1-11-2010

Freshmen Who Plan to Transfer (Analysis)

Beth Hartsoch
Western Washington University

John M. Krieg
Western Washington University

WWU Office of Survey Research

Elizabeth Hartsoch and John Krieg

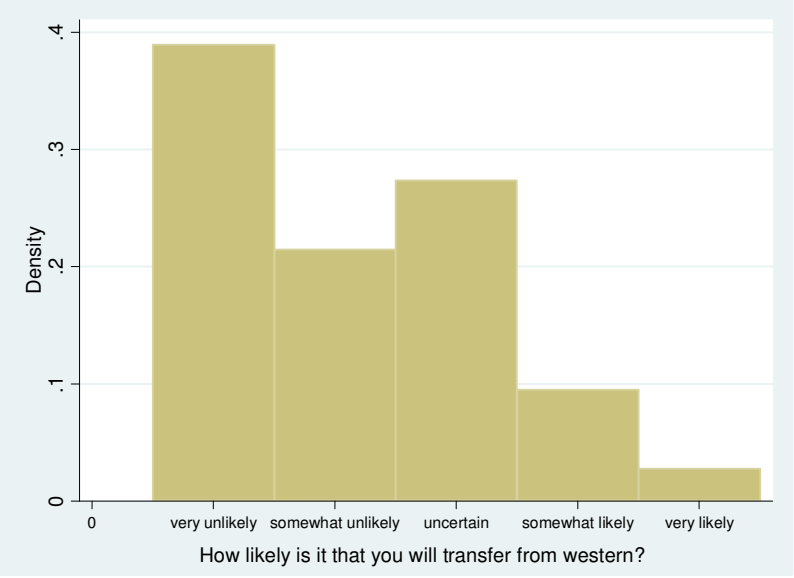
11 January 2010

Freshmen who Plan to Transfer

On the 2009 WELS baseline survey of incoming fall 2009 freshmen, thirteen percent indicate some likelihood of transferring prior to graduation. Western administrators are interested in the retention rate of these students, as well as demographic and educational history characteristics. The following is a brief exploratory analysis of these questions.

Q: What is the survey question regarding transfers?

A. All respondents to the 2009 survey where asked "How likely is it that you will transfer from Western to another college or university before you graduate?" Respondents were allowed to select from five responses: "very unlikely", "somewhat unlikely", "uncertain", "somewhat likely", and "very likely." 2357 responses were gathered (out of 2,696 fall, 2009 freshmen). The distribution of responses is:



Q: Are students who report that they are likely to transfer before graduation retained at a lower rate than students who report being unlikely to transfer?

A. Yes. A similar question to that asked on the 2009 survey was asked on the 2007 incoming freshmen survey. For students enrolling as freshmen in the fall of 2007, the response to this question statistically predicted enrollment in the winter of 2008 (second quarter), fall 2008 (second year) and fall 2009 (third year). One difference of the question in 2007 relative to that in 2009 is the 2007 included 7 responses (Extremely, Very, and somewhat of unlikely/likely and uncertain). Actual retention of students who responded with one type of unlikely, the uncertain, or one type of likely was 97%, 94%, and 93% in their

second quarter on campus, 87%, 85%, and 74% in their second year, and 79%, 74% and 65% in their third year.

	Likelihood of Transfer			
Enrolled	Unlikely	Uncertain	Likely	Total
N	1234	328	227	1789
Second Quarter (winter 2008)	97%	94%	93%	96%
Second Year (fall 2008)	87%	85%	74%	85%
Third Year (fall 2009)	79%	74%	65%	76%

From the 2007 survey, plotting retention by quarter and by response to the likelihood of transfer question (likelytransfer, where 1 is extremely unlikely to transfer and 7 is extremely likely to transfer), we see that response to this question is predictive of retention (Figure 1). Slightly above 50% of students claiming they were very likely to transfer remained on campus in their 7th quarter (Fall, 2009) while about 80% of students claiming they were extremely unlikely to transfer remained in their 7th quarter.

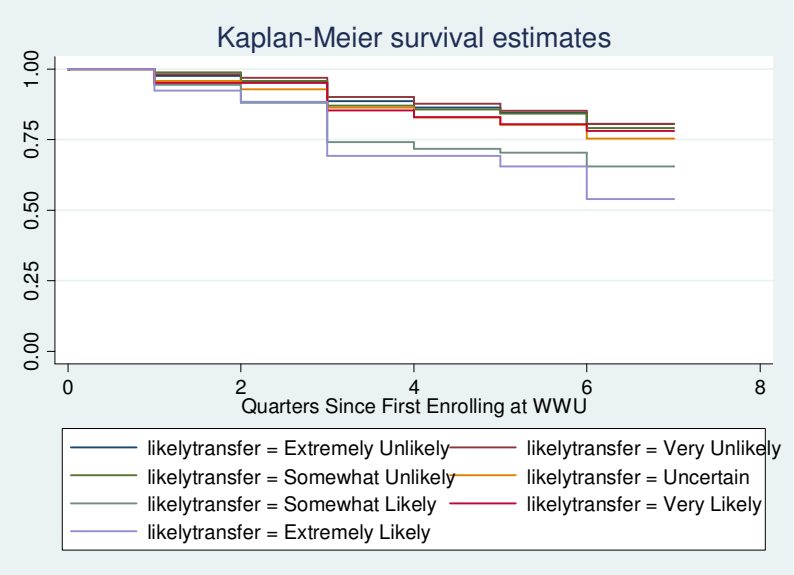


Figure 1. Survival function of 2007 freshmen who responded to the WELS question about likelihood of transfer before graduation. Peak enrollment data by quarter, where fall 2007 is quarter #1 through fall 2009 as quarter 7.

One may be concerned that a student's response to their likelihood of transferring is correlated with other observable factors which can more easily measure the likelihood of transferring. For instance, if students with low admissions indices (AI) are more likely to respond that they are likely to transfer, then observing AI would be sufficient to predict retention. A Cox Proportional Hazards model is a multivariate technique that allows one to control for exogenous factors that impact the probability of an event occurring (in our case, dropping out). Using the Cox model to control for demographic and educational observables at the time of admission produces the

following retention graph, and supports claim that the question about likelihood of transfer is predictive of actual transfer, especially transfer after the freshmen. A one-increment increase in response to the likelihood of transfer question (e.g. from "very unlikely=2" to "somewhat unlikely=3") predicts a 13% (t=3.66, p=.0000, see Appendix Table 6) increased risk of dropout after any given quarter holding observables including AI, ethnicity, age, hours transferred, first generation, resident status, and running start constant.

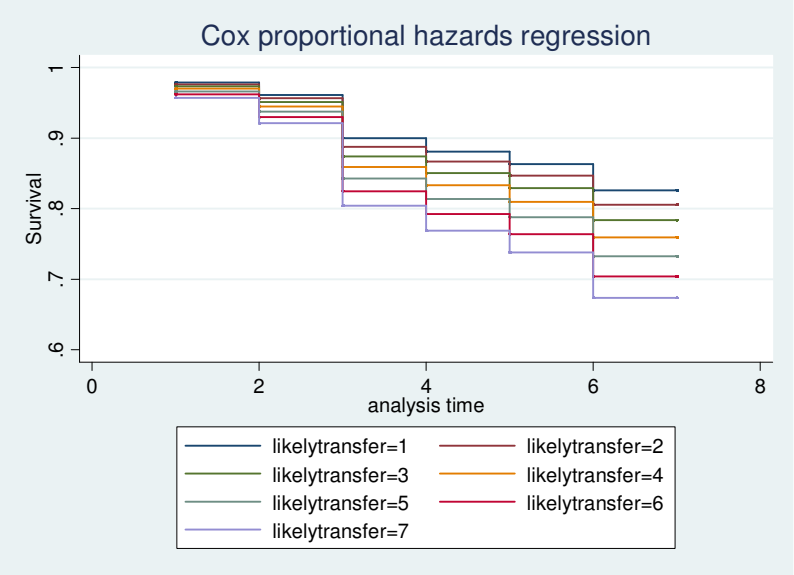


Figure 2. Cox proportional hazards model controlling for admission index, age, running start, hours transferred, sex, first generation, resident, and ethnicity. See table 12, appendix A for full model.

It should be noted that the above analysis uses only observables at the time of admission. In the presence of other variables observed after coming to campus (e.g. quarterly GPA), the survey question continues to be a strong predictor of retention

It should also be noted that this analysis ignores the stated major preference of students at the time of admission (currently unavailable in our data but obtainable if a full analysis is requested). One can imagine that undecided students are more likely to transfer and perhaps, more likely to claim they have a higher probability of transferring. Exploring this issue could help admissions choose who to accept with an eye to limiting student attrition.

Q: How do they compare to the rest of the cohort in things like financial aid, living on/off campus, first gen, initial major preference, AI score, gender, race, etc.

A:

		Likelihood of Transfer			
		Unlikely	Uncertain	Likely	Total
N		1229	325	226	1780
Ethnic code - general	Caucasian	80%	72%	70%	77%
Sex	Female	63%	54%	65%	62%
First Generation		33%	30%	35%	33%

Residency	Not WA	7%	13%	5%	8%
HRS_REGISTERED_200740		14.5	14.3	14.5	14.5
Age on 1 September 2007		18.5	18.6	18.6	18.5
ADMIT_INDEX		58.8	56.0	57.2	58.1
Sum of hours transferred to WWU		14.8	11.5	13.1	14.0
HSGPA		3.54	3.48	3.52	3.52
SAT_MATH		557	555	545	555
SAT_VERBAL		562	551	560	560

Major preference frequencies are included in table 10 in appendix A.

Q: Was Western the first choice of students who plan to transfer?

A: Not as often. More than one quarter of the 306 respondents who ranked Western as their second or third choice report being likely to transfer, as compared with only 10% of students ranking Western as their first choice.

Looking at it in the other direction, of students who report being likely to transfer, 71% list Western as their first choice, as compared with 91% of students who are unlikely to transfer.

Q: Why do these students plan to transfer?

The two most common reasons given for the transfer were interest in a major that Western doesn't have and that Western wasn't the student's first choice. Among the 201 students who did rank Western as their first choice but still indicate they are likely to transfer, reasons given include interest in a major not available at Western (41%), interest in another school (26%), desire to study abroad (12%), and desire to be closer to family (10%). See table 11 in appendix A.

Appendix A

Tables 1-3. Percent enrolled in second quarter, fall of second year, and fall of third year by response to likelihood of transfer question. Data from WELS Fall 2007 freshmen baseline. Recoded likelihood question from seven to three categories.

Likelihood of transfer (recoded from QFUTUREPLANS1) * Enrolled in second quarter Crosstabulation

			Enrolled in second quarter		Total
			Not enrolled	Enrolled	Not enrolled
Likelihood of transfer (recoded from QFUTUREPLANS1)	Unlikely (1-3)	Count	34	1200	1234
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	2.8%	97.2%	100.0%
	Uncertain (4)	Count	21	307	328
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	6.4%	93.6%	100.0%
	Likely (5-7)	Count	15	212	227
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	6.6%	93.4%	100.0%
Total		Count	70	1719	1789
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	3.9%	96.1%	100.0%

Likelihood of transfer (recoded from QFUTUREPLANS1) * Enrolled in second year Crosstabulation

			Enrolled in second year		Total
			Not enrolled	Enrolled	Not enrolled
Likelihood of transfer (recoded from QFUTUREPLANS1)	Unlikely (1-3)	Count	165	1069	1234
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	13.4%	86.6%	100.0%
	Uncertain (4)	Count	48	280	328
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	14.6%	85.4%	100.0%
	Likely (5-7)	Count	59	168	227
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	26.0%	74.0%	100.0%
Total		Count	272	1517	1789

		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	15.2%	84.8%	100.0%

Likelihood of transfer (recoded from QFUTUREPLANS1) * Enrolled in third year Crosstabulation

			Enrolled in third year		Total
			Not enrolled	Enrolled	Not enrolled
Likelihood of transfer (recoded from QFUTUREPLANS1)	Unlikely (1-3)	Count	261	973	1234
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	21.2%	78.8%	100.0%
	Uncertain (4)	Count	86	242	328
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	26.2%	73.8%	100.0%
	Likely (5-7)	Count	80	147	227
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	35.2%	64.8%	100.0%
Total		Count	427	1362	1789
		% within Likelihood of transfer (recoded from QFUTUREPLANS1)	23.9%	76.1%	100.0%

.

Table 4 . Frequency comparison by major interest at time of enrollment. 2007 freshmen.

MAJOR_DEPT_DESC * Likelihood of transfer (recoded from QFUTUREPLANS1) Crosstabulation

			Likelihood of transfer (recoded from QFUTUREPLANS1)			Total
			Unlikely (1-3)	Uncertain (4)	Likely (5-7)	Unlikely (1-3)
MAJOR_DEPT_DESC		Count	5	3	1	9
		% within MAJOR_DEPT_DESC	55.6%	33.3%	11.1%	100.0%
	Accounting	Count	29	4	2	35
		% within MAJOR_DEPT_DESC	82.9%	11.4%	5.7%	100.0%
	Anthropology	Count	14	3	2	19

	% within MAJOR_DEPT_DESC	73.7%	15.8%	10.5%	100.0%
Art	Count	56	20	8	84
	% within MAJOR_DEPT_DESC	66.7%	23.8%	9.5%	100.0%
Art History	Count	6	0	2	8
	% within MAJOR_DEPT_DESC	75.0%	.0%	25.0%	100.0%
Biology	Count	47	19	10	76
	% within MAJOR_DEPT_DESC	61.8%	25.0%	13.2%	100.0%
Chemistry	Count	66	25	27	118
	% within MAJOR_DEPT_DESC	55.9%	21.2%	22.9%	100.0%
College of Business & Econ	Count	22	3	4	29
	% within MAJOR_DEPT_DESC	75.9%	10.3%	13.8%	100.0%
Communication	Count	21	10	10	41
	% within MAJOR_DEPT_DESC	51.2%	24.4%	24.4%	100.0%
Communication Sci & Disorders	Count	2	2	1	5
	% within MAJOR_DEPT_DESC	40.0%	40.0%	20.0%	100.0%
Computer Science	Count	46	12	4	62
	% within MAJOR_DEPT_DESC	74.2%	19.4%	6.5%	100.0%
Dance Program	Count	4	0	1	5
	% within MAJOR_DEPT_DESC	80.0%	.0%	20.0%	100.0%
Decision Sciences	Count	3	0	0	3

	% within MAJOR_DEPT_DESC	100.0%	.0%	.0%	100.0%
East Asian Studies	Count	2	0	2	4
	% within MAJOR_DEPT_DESC	50.0%	.0%	50.0%	100.0%
Economics	Count	1	1	1	3
	% within MAJOR_DEPT_DESC	33.3%	33.3%	33.3%	100.0%
Elementary Education	Count	92	6	4	102
	% within MAJOR_DEPT_DESC	90.2%	5.9%	3.9%	100.0%
Engineering Technology	Count	49	26	13	88
	% within MAJOR_DEPT_DESC	55.7%	29.5%	14.8%	100.0%
English	Count	41	8	9	58
	% within MAJOR_DEPT_DESC	70.7%	13.8%	15.5%	100.0%
Environmental Studies	Count	59	8	4	71
	% within MAJOR_DEPT_DESC	83.1%	11.3%	5.6%	100.0%
Fairhaven College	Count	34	9	10	53
	% within MAJOR_DEPT_DESC	64.2%	17.0%	18.9%	100.0%
Finance, Mrkt & Decision Sci	Count	72	24	16	112
	% within MAJOR_DEPT_DESC	64.3%	21.4%	14.3%	100.0%
Geology	Count	3	1	1	5
	% within MAJOR_DEPT_DESC	60.0%	20.0%	20.0%	100.0%

Health Education	Count	5	2	3	10
	% within MAJOR_DEPT_DESC	50.0%	20.0%	30.0%	100.0%
History	Count	36	5	5	46
	% within MAJOR_DEPT_DESC	78.3%	10.9%	10.9%	100.0%
Human Srvcs and Rehabilitation	Count	3	0	0	3
	% within MAJOR_DEPT_DESC	100.0%	.0%	.0%	100.0%
Journalism	Count	38	6	3	47
	% within MAJOR_DEPT_DESC	80.9%	12.8%	6.4%	100.0%
Liberal Studies	Count	2	0	0	2
	% within MAJOR_DEPT_DESC	100.0%	.0%	.0%	100.0%
Linguistics	Count	7	1	3	11
	% within MAJOR_DEPT_DESC	63.6%	9.1%	27.3%	100.0%
Management	Count	50	14	18	82
	% within MAJOR_DEPT_DESC	61.0%	17.1%	22.0%	100.0%
Mathematics	Count	17	4	0	21
	% within MAJOR_DEPT_DESC	81.0%	19.0%	.0%	100.0%
Modern and Classical Languages	Count	15	4	1	20
	% within MAJOR_DEPT_DESC	75.0%	20.0%	5.0%	100.0%
Music	Count	44	19	8	71
	% within MAJOR_DEPT_DESC	62.0%	26.8%	11.3%	100.0%

Philosophy	Count	3	0	2	5
	% within MAJOR_DEPT_DESC	60.0%	.0%	40.0%	100.0%
Physical Ed, Health&Recreation	Count	46	8	7	61
	% within MAJOR_DEPT_DESC	75.4%	13.1%	11.5%	100.0%
Physics	Count	7	4	1	12
	% within MAJOR_DEPT_DESC	58.3%	33.3%	8.3%	100.0%
Political Science	Count	33	15	10	58
	% within MAJOR_DEPT_DESC	56.9%	25.9%	17.2%	100.0%
Psychology	Count	83	21	9	113
	% within MAJOR_DEPT_DESC	73.5%	18.6%	8.0%	100.0%
Recreation/Park	Count	3	0	1	4
	% within MAJOR_DEPT_DESC	75.0%	.0%	25.0%	100.0%
Science Education	Count	1	0	0	1
	% within MAJOR_DEPT_DESC	100.0%	.0%	.0%	100.0%
Secondary Education	Count	49	12	6	67
	% within MAJOR_DEPT_DESC	73.1%	17.9%	9.0%	100.0%
Sociology	Count	20	1	3	24
	% within MAJOR_DEPT_DESC	83.3%	4.2%	12.5%	100.0%
Special Education	Count	7	0	1	8

		% within MAJOR_DEPT_DESC	87.5%	.0%	12.5%	100.0%
	Theatre Arts	Count	23	8	4	35
		% within MAJOR_DEPT_DESC	65.7%	22.9%	11.4%	100.0%
	University	Count	67	20	10	97
		% within MAJOR_DEPT_DESC	69.1%	20.6%	10.3%	100.0%
	Womens Studies	Count	1	0	0	1
		% within MAJOR_DEPT_DESC	100.0%	.0%	.0%	100.0%
Total		Count	1234	328	227	1789
		% within MAJOR_DEPT_DESC	69.0%	18.3%	12.7%	100.0%

Table 5 . Coded responses to why students are likely to transfer.

Q.35 Why are you likely to transfer from Western?		
		# responses
Code 3	Major	115
Code 11	Different school	104
Code 2	New atmosphere/experience	24
Code 9	Closer to home/family	24
Code 4	Friends/Boyfriend/Girlfriend	14
Code 7	Size/bigger or smaller	12
Code 6	Money/out of state	10
Code 13	Study Abroad	10

Code 14	California	7
Code 23	Not first choice in school	5
Code 5	Campus/location	4
Code 19	No plans	4
Code 12	Religion	3
Code 16	Classes	3
Code 21	Weather	3
Code 22	Too close to home	3
Code 25	Bad reputation	2
Code 1	Full Sail University	1
Code 8	Bad teachers	1
Code 10	Scholarship	1
Code 15	Competition in major field	1
Code 17	For fun	1
Code 18	I do not intend to transfer	1
Code 20	Don't like it	1
Code 24	Classes too full/can't graduate in 4 yrs.	1
Code 26	Keeping options open	1
Code 27	Better fit	1
Code 28	More opportunities	1
Code 29	Greek system	1
Code 30	No football	1

Table 6 . Cox proportional hazards model

```
. stcox likelytransfer ai age runstart hrstrans female firstgen resident black hispanic asian, basesurv(s)

         failure _d:  dropout
   analysis time _t:  end

Iteration 0:   log likelihood = -2909.2344
Iteration 1:   log likelihood = -2870.7868
Iteration 2:   log likelihood = -2869.3481
Iteration 3:   log likelihood = -2869.3381
Iteration 4:   log likelihood = -2869.3381
Refining estimates:
Iteration 0:   log likelihood = -2869.3381

Cox regression -- Breslow method for ties

No. of subjects =         1768                     Number of obs   =      1768
No. of failures =          394
Time at risk    =        11009
                                                   LR chi2(11)     =     79.79
Log likelihood  =   -2869.3381                     Prob > chi2     =    0.0000
```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
likelytran~r	1.128812	.0373305	3.66	0.000	1.057967	1.204402
ai	.9839932	.0034421	-4.61	0.000	.97727	.9907628
age	1.189339	.1485314	1.39	0.165	.9311139	1.519178
runstart	1.566247	.2866221	2.45	0.014	1.094185	2.241968
hrstrans	.9860636	.0036389	-3.80	0.000	.9789573	.9932216
female	1.153642	.1246404	1.32	0.186	.9334832	1.425724
firstgen	1.013836	.1111438	0.13	0.900	.8178109	1.256847
resident	.5657719	.0987654	-3.26	0.001	.4018364	.7965874
black	1.210834	.3038353	0.76	0.446	.7404441	1.980054
hispanic	.9984708	.2260337	-0.01	0.995	.640679	1.556074
asian	.9599916	.1639339	-0.24	0.811	.6869279	1.341602