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ABSTRACT

The applicability of Tinto's model of retention for first-year students attending church-related colleges and universities is examined. Data collected from entering freshmen at two Midwestern Seventh-day Adventist colleges were used to replicate studies of Tinto's model done in other settings. Based on Tinto's model, indicators of academic and social integration are the student's academic performance, level of intellectual development, and the extent and quality of student-student and student-teacher interactions. Study variables included: students' family background; individual attributes; precollege schooling; academic aspirations; grade point average; students' perceived level of intellectual development; student-faculty contact outside of class; participation in extracurricular activities; and student interaction with peers. Although the discriminant function analysis yielded results accounting for a smaller proportion of the variance in dropout behavior, the results were somewhat consistent with those of the earlier studies. Path analysis of the pooled data, as well as for separate gender and institutional subgroups, provided additional confirmation of the general explanatory power of Tinto's model. Differences found may be due to the sectarian nature of the schools and students studied. (SW)

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TESTING TINTO'S MODEL OF ATTRITION ON THE CHURCH-RELATED CAMPUS

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Elizabeth F. Fox, Chair
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TESTING TINTO'S MODEL OF ATTRITION ON THE CHURCH-RELATED CAMPUS

Abstract

This paper examined the applicability of Tinto's model of retention for first-year students attending church-related colleges and universities. Data collected from entering freshmen at two Seventh-day Adventist colleges were used to replicate studies of Tinto's model done in other settings (Terenzini, Pascarella, Theophilides, & Lorang, 1983; Pascarella & Terenzini, 1983). Although the discriminant function analysis yielded results accounting for a smaller proportion of the variance in dropout behavior, the results were somewhat consistent with those of the earlier studies. Path analysis of the pooled data, as well as for separate gender and institutional subgroups, provided additional confirmation of the general explanatory power of Tinto's model. Differences found may be due to the sectarian nature of the schools and students studied.

TESTING TINTO'S MODEL OF ATTRITION ON THE CHURCH-RELATED CAMPUS

Introduction and Perspectives

While the study of attrition and retention has been conducted in higher education almost since the first student dropped out, only recently have researchers been guided by theoretical constructs in their efforts to explain retention and attrition behavior. Spady (1971) and Tinto (1975) both urged that further research concentrate on multi-dimensional and longitudinal studies of the dropout phenomenon, and provided models suggesting the relationships of the various components related to persistance or attrition. Tinto's model (Figure 1), which has been more widely tested, describes attrition as a longitudinal process involving a complex series of sociopsychological interactions between the student and the institutional environment. A growing body of research (Aitken, 1982; Baumgart & Johnstone, 1977; Munro, 1981; Pascarella & Terenzini, 1979, 1980; Terenzini & Pascarella, 1977, 1978) has focused on the validity of various aspects of this model. More recently, path analytic validations of the entire model (Pascarella & Chapman, 1983; Pascarella & Terenzini, 1983; Terenzini, Pascarella, Theophilides, & Lorang, 1983) have been undertaken at public residential and commuter institutions, as well as at a selective private university. While there have been some retention/attrition studies reported from church-related institutions (i.e., Bean & Creswell, 1980; Lenning, 1970), the presenters are unaware of any complete test of Tinto's model on a church-related campus, defining a complete test of the model as one in which all salient constructs of the model are represented in the data (Pascarella, Duby, & Iverson, 1983).

Generally, church-related colleges and universities draw students from a dispersed population, many of whom could have enrolled much closer to home.

Further, these students often pay more for tuition and living expenses in order to attend a church-related institution. While these factors could strengthen the student's commitment to attending a private college, they may also contribute to a greater tendency to drop out for reasons related to cost and distance from home. Because these students often share similar religious backgrounds, the composition of students in a church-related institution may be less homogeneous than that in other institutions. Yet it appears that in other respects they share most of the characteristics of college students and the elements of Tinto's model should be equally applicable in their setting.

Thus, the purpose of this study was to replicate earlier path analytic validations of Tinto's model in a church-related college setting. This study will also show whether there are differences between two different colleges operated by the same church in the characteristics related to retention and attrition at each institution.

Methods

Two midwestern colleges operated by the Seventh-day Adventist church were used for this study. Institution 1 is a small university with an undergraduate enrollment of 2,000, while Institution 2 is a liberal arts college enrolling approximately 1,000. Both schools have open admissions, and their freshmen generally rank near the national median on American College Testing (ACT) scores. Over the past several years, the freshman dropout rate at both institutions has been about 30% to 35%. Each school is the church's post-secondary institution for the geographical area consisting of the contiguous states in which it is centrally located. A large proportion of entering students come from Seventh-day Adventist-operated secondary schools (both boarding and day schools) within these geographic regions.

Design and Sample

The overall study design was longitudinal and ex post facto, replicating previous path analytic studies of Tinto's model (Pascarella et al., 1983; Pascarella & Terenzini, 1983; Terenzini et al., 1983). Entering freshmen for the fall of 1983 at both schools were asked to complete a questionnaire during their orientation programs. Included on the questionnaire were questions regarding their educational and family background, and their educational plans for their present institution and subsequent education. Usable responses were received from 354 of 412 entering students at Institution 1, and from 230 of 257 entering students at Institution 2. Additional demographic and academic background variables were obtained from the respective records offices.

Late in the spring term a second survey was administered to the freshmen classes at each institution. After a follow-up mailing, usable responses were received from 244 students at Institution 1 and 130 students at Institution 2. This survey included questions related to their activities during the year, including their relationships with faculty and peers, their social activities, their present commitments to individual educational goals and to the institution, and their plans for the coming year.

A review of institutional records at each school at the beginning of the subsequent school year (Autumn 1984) revealed that 292 of 374 respondents for whom complete data were available had continued their study into their sophomore year. Of the 82 dropouts, 56 (23.0%) were from Institution 1 and 26 (20.0%) from Institution 2. Males withdrew at a slightly higher rate at both institutions (24.3% and 21.8%, respectively, compared with female withdrawal rates of 21.9% and 18.7%, respectively).

Tests indicated that the respondents were representative of the freshman class population at each school with respect to race (white/non-white) and

secondary-school location (regional feeder school/not regional school). However, the respondents overrepresented younger students, higher academic aptitude (composite ACT score), higher secondary-school achievement, and were more likely to be female and residential students, taking a heavier class load during their first freshman term.

Variables

Figure 1 shows that Tinto's model consists of five major constructs or variable sets, each operationalized as follows:

I. Background Characteristics

A. Family Background

1. Parents' education, derived from the sum of each parents' level of formal education, using nine ordinal categories from "eighth grade or less" to "received an advanced degree"

2. Location of home state (coded 0 = not in college's region, 1 = in college's region)

B. Individual Attributes

1. Gender (coded 1 = male, 2 = female)

2. Academic aptitude (composite ACT score)

3. Credits taken in first college term

4. Number of planned extracurricular activities for college (the sum of items marked on orientation questionnaire)

5. Race (0 = non-white, 1 = white)

6. Age at time of freshmen orientation

C. Pre-college Schooling

1. Academic achievement (quartile rank in secondary school class)

2. Secondary-school preparation (degree of secondary-school preparation for college: 1 = very inadequately, 5 = very adequately)

3. Number of secondary-school extracurricular activities participated in previous year for at least two hours weekly
4. Location of secondary school (coded 0 = not regional feeder school, 1 = regional feeder school)

II. Initial Commitments

A. Initial goal commitment was operationalized as the sum of the highest degree planned anywhere (seven categories from "none" to "doctor's degree") and the rating of the importance of graduation from college (1 = very unimportant, 5 = very important)

B. Initial institutional commitment was the sum of four items:

1. The rank (from one to four, reverse coded) of the particular college as college choice
2. Confidence that the choice to attend that particular college was the right choice (1 = very insecure, 5 = very confident)
3. Probability of transfering to another school before graduation (1 = very low probability, 5 = very high probability, reverse coded)
4. Highest degree planned at that particular institution (seven categories from "none" to "doctor's degree")

The two commitment scales correlated .164 for Institution 1 and -.008 for Institution 2.

According to Tinto (1975), academic integration is determined primarily by the student's academic performance and his/her level of intellectual development, while social integration is primarily a function of the extent and quality of both peer-group interactions and student interactions with faculty. While Tinto places interaction with faculty under social integration, he nevertheless argues that, depending on their focus, such interactions may positively influence academic integration. Thus this study, replicating

studies of Pascarella and Terenzini (1979, 1980, 1983; Terenzini & Pascarella, 1980), considers different aspects of the extent and quality of students' interaction with faculty as measures of either academic or social integration.

III. Integration Variables

A. Academic integration was operationalized as the sum of the following scales or variables:

1. Cumulative freshman-year grade-point average
2. A seven-item, factorially-derived scale measuring students' perceived level of intellectual development, derivation and composition of which is given in Pascarella and Terenzini (1980), from whom it was borrowed
3. A five-item, factorially-derived scale measuring students' perceptions of faculty members' concern for student development and teaching (Pascarella & Terenzini, 1980)
4. The frequency of students' out-of-class contact with faculty of 10 minutes or more for each of the following purposes:
   a. "to get basic information and advice about my academic program"
   b. "to discuss intellectual or course-related matters"
   c. "to discuss matters related to my future career"

B. Social integration was operationalized as the sum of the following scales and items:

1. The average number of hours per week spent during the past year in organized extra-curricular activities
2. A seven-item factorially-derived scale measuring the extent and quality of students' interactions with their peers (Pascarella & Terenzini, 1980)

3. A four-item factorially-derived scale measuring the quality and impact of students' out-of-class contact with faculty (Pascarella & Terenzini, 1980)[1]

4. The frequency of freshman non-classroom contact of 10 minutes or more with faculty for each of the following purposes:

   a. "to discuss a personal problem"

   b. "to discuss a campus issue or problem"

   c. "to socialize informally"

The distributions of the frequency of faculty contact variables, which were positively skewed, were smoothed by taking the natural logarithm of each variable. A constant of one was added to each variable prior to this transformation in order to avoid taking the log of zero. This procedure replicates that of Pascarella and Terenzini (1983). The two integration scales correlated .474 at Institution I and .376 at Institution 2.

IV. Subsequent Commitments

A. Subsequent goal commitment was a single item rated near the end of the freshman year: "It is important for me to graduate from college," (1 = strongly disagree, 5 = strongly agree)

B. Subsequent institutional commitment was the sum of two items, both also rated near the end of the freshman year:

1. "I am confident I made the right choice in choosing to attend [name of institution]" (1 = strongly disagree, 5 = strongly agree)

2. "It is not important for me to graduate from [name of institution]" (1 = strongly disagree, 5 = strongly agree, reverse coded)

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[1]Pascarella & Terenzini (1980) derived five items for this scale, but one item was inadvertently left off this study's questionnaire.

The subsequent commitment scales correlated .240 at Institution 1 and .208 at Institution 2.

V. Intention to Continue

Building on the arguments of Fishbein and Azjen (1975) that attitudes and past experiences act through intentions to influence future behavior, Bean (1981) suggested that the addition of a construct termed "intention" adds to the predictability of Tinto's model. Pascarella et al. (1983) found that the inclusion of intention increased explained variance from 19% to 28.2%. Not only is intention likely to have a direct effect on persistence, but the influence of several other determinants, such as institutional commitment, could be transmitted through intention. This construct was a single item: "It is likely that I will enroll at [name of institution] next fall" (1 = strongly disagree, 5 = strongly agree).

As in Pascarella and Terenzini (1983), the dependent variable, persistence into the sophomore year was dummy coded 1 = persisters, 0 = withdrawals.

In all instances where scales operationalizing components of the model were constructed from variables with different metrics (e.g., academic and social integration), the two-step procedure use by Pascarella and Terenzini (1983) was employed. First, each individual item or scale was standardized to eliminate negative numbers, and then the scale was formed by summing across the standardized items (Armor, 1974).

Statistical Analyses

As noted earlier, this study is based on the responses of 374 freshmen, of whom 82 had withdrawn. In order to keep the sample size as large as possible without losing cases due to missing data, missing values were estimated using group values by gender and school. Stepwise regression was used to calculate values used subsequently as criterion variables, and group means

were used for the remaining variables. For most variables, less than 3% of the values were missing, and in no case were more than 12% of the values missing. No case was included in the study which did not include data from both surveys.

As in the studies being replicated, discriminant function analysis and path analysis were the principal analytical procedures used. Discriminant analysis was used to assess not only the predictive power of the variables employed, but also to provide a classification procedure that permits assessment of the equation's ability to classify correctly members of the groups. Predictor variables were entered in sets consistent with Tinto's model: (1) background characteristics, (2) initial commitments, (3) academic and social integration, and (4) subsequent commitments. At each step, the variable set entered was tested for the significance of its contribution to explained variance beyond that associated with all causally prior variable sets.

Path analysis was also employed to test the causal relations among the variables in Tinto's model. Background variables were treated as exogenenous variables (sources of variation outside the model's conceptual pattern), while the remaining variables were considered endogenous (determined by other variables inside the model). This analysis required the solution of eight structural equations in which each set of endogenous variables was regressed (using ordinary least-squares regression) on all exogenous variables and all causally prior endogenous variables in the model. These regressions yielded standardized partial regression coefficients (beta weights) that can be considered path coefficients reflecting direct effects (Kerlinger & Pedhazur, 1973). For each solution, the residual variance is represented by a path from outside the system ($\sqrt{1 - R^2}$). Six path models were estimated. Two models illustrate the constructs originally described by Tinto for the entire sample, first

without and then with the intention variable. Additional models for each gender and school sub-group were estimated including the intention variable.

Following the original regressions in which all variables were entered in their turn, paths with non-significant weights ($p < .05$) were deleted, unless an exception was made under two circumstances: (1) if no other path leading to an endogenous variable was significant at $p < .05$, or (2) if the path was hypothesized in the model to be a theoreticaly important influence on persistence. Because path models are recursive--there is a one-way causal flow between the variables in the model--the effect of this flow should extend through the model. For the six models developed, 11 paths not significant at $p < .05$ were included to complete the flow.

Results and Discussion

Table 1 summarizes the results of the discriminant function analysis for the entire two-school sample, and by gender and school. As expected from the results of previous studies (i.e., Terenzini et al., 1983), students' background characteristics did not significantly differentiate persisters and dropouts (except for males). The proportion of correctly predicted cases for the pooled group was 61.2%, and ranged in the subgroups from 58.6% to 66.0%. Neither did the addition of initial institutional and goal commitments add significantly to the separation of the two groups.,

The inclusion of academic and social integration variables produced a significant increase in the canonical R^2 (analogous to the R^2 in multiple regression) for the overall group, as well as for males. While the inclusion of these variables also added to the amount of variance explained for the other groups, the increase was not statistically reliable.

The incorporation of subsequent levels of goal and institutional commitment produced significant increases in the value of the canonical R^2 for the

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overall sample and for each separate institution, although not for the gender subgroups. The discriminant function correctly predicted 65.8% of the cases for the total group, and between 63.8% and 71.0% for the four subgroups.

Statistically reliable increases in the canonical R^2 (ranging from .122 to .161) occurred for all groups when intention to continue was added, and the proportion of correctly identified cases was 78.6% for the pooled group, and ranged between 77.0% and 81.5% for the subgroups.

Previous studies (Pascarella et al., 1983; Pascarella & Terenzini, 1979, 1983; Terenzini et al., 1983) reported that interaction effects existed between integration and subsequent commitments, as well as between gender and the integration and subsequent commitment constructs. Interaction variables were created from the cross-product terms between the two integration variables, and between the two subsequent commitment variables, as well as between gender and each of the four integration and subsequent commitment variables. These interaction variables were entered into the discriminant analyses after the inclusion of the antecedent variables and the increase in canonical R^2 was tested. None of these interaction variables was significant with the exception of gender vs. subsequent goal commitment interaction for Institution 2, which increased the canonical R^2 .042 to .283, and the proportion of correctly classified cases from 81.5% to 83.1%.

While the results of this study are somewhat similar to those achieved by earlier tests of Tinto's theory at different institution types, there are some dissimilarities. For the overall sample, the canonical R^2 of .086 obtained with the inclusion of subsequent institutional and goal commitments is lower than that obtained earlier (Pascarella & Terenzini, 1980, obtained canonical R^2 of .259, and Terenzini et al., 1983, reported canonical R^2s of .229 and .140). Although higher R^2's are obtained at this point for the male subgroup

and for Institution 2, the low number of subjects in these two groups may affect the reliability of these statistics. However, the canonical R^2 of .237 obtained with the inclusion of intention in this study is closer to the R^2 of .282 with the inclusion of intention reported by Pascarella et al. (1983).

Figure 2 shows the reduced model without the intention variable for the entire sample, while Figure 3 includes the intention variable on the same sample. Figures 4-7 show the reduced path models, including the intention variable, for each of the four sub-samples. A visual comparison between Figure 1 and the path models demonstrates substantial similarity between Tinto's theoretical model and the results of this study.

This path model (Figure 2) shows that students' individual attributes (aptitude, number of planned extracurricular activities, and race) have a direct influence on their initial goal commitment, and a slight influence on their institutional commitment (based on age). The lack of paths between family background and pre-college schooling to initial commitments varies from Tinto's model and the results previously reported (Pascarella et al., 1983; Terenzini et al., 1983).

Tinto's model suggests that early institutional commitment will influence social integration, and that expectation was supported in this study. Additional influences on social integration include individual attributes (number of planned extracurricular activities) and pre-college schooling (number of secondary-school extracurricular activities weekly).

Although Tinto suggests that initial goal commitment will have an effect on academic integration, that result was not found in this study (nor in some earlier studies, i.e. Pascarella et al., 1983; and Terenzini et al., 1983). Moreover, initial institutional commitment had a direct influence on academic integration on this study, a path not theorized by Tinto. This path also

appeared on the path model reported at a commuter institution (Pascarella et al., 1983). In the present study, individual attributes (academic aptitude and race) also directly influence academic integration.

As expected from both the model and the results of previous studies (Pascarella et al., 1983; Terenzini et al, 1983), there was a significant influence by academic integration on subsequent goal commitment, although the degree of this influence was not as strong as that exerted by the initial goal commitment. There were also direct influences on subsequent goal commitment from individual attributes (gender, class load, number of planned extracurricular activities, and race).

The theorized relationship between social integration and subsequent institutional commitment was not significant, also replicating earlier studies (Pascarella et al., 1983; and Terenzini et al., 1983). Further, the significant path between academic integration and subsequent institutional commitment, although not theorized, was also reported in previous studies (Pascarella & Terenzini, 1983; Pascarella et al., 1983; Terenzini et al., 1983).

Without the influence of the intention variable, subsequent institutional commitment had a direct relationship with persistence, as did academic integration. No significant path lead from subsequent goal commitment.

A comparison of this path analysis with those reported earlier (Pascarella & Terenzini, 1983; Terenzini et al., 1983) shows that 11 of the 14 significant paths for this study replicated the paths on at least one of the two studies cited. Pascarella and Terenzini (1983) reported 20 significant paths, including 4 paths from pre-enrollment variables that were not replicated here, and Terenzini et al. (1983) reported 17 significant paths, of which 6 from pre-enrollment variables were not replicated. This study used some pre-enrollment variables not used in the earlier study, which accounts

for some of this difference. The earlier studies had not included the pre-enrollment variable, "number of planned extracurricular activities," which had a significant path to social integration.

Of the paths between endogenous variables, six of eight in this study had been reported earlier. The two new paths for this study were from initial institutional commitment to both academic integration and social integration. Paths previously reported that are missing from the present study are from initial goal commitment to social integration, and from subsequent goal commitment to persistence. This suggests that differing influences may be at work in the various institutional types. It is possible that initial institutional commitment is a much greater determinant of subsequent integration in a church-related institution than in other settings, and that initial goal commitment does not influence social integration in church-related institutions to the extent that it does in other settings.

The inclusion of the intention variable (Figure 3) increased significantly the amount of variance explained by the model, with results similar to those reported by Pascarella et al. (1983). A strong relationship was found between subsequent institutional commitment and intent, and between intent and persistence. Pre-college schooling (number of secondary schools attended) also influenced intent, and a slight influence (although statistically significant) was found between subsequent goal commitment and intention.

Because the discriminant analyses suggested that the components of the model were explaining substantially different proportions of the explained variance for the gender and school subgroups, path analyses of the sub-samples were also undertaken (see Figures 4-7).

For both male and female groups, family background variables were statistically reliable influences in the model. However, the effect of individual

attributes and pre-college schooling on academic integration was not significantly reliable for the male group.

Of those paths appearing on the reduced model for the entire sample, the path between initial and subsequent goal commitment was not statistically reliable for males, nor was there a significant path between social integration and persistence. Several paths significant on the overall model were not significant for the female group, including paths between individual attributes and both subsequent goal commitment and social integration, between pre-college schooling and intent to continue, between initial institutional commitment and academic integration, between academic integration and persistence, and between subsequent goal commitment and intent to continue. In fact, somewhat similarly to Pascarella et al. (1983), no significant paths were found leading from subsequent goal commitment. For the paths common to both gender models and the overall model, there are generally similar path coefficients between models, except for the path between academic integration and subsequent institutional commitment, which was much stronger for females (.279) than for males (.191).

Figures 6 and 7 show the reduced path models for each institution separately. The major differences between these figures and the total path model are in the effects of the pre-enrollment variables. For Institution 1, three paths were added from pre-college schooling to, respectively, initial goal commitment, initial institutional commitment, and subsequent goal commitment. There was no path between pre-college schooling and academic integration. However, a statistically reliable path between individual attributes and subsequent institutional commitment was found, as well as paths between initial institutional commitment and social integration, between social and academic integration and persistence, and between subsequent goal commitment

and intent to continue. As with the female subsample, there were no significant paths extending from subsequent goal commitment.

For Institution 2, a statistically reliable path was added between family background and academic integration, as well as additional paths from individual attributes to both subsequent institutional commitment and intent to continue. Paths from pre-college schooling were found to initial goal commitment and initial institutional commitment. The statistically weak path between individual attributes and initial institutional commitment on the total model was not necessary on this reduced model, as more statistically reliable paths were found on this model to the commitment variable.

There are several paths appearing on the total model that were not statistically significant for Institution 2, including the paths from initial institutional commitment to academic integration, from both academic and social integration to persistence, from pre-college schooling to intent to continue, and from subsequent goal commitment to intent to continue.

Of the paths common to both institutional models and the overall model, there were two that had considerably different path coefficient between institutions. The path between initial and subsequent institutional commitments is stronger for Institution 1 (.279) than for Institution 2 (.199), and the path between academic integration and subsequent goal commitment is stronger for Institution 2 (.251) than for Institution 1 (.177).

The pre-enrollment characteristics influenced various components of the model differently for each of the different subgroups. Those characteristics which most strongly and consistently entered the model were aptitude (influencing initial goal commitment for the pooled sample, females, and Institution 1; and academic integration for the pooled sample, males, females, and Institution 1), and the number of credits taken during the Fall term (influencing

subsequent goal commitment for the pooled sample, males, and both institutions). The number of planned extracurricular activities, and race both influenced initial goal commitment for the overall sample and two groups (males and Institution 2 for number of planned extracurricular activities; females and Institution 1 for race).

Of the paths between endogenous variables, there were five that were significant for the total sample and all four subgroups: initial institutional commitment to subsequent institutional commitment, academic integration to subsequent institutional commitment, academic integration to subsequent goal commitment, subsequent institutional commitment to intention to continue, and intention to continue to persistence. The path between initial goal commitment to subsequent goal commitment was significant for all models except for males. The path between initial institutional commitment and academic integration was significant for the overall model, males, and Institution 1, while the path between initial institutional commitment and social integration was significant for the overall model, males, and Institution 2.

Thus it appears in these two church-related colleges and universities that pre-enrollment characteristics are related to the initial personal goals of students, and to their subsequent academic and social integration. The degree of their initial commitment to their institution is also related to the degree of their academic and social integration, as well as to the degree of their subsequent commitment to the institution. It is this subsequent institutional commitment, strengthened by academic integration, that is most strongly related to their intention to continue, which itself is a strong predictor of their decision to persist. To a lesser degree, academic integration is positively related to persistence, while social integration has a negative relationship.

Limitations

The limitations for this study, similar to those stated on previous tests of Tinto's model, include the nature of the criterion variable, the use of correlational techniques to estimate crusal links, the limited number of institutions studied, the operational definitions of Tinto's constructs, and the restriction of the study to only freshmen-class dropout. By combining all dropout behavior, whether stopout, dropout, dismissal, or voluntary withdrawal, some of the difference in dropout behavior may be masked. Further, not only was this study limited to two institutions, but the small sample sizes may affect the stability of the results. Although the variables used to define the constructs had been used in earlier studies, it is possible that the manner in which the theory functions is not completely operationalized by the data collected. Tinto (1985) suggests that a greater emphasis must be put on the qualitative aspects of campus life, as well as on the quantitative aspects. Finally, Tinto's model was originally designed to describe attrition behavior throughout the college experience, and the dropout behavior of first-year students may not fully reflect all the nuances inherent in the model.

Implications and Conclusions

While the data generally support Tinto's theory, it is obvious that much of the dropout behavior in these two church-related colleges is not being explained in the model, as presently operationalized. Particularly on the church-related college campus there appears to be other factors which affect students' decisions to persist or drop out.

The financial burden of obtaining an education in a private college is much greater than it is in state-supported schools, and it is known that many students withdraw for financial reasons. Yet other students continue their

studies and accumulate much greater indebtedness than do some academically-able dropouts. How this relates to academic and social integration and the subsequent institutional and goal commitments remains to be studied.

Further, the degree to which a student and his family are committed to the benefits of obtaining a Christian education also affects retention or attrition decisions. At what point does financial difficulty, or lack of either (or both) academic and social integration overcome this commitment and bring about attrition?

The finding that Tinto's model has some relevance in the church-related college provides a framework from which to base further study regarding dropouts at these schools. For this reason the results of this study should be of interest to educators, administrators, and researchers in church-related colleges and universities. Those planning multi-institutional studies of retention and attrition should be interested in this demonstration of the potential applicability of Tinto's model to the large group of church-related institutions that should be included in these wider studies.

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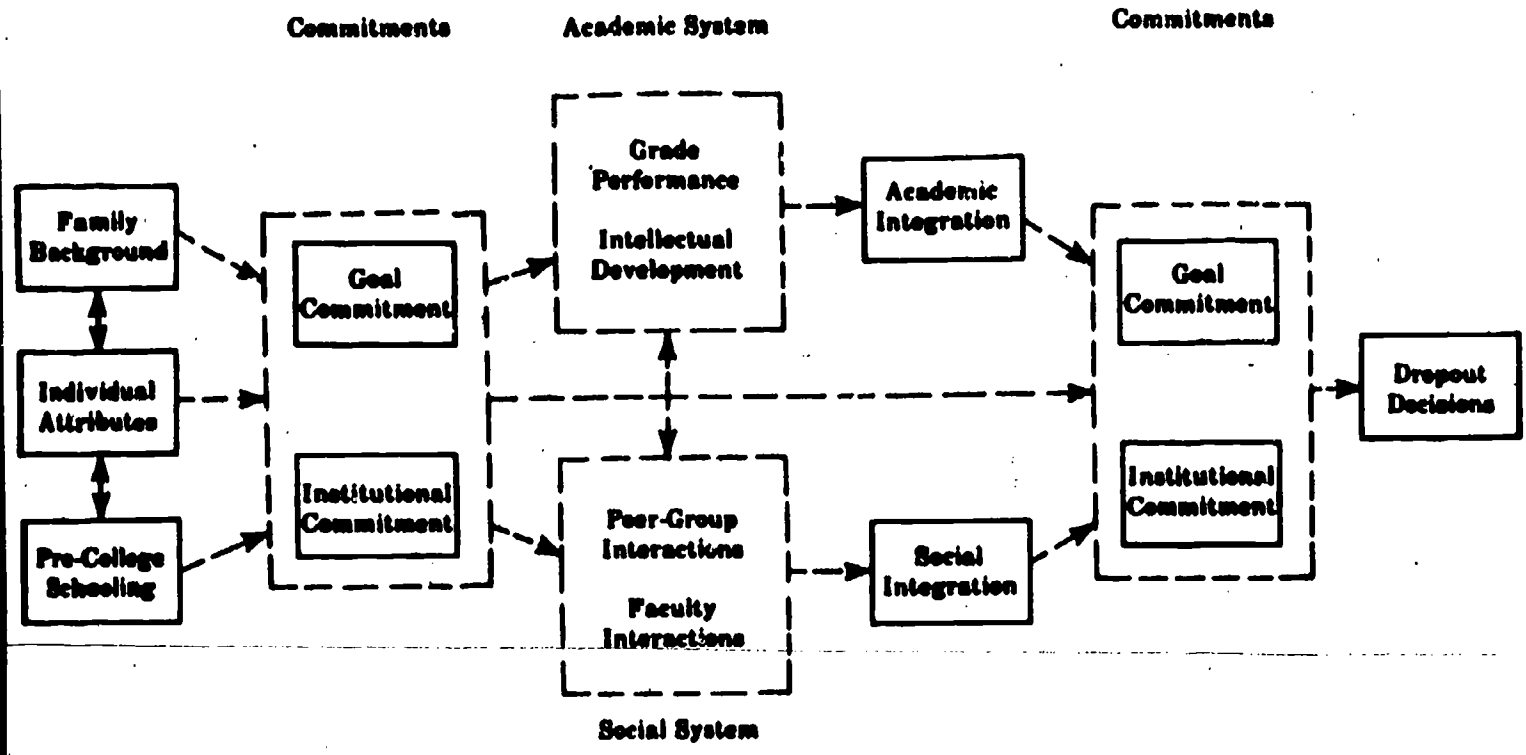

Figure 1. A conceptual schema for dropout from college (Tinto, 1975, p. 95).

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TABLE 1

DISCRIMINANT ANALYSIS SUMMARIES

Step/Variable Set	Overall (n = 763)			Males (n = 402)			Females (n = 361)			Institution 1 (n = 244)			Institution 2 (n = 130)		
	R^2_c	R^2_c increase	% correct classification[a]	R^2_c	R^2_c increase	% correct classification	R^2_c	R^2_c increase	% correct classification	R^2_c	R^2_c increase	% correct classification	R^2_c	R^2_c increase	% correct classification
1. Background Characteristics[b]	.032	.032	61.2	.089	.089*	66.0	.032	.032	61.3	.038	.038	58.6	.059	.059	59.2
2. Precollege Institutional and Goal Commitment I	.042	.010	64.2	.118	.030	68.5	.032	.001	61.3	.049	.011	59.8	.064	.005	63.1
3. Academic and Social Integration	.064	.023*	66.3	.158	.039*	67.9	.056	.023	64.2	.071	.022	66.8	.095	.031	66.2
4. Institutional and Goal Commitment II	.086	.021*	65.8	.171	.013	71.0	.077	.022	65.1	.095	.024*	66.0	.141	.046*	63.8
5. Intention	.237	.151**	78.6	.300	.129**	79.0	.225	.148**	79.7	.255	.161**	77.0	.263	.122**	81.5

[a] Percent overall correct classification with prior probabilities = .50

[b] Family background, individual attributes and pre-college schooling.

* $p < .05$ ** $p < .001$

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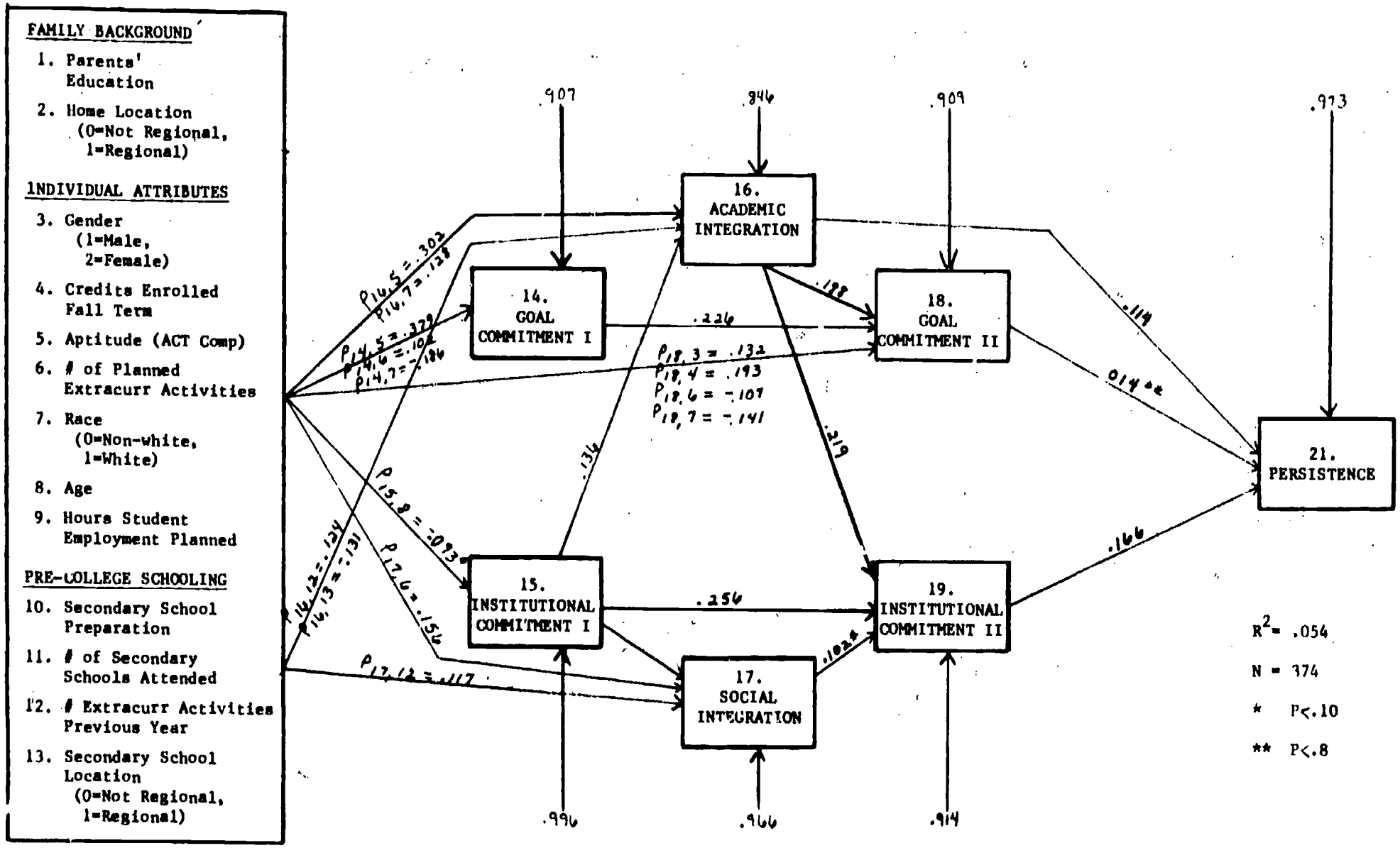

Figure 2. Reduced Path Model - Total

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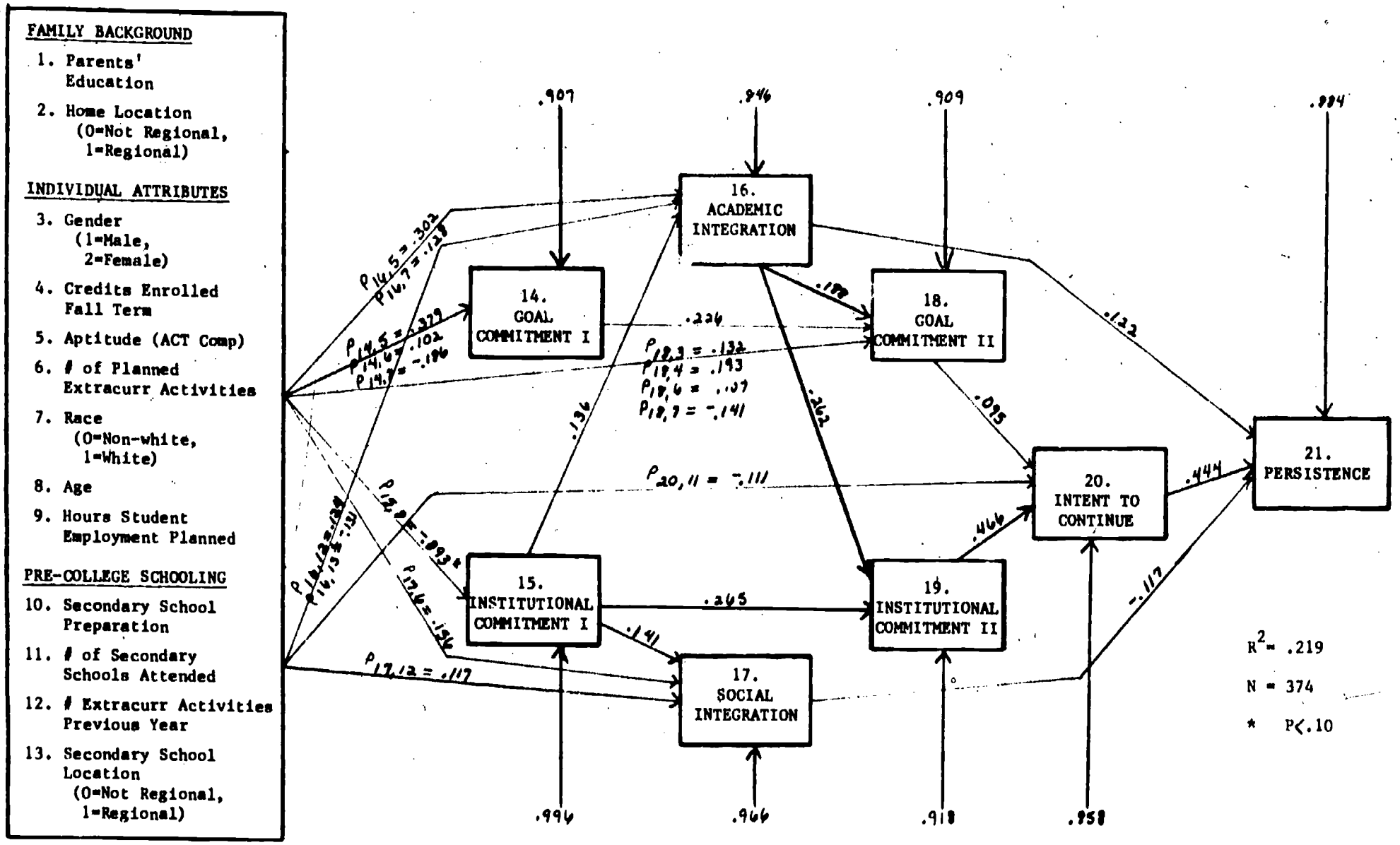

Figure 3. Reduced Path Model with Intent - Total

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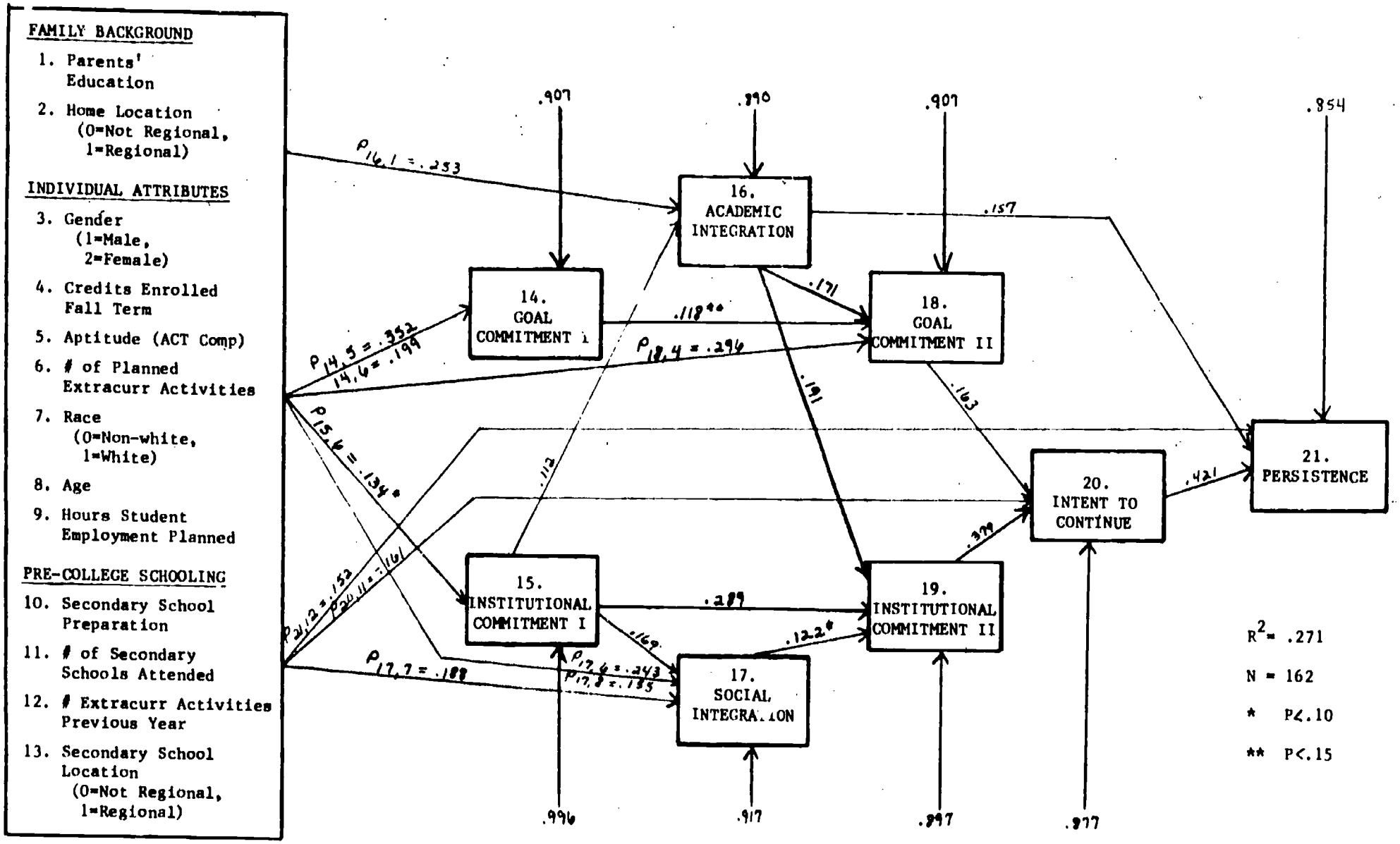

Figure 4. Reduced Path Model with Intent - Male

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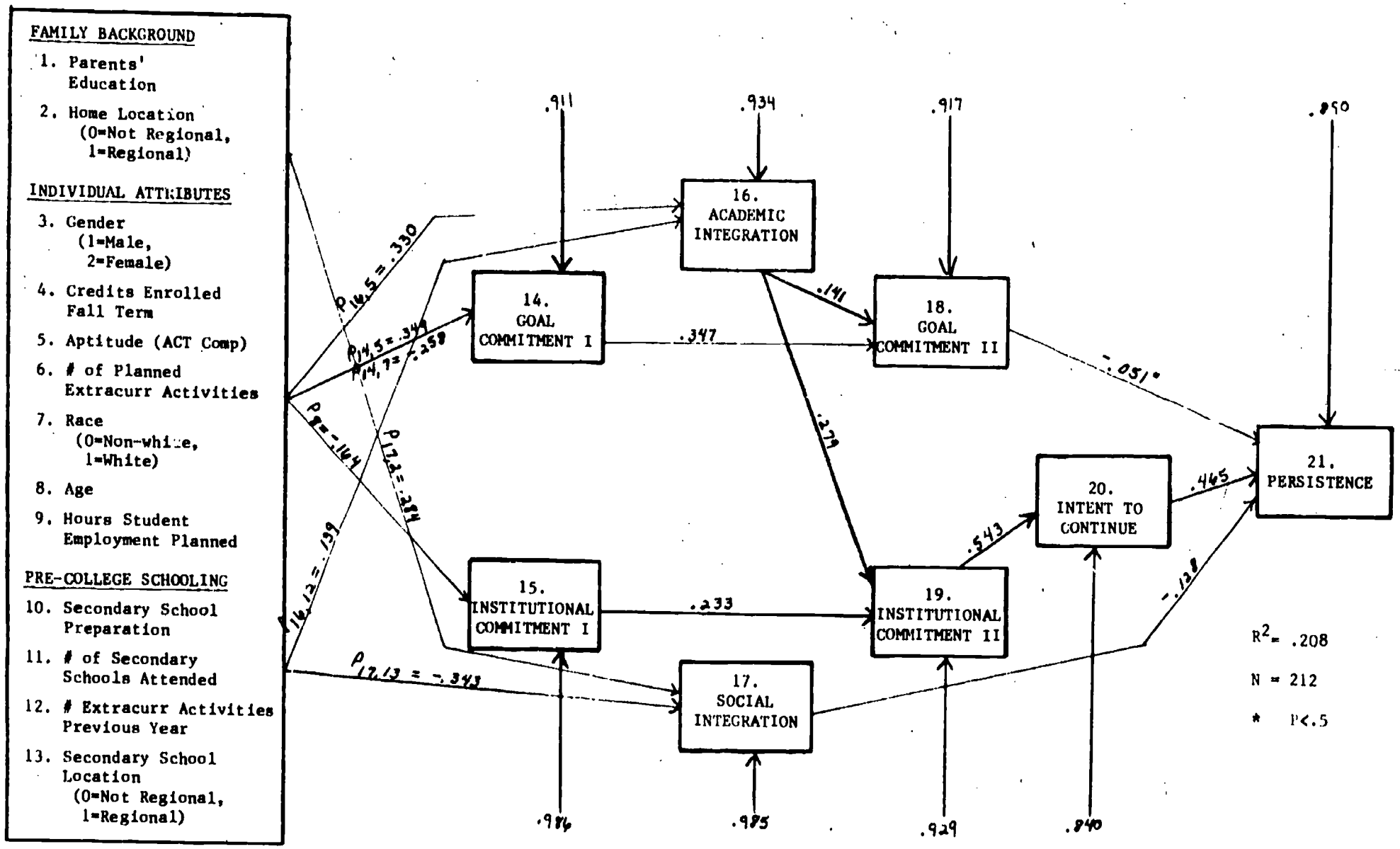

Figure 5. Reduced Path Model with Intent - Female

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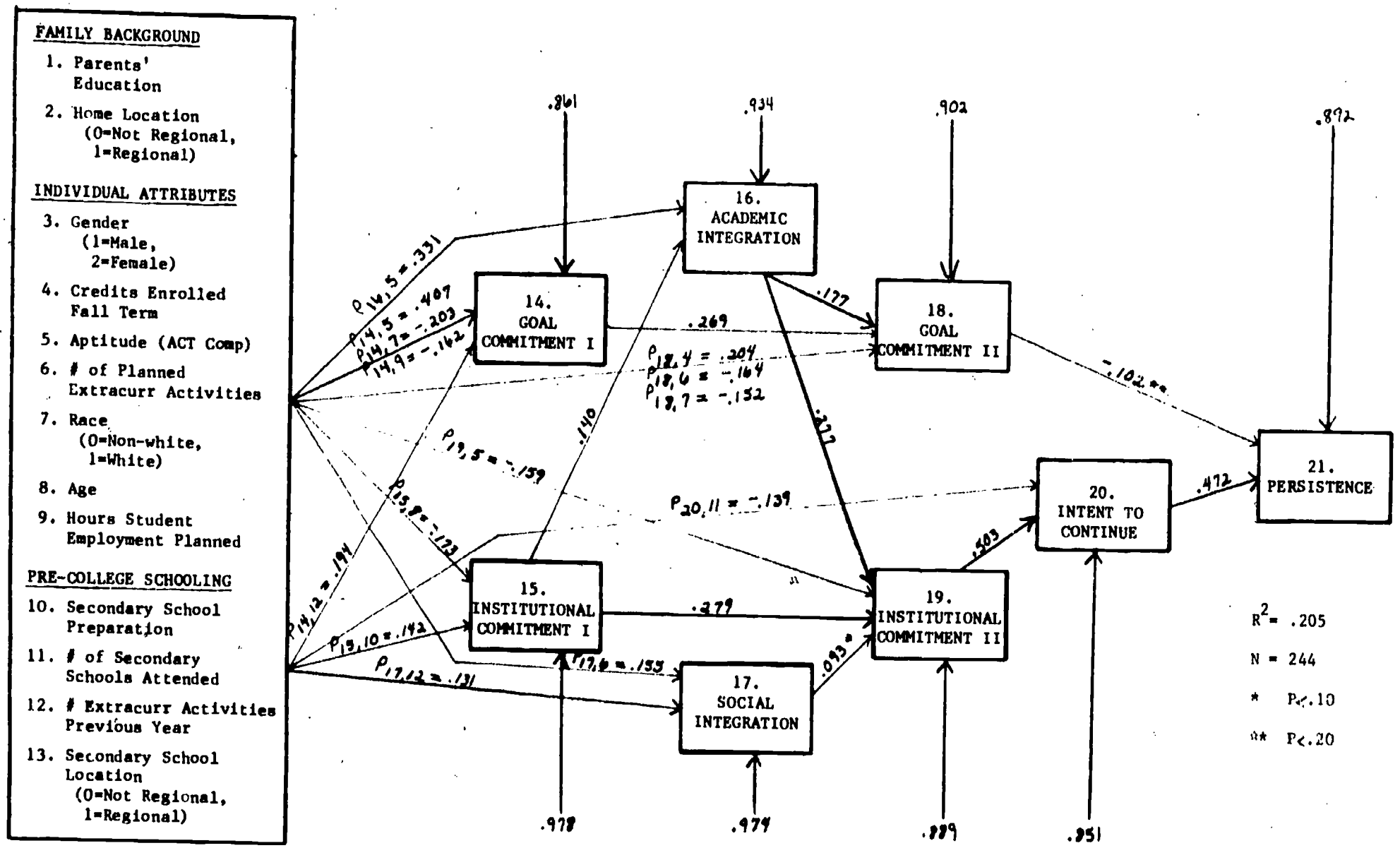

Figure 6. Reduced Path Model with Intent - Institution I

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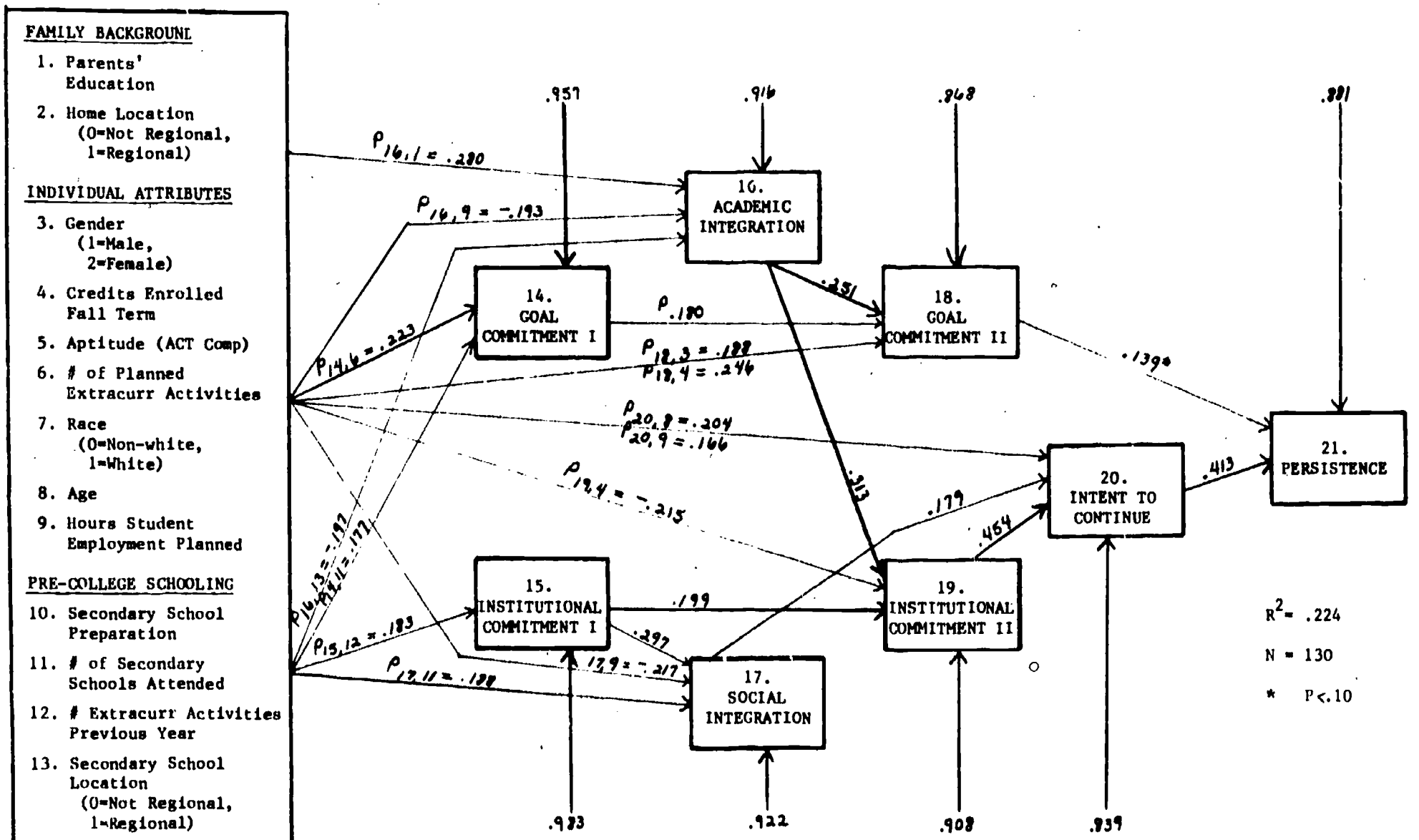

Figure 7. Reduced Path Model with Intent - Institution II

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