

ATTRITION IN ODL: A MACRO PERSPECTIVE FOR REDUCING NON-COMPLETION RATE AMONG LLL LEARNERS

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Abstract

Increasing student attrition at high rates in Open and Distance Learning (ODL) institutions is a phenomenon which has not been fully understood. Generally, much literature has been produced to explore student attrition in the conventional higher education settings, which provides guidance as to possible factors that may influence attrition. Many factors affecting student attrition have been identified; however, these results have only benefited the traditional institution of higher education that promotes full-time learning, but have not helped the attrition rates at ODL institutions that supports formal learning via lifelong learning (LLL). Today, in the advent of the Internet and its digital technologies, focus on LLL, online education and adult learning is more evident. ODL institutions in Malaysia have now reached the mainstream of education via lifelong learning through formal learning. Therefore, a major benefit of this research is to provide conclusive results, which are to be used to work towards successfully reducing student attrition at ODL institutions, and, in turn, increase their completion rates.

Introduction

As Malaysia transforms into an information and technology-driven and knowledge-based society to attain fully developed nation status by the year 2020, a highly-skilled and well-educated workforce is deemed critical in achieving this. The Malaysian education system has been reformed by the setting up of the Malaysian Qualification Agency (MQA) and the Malaysian Qualification Framework (MQF) to bring tertiary education in Malaysia to a higher standard and to ensure constant development of a highly educated, highly skilled professional workforce to transform Malaysia from the production-based economy to the knowledge-based economy. Fortunately for Malaysians, accessibility to higher education programmes through public and private universities and colleges offering full-time and part-time higher education are being provided so that Malaysians, both young and old, have the opportunity to acquire new skills and higher qualifications and LLL that will enable them to contribute and adapt towards global changes. This is clearly indicated in the Tenth Malaysia Plan, which is testimony to the Malaysian's government's commitment towards enhancing the capabilities of Malaysians through the human capital transformation agenda to support the growth of the knowledge based economy (10th Malaysia Plan 2011-2015). Other documents supporting the implementation of knowledge-driven academic programmes include the Enculturation Lifelong Learning for Malaysia blueprint 2011-2012, the Fourth Outline Perspective Plan or OPP4 (2011-2020), the Third Industrial Master Plan (2006 to 2015), Multimedia Super Corridor (MSC) Project and Malaysia's Vision 2020.

To ensure continuous manpower employability and marketability, Malaysian Higher Education Institutions (HEIs) are encouraged to improve the quality of higher education and expand the educational base to include adult learners, in line with technological advancements and industry demands. Due to this encouragement via the support from the Malaysia Ministry of Education, many adult learners participate to add value to their competencies. One such avenue that has the most number of adult learners is Open University Malaysia (OUM), which is offering degrees and diplomas right up to PhDs to adult students via open and distance learning (ODL). ODL appeals to Malaysians because of the weekend day-time classes, flexible lecture hours, low programme fee, convenient location of learning centres, wide choice of university learning centres, the proximity to home and familiar surrounding of people and neighbourhood (Santhi, 2009). In addition, courses offered by OUM are carefully designed for adult learners participating in part-time education via ODL with LLL notion in mind. With the knowledge that ODL provides an avenue to learn theories in a classroom environment as well as share practices and experiences gained at the workplace, the enrolment in OUM has been overwhelming. In just 11 years, the number of courses in OUM rose from 5 programmes with 753 students, to 80 programmes offered, with about 155,000 cumulative student enrolment (OUM Statistics, September 2014). Because the current economy requires a better-educated worker, and due to the increase in the use of technology in the workplace, adult learners are now seeking higher education (Burns, 2001). However, sadly, the attrition rate among these learners is also high. Nearly 30% of new learners enrolled in their first semester in OUM do not re-register for their second semester and nearly 10% do not re-register for their third semester. Research has indicated that ODL learners have a higher attrition rate than their counterparts in campus-based institutions (Brindley, 1985; Parker, 1995).

Learning via ODL has its own sets of problems: workload at the workplace, domestic and marital responsibilities at the family front, inability to cope with lessons and assignments, lack of learning skills, lack of confidence and motivation, cost and affordability, student support services, inaccessibility to online learning, time mismanagement, etc.

Objective of the Study

The objective of this paper is to identify factors responsible for LLL learners' attrition studying in various programmes in an ODL environment.

Research Questions

To achieve the study objective, the following research question is formulated:

- What are the factors (both controllable and uncontrollable factors) leading to learners' attrition in various programmes in an ODL setting?

Significance of the Study

The main investigation carried out here is to identify factors responsible for undergraduate and postgraduate learner attrition in each programme. A major benefit and importance of this research is the prospective possibilities in which student attrition rate at the undergraduate and postgraduate level can be reduced, in turn, increase the rate of retention and completion.

Literature Review

As universities reform to face local and global changes in human resource, the concept of ODL is becoming more popular (Santhi et al, 2005). ODL refers to education using learning resources, rather than attending face-to-face classroom sessions at a physical location, is the central feature of the learning experience (Commonwealth of Learning, 2003). This requires the learner to be responsible for his/her own learning and self-development, which in turn suggests a highly learner-centred philosophy.

The nature of ODL institutions allows learners to pace their studies based on their preferences, as such in this respect, the attrition figure may not essentially reflect the performance and quality of the institution (Latifah et al, 2009). Attrition was predominantly investigated from the institutional point of view as opposed to emphasis on learners' interest, thus it may not justly reveal the real motives of learners when they decide to discontinue their studies. Latifah et al (2009) notes that the institutions normally embark on reaching to their learners who had stepped aside from the system and encourage them to continue their studies but the institutions' enthusiasm is sometimes not matched by learners' enthusiasm.

A learner, who lacks enthusiasm or is not self-instructed, will find himself easily deterred from continuing his education. Hubble (2000), Rezabeck (1999), Nahdi (1999), Hansen (1999), Galusha (1998), Murphy & Terry (1998), Quigley (1998), Belzer (1998), Miller (1997), Scanlan & Darkenwald (1984), and others, have developed almost similar typologies or classification to identify what factors deter learners from continuing to participate in adult education. The deterrents classifications are situational, dispositional and institutional.

Situational and institutional are structural barriers, whereby the learners will find them beyond their control, as these barriers exist externally. Situational barriers includes lack of day care centres for the learners' children, lack of transportation, lack of family support for learning, health problems, financial or legal difficulties, and personal or family problems, which may not be under their control (Belzer, 1998). Institutional barriers are matters such as scheduling of classes, locations of programmes, and institutional red tape that may discourage participation or retention. Institutional barrier had the widespread support of researchers through their use of this categorization (Rezabeck, 1999; Garland, 1993; Brindley, 1988; Brookfield, 1986; Charner & Frazer, 1986; Darkenwald & Valentine, 1985; Scanlan & Darkenwald, 1984; and Thiel, 1984).

Dispositional deterrents describe barriers that are within the learner, such as fear of failure, unwillingness to try something new (Cross, 1981), lack of self confidence (Rezabeck, 1999), self-esteem and prior educational experience (Hubble, 2000). Quigley (1997) notes that dispositional barriers are the most significant for determining retention in any adult learning programmes. He adds that early identification of at-risk learners in a programme, with appropriate interventions, can significantly reduce drop-out rates and increase retention. "At-risk" learners here means, those learners who probably have the highest chance of dropping out in the first few critical weeks (Latifah & Mansor, 2007) by virtue of the dispositional barriers than others (Quigley & Kuhne, 1997). In Darkenwald & Merriam's (1982) study, the fourth deterrent was used: informational deterrent, arising from lack of information from faculty among learners regarding educational opportunities in the faculty and difficulty to accessing information from faculty staff.

In this study, informational deterrent is excluded since all information is uploaded in myVLE (My Virtual Learning Environment), the university's Learning Management System, and updated from time to time, as well as easily accessible via internet by all learners.

Thus, there are many deterrents to successful ODL – some might be new and many have plagued ODL since it was first conceived. Much literature too has been produced to explore student attrition in the higher education settings, which provides guidance as to possible factors that may influence attrition. Many factors have been considered to affect student attrition, and some of them are interrelated. Indeed, researchers view student departure as a process of interaction between individual students' characteristics, the academic environment and the social environment. The key factors identified are as listed below:

- Previous academic achievement
- First preference
- Quality of teaching
- Basis of entry
- Financial ability
- Family support
- Language background
- Mode of study

These aspects, as well as other references are taken into consideration in the construction and execution of the questionnaire.

Methodology

This study applies an exploratory survey which integrates Scanlan & Darkenwald's (1984) Deterrents to Participation Scale (DPS) as the basis for this research framework. These established scales are applicable in a university setting, and its test-retest reliability and construct validity has been previously certified in countless other studies.

This research utilizes the quantitative research methodology involving a sample of working adults who had quit or have not re-registered in both undergraduate and postgraduate programmes in OUM. To obtain the responses from the respondents, the questionnaires were sent out to all the identified learners who quit from OUM programmes since January 2006 Semester as well as learners who did not re-register since January 2009 Semester up till January 2011 Semester. The online questionnaire was posted in Survey Monkey (<https://www.surveymonkey.com/s/PGMWNTN>) in 2011 for the respondents to answer online. Emails were sent out to all names in list. Respondents were given 3-4 weeks to complete the online questionnaire. In the survey, respondents were requested to rate their responses to several statements based on the Likert-type scale of 1 to 5; with 1 (Strongly Disagree), 2 (Disagree), 3 (Neutral), 4 (Agree) and 5 (Strongly Agree). Higher scores indicate greater needs and greater deterrents. A total of 8251 learners who had quit or did not re-register (dormant) were requested to respond to the survey via an email sent to them on 17 September 2012. Reminder emails were sent again by batches on 9 October, 11 October, 21 October, 24 October and 31 October 2012 to trigger a better response rate among the population. The Centre for Student Management (CSM) assisted by contacting the learners who were yet to respond to the email reminder. A total of 340 (4.12%) responded. A total of 263 (2.92%) questionnaires were completed while 84 (1.03%) were partially filled. A total of 275 (3.33%) emails bounced back to sender.

It was suspected that many from the population would not be accessing their OUM emails as well as their alternative emails since quitting or not re-registering in OUM. A total of 263 valid responses (3.19% of return rate) were used. The survey sample covered all states in Malaysia.

Data Analysis

Profile of Respondents

This section begins with a demographic overview of the respondents. The total number of respondents was 340, however, only 263 actually completed the entire survey, which is 77.4%. Based on the finding it reveals that the highest qualification of the respondents before they entered into a programme at OUM is a diploma at 37.7%, consisting of 126 respondents. This is followed by respondents with SPM (equivalent to O-Level) or equivalent with 116 respondents, making up 34.7% of respondents. The first and second make up a large portion of the total respondents. This is followed by STPM (equivalent to A-Level) or equivalent at 40 (12%), 22 respondents with a Bachelors degree (6.6%), 10 respondents with a Masters degree (3%), and interestingly, 4 respondents already with a Doctorate (1.2%). The remainder of the respondents, making up 4.8% (16) categorized themselves in various qualifications, such as, certificate, foundation in science, executive diploma, matriculation, and polytechnic certificate.

Based on the research finding the current programme respondents were enrolled in at OUM, majority are from Bachelors programme at 77.2% (258), followed by Diploma at 15.6% (52), Masters at 4.8% (16), and PhD at 2.4% (8). Majority of the respondents (63) were registered in the Bachelor of Management, programme, followed by Bachelor of Business Administration, and Bachelor of IT. Others include various Bachelors in Multimedia Communication, Bachelor in Nursing Science, TESL, and Bachelors in Education.

The top three faculties in terms of number of respondents were FBM at 27.3% (91), followed by FITMC at 25.4% (85), and FEL at 20.4% (68). The other respondents registered under FST at 13.2% (44), CGS at 7.5% (25), FASS at 3.6% (12) and the least was from the former SONAHS, now FONAHS, at 2.7% (9).

Majority of the respondents were from Shah Alam, followed by Bangi, Petaling Jaya, Kota Kinabalu, Johore Bahru, Ipoh, Kuching, Melaka. The result also indicated a fairly even distribution of respondents from these Learning Centres.

The response indicated that 72.9% (221) were self-financed, with include the facility provided by KWSP. As for the others, 15.5% (47) took out a loan, while 5.9% (18) were on full scholarship, and 5.6% (17) had partial financial assistance of various forms.

The respondents' current status, 47.2% (143) are considered dormant, while 27% (84) have officially quit, and 25.1% (76) are currently considered inactive.

Interestingly, the finding shows that 62% (188) of the respondents plan to return to the programme, while 19.5% (59) were uncertain, and 18.5% (56) will not be returning to the programme.

Although a large percentage of the respondents plan to return, the result indicates that 36.8% (111) of them plan to switch into another programme, which a larger percentage at 41.1% (124) still plans to continue in the same programme. 22.2% (67) were uncertain.

Nearly all the respondents were Malaysians (99.7%) and that 64.4% are male, while the remaining 35.6% are female. This was followed by an indication that 70% (212) of the respondents were Malay, while 9.9% (30) were Chinese and 9.2% (28) were Indian. The 'Others' category, making up 10.9% (33) of the respondents, which included Kadazan, Bidayuh, Dusun and Iban.

Of these respondents, the study indicated 66.7% (202) were married, while 30.4% (92) were single and 3% (9) were divorced.

The respondents' occupation, as indicated by the research finding, showed that 26.6% (80) were non-executive/support staff, followed by executive that make up 18.6% (56), 11.6% (35) are of the technical background, and 10.6% (32) were teachers. The remaining respondents are self-employed at 7.3% (22), employed at managerial level at 5.3% (16), professionals at 4.7% (14), and 2.7% are unemployed. The 'Others' category included police, clerk, IT analyst, web developer, fire officer and safety and health officer.

Majority of the respondents are from the private sector at 51.5% (150) and the government sector at 36.8% (107). Importantly, the result shows that a large majority of the responses hold full-time and permanent positions at 88% (256), while 6.9% (20) are on contract, 3.6% (11) hold part-time positions, two retirees, and a freelancer.

In terms of English proficiency, the result reveals that 39.8% (119) consider themselves average in oral communications, while 35.5% (106) consider themselves fairly proficient, 10% (30) consider themselves to be very proficient. As for written proficiency, the responses seem to correlate with the oral communication proficiency as the percentages are almost the same.

As for proficiency in Bahasa Malaysia, majority at 51.5% (154) and 48.2% (144) indicated that they were very proficient in oral and written proficiency, respectively.

Using Factor Analysis to Identify Factors Affecting the Rate of Attrition

This part of the paper uses the factor analysis to identify important factors affecting the rate of attrition among OUM learners. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. A "high" value of alpha is often used (along with substantive arguments and possibly other statistical measures) as evidence that the items measure an underlying (or latent) construct. Before proceeding into the analysis, we check the reliability of the instrument use. From table 1, the Cronbach's Alpha is 0.961 for the total 60 items. This indicates that the instrument is highly reliable and therefore can be use further analysis.

Table 1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.961	.963	60

The **Kaiser-Meyer-Olkin Measure of Sampling Adequacy** measure varies between 0 and 1, and values closer to 1 are better. In this study, the KMO has a value of 0.908, which is much higher than the suggested minimum value of 0.6. Hence, the sample is more than adequate to conduct the factor analysis. Result of the **Bartlett's Test of Sphericity**, which tests the null hypothesis that the correlation matrix is an identity matrix is highly significant; hence, we reject this null hypothesis. Taken together, both these tests have provided the minimum standard for us to proceed with the factor analysis (or a principal components analysis).

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.908
Bartlett's Test of Sphericity	Approx. Chi-Square	12277.619
	Df	1770
	Sig.	.000

Factor Extraction

Appendix 1 lists the eigenvalues associated with linear component (factor or variable) before extraction, after extraction and after rotation. The eigenvalues associated with each factor represent the variance explained by that particular linear component. The first component, for instance, has an eigenvalue of 20.20; and this factor alone explains 33.667% of the total variance. It should be clear that the first few factor; explain relatively large amounts of variance (especially factor 1); whereas subsequent factors explain only small amounts of the total variance.

Before extraction, there were 60 linear components within the data set. In this analysis, we chose to extract all factors with eigenvalues greater than 1. Hence after extraction, we obtained 13 factors. The interpretability of the extracted factors was further enhanced through rotation. Rotation optimizes the factor structure, where the relative importance of the 13 factors was equalized. In this case we use the varimax method of rotation. Results of the rotation are shown in the last three columns of Appendix 1. Notice that after extraction and rotation, Factor 1 explained 12.025% of the total variance, Factor 2 10.584%, and so on until Factor 13. Cumulatively, the 13 factors extracted explained 72.414% of the total variance.

Discussion

The factor loadings are represented in the rotated component matrix (Appendix 2). These factor loadings are important in the interpretation of the factors. This is done by looking at the content of questions that load onto the same factor and identifying common themes. Assuming that the analysis represents some real world construct, then the common themes among highly loading questions can help us identify what the construct might be. The 13 factors extracted are discussed below.

FACTOR 1: Institutional Barriers – Management of Assessment Practices

From Appendix 2 and as reproduced in Table 3a, the questions that load highly on Factor 1 were mainly in the category called institutional barriers which are related to the management of assessment practices. The major issue appears to be the constant change in the assessment formats, both assignment and final examination. The learners also highlighted the delays in releasing examination results as well as posting of examination timetable.

The difficulty of submitting assignment was also highlighted. Three questions about quality of course materials, which happen to be in the institutional barriers category, were also loaded onto this factor.

Table 3a: Management of Assessment Practices

IB-A1 Constant change in the examination format
IB-A2 Constant change in the assignment format
IB-A3 Constant change in examination timetable
IB-A4 The delay in releasing the semester's examination results
IB-A5 The delay in posting the examination timetable
IB-A6 The examination timetable is not suitable
IB-A7 Difficulty in submitting assignment via MyVLE
IB-CM8 The course materials contain a lot of mistakes
IB-CM9 The course materials were often not available
IB-CM10 The course materials were not of quality

FACTOR 2: Institutional Barriers – Support Services

The second factor extracted from the analysis also originated from the institutional barriers category (Table 3b). This factor points out that the quality of support services did contribute significantly to the attrition/inactive rate among learners. Poor administrative and academic support, lack of information and slow responses to complaints were some of the reasons that lead to attrition or inactivity.

Table 3b: Support Services

IB-S1 Poor administrative support
IB-S2 Lack of information from Learning Centre
IB-S3 No or slow response given for the enquiries/complaints
IB-S4 Lack of information from Main Campus (eg. Finance or Examination Unit)
IB-S5 Poor academic support
IB-S6 The institutional procedures are difficult to follow
IB-S7 No flexibility given in fees payment
IB-CM8 The course materials were difficult to understand

FACTOR 3: Dispositional Barriers – Learner's Capacity to Study

As shown in Table 3c, the respondents, however, did admit that they also contributed to incidence of attrition or inactivity. This is categorised as dispositional barriers. This factor concerns with the inability of the learners to cope with their studies. They felt they could not keep up with their studies, particularly, when they compare their capability with those of their fellow learners. The lack of self-confidence and the fear of failure tend to lead them to drop out of the programme.

Table 3c: Learner’s Capacity to Study

DB1 Cannot keep-up with other learners
DB2 Lack of self-confidence
DB3 Fear of failure
DB4 Lack of support from fellow learners
DB5 Poor time management
DB6 Uncomfortable with ICT technology
DB7 Programme is irrelevant to my career
DB8 Unable to cope with the number of courses taken
DB9 No support from family members

FACTOR 4: Institutional Barriers – Tutoring and Facilitating

The fourth factor that contributed to the attrition/inactivity points back to the institutional barriers. The questions that load highly on this factor relate to the quality of persons involved directly in delivering the services to the learners (Table 3d). Not only the respondents felt that the tutors/facilitators lacked the proper knowledge, they also believed that the tutor/facilitators were not well-prepared, responded very slowly, not approachable and inexperienced.

Table 3d: Delivery Practices – Tutoring and Facilitating

IB-D1 The tutor/facilitator was not knowledgeable
IB-D2 The tutor/facilitator was not well prepared
IB-D3 The tutor/facilitator’s responsiveness was very slow
IB-D4 The tutor/facilitator was not approachable
IB-D5 The tutor/facilitator was inexperienced
IB-P6 The programme was not of quality

FACTOR 5: Institutional Barriers – Facilities

As can be gleaned from Table 3e, another institutional barrier that was extracted from the Factor Analysis centred on the questions regarding facilities. Availability of computing facilities, poor conditions of the library at learning centres, poor conditions of computer laboratory and classrooms were cited as reasons for attrition or inactivity.

Table 3e: Facilities

IB-F1 Not enough computers available at the LC
IB-F2 The poor condition of the library at the Learning Centre(LC)
IB-F3 The poor condition of the computer labs
IB-F4 The poor condition of the classrooms
IB-F5 Not enough materials available in the library at the LC

FACTOR 6: Institutional Barriers – Programmes’ Intensity

Table 3f shows yet another institutional barrier that contributed to attrition and inactivity. The learners who were dormant or inactive felt that the programmes were too tough for them; perhaps tougher than what they expected before enrolling into the programmes. They felt that the assignments were too demanding and too time-consuming.

Table 3f: Programmes’ Intensity

IB-P1 The programme was too demanding in terms of assignment
IB-P2 The programme was too demanding in terms of time
DB3 Unable to cope with the assignment(s)
IB-P4 The programme was too tough/difficult

FACTOR 7: Situational Barriers – Learning Environment and Time Management

Questions reflecting situational barriers were highly loaded to Factor 7 (Table 3g). The respondent believed that the environment at the office and at home was not conducive for learning. As expected, work requirement and family commitment consumed most of their time.

Table 3g: Learning Environment and Time Management

SB1 Poor learning environment at office
SB2 Poor learning environment at home
SB3 Lack of time due to work requirement
SB4 Lack of time due to family commitment

Looking back at Appendix 1, the seven factors above explained 54.336% of the total variance, whereas the next six factors as listed below, explained 18.078%. The factors that may explain why learners decided to remain dormant or inactive include health problem, transportation and location of learning centres, financial problems, timetabling of tutorial and seminar, and accessibility of the learning management system.

FACTOR 8: Dispositional Barriers – Health Problem

DB1 Unexpected health problems
SB2 Health problems
DB3 Unexpected personal problems

FACTOR 9: Situational Barriers – Transportation and Location

SB1 Transport problems
SB1 Inconvenient location of the Learning Centre
IB-P3 The programme was not yet accredited

FACTOR 10: Situational Barriers – Financial Problem

SB1 Financial constraints
IB-P2 The programme fees were too expensive

FACTOR 11: Dispositional Barriers – Tight Schedule

DB1 Too many activities in my schedule
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FACTOR 12: Institutional Barriers – Timetable

IB-T/S1 The tutorial/seminar timetable was not suitable

IB-T/S2 Constant change in tutorial/seminar timetable

IB-T/S3 The delay in posting the tutorial/seminar timetable

FACTOR 13: Institutional Barriers – myVLE

IB-F1 The myLMS/ myVLE was difficult to access
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IB-F2 The myLMS/ myVLE was less user-friendly

In the above analysis, we retained the factors which have eigenvalues of more than one. Thirteen factors were retained. Another rule of thumb regarding the number of factors to be retained is to look at the scree plot, as shown in Appendix 3. Using the scree plot, we may retain all factors before the breaking point or elbow. This curve is a bit difficult to interpret because the curve begins to tail off after five factors, but there is another drop after six factors before a plateau is reached. We could justify retaining either four or six factors.

Conclusion

Concluding the discussion on this section, we found that the major factors leading to learners’ attrition or inactivity were mainly due to institutional barriers; these include the institution’s management of assessment practices, the quality of support services and the ability of the tutors and facilitators to deliver effectively. On the part of the learners, the main factor was their capacity to cope with the programmes’ requirement.

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Appendix 1: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.200	33.667	33.667	20.200	33.667	33.667	7.215	12.025	12.025
2	4.983	8.305	41.973	4.983	8.305	41.973	6.351	10.584	22.610
3	2.635	4.391	46.364	2.635	4.391	46.364	4.762	7.936	30.546
4	2.256	3.759	50.123	2.256	3.759	50.123	4.679	7.798	38.344
5	2.079	3.464	53.588	2.079	3.464	53.588	4.146	6.911	45.255
6	2.047	3.412	56.999	2.047	3.412	56.999	3.006	5.011	50.265
7	1.748	2.913	59.913	1.748	2.913	59.913	2.442	4.070	54.336
8	1.569	2.616	62.528	1.569	2.616	62.528	2.177	3.628	57.964
9	1.392	2.321	64.849	1.392	2.321	64.849	2.075	3.458	61.422
10	1.259	2.098	66.947	1.259	2.098	66.947	1.853	3.088	64.510
11	1.168	1.946	68.893	1.168	1.946	68.893	1.836	3.061	67.571
12	1.065	1.775	70.668	1.065	1.775	70.668	1.547	2.578	70.148
13	1.048	1.746	72.414	1.048	1.746	72.414	1.360	2.266	72.414

Appendix 2: Rotated Component Matrix

	Component												
	1	2	3	4	5	6	7	8	9	10	11	12	13
IB A1	.839												
IB A2	.822												
IB A3	.787												
IB A4	.733												
IB A5	.728												
IB A6	.716												
IB A7	.678												
IB CM8	.575												
IB CM9	.486												
IB CM10	.485												
IB S1		.825											
IB S2		.820											
IB S3		.789											
IB S4		.775											
IB S5		.762											
IB S6		.623											
IB S7		.503											
IB CM8		.451											
DB 1			.783										
DB 2			.765										
DB 3			.724										
DB 4			.710										
DB 5			.643										
DB 6			.619										
DB 7			.533										
DB 8			.489										
DB 9			.338										
IB D1				.817									
IB D2				.807									
IB D3				.762									
IB D4				.755									
IB D5				.726									
IB P6				.445									
IB F1					.819								
IB F2					.772								
IB F3					.756								
IB F4					.696								
IB F5					.674								
IB P1						.752							
IB P2						.704							
DB 3						.605							
IB P4						.545							
SB 1							.780						
SB 2							.768						
SB 3							.564						
SB 4							.500						
DB 1								.818					
SB 2								.796					
DB 3								.606					
SB 1									.728				
SB 2									.662				
IB P3									.557				
SB 1										.754			
IB P2										.610			
DB 1											.673		
IB T/S1												.564	
IB T/S2												.529	
IB T/S3												.484	
IB F1													.618
IB F2													.549

Appendix 3

