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Student persistence in higher education. A literature review
(background study)

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Student persistence in higher education. A literature review
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Introduction
Expansion of higher education came along with a decline in selectivity but also a decrease of the chances of students to persist in colleges and universities until degree completion. The extent of student dropout problem, which raises to up to 50% of the initially enrolled students in some countries, in a context in which university funding depends directly or indirectly on student count and where analysts and critics are questioning the issue of participation and persistence in terms of social justice motivated in the last several decades a great number of theoretical approaches and empirical investigations into the correlates of student persistence in higher education.

Our article will endeavor a synthetic endeavor into this area of interdisciplinary scholarly research following a simple outline. After having discussed briefly the main concepts, the frequency of students withdrawal, the main research strategies and the unit of analysis we will turn with a more detailed presentation of the two main broad theoretical traditions in this area: the integrationalist view, which is currently associated with the work of Tinto, on the one hand, and the models of student decisions based on rational choice theory. We will finish our theoretical synthesis with some short conclusive remarks concerning the investigation of student persistence within the HERD research project.

Main concepts: student retention, dropout, persistence, dropout syndrome and intention to leave
An alternate concept to student dropout is student retention. The higher the dropout rate, the lower the retention rate. Obviously most universities are striving for increasing retention rates, especially if dropout comes with a financial consequence. Conversely, a low retention rate can be regarded as a consequence of academic exigency while high retention rate can be regarded as sign of low academic standards.

Students that succeed in completing their degrees, that is those that do not drop out, are sometimes called persistent student. Dropping out is called also attrition and the dropout rate may be also called attrition rate.

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Decades ago Tinto had highlighted the narrow definitions of student dropout of the researches he has covered in a thorough literature review (Tinto 1975). He warns, for example, that voluntary dropouts should be considered separately from those depart from school due to academic failure. In the same time, one should consider differentiating permanent from temporary dropouts.

Methodology and cost feasibility of research on student dropout makes sometimes extremely difficult the choice of dependent variables. As described below, standard research methodology in the area is longitudinal, in which probability of actual dropout is modeled. In this case the main methodological pain is in differentiating permanent withdrawal from temporary leave. Due to data and resource constraints though, some research takes as dependent variable predictors of dropout, like the so called dropout syndrome - a combination of intent to leave, discussing leaving, and actual attrition (Bean 1985) or the intention to leave (Bennett 2003). In these cases both the authors and the readers should be aware that the object of analysis is not dropout and consequences brought based on such results might be misleading.

How frequent is student dropout?
Dropout probabilities are variable across nations. In the US, were most of the empirical inquiries in student persistence have been made, about half of all students who enter postsecondary education fail to acquire any certificate within 5 years (Stratton, O'Toole and Wetzel 2008). More nuanced estimates say that dropout rates are around 10-20% for on-campus course while for online courses they rise to 25-40% (Levy 2007). Overall, in OECD countries the average non-completion rate is around 30%, with peaks in Mexico, New Zealand, Sweden or United States. The higher the participation in higher education tough the higher the attrition rate, highlighting the below mentioned correlation between the proportion of non-traditional students and the rate of withdrawal (Hansson and Charbonnier 2010).

Research strategies
A great majority of research on student retention or withdrawal is quantitative, aiming to test the various theoretical models available in the field (Bean and Metzner 1985; Bennett 2003; Boshier 1973; Brunsden et al. 2000; Chen 2008; Cleveland-Innes 1994; Farabaugh-Dorkins 1991; Lassibille and Gómez 2007; Mastekaasa and Smeyb 2008; Montmarquette, Mahseredjian and Houle 2001; Munro 1981; Nora 1987; Shin and Kim 1999; Smith and Naylor 2001; Stage 1989; Starr, Betz and Menne 1972; Sweet 1986; Voelkle and Sander 2008). Several published materials approach the issue of dropout applying an ethnographic strategy especially when the aim of the researcher is to investigate the motivations and

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Unfortunately the latest OECD estimates do not provide figures for Hungary
experiences associated with decisions to leave the school (Sittichai ; Walker 1999; Xenos, Pierrakeas and Pintelas 2002).

Most of the consulted empirical materials are based on the analysis of longitudinal data using either a survey or quasi-experimental design. In each case the probability of belonging to the dropouts group is modeled using varieties of logistic regression (Brunsden et al. 2000; Chen 2008; Farabaugh-Dorkins 1991; Kember 1989; Lassibille and Gómez 2007; Montmarquette, Mahseredjian and Houle 2001; Munro 1981; Nora 1987; Shin and Kim 1999; Smith and Naylor 2001; Stage 1989; Starr, Betz and Menne 1972; Sweet 1986; Voelkle and Sander 2008; Walker 1999). However, there are articles built on the quantitative analysis of cross-sectional data (Bean 1985; Bennett 2003; Levy 2007).

Investigated student populations
As some of the researches have noticed that the mechanisms of persistence and withdrawal are contingent on the type of learning and students, studies often focus on merely one type of students. Thus, many researches are devoted to the problem of persistence in the case of various forms of distance-learning (e-learning is such a form) (Kember 1989; Levy 2007; Montmarquette, Mahseredjian and Houle 2001; Nistor and Neubauer 2010; Shin and Kim 1999; Sittichai ; Sweet 1986; Voelkle and Sander 2008). This happens especially because the issue of withdrawal is more acute in the case of these students but I suspect that more research is being done on distance-learning because of more readily available data.

Others make a difference between traditional and non-traditional students, where traditional mean usually middle class students who enroll into university right after graduating high school. While the social composition of student body was heavily dominated by this category before the massification of higher education, the apparition of minority students, of late enrolers – who start college in their thirties of even forties, of employed a.s.o. complicated the reflection on student dropout (Nora 1987; Walker 1999). Tinto’s model for example is well-known to be fit for traditional students mainly but which less predictive power in other cases.

Main theories
We have started our literary review by lecturing mainly research articles, reviews and theoretical standpoints published in the last two or three decades hoping to build a clear view of the state of explanation regarding student persistence in tertiary education. Our focus was on tests of solid far reaching theoretical models rather than on explanations that infer dropout from commonsensical predictors like intention to withdraw (Farabaugh-Dorkins 1991) or satisfaction with school (Starr, Betz and Menne 1972), predictors without which dropping out could hardly seem result of purposeful action any
The authors of this review agree with other specialists in the field (Melguizo 2011) on the apparent domination of Tonto’s paradigm in the field of student retention and dropout. Besides the variations and development of models that stress the importance of student’s academic and social integration in the college life, another important stream of theories put the accent on self-interested decisions of students and/or their parents.

**Tinto’s student integration model**

Tinto had built his model upon analogies with exemplary works in social anthropology. One is Van Gennep’s *Rite of passage*, which provides the model of integration into a new community. The other is Durkheim’s paradigmatic explanation of egotistic suicide, taken as example for voluntarily exiting a system (Tinto 1975). If withdrawal in case of suicide is explained by a lack of integration than the causal mechanism should be the same in the case dropout of students. Dropping out is a process that should be addressed longitudinally in which initial individual features in interaction with institutional ones determine two evolving dimensions of integration – academic integration and social integration (Tinto 1993) which in their turn determine the student’s goals and investments in the school and, finally, the decision to persist or leave the school. More or less student departure may serve as a measuring tool of the social and intellectual quality of college life as much as of the students' experiences at the college.

The model makes clear that any empirical assessment of it should measure: 1) variables of the student’s academic system (grade performance, intellectual development, peer-group interactions and faculty interactions); 2) variables of student’s commitment, i.e. his goals and his commitment to the school.

This is a would-be institutional level model, in which both students and universities bear the responsibility of eventual withdrawal. Although the initial state of the students, regarding their social status, or gender or attitudes, are important, more important are the interactions with his/her peers and faculty members as well as his/her perceptions of these interactions that occur during the university years. However as we will see, most of the research that have put the theory to test have been focusing on individual level predictors.

It is no doubt that Tinto’s model has been dominating the reflection in the area for the last three decades (Melguizo 2011). This has been the case despite of the numerous evident weak points in the empirical support of the theory. In 1997 Braxton et al published an appraisal of Tinto’s theory based on the evaluation of the empirical studies based on the theory as well as a discussion of theoretical and conceptual developments founded on the integrationalist model (Braxton, Sullivan and Johnson 1997). The article finds weak empirical support for the model and, most troubling, no support for the supposed link between academic and social integration, on the one hand, and persistence on the other.
Melguizo (2011) makes a list of the most important limitations that affect Tinto’s theory of student persistence:

- The models and the researches based on it tend to ignore the outside world and its’ influence on students persistence. The dependent variable can be affected by evolutions in secondary education, in the policies to support financially higher education students to give just two examples.
- The main concepts of the theory – academic and social integration are lacking reliable and valid measure instruments researches in the field using very diverse solutions to measure concepts like goal commitment or student engagement.

The theory is limited in his applicability for every kind of students. Tinto himself admitted that it is not suited to explain persistence likelihood in the case of non-tradition students (non-residents, commuters). Other critics have highlighted that the withdrawal of minority students is not addressed properly by Tinto’s theory. Bean and Metzner (1985) attempted to adapt the theory to the case of non-traditional students (older, commuters and part-time students). He argued that non-traditional students are more affected by the external environment than by social integration variables that influence the...
Melguizo’s review stresses also some questions for future uses of the model of student integration:

- Student integration – academic and social – might be correlated to their initial characteristics which makes integration an effect of selection procedures.
- The model leaves a huge burden of responsibility for student retention on faculty while ignoring the external factors and the impact of student characteristics on students’ aspirations and commitments.

As already told, numerous empirical efforts had put Tinto’s model to test (Breier 2010; Cleveland-Innes 1994; Kember 1989; Stage 1989) and some of them do not confirm all off the expectations derived from the assumptions of the theory (Brunsden et al. 2000). Some empirical investigations highlighted that Tinto’s model is more appropriate for traditional (resident, young) students than for non-residents (Cleveland-Innes 1994). Moreover, older students and students who delay entry into higher education are more likely to drop out before graduating (Lassibille and Gómez 2007).

Researches that rely on the integration theory have an emphasis on testing the impact the two main dimensions in the theory – academic and social integration – on student persistence.

Academic integration, measured in various ways appears to be one of the most important class of predictors of persistence and withdrawal. Abilities (Montmarquette, Mahseredjian and Houle 2001), grades in university (Bean and Metzner 1985; Bennett 2003; Farabaugh-Dorkins 1991; Voelkle and Sander 2008) academic preparedness (Lassibille and Gómez 2007; Smith and Naylor 2001) all have a positive influence on student’s likelihood of grade completion.

However, if the concept of academic integration is developed beyond measures of abilities (previous grades, GPA) the impact of this integration dimension seem to dim. According to an early research published by Munro (1981) students integration into the colleges academic setting more important that integration into the college’s social setting (Munro 1981). In case of Bean’s research (1985) the findings were only minimally supportive of the hypothesized relationship between measures of academic integration and retention.

Other important concept developed in association with that of institutional integration is that of institutional commitment.

Even less convincing are the results relating the social fit of students and the probability of retention. Several empirical results indicate that the hypothesized relationship between measures of social integration could not be substantiated (Nora 1987; Smith and Naylor 2001). However time and again research show that less successful students have habits that are less prone for academic accomplishments. In a qualitative research with subjects from Thailand (Sittichai) finds that dropping out is explained in terms related to the degree of adjustment.
Relating lifestyle with integration in the academic and social domains of college life is very close to the well-known theory social reproduction model of Pierre Bourdieu. In *La Noblesse d’Etat*, the French sociologist (Bourdieu 1989) argues that in the case of Great Schools at least the hidden curriculum is much more important that the official one and that the whole academic and social life of such a school is oriented towards the inculcation of habitus appropriate to the future roles of the schools graduates. In the case of schools preparing for leadership and management positions the offspring of French upper middle class the focus is on developing action oriented persons, capable of rapid and effective decisions, a state that is opposed to the requirements for critical and reflexive detachment from power of intellectual. Of course that only a very strong commitment can compensate for initial handicap in the necessary habitus, a commitment that is assured through a very competitive selection system that is the stage for a rite of passage as well. Since Bourdieu addresses the issue of school access and success we can extend his argument to the topic of withdrawal and retention: dropout is in this regard a consequence of an un-appropriate habitus combined with a lack of motivation.

Although institutional factors are often mentioned as culprits in the discourse on student retention the research that robustly underlines such variables is rather scarce. Both academic and social integration, from the Tinto model, can be subject of purposeful action on behalf of the university while structural contextual factors could have an impact on the social integration of the school, as already demonstrated in the case of secondary educational institutions (Rumberger and Palardy 2005). The methodological difficulties of correctly assessing contextual factors are well-known so there is reasonable argument in favor of individualist approaches. However, some of the empirical evidence at hand shows that structural variables ought not be ignored when explaining students retention. (Montmarquette, Mahseredjian and Houle 2001) show that dropout likelihood increases at the University of Montreal along with the size of student groups in the compulsory course in the first year of college. The composition of student body is suspected as being influential in the individual’s decision to withdraw from college in a study by Voelkle and Sander (2008). Feelings of personal insecurity associate with the decision to dropout (Sittichai) and that could also be related to college policies.

**Rational choice models**

For their most part, econometric and sociological rational choice models of student persistence and dropout make the patterns of student attrition and retention an outcome of student calculated decisions rather than of structural barriers and constrains as implied by theories like that of social reproduction (Bourdieu) or of structurally maintained inequalities (Lucas 2001; Raftery and Hout 1993). In this case the focus of the analyzes shifts to the mechanisms of decision making, including the class differentials in the formation of beliefs, expectations that determine the subjective assessment of costs and benefits of pursuing specific educational pathways, including that of withdrawal from university.

**The econometric model of student persistence (Becker, Manski and Wise)**

Human capital theory have had stressed that the post-secondary schooling decisions depend on the perceived costs and benefits (Becker 1975). As the standard human capital theory predicts, an
individual will invest in schooling up to the point that the marginal cost of an additional year of schooling (indirect costs, mainly foregone earnings and direct costs, tuition and other expenses entailed by schooling) is equal to its marginal benefit (the discounted stream of earnings attributable to another year of school).

Given the fact that university learning comes with cost (direct and indirect) there is no doubt that economic resources or incentives have an impact on the demand for higher education certificates as well as for students’ persistence in college after enrollment. Because of the policy implications of this topic, mainly, the impact of economic factors on student persistence has been often investigated. Chen (2008) investigates the impact of types of financial aid on persistence decision, controlling for socio-economic and racial background. Both Bennett (2003) and Chen (2008) conclude that grants and subsidies significantly moderated the influence of academic performances and commitment to academic program on the decision the dropout. Breier (2010) on the other hand argues that the lower the students’ ability to pay the more important is the economic factor in the decision to stay or leave in university. Such problems can become universal in case of enrollments in less developed countries.

According to the two main authors (Manski and Wise 1983) persistence in college, after enrolling, is the result of a fourth level systems of decisions in which students had to choose learning over work and one university over other while universities decide to admit or to reject certain candidates and to provide or not financial aid. Manski and Wise argue that persistence to graduation depends on attributes of the student and of the postsecondary institution attended.

Manski and Wise were well aware that institutional factors determine partially application and, thus, the selection of students, and therefore individual and institutional factors influencing persistence could have been confounded in their research. These self-selection problems in institutions should be addressed when assessing the impact of individual and institutional factors on outcomes of academic pathways (Manski and Wise 1983; Melguizo 2011).

Using data from the US longitudinal surveys of the National Center for Educational Statistics the authors concluded that high-school rank (a measure of attended secondary school’s reputation) and SAT (scholastic aptitude tests) are of equal weight in determining college attendance, college perceived quality and perceived college costs (all three variables instrumental for modeling college persistence). Controlling for individual and family background variables, though, the high school rank appears to be three times more important in predicting persistence than SAT. In general, using US data of the 70s, when college attendance has become already universal (55% of high school graduates at that time were enrolling into postsecondary education), Manski and Wise conclude that persistence functions on mechanisms that are pretty similar to the decision to enroll to college. Thus, the highest probability of dropout is in the case of students with the lowest probability to enroll in college.
A somewhat similar model, especially known in the attrition literature, is the College Choice Nexus Model which argues that there is a connection between student’s college choice and his/her persistence in college. Once entered in college, depending on socio-economic factors, academic ability and the costs and benefits expected from enrolling in college, persistence is shaped by collegiate and academic experiences – like academic performances, provision of financial aid a.s.o. (St John et al. 2000).

Paulsen (2001) has argued that the theory of Manski and Wise is limited because does not take into account the perceptions of costs and benefits vary as function of individual factors that are not monetary: socioeconomic status, academic ability, access to information about postsecondary education opportunities available, employment opportunities a.s.o. can affect the way a student valuates the costs and benefits of schooling.

Sociological rational choice has modeled grade completion within the paradigm of educational transitions (Mare 1980; Mare 1981). Dropouts in our case are among those who do not make the successful transition from high school to university degree. Generally, theories of this sort (Boudon 1973) explain discontinuation decisions using rational choice assumptions which can also explain why teenagers from lower socio-economic backgrounds have smaller chances in pursuing long academic careers than those from well-off families. First of all, education career decisions are greatly dependent on perceived academic abilities, for whose assessment students rely heavily on grades and GPA’s which, in turn, are significantly influenced by background factors. Secondly, perceptions and attitudes towards risks are differentiated according to social class. According to Breen and Goldthorpe (1997) the relative risk of downward social mobility is greater for students from lower social strata because young people and their families value less upward mobility than fear downward mobility and thus make conservative choices. Consequently, students from deprived social strata when faced with prospects of failure – in school or in labor market – as a consequence of school persistence will more easily decide to withdraw than those from upper social strata.

Morgan’s theory of commitments

According to Morgan (2005) the fundamental problem affecting the sociological inquiry into the socially unequal transition rates to higher education and university level education completion is the lack of theorizing on the ways in which high school graduates and their parents form beliefs about the costs and the benefits of attaining a post-secondary level education. Morgan relies at the beginning of his model building on the well-known Wisconsin model of status attainment according to which educational achievements depend on student motivation which in turn is contingent upon the internalization of achievement aspirations. Morgan’s view highlights educational expectations as self-fulfilling prophecies ‘by regulating beliefs about future decisions on which students must condition their current behavior’ (Morgan 2005, p.52), the core of the explanation of achievement being put thus on expectation.
formation which are modeled using a Bayesian learning approach.

Morgan’s theory of behavior regulation through expectations socialized through Bayesian learning has been first published in 2002 (Morgan 2002) and later detailed in a book (Morgan 2005). Educational decisions depend on the strength of expectations concerning the future direction of actions. This feature of a person’s belief is called by Morgan pre-figurative commitment and is internalized on the bases of three types of subsequent beliefs (named also pre-figurative commitments): purposeful (I will do a certain action if it is in my best interest to do so), normative (I will do what significant others perceive to be in my best interest) and imitative (I will do so if I perceive that those similar to me will do that as well). Pursuing one’s pre-figurative commitment, which refers usually to long term future, implies everyday decisions needed to take actions that contribute to the fulfillment of the grand future, decisions which formally are taken following the same mechanism as selecting a grand future (preparatory commitment).

Morgan’s inferences stress the importance of accurate and sufficient information for building strong pre-figurative commitments. Uncertainty lowers the strengths of commitments and the probability that the person will take the required course of action needed to fulfill this commitment.

Although Morgan’s model was developed first to account for decision to enroll in university and to explain the differential effect of educational expectations on attainment between black and white students it can be easily adapted to construct a model of university continuation decision. Students with low commitment to graduation will be more likely to make steps (preparatory commitments) leading to withdrawal from university. Commitment to graduation depends on the assessment of one’s interest from school completion, as compared to alternative course of action, on the inputs from significant others (parents, teachers, role-models) and the inputs from persons’ considered to be in similar situation (most likely students in the same positions).

The importance of initial commitments for long-term persistence and success in college had been already recognized in the integrationalist model of Tinto and their developments. This explains why the impact of goal commitment has been investigated in most of the studies devoted to student persistence. The results of these studies supported the importance of goal commitments for the successful pursue of academic career (Farabaugh-Dorkins 1991; Munro 1981). Equally important seem the consistent finding that preparatory commitments, the engagement of student towards the intermediary steps in fulfilling their academic career, is also very important. According to Walker (1999) students that have withdrawn were less motivated, less suited to academic work and had poorer attitudes. The most important finding was that successful students were highly motivated towards study whereas none of the drop-outs were. (Walker 1999). On the other hand, there is evidence that dropout students show lower levels of interest for college of for the taught contents (Montmarquette, Mahseredjian and Houle 2001; Sittichai). Moreover if somebody thinks that academic burden is a demotivator in itself there is the compelling...
A focus on distance learning students

Empirical focus on persistence on behalf of distance education students is motivated by several factors. First, it had been observed from the very beginning that non-traditional students, a category to which distance learning students belong, are much less successful in finalizing tertiary studies than their colleagues enrolled in more traditional programs and conditions. Of course, part of the issue emerges from the simple fact that non-traditional students are more often with less privileged backgrounds but the specific educational technologies employed, in the case of distance education for example, play their part as well. Moreover one cannot ignore that persistence and withdrawal of distance students is more easily researchable using longitudinal designs due to the more accurate and informative record that are available as much of the relationship of students with the college occurs in written form and more recently through internet.

Some of the research that had distance education students as their population aimed to put Tinto’s model of social and educational integration to test. This is the case of (Sweet 1986) who concluded that direct telephone contact between faculty and distance learning students significantly influenced student commitment and persistence. The impact of academic locus of control and school satisfaction on distance learning students’ persistence was evaluated, on the other hand by (Levy 2007).

Other researches have focused, though on variables which are specific to distance learning. (Xenos, Pierrakeas and Pintelas 2002) have investigated the impact of students’ IT competences on the probability of withdrawal, controlling for age, gender and time-management. The authors concluded that the ability to handle IT technology used in distance learning programs significantly influences the chances of academic success and the probability of withdrawal. Specific teaching devices and strategies were evaluated by Nistor and Neubauer (2010) as well as the impact of face to face activities in the case of distance learners, by Shin and Kim (1999).

Conclusions

Although numerous criticisms and lack of overwhelming empirical support the student integration model appears to dominate the field of student persistence research, often combined with arguments inspired by the rational actor paradigm. Therefore, at least for the case of traditional students, academic and social integration of students appear to be the most important dimensions explaining persistence or withdrawal from university. Economic calculations on behalf of the student or his/her parents, regarding the costs and benefits of college persistence or of alternate decisions, should be also considered along
with the issues of content and strength of commitments.

Researchers in the area of student persistence should not ignore the important theoretical and methodological questions that they have to answer. Most robust results are obtained though longitudinal design, or at least ex-post-facto effect-cause quasi-experiments, in which actual withdrawal and persistence comes to be modeled. The research in this field has to consider the differences between traditional and non-traditional students going even in more details with differentiating the various types of non-traditional students. Finally one has to observe that, in contrast with the research dealing with secondary school students, contextual factors are rarely considered in an appropriate way in studies of tertiary students’ persistence despite the variability of institutional settings in which students are enrolled. In our opinion one of the greatest challenges for the research in this area will be to build data comparable sets from a large enough number of universities to allow the researchers to evaluate the interaction of institutional context (private vs public, large vs. small, new vs. traditional etc.) with individual features in determining the persistence of students in universities.

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