2009).

The present study

Drawing upon the identity capital model (Côté 2016) and self-determination theory (Ryan and Deci 2012), the overall aim of the present study was to explore whether work/study motivation and need fulfillment serve as intangible identity capital resources for Georgian emerging adults' successful identity resolution. Our study was therefore guided by three general objectives. First, we sought to investigate the link between motivation and identity resolution. We hypothesized that motivation reflecting high levels of self-determination would be positively associated with both adult and societal identity resolution, whereas motivation reflecting low self-determination and amotivation would relate negatively to identity resolution. Second, we aimed to study the intervening role of need fulfillment in the association between motivation and identity resolution. Young people whose study or work is driven by interest and curiosity towards a specific profession may feel certain as adult members of society because they have a sense of choice and personal connection, and feel effective in what they do. On the other hand, young people who study or work in order to avoid others' criticism may experience less freedom and personal integrity and would probably experience less competence and self-efficacy. Finally, given that our study sample was composed of students, workers, and student-workers, our third goal was to explore whether participants' occupational status (i.e., student, worker, or student-worker) would moderate the associations among motivation, need fulfillment, and identity resolution.

Method

Participants and procedure

Using an online survey, 21 master's students gathered data as a course requirement, for which they were given course credits. They recruited emerging adults through their social networks by sending their network members an electronic link to the survey. The sample consisted of 397 Georgian emerging adults (62% female). Ages ranged from 17 to 29 (mean age = 23.32, $SD = 2.5$, median age = 24). In terms of occupational status, 32% of participants were students ($N = 127$), 32.5% were workers ($N = 129$), and 35.5% both studied and worked ($N = 141$). These groups did not differ in

terms of gender ($\chi^2(2) = .45$, $p = .797$), but differed in terms of age ($F(2, 396) = 75.4$, $p < .001$, $\eta^2 = .16$). Participants in the student group were youngest ($M = 21.7$, $SD = 2.39$), followed by the student workers ($M = 23.28$, $SD = 2.04$). Participants in the worker group were the oldest ($M = 24.98$, $SD = 1.96$). The majority (65%) of participants lived with their parents. All research procedures met the ethical guidelines of the American Psychological Association and were approved by the Institutional Review Board (IRB) from the first author's university.

Instruments

Identity resolution

The Identity Resolution Scale (Côté and Mizokami 2016) is composed of two subscales, one assessing adult identity resolution (three items, e.g., "You consider yourself to be an adult", $\alpha = .82$), and the other assessing societal identity resolution (three items, e.g., "You have settled on a lifestyle that you are satisfied with for the remainder of your life", $\alpha = .71$). A two-factor model for the Georgian version of the scale in the current sample provided good fit: $\chi^2(7) = 14.42$, $p < .001$; CFI = .99; TLI = .98; RMSEA = .05.

Motivation

To measure motivation, we used the adjusted Work Extrinsic and Intrinsic Motivation Scale (WEIMS; Tremblay et al. 2009). Some young people consider studying as more central, and working as more peripheral, within their identities, whereas the opposite may be true for others. To consider the centrality of the study-work domain for each participant, we asked them to indicate which is more important for them (i.e., study or work), and to keep this domain in mind while filling out the motivation questionnaire. A total of 49.4% of the sample indicated that education was more important, and 50.6% indicated that work was more important. The introductory sentence of the scale asked respondents to indicate reasons why they are engaged in the selected domain (i.e., study or work). The items covered six motivation types corresponding to six subscales assessing intrinsic motivation, identified motivation, integrated motivation, introjected motivation, external motivation, and amotivation.

Confirmatory factor analysis using the present Georgian data indicated that a six-factor model did not yield an acceptable fit ($\chi^2(120) = 478.97$, $p < .001$; CFI = .89; RMSEA = .08). We then tested a three-factor model, with a factor reflecting self-determined motivation (composed of the intrinsic, identified and integrated motivation subscales), controlled motivation (composed of the introjected and external motivation subscales), and amotivation (De Meyer et al. 2014; Haerens et al. 2013). This model provided

an acceptable fit, $\chi^2(111) = 312.92$, $p < .001$; CFI = .93; TLI = .91; RMSEA = .07. Thus, the final Georgian version of the scale was composed of three subscales: self-determined motivation (9 items, e.g., "Because I derive much pleasure from learning new things", α = .89), controlled motivation (5 items, e.g., "Because I want to be very good at this work, otherwise I would be very disappointed", α = .64; the original scale had three items for external motivation, but one of the items was dropped from the analysis because of a low loading), and amotivation (3 items, e.g., "I don't know, too much is expected of us", α = .47).

Basic psychological need fulfillment

The Basic Psychological Need Satisfaction and Frustration Scale (Chen et al. 2015) is composed of six subscales, assessing satisfaction and frustration of the needs for autonomy, competence, and relatedness. For the present research, we reverse-coded the need frustration items. The factor structure of the Georgian version of the scale with six first-order and three second-order factors provided a good fit to the data, $\chi^2(180) = 291.968$, $p < .001$; CFI = .94; TLI = .93; RMSEA = .04. We computed three scale scores for need fulfillment: autonomy fulfillment (8 items, e.g., "I feel a sense of choice and freedom in the things I undertake" and "I feel forced to do many things I wouldn't choose to do", reverse coded; α = .78), relatedness fulfillment (eight items, e.g., "I experience a warm feeling with the people I spend time with" and "I feel the relationships I have are just superficial", reverse-coded; α = .80), and competence fulfillment (eight items, e.g., "I feel I can successfully complete difficult tasks" and "I feel disappointed with many of my performance", reverse coded; α = .85).

Results

Mean level analysis and bivariate correlations

We conducted a series of univariate ANOVAs with our study variables as dependent variables and gender and occupation (study vs. work) as between-subject variables. We found a number of significant differences between the study-work groups: those who considered education as their priority over working scored higher on self-determined motivation ($F(1, 395) = 14.91$, $p < .001$, $\eta^2 = .04$) and autonomy need fulfillment ($F(1, 395) = 6.38$, $p = .01$, $\eta^2 = .02$). Some significant differences were also found across gender: women scored higher on self-determined motivation ($F(1,395) = 11.62$, $p = .001$, $\eta^2 = .03$), controlled motivation ($F(1, 395) = 7.21$, $p = .008$, $\eta^2 = .02$), and relatedness need fulfillment ($F(1, 395) = 8.45$, $p < .001$, $\eta^2 = .02$); whereas men scored higher on amotivation ($F(1, 395) = 4.49$, $p = .035$, $\eta^2 = .01$).

Table 1 presents means, standard deviations, and bivariate correlations for all study variables. In general, self-determined motivation related positively to fulfillment of the three needs and to both identity resolution variables, and was not linked with age. Controlled motivation was positively associated with the three need fulfillment variables and societal identity resolution, and was not associated with age. Amotivation was associated negatively with need fulfillment, identity resolution, and age. All three need fulfillment variables were positively interrelated and were related to the identity resolution variables. Relatedness and competence need fulfillment were positively related to participants' age, whereas the association between autonomy and age was not significant. Finally, adult and societal identity resolution were also positively interrelated, and both were positively related to participants' age.

Table 1 Descriptives and correlations among study variables

	M	SD	2.	3.	4.	5.	6.	7.	8.	9.
1. Self-determined motivation	5.06	1.17	.52*	− .21*	.40*	.27*	.32*	.25*	.35*	.01
2. Controlled motivation	4.88	1.14		.05	.14*	.12*	.12*	.09	.13*	.01
3. Amotivation	3.40	1.17			− .37*	− .26*	− .41*	− .30*	− 31*	− .13*
4. Autonomy need fulfillment	3.42	.60				.37*	.42*	.32*	.38*	.02
5. Relatedness need fulfillment	3.88	.57					.39*	.24*	.43*	.12*
6. Competence need fulfillment	3.71	.61						.42*	.42*	.22*
7. Adult identity resolution	3.81	.91							.47*	.23*
8. Societal identity resolution	3.18	.88								.19*
9. Age	23.32	2.5								−

*p < .05

Steps of mediation analysis

Path analysis with structural equation modeling, conducted in Mplus 7, was used to test our central hypotheses. Following the recommendations of Holmbeck (1997), three models were tested: (1) a direct effects model including the three motivation types as predictors of adult and societal identity resolution; (2) a full mediation model in which motivation was indirectly related to adult and societal identity resolution through the fulfillment of the needs for autonomy, relatedness, and competence; and (3) a partial mediation model including direct paths from motivation to identity and indirect paths through need fulfillment. Full mediation is demonstrated when the addition of direct paths does not improve model fit. The BOOTSTRAP option (with 1000 iterations) was used to estimate indirect effects.

## Direct and indirect links between study variables

We first tested the direct effects model, which involved testing associations between the motivation and identity resolution variables. This model provided perfect model fit due to saturation (zero degrees of freedom). Self-determined motivation was positively associated with both adult identity resolution ($\beta = .19$, $p = .001$) and societal identity resolution ($\beta = .31$, $p < .001$). Amotivation was negatively linked with adult identity resolution ($\beta = -.26$, $p < .001$) and societal identity resolution ($\beta = -.24$, $p < .001$). Controlled motivation was not linked with either type of identity resolution.

Next, we estimated a full mediation model, which included the needs variables as mediators. Three models were tested. First, the needs were represented by six factors

(three need satisfaction and three need frustration factors). However, fit indices for this model did not indicate acceptable model fit ($\chi^2(3) = 78.35$, CFI = .89, TLI = .88. A second model involved two factors, one overall need satisfaction factor and one overall need frustration factor. This model showed perfect fit. Need satisfaction positively, and need frustration negatively, predicted both adult identity resolution ($b = .17$, $p = .007$, for need satisfaction; $b = -.20$, $p = .007$, for need frustration) and societal identity resolution ($b = .20$, $p = .008$ for need satisfaction; $b = -.30$, $p < .001$, for need frustration). Further, self-determined motivation positively ($b = .37$, $p < .001$), and amotivation negatively ($b = -.26$, $p < .001$), predicted need satisfaction; and vice versa for need frustration ($b = -.24$, $p < .001$, for self-determined motivation; $b = .41$, $p < .001$, for amotivation). In the third model, we included three need fulfillment in the model (one for each need) by using the satisfaction and frustration items as indicators of their respective needs. Although the full mediation model yielded adequate fit, $\chi^2(6) = 18.72$, $p = .005$; CFI = .98; TLI = .91; RMSEA = .07, the partial mediation model was saturated and provided a perfect fit, so we retained partial mediation model. The partial mediation model, presented in Fig. 1, accounted for 22% of variance in adult identity resolution and 31% of variance in societal identity resolution.

We found that self-determined motivation was positively, and amotivation negatively, associated with all three needs. Autonomy and competence need fulfillment were positively linked with adult and societal identity resolution, whereas relatedness need fulfillment was positively associated only with societal identity resolution. The direct path from self-determined motivation to adult identity resolution was

Fig. 1 Final partial mediation model in the total sample. All coefficients are standardized. *Note* Coefficients between parentheses represent the coefficients from the direct effects model. For the sake of clarity, the figure does not depict covariances, whereas non-significant relations are depicted in gray. *$p < .05$
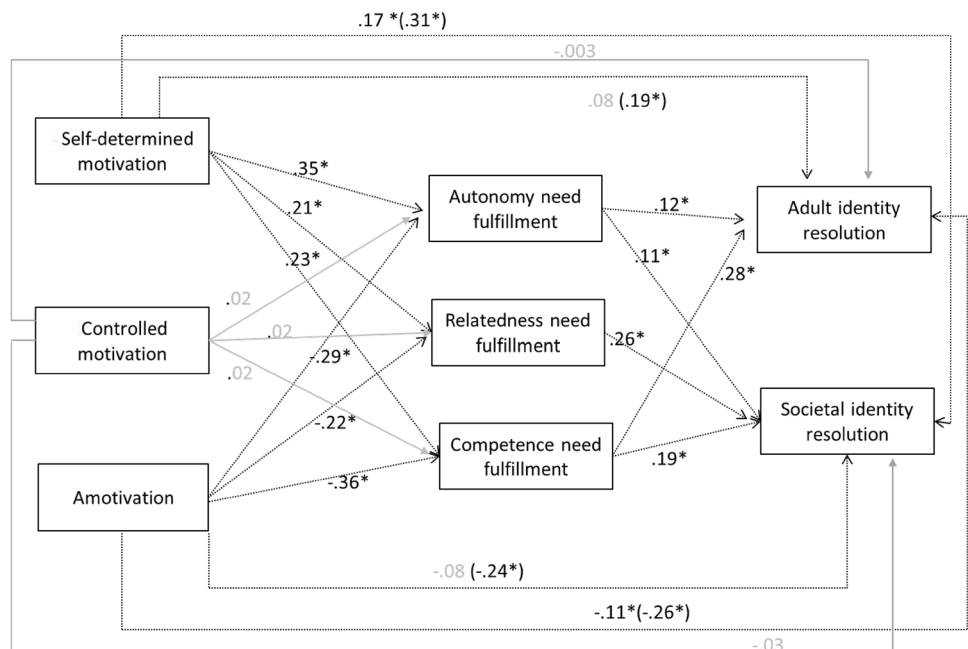
reduced to non-significance, and the direct paths to societal identity resolution were substantially reduced, in the partial mediation model. Similarly, paths from amotivation to societal identity resolution became nonsignificant, and paths to adult identity resolution were substantially reduced. Significant indirect effects emerged from self-determined motivation to adult identity resolution via autonomy and competence need fulfillment. Further, indirect effects from amotivation to adult identity resolution via autonomy and competence need fulfillment were also significant. Indirect effects from self-determined motivation to societal identity resolution were significant via autonomy, relatedness and competence need fulfillment. Finally, there were significant indirect effects from amotivation to societal identity resolution via autonomy, relatedness and competence need fulfillment. Table 2 summarizes these indirect mediational effects.

Multigroup analysis comparing students, workers, and student-workers

Before conducting our multigroup analysis, we first examined measurement invariance of the identity resolution scale (i.e., our dependent variable) across the groups of workers, students and student-workers, testing specifically for metric invariance. That is, in the first model, the factors loadings were freely estimated across groups, whereas in the second model factor loadings were set equal across groups (Dimitrov 2010). Results indicated no significant difference between the models ($\Delta\chi^2(8) = 14.43$, $p = .08$, ΔCFI = .006), indicating measurement equivalence across groups.

Multigroup SEM models were estimated on the final partial mediation model to assess whether paths from different types of motivation to need fulfillment and to adult and societal identity resolution, and from need fulfillment to adult and societal identity resolution, would differ across the three work-study groups (students, student-workers, and workers). A constrained model with all 21 paths set equal across the three groups ($\chi^2(42) = 64.18$, $p < .001$; CFI = .96; TLI = .94; RMSEA = .06) was compared to an unconstrained model with all paths allowed to vary across three groups (the unconstrained model was saturated and fit the data perfectly). Difference tests therefore indicated that our model did not fit equivalently across the three groups. Subsequent analyses indicated that paths from self-determined motivation to adult identity resolution, from controlled motivation to competence need fulfillment, and from autonomy and competence need fulfillment to societal identity resolution differed across the three groups: constraining these paths yielded a significant difference ($p = .03$) to the unconstrained model in terms of $\Delta\chi^2$. More specifically, self-determined motivation positively predicted adult identity resolution for students ($\beta = .18$, $p = .03$ and student-workers ($\beta = .18$, $p = .04$, but not for workers ($\beta = .09$, $p = .24$). Controlled motivation negatively predicted competence need fulfillment for workers ($\beta = -.29$, $p = .003$), but not for students ($\beta = .14$, $p = .28$) or student-workers ($\beta = .03$, $p = .47$). Autonomy need fulfillment positively predicted societal identity resolution only for workers ($\beta = .29$, $p < .001$), but this path was not significant for students ($\beta = .03$, $p = .72$) or student-workers ($\beta = .09$, $p = .57$). Competence need fulfillment positively predicted societal identity resolution for workers ($\beta = .23$, $p < .001$) and student-workers ($\beta = .18$, $p = .005$), but not for students ($\beta = .07$, $p = .64$).

Discussion

Finding one's answer to the question "who am I?" entails a challenging developmental process starting in early adolescence and peaking in emerging adulthood (Arnett 2000; Côté 2016; Erikson 1968). Identity formation, as a lifelong project, is not "final" at any point; even at the age

Table 2 Summary of indirect mediational effects

Independent variable	Mediator variable	Dependent variable	Point estimate	S.E.	95% CI
Self-determined motivation	Autonomy need fulfillment	Adult identity resolution	.058	.019	.021 to 089
Self-determined motivation	Relatedness need fulfillment	Adult identity resolution	.011	.013	− .015 to .036
Self-determined motivation	Competence need fulfillment	Adult identity resolution	.074	.023	.030 to .119
Amotivation	Autonomy need fulfillment	Adult identity resolution	− .049	.016	− .081 to − .018
Amotivation	Relatedness need fulfillment	Adult identity resolution	− .011	013	− .037 to .015
Amotivation	Competence need fulfillment	Adult identity resolution	− .118	.025	− .166 to − .070
Self-determined motivation	Autonomy need fulfillment	Societal identity resolution	.061	.021	.019 to .103
Self-determined motivation	Relatedness need fulfillment	Societal identity resolution	.058	.020	.020 to .097
Self-determined motivation	Competence need fulfillment	Societal identity resolution	.054	.019	.017 to .091
Amotivation	Autonomy need fulfillment	Societal identity resolution	− .052	.018	− .088 to − .016
Amotivation	Relatedness need fulfillment	Societal identity resolution	− .060	.018	− .095 to − .026
Amotivation	Competence need fulfillment	Societal identity resolution	− .086	.021	− .127 to − .045

of 30, some people have achieved more or less stability and coherence in terms of identity resolution than others have. Especially in late modern societies, intangible identity capital resources become increasingly important for fostering a developmental (as opposed to a default) individualization trajectory in one's transition to adulthood (Côté 2016; Schwartz et al. 2005). In the present study, we examined whether emerging adults' work/study motivation and the fulfillment of three psychological needs contributed to their identity resolution, as these motivational and need-satisfaction variables were expected to serve as important intangible resources for engaging in a developmental (rather than default) identity resolution trajectory.

Emerging adults ages 18–29 face the challenge of considering and enacting identity commitments in the areas of work and education (Arnett 2000). These commitments, as temporary endpoints of the identity formation process, might be achieved via different trajectories. They may come into being as a result of extensive exploration and critical evaluation based on one's authentic self, or they might be passively adopted following environment's default patterns. Empirical evidence suggests that identity commitments enacted for self-determined reasons contribute to positive well-being and adjustment, such as self-esteem and agency, whereas identity commitments that are poorly internalized (i.e., non-self-determined) relate to decreased well-being, such as experiencing depressive symptoms (Soenens et al. 2011; Soenens and Vansteenkiste 2011).

In accordance with the above-discussed findings, the present findings indicate that self-determined motivation underlying education or work serves as a positive predictor of identity resolution. Erikson's (1975) definition of identity stresses the importance of integration and coherence. As the present findings suggest, self-determined motivation for being involved in an important occupation (such as work or studying) seems to facilitate integration on a personal level (adult identity resolution) and drive the process of finding one's place in a larger community (societal identity resolution). These findings resonate with prior work indicating that autonomous goal regulation is associated with subjective well-being during the post-high-school transition in three different groups of young people—those pursuing university degrees, those involved in vocational training, and those not involved in education (Litalien et al. 2013). At the same time, our results indicated that amotivation serves as a negative predictor of identity resolution, thus setting the stage for a more default identity resolution trajectory. The absence of motivation towards study or work might lead to identity diffusion, where one only makes choices when the situation dictates doing so, thereby setting the stage for the sense of anomie that is characteristic of default individualization (Côté 2016).

It is important to note that our results are based on data from the Georgian context, where an unstable labor market and weak ties between education and job opportunities create conditions where the adaptiveness of an agentic approach to identity might be questioned. According to Assor (2012), identity formation requires an "inner compass" that provides people with criteria for determining whether or not a given choice, value, goal, or activity is congruent with one's sense of self. The present findings suggest that self-determined motivation represents an essential component of one's inner compass and thus facilitates navigating the increasingly complex, changing and unstable context of modern life (Côté 2016). That the present findings emerged within a cultural context where work opportunities are scarce is especially noteworthy—and speaks to the robustness of the links among motivation, need satisfaction, and identity resolution in emerging adulthood.

As hypothesized, self-determined motivation was positively related, and amotivation negatively related, to fulfillment of all three needs, whereas controlled motivation related negatively to competence need fulfillment in the workers group. These findings are in line with previous research showing associations between different types of motivation and need fulfillment (e.g., Milyavskaya and Koestner 2011). Further, in terms of the association between need fulfillment and identity resolution, we found that the experience of effectiveness in influencing one's environment (i.e., competence need fulfillment) is strongly associated with a sense of being an adult, whereas feelings of connection and care towards and from others (i.e., relatedness need fulfillment) is more strongly associated with one's sense of feeling accepted in society. Autonomy fulfillment appears to be equally important for adult and societal identity resolution, although our multigroup analyses indicated that autonomy fulfillment positively predicted societal identity resolution only for workers and not for students or student-workers. It was remarkable, however, that need satisfaction and need frustration did not show differential associations with other study variables. Based on previous findings (e.g., Costa et al. 2014; Neubauer and Voss 2018), we would have expected that self-determined motivation (the "bright side" of motivation) would be more strongly associated with need satisfaction (versus need frustration), whereas amotivation (and potentially controlled motivation, representing the "dark side" of motivation) would have been more strongly linked with need frustration. Our results indicated only a slight difference in the strength of associations between motivation and need satisfaction and frustration. This seems important as it may inform future research about conditions in which differential effects of need satisfaction and need frustration might actually not be expected.

Descriptive analyses indicated that those participants who prioritized work over education scored lower on autonomy

need fulfillment. This finding might suggest that the work environment quite often thwarts one's need for choice and self-directedness, which represents an important precondition for having a sense of own place in society (Côté 2016). The link between relatedness fulfillment and societal identity resolution seems quite straightforward—people are more likely to have found their place when being surrounded by the people they love and who care for them.

On the other hand, it is possible that the link between competence fulfillment and adult identity resolution may resonate with two components of intangible identity capital, that is, as internal locus of control and self-esteem (e.g., Côté et al. 2016). Feeling capable of successfully mastering challenging tasks in life (i.e., competence need fulfillment) may nurture feelings of self-esteem and may reinforce one's beliefs in one's efforts and abilities (i.e., internal locus of control). Such beliefs may in turn contribute to "feeling adult" and feeling *recognized* as an adult. Overall, need fulfillment experiences may provide emerging adults with important identity capital resources for adaptively facing the challenging transition into adulthood in contemporary society (Côté 2016).

Further, the association of motivation with identity resolution appeared to be mediated by the fulfillment of basic psychological needs, but this mediated effect was only partial with regards to the links (a) between self-determined motivation and societal identity resolution and (b) between amotivation and adult identity resolution. Based on previous studies, self-esteem, purpose in life, and sense of coherence might represent other mediating factors (Luyckx et al. 2008; Schwartz 2006). Overall, the present empirical findings illustrate the positive and negative roles that motivation can play in the individualization process and point to the importance of nurturing self-determined or autonomous functioning vis-à-vis the identity resolution task.

These findings have both theoretical and practical implications. Nowadays, the transition to adulthood is often experienced as stressful because of a series of psychological challenges and societal obstacles that emerging adults are increasingly facing. The present investigation offers a number of insights as to how to support emerging adults in facing this transition in adaptive ways. First, the developmental antecedents of self-determined motivation are partly situated in the parenting context. For example, academic structure and autonomy-supportive parenting foster children's competence and self-determined motivation (e.g., Grolnick et al. 2018). Second, student-oriented educational contexts further play an important role in strengthening students' motivation and sense of agency (e.g., Sierens et al. 2009; Wang et al. 2016). Third, our findings indicated that working emerging adults scored lowest on autonomy need fulfillment and self-determined motivation. Previous research has found that, among other factors, managerial climate and job design may

lead to employees' enhanced need satisfaction (Rigby and Ryan 2018). Thus, interventions targeting the family system, the educational context and organizational settings might be useful for fostering successful identity resolution (e.g., Allen et al. 2019). In addition, interventions may also target emerging adults directly to help them develop more intangible identity capital resources, such as attributional retraining programs, that have been found to foster self-efficacy, engagement and self-regulation among vulnerable college students (e.g., Haynes et al. 2009). These concerted actions may, in the long run, facilitate emerging adults' transition to adulthood and their successful integration in society.

Limitations and directions for future research

The present findings should be interpreted in the light of some limitations. One such limitation is the cross-sectional design used. As such, we could not draw decisive conclusions about the causal direction of effects. For instance, according to self-determination theory, successful identity formation may play a role in satisfying one's psychological needs for autonomy, competence, and relatedness (Ryan and Deci 2017). In line with this postulate, research findings suggest that the association between need satisfaction and identity processes is reciprocal, meaning that need satisfaction is also important for successful resolution of the identity formation task (Luyckx et al. 2009). Further, in our study, we modeled need fulfillment as in intervening variable between motivation and identity resolution. However, according to self-determination theory, need fulfillment also serves as a nutriment for growth and optimal functioning, and helps to create conditions for the development of self-determined motivation (Olafsen et al. 2018; Ryan and Deci 2012; Vansteenkiste and Ryan 2013). As a result, need fulfillment may not only be a consequence of self-determined motivation, but may also serve as an important prerequisite for the development of such motivation. Therefore, future longitudinal studies are needed to address the predictive or causal effects.

A second limitation concerns the sample size, which did not allow us to conduct measurement invariance analyses on the motivation and need fulfillment scales before our multigroup analysis. Future studies should utilize larger and more heterogeneous samples.

A third limitation involved the sample recruitment strategy. A purposeful sampling approach would be recommended for future studies, instead of the convenience sampling strategy used in the current investigation. Further, certain subscales of the Georgian adaptation of the motivation scale, and the amotivation and external motivation subscales in particular, did not hold together as well as would have been expected. Future work should be directed toward

developing indigenous Georgian versions to assess motivation for work and for education.

Finally, in the present study, we focused primarily on psychological prerequisites of identity resolution. Future work should also consider social-contextual influences such as family, peers, instructors/employers, and cultural values (Côté 2016). For example, how might specific elements of educational context, such as instructor autonomy support and informative feedback on accomplished tasks facilitate young people's self-determined motivation, need fulfillment and also support successful identity resolution? We hope that the present study inspires future work in these and other directions.

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