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Pre-college profiles of first year students: A typology

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Abstract

Students can be classified into various types according to their general characteristics and traits. Typologies of students are useful to provide a better understanding of students' behavior to assist an institution in the development of programs to maximize students' experiences and achievements. This study used a typological schema to differentiate 315 freshmen at the time of entry into the American Degree Transfer Program (ADP). Data were collected over three semesters using the Cooperative Institutional Research Freshmen Survey (CIRP), developed by the University of California, on students during their first day of the orientation week. Data reduction was done by exploratory factor analysis and K-means cluster analysis was used to obtain categorical typology of students. We identified seven distinctive and meaningful students' types, namely Leaders, Status Strivers, Scholars, Undecided, Uncommitted, Artists and Social Activists. The Uncommitted and Undecided represented the largest subgroups of freshmen standing at 28% and 25% respectively. Uncommitted students scored negatively on all variables pertaining to career success, self-confidence, social concern, academic matters and artistic abilities. Undecided students reported their choice of the ADP was largely influenced by their parents, school teachers and school counselors. The findings of this study can be leveraged to academic interventions and special guidance to specific at-risk subgroups so as to produce positive outcomes at the exit point. It can also inform institutional marketing to focus on those people who play a significant role in a student's choice of a university.

Keywords: Freshmen; Student typology; Cluster analysis

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1. Introduction

The classification of university students is a topic of emerging interest among educational researchers in an effort to understand their behavior. One way of classifying cohorts of college students is the typological approach (Clark and Trow, 1966; Astin, 1993; Kuh, Hu, and Vesper, 2000). An institutional typology clusters group of students that shares many similarities in behaviors and attitudes which distinguishes them in meaningful ways from other groups in the campus. Hence student clusters are also known as student subcultures on campus as they represent social groups of students who shared collective identity (Hu, Katherine and Kuh, 2011).

Typological framework are frequently used to assess college impact and student outcomes (Kuh, 1990; Kuh, Hu, and Vesper, 2000). With this knowledge faculty and other staffs can better understand and predict how various groups of students may take advantage of learning opportunities or behave when encountering or experiencing different aspects of college life, inside and outside the classroom.

Our study seeks to extend knowledge of typology to students in the American Degree Transfer Program in a Malaysian private institution (ADP). To examine student characteristics at ADP, and to provide comparison with those in US institutions, we use the CIRP survey questionnaire to survey students' perceptions on values, attitudes and expectations at college entry. in general. Four questions are addressed: First, what is the distribution of the student types /subcultures in our program? Second, what antecedent factors or defining traits affect these student classifications? Thirdly, how are the students' typology interrelated to some of their demographic variables? Fourthly, how are the student types related to their academic achievements at the entry and exit points, and to retention?

2. Literature Review

Over the years a few empirical typologies of college students have been developed. One of the most cited typology model is proposed by Clark and Trow (1966). This model is based on students' orientation towards college in two dimensions, "involvement with ideas" and "identification with the institution". Four student subcultures are described: Vocational show little attachment to college. The number credits enrolled in each semester vary according to what they can afford in time and money. Their main reason for attending college is to be able to get a better job. They are resistant to intellectual demands beyond what is needed to pass the course. The Academics work hard, get the best grades and they are attached to institutions that support their intellectual values and opportunities to learn. The Collegiate type is very involved with college activities and sports. They show strong loyalty and attachment to their institutions, but they only work as much as to be able to pass the course. Nonconformists demonstrate a detachment from the college they attend and a general hostility to college administration. They are deeply concerned with ideas encountered in the classroom, and societal issues relating to art, literature and politics. The nonconformist students can be found in many small liberal arts colleges.

Following Clark and Trow's model, the more recent other typologies for US institutions are generated based on either students' experiences and involvement while in college, or by their precollege characteristics and expectations. Students' engagement patterns in college activities and self-reported gains are examined by Kuh, Hu and Vesper (2000) who identify 10 student types: Disengaged, Recreator, Socializer, Collegiate, Scientist, Individualist, Artist, Grind, Intellectuals, and Conventionals. Then Zhao, Gonyea and Kuh (2003) use a k-means cluster analysis to group students according to student-faculty interactions, experiences with diversity, academic effort and out-of-class experiences. Eight clusters resulted: Collegiate, Vocationals, Conventionals, Grinds, Academics, Maximisers, Disengaged and Unconventional. The Unconventional is a new group over represented by part-time students, reflecting the increasing trend of part-time enrollment in colleges in the United States.

The second approach that differentiated students by their characteristics at the time of entry into college is done annually in many institutions in the United States (US), using the Cooperative Institutional Research Program (CIRP) survey. Results from this survey are published annually in "The American Freshmen" which serve as a source of data on the demographics and attitudinal trends of incoming students in US Universities. A notable typological model developed from the CIRP survey is that by Astin (1993) who identifies seven types: Hedonists, Status Striver,

Academics, Leaders, Social Activist, Artist and Uncommitted. These groups are found to be quite similar to those described in other typologies suggesting the considerable stability of the major student types over time. Generally the Scholarly type reported a high intellectual self-esteem and high aspiration for academic success and advanced degree while Hedonists who love to party are the direct opposite. Status Strivers are committed to career and financial success, Social Activists are very much engaged with social activities, Leaders are confident and popular, Artists are good in art, music or theater, and the Uncommitted student anticipate disengagement in higher education.

Typology frameworks are now increasing adopted for research on the assessment of college impact and student outcomes. Studies have used Astin's typology as a measure of student growth, retention (Gilmartin & Sax, 2002), and performance (Atakpu, 1990). Variable opinions exist on whether it is what students do in college, or their pre-college characteristics that could have a greater bearing on positive college outcomes. Pascarella and Terenzini (1991) observe that students' behavior and actions in college are better predictors of desired college outcomes than their background information. For instance the Academics type is found to be more successful in college because they work hard on educationally purposeful endeavors and regularly interact with faculty, while the Disengaged group who are uninterested in all college activities also achieve the lowest Grade Point Average (GPA) (Hu and McCormick, 2011).

Others argue that we need to know the types of student we are receiving so that campus environment can be created or modified to 'fit' students' behavior which in turn can have several productive outcomes, both in terms of individual achievement and retention. The values and attitudes that a student brings with him can often shape his goal-setting aspirations and behavior while in campus. Luo and Drake (2005) build on Astin's model to link the student types with their self-reported gains and future plans. They find Success Strivers to have on average higher school grades than Artists and Uncommitted individuals, have wide ranging interests and aspire to strive for career success and social improvement. In comparison Hedonists who are characterized by their partying, drinking and smoking behavior on campus generally reported significantly lower intellectual capacity and lower levels of academic performance.

Thus, the relevance of student typologies if systematically updated with valid, reliable data, can continue to inform institutional policies and practices on the characteristics, attitudes, and behaviors that define who students are and how they benefit from college in different ways.

3. Method

3.1. Instrument

The Cooperative Institutional Research Program (CIRP) questionnaire covers a wide range of demographic characteristics including parental income and education, ethnicity, financial aid and secondary school achievement as well as students' perceptions on their educational and career plans, reasons for attending college, values, attitudes and beliefs on politics and social concerns, and self-concept. We selected and retyped 140 out of the 160 questions that are considered to be relevant to our program. These questions require students to rate their perceptions on a 5-point Likert scale (1=strongly disagree or not important at all to 5=strongly agree or extremely important). Some questions relating to demographic and background information were also changed or removed to reflect the Malaysian situation, e.g. SAT scores were changed to SPM or 'O'-levels scores. We retain the requirement in the original CIRP document to have students write their names on the questionnaire. This will enable us to track their cumulative Grade Point Average (CGPA) from the program office at the end of five semesters in ADP.

3.2. Participants

The participants are freshmen in summer 2010, fall 2010 and winter 2011 semesters. This covers the entire enrollment year in ADP which consists of the winter, summer and fall semesters. The questionnaire is distributed to the students on the first day of the orientation week and will be returned to the program office on the last day of the

orientation week. A total of 524 questionnaires are distributed and 315 are returned which showed a response rate of 60%.

Permission is obtained from the ADP program office in the administration of the questionnaires and participation in the study was voluntary. Participants are requested to return the questionnaires to the ADP office after their first week of their orientation. A short introduction on the first page inform students of their voluntary participation and the absolute confidentiality of their responses if they so participate.

3.3. Statistical Data Analysis

All data analysis is done with the Statistical Package for Social Science (SPSS, version 11.5) and MS Excel. We use two types of statistical procedures, (a) exploratory factor analysis technique and principal component analysis and (b) K-means clustering analysis.

3.3.1. Exploratory factor Analysis

An exploratory factor analysis (EFA) is done as a data reduction technique to group the 140 questions objectively. Principal component factors are extracted by the Promax rotation method and Kaiser Normalization with 25 iterations. An eigenvalue of 1.0 is used as a cut-off, and retaining only items loading at .5 or higher for a factor. Reliability of the samples is checked by Cronbach alpha for a value of at least .70. The scores for each distinct component factor derived from the EFA will be used for subsequent K-means cluster statistical analysis provided the Kaiser-Meyer Olkin (KMO) measure of sampling adequacy exceeds 0.60, and the significance at level of 0.05 of the Bartlett's Test of correlation between variables.

3.3.2. K-means Cluster Analysis

Only factors that show Cronbach alpha of at least 0.70 are selected. Each of the factor scores is standardized with mean of zero and standard deviation of one. K-means cluster analysis is based on the factor scores across entire cases. The analysis involves deciding on a set number of clusters to extract. The variables are moved around between clusters (sub-sets) so as to make variables within a cluster as similar as possible and variables between clusters as different as possible (Everitt *et al*, 2011). We tried 3-8 cluster solutions in light of the number of student types reported in the literature we reviewed in an attempt to obtain a set of clusters that were mutually exclusive and exhaustive. Statistically significance and stability of each cluster is derived from the cluster centers of the factor scores.

Demographic characteristics are calculated for means and percentages. Since the number of subjects for SPM and 'O' levels are variable among the students, we adjusted the results by coding the grades, similar to that used in ADP, and calculate the mean CGPA (See Table 3).

4. Results

4.1. Students Clusters

Exploratory factor analysis retained 51 items which are grouped into eight factors. We labeled these factors as self-confidence, social concerns, influence on choice of college, political interest, career success, hedonism, academic success, and artistic ability, based on the respective descriptive items in each factor. These labels are similar to those used by Astin (1993) and Luo & Drake (2005), except for influence on college choice. All the factors generated a Cronbach alpha value exceeding 0.70, except for hedonism (Cronbach α <0.5). The hedonism factor which consists of four items relating to beer and liquor consumption and abortion is dropped from the K-means cluster analysis. Seven student clusters are finally adopted as being mutually exclusive with regards to the cluster centers of the factor scores, the statistical significance, stability and their conceptual usefulness (Fig. 1). We labeled these student types as a) Status Strivers, b) Scholars, c) Leaders, d) Uncommitted, e) Undecided, f) Artists g) Social Activists. Except for the Undecided individuals, these labels take the same name as the student types

identified by Astin (1993), since several of the respective defining traits in our typology are similar to those in Astin's. Hedonists are absent from our typology, while the Undecided individuals are a new group present only in our study.
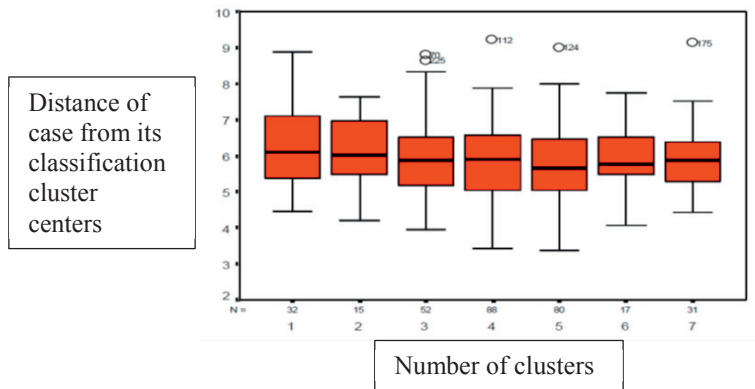

Fig.1. Final seven clusters from k-means cluster analysis

4.2. Defining traits

The defining characteristics of the seven student types are displayed in Table 1. Status strivers reported high aspirations for career status such as getting a good job, having more money and attending high ranking universities. They strive for academic success, and showed high ratings in self-esteem and interests in political issues. Their choice of enrollment at ADP is mainly influenced by others.

Scholars typically reported high self-ratings of academic drive and self-confidence. Besides the declaration of artistic abilities, they rate concerns for social issues and political matters as important too. But they are not as concerned about career status and are less influenced by other people to attend college.

Leaders reported high confidence in their leadership ability, general popularity, public speaking abilities and having their viewpoints challenged. Their academic drive, social concerns and political interests showed lower ratings than those reported by the Status Strivers and Scholars. Leaders are also less bothered about career success and the least likely to be influenced by other people to attend college.

The Uncommitted individuals are defined by negative scores in all the seven traits. Ratings by the Undecided individuals are nearly similar to the Uncommitted in most of the traits, except for a small positive rating in career success.

Artists are distinctly characterized by their self-assessment of artistic ability and self-confidence, but are not so interested in social issue and career success.

Social Activists rate social and political concerns as very important. These include values, beliefs and participation in community services, volunteer work, religion, environmental protection and involvement, discussion and keeping up to date with political affairs respectively.

Table 1. Students types and the standardized scores of final cluster centers

Factors	Status Strivers	Scholars	Leaders	Uncommitted	Undecided	Artists	Social Activists
Self-confidence	0.688	1.254	0.386	-0.572	-0.256	0.654	-0.041
Social concern	0.375	0.994	0.174	-0.492	-0.112	-0.068	0.550
College choice	1.134	-0.460	-0.550	-0.361	0.463	-0.118	-0.048
Political interest	0.537	1.125	0.126	-0.568	-0.209	0.267	0.694

Career success	0.804	0.274	-0.058	-0.378	0.144	-0.963	0.361
Academic drive	0.619	1.150	0.431	-0.525	-0.203	0.404	-0.124
Artistic ability	0.399	0.811	-0.009	-0.439	0.044	0.787	-0.087

- Self-confidence (Cronbach α=0.8021) consists of 6 items relating to openness to have own views challenged, leadership ability, popularity, public speaking ability, social self-confidence and self-esteem.
- Social concern (Cronbach α=0.8026) consists of 8 items relating to values, beliefs and participation in community services, volunteer work, religion and environmental protection.
- College choice (Cronbach α=0.8565) consists of 9 items relating to factors (parents, relatives, school and college counselors) that have influenced their enrollment in ADP at Taylor's university.
- Political interest (Cronbach α=0.8068) consists of 7 items relating to involvement, discussion and keeping up to date with political affairs.
- Career success (Cronbach α=0.8146) consists of 7 items relating to interest in career related status and success.
- Academic achievement (Cronbach α=0.7668) consists of 6 items relating to the drive to achieve and intellectual confidence.
- Artistic ability (Cronbach α=0.7215) consists of 4 items relating to ability and intention to become accomplished in playing a musical instrument, performing arts or creating works of art.

4.3. Demographic characteristics of student types

Table 2 shows several student demographics by student types. The highest proportions of students at ADP are Uncommitted (28%) and Undecided (25%) individuals. Scholars (5%) and Artists (5%) comprised the minority types. Gender distribution is almost equal for all types, except for Scholars and Social Activists who are represented by more males.

Compared to the other types, Status Strivers make up the largest proportion of international students, those who have attended private schools and who plan to live in the campus hostel. Artists are another group with a high proportion of students who have attended private schools. The other groups are predominantly Malaysian who have studied in the national school and plan to live with family, relatives or rented accommodation elsewhere.

Being a private institution, students generally are from middle and upper middle income family and their parents are well educated. All student types are relatively homogeneous in having both parents living together and believing in a religion. There is no apparent preponderance of a particular major to any specific student type, although a slightly higher proportion of Scholars prefer the Social Sciences while slightly more Status Strivers intended to study business. The majors offered by ADP include social sciences, business, engineering, and applied science and all of them are well represented except for the applied science major. A large number of students aspire to pursue Masters and PhD degrees.

Table 2. Demographic Characteristics by student types

		Status strivers	Scholars	Leaders	Un-commited	Un-decided	Artists	Social activist
Frequency/ Percentage		32 (10%)	15 (5%)	52 (17%)	88 (28%)	80 (25%)	17 (5%)	31 (10%)
Gender	male	53%	60%	42%	52%	48%	59%	71%
	female	47%	40%	58%	48%	53%	41%	29%
Nationality	Malaysian	59%	93%	83%	85%	90%	65%	84%
	International	41%	7%	17%	15%	10%	35%	16%
School	Sekolah Kebangsaan	44%	80%	60%	55%	69%	53%	65%
	Chinese Private School	6%	0%	2%	9%	4%	0%	10%

	Private School	41%	13%	35%	33%	18%	47%	26%
	Mara Science College	3%	0%	4%	2%	4%	0%	0%
	Home School	3%	7%	0%	1%	3%	0%	0%
	Others	3%	0%	0%	0%	4%	0%	0%
Plan to live	My family or relatives	28%	47%	48%	52%	54%	65%	55%
	Rented place	25%	33%	21%	25%	21%	18%	19%
	Campus hostel	47%	20%	31%	23%	25%	18%	26%
Parents	Living together	84%	80%	90%	91%	93%	88%	94%
	Separated / living apart	13%	13%	8%	8%	8%	12%	6%
	One or both deceased?	3%	7%	2%	1%	0%	0%	0%
Religion	Buddhism	19%	20%	23%	47%	43%	18%	23%
	Hinduism	6%	13%	6%	7%	6%	0%	6%
	Islam	38%	13%	23%	18%	29%	6%	35%
	Other	3%	7%	42%	0%	0%	12%	3%
	Christianity	22%	33%	6%	19%	18%	41%	26%
	None	13%	13%	0%	9%	5%	24%	6%
Parents' income p.a.	RM 50,000 to RM 99,999	47%	53%	42%	56%	56%	35%	32%
	RM 100,000 to RM 149,999	22%	27%	29%	26%	26%	29%	35%
	RM 150,000 to RM 199,999	16%	13%	13%	9%	8%	18%	16%
	≥ RM 200,000	16%	7%	15%	9%	10%	18%	16%
	Average (RM)	125,000	111,666	125,961	110,795	110, 625	133,832	133,064
Father's Education	Secondary school	9%	33%	23%	25%	41%	18%	26%
	Vocational certificate	3%	0%	4%	6%	4%	0%	6%
	Diploma	19%	13%	13%	10%	14%	0%	13%
	Bachelor degree	41%	13%	40%	31%	29%	47%	35%
	Master degree	25%	40%	12%	23%	11%	35%	13%
	PhD degree	3%	0%	8%	3%	1%	0%	6%
	Unknown	0%	0%	0%	2%	0%	0%	0%
Mother's Education	Secondary school	19%	40%	33%	44%	58%	18%	55%
	Vocational certificate	6%	0%	2%	3%	4%	0%	0%
	Diploma	25%	20%	13%	16%	10%	24%	13%
	Bachelor degree	28%	40%	42%	24%	23%	24%	16%
	Master degree	22%	0%	6%	8%	5%	35%	13%
	PhD degree	0%	0%	4%	2%	1%	0%	3%
	Unknown	0%	0%	0%	2%	0%	0%	0%
Declared Majors	Social Science	9%	47%	21%	18%	14%	35%	10%
	Business	34%	27%	31%	38%	35%	18%	32%
	Engineering	25%	13%	29%	25%	20%	24%	23%

	Applied Science	3%	13%	15%	10%	13%	18%	3%
	Undeclared	28%	0%	4%	9%	19%	6%	32%
Personal aspiration	Basic degree	19%	0%	29%	30%	31%	24%	26%
	Masters	41%	53%	40%	44%	55%	71%	48%
	PhD	41%	47%	31%	26%	14%	6%	26%

4.4. Academic achievements by student types

The academic achievements of each student type at secondary school and at ADP are shown in Table 3. Among ADP retentions, entry and exit CGPA between each student type is not significantly different ($p>0.05$), but there is a significant correlation ($R=0.71$, $p<0.05$) between the entry CGPA and exit CGPA among them. Attrition rate ranges from 18% to 40%. Most of the students did not complete ADP due to poor academic achievement (CGPA<2.00), except for Scholars and Social Activists. Entry CGPA for retention is also significantly different ($p>0.05$) from entry CGPA for attrition among Scholars, Uncommitted and Social Activists.

Table 3. Academic Achievements by Student Types

		Status strivers	Scholars	Leaders	Uncommitted	Undecided	Artists	Social Activists
Secondary School grades	Number of A	59%	78%	74%	59%	67%	55%	57%
	Number of B	21%	18%	17%	22%	19%	25%	21%
	Numbers of C & below	20%	4%	9%	19%	14%	21%	22%
ADP Retention[1]		75%	60%	79%	81%	82%	76%	68%
	Entry CGPA[3,4]	3.37 ±0.63	3.85[5] ±0.17	3.58 ±0.47	3.49[5] ±0.50	3.49 ±0.58	3.31 ±0.58	3.39[5] ±0.57
	Exit CGPA[3,4]	3.05 ±0.50	3.60 ±0.29	3.25 ±0.48	3.04 ±0.58	3.00 ±0.57	2.92 ±0.49	3.02 ±0.59
ADP Attrition[2]		25%	40%	21%	19%	18%	24%	32%
	Entry CGPA	2.96 ±0.53	3.52[5] ±0.23	3.67 ±0.50	2.62[5] ±0.62	3.40 ±0.48	2.60 ±0.57	2.63[5] ±0.73
	Exit CGPA	1.87 ±0.94	2.65 ±0.66	1.88 ±1.08	1.73 ±0.83	1.93 ±0.78	1.56 ±0.00	2.10 ±0.95

- ADP retention refers to those students who completed the five semesters and successfully transfer to US universities.
- ADP attrition refers to those who did not complete the program due to academic dismissal or voluntary withdrawal.
- Entry CGPA is determined by giving a score to each grade achieved in the secondary results (A = 4.00, B = 3.00, C=2.00, D = 1.00) and the weighted average was calculated. Entry CGPA and Exit CGPA are not significantly different across all the student types ($p>0.05$).
- Entry CGPA for retention is significantly different from entry CGPA for attrition ($p>0.05$).
- Pearson correlation analysis between entry and exit CGPA for retention for each student type, $r=0.71$ ($p<0.05$)

4.5. Influence on choice of ADP

Because influence on the choice of ADP is one of the defining traits in our typology, we decided to look more closely at this factor. The most important people to influence students' choice of ADP at Taylor's university are their parents, school and college counselors (Table 4) for all student types. The location of the college is also an important factor as many students prefer to enroll in colleges near to their house. Other less dominant reasons are affordability and the inability to obtain financial aid from other institutions of their first choice.

Table 4. Self ratings for influence on choosing ADP by Student types

	Status Strivers (32)	Scholars (15)	Leaders (52)	Uncommitted (88)	Undecided (80)	Artists (17)	Social Activists (31)	TOTAL
My Parents Want Me to Come Here	19 (59.4%)	1 (6.7%)	2 (3.8%)	10 (11.4%)	22 (27.5%)	3 (17.7%)	5 (16.1%)	20%
My Relatives Want Me to Come	11 (34.4%)	0	0	1 (1.1%)	4 (5%)	0	2 (6.5%)	6%
My Friends Want Me to Come	8 (25%)	0	1 (1.9%)	1 (1.1%)	5 (6.3%)	0	1 (3.2%)	5%
My Teacher Advised Me	17 (53.1%)	0	0	3 (3.4%)	6 (7.5%)	1 (5.9%)	1 (3.2%)	9%
My High School Counselor Advise Me	18 (56.3%)	0	0	0	13 (16.3%)	0	0	10%
Private College Counselor Advise Me	15 (46.9%)	0	4 (7.7%)	1 (1.1%)	11 (13.8%)	0	1 (3.2%)	10%
I Want to Live Near Home	11 (34.4%)	2 (13.3%)	5 (7.7%)	2 (2.3%)	15 (18.8%)	0	2 (6.5%)	12%
I was not Offered Financial Aid by First Choice	8 (25%)	1 (6.7%)	1 (1.9%)	1 (1.1%)	5 (6.3%)	0	2 (6.5%)	6%
I Could Not Afford First Choice	12 (37.5%)	2 (13.3%)	1 (1.9%)	2 (2.3%)	10 (12.5%)	1 (5.9%)	4 (12.9%)	10%
TOTAL								87%*

*The frequencies are the total counts of self-ratings for 4 = agree and 5=strongly agree only.

5. Discussion

Although this study is exploratory in nature and the sample is limited to enrollment in one year, it does offer some valuable insights into students' attitudes and expectations of college. Several interesting patterns emerged from our findings. First, student subcultures at ADP are almost similar to Astin's types (1993) described for US campuses, except for Hedonists. This suggests that student subcultures in the American education system share similar traits with ours despite regional differences. The absence of Hedonists in our typology is probably a unique product of Malaysian cultural values. Although each ethnic culture in Malaysia has its own set of values, they all share a common core value with regards to morality and religion. Malaysian children have been taught since young to believe that indulgence in alcohol, drugs and sensual pleasures is immoral and prohibited by their religion. Thus our college students are less likely to have or to report a hedonistic mindset.

The second pattern that emerged is the strong influence of parents and teachers on the choice of program /institution as a defining trait in our typology, but not in others. This reflects the Asian parents' involvement and vested interest in all aspects of their children's education, and the Confucian value of respect for teachers. Bodycott and Lai (2012) similarly found that for the majority of Chinese students who pursue higher education, the eventual decision on choice of country, program and/or university was made by the parents. Comparatively, the Western counterparts are more likely to cite that getting a better job, making more money or obtaining a general education are important reasons for attending college (Luo & Drake, 2005).

A third pattern is the over representation by Uncommitted and Undecided students in ADP and their high rates (>80%) of retention relative to other student groups. Observation from other studies (Luo and Drake, 2005; Astin,

1993) showed that such groups of students are normally disengaged, had lower SAT scores upon entry, and more likely to drop-out. The Uncommitted and Undecided at ADP similarly reported low or negative scores on all the defining factors relating to academic drive, career success, self-confidence, social concern, political interests, upon entry, but no difference in   entry CGPA (at least 3.00) with the other groups. We believe the Undecided and Uncommitted students at ADP are young adults who are as yet uncertain of their career pathways when they enter ADP, and who might also dislike the other examination oriented programs they had been accustomed to in school. At ADP these students are continuously assessed in multiple ways, besides written examinations. They are also exposed to broad multidisciplinary approaches by enrolling for a range of general education courses including liberal arts, the applied sciences, mathematics, the social sciences, music and theater. It is this broad exposure that might help these groups of students to become clearer about their goals and to persist for academic success. This argument is consistent with John Holland's theory (1966) which describes how individuals interact with their environments and how individual and environmental characteristics result in vocational choices and adjustment.

An interesting pattern can also be found among the Scholars who are least represented in our typology but who showed the highest attrition rate (40%), while other studies described Scholars as academically focused and most likely to graduate with higher grades than other Astin types (Gilmartin and Sax, 2002; Atakpu, 1990). Scholars in ADP do share similar defining traits and those who persist attained the highest CGPA (3.85) too. But it is to be noted that the exit CGPA for Scholar dropouts (2.65) is above 2.00, the minimum standard for acceptable academic progress. In light of these findings, it is likely that Scholars are leaving college based on other factors. Although it is beyond the scope of this study to determine the cause of attrition, it is possible that Scholars drop-out or transfer to other institutions that they deem to be more intellectually challenging or to pursue other majors especially medical and health-related ones (Thurman, 2013) which are not offered at ADP. Tinto (1993) attributed such behavior to academic incongruence whereby a student's academic competence, efforts and needs do not match the demands of the academic system they are in.

Finally our findings showed that although student groups are not differentiated by their entry and exit CGPA, students in any group who enter the program with lower academic qualifications also exit with lower CGPA, and are also more likely to drop out.

6. Conclusions and Recommendations

Student subcultures at ADP share quite similar traits to Astin's types (1993) described for US campuses, but for the absence of Hedonists and the presence of Undecided. The Uncommitted and Undecided students dominate the student subcultures who found an academic niche at ADP for goal identification and to successfully complete the program. However this study did not examine students' educational experiences or capture how they have been transformed in other ways by the end of their studies. Future research need to focus on what they do while in college, and what they gain from the college experience.

However this study contributes to some extent on the understanding of how entry grades relate to student retention and academic achievement in this program. For instance students with lower entry grades were found to end up with lower academic outcomes at ADP. Hence if the program wishes to improve academic achievement then student admissions need to be more selective. Additionally if a different student profile is desired, then the college environment has to be modified to attract other types of students (e.g. Scholars and Artists).

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