

# Siyaphumelela Conference

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## Evaluation of the UP nudging campaign

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Make today matter



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
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# UP Nudging campaign



Nudging is an approach that steers people in particular directions, but that also allow them to go their own way (Sustein, 2014).



Students who complete in minimum time...



Choose the right programme.



Ask for help.



Use resources.



Seek advice about financial aid and financial management.



Manage time.



# UP Nudging campaign

Phase 1: Credits load at registration

Phase 2: Semester credit fail ratio

Monitoring and evaluation



# Methodology: P1

PROGRAM CODE	PROGRAM DESCRIPTION	FACULTY	REQUIRED_CREDIT	CREDIT_Y1_REQ	CREDIT_Y2_REQ	CREDIT_Y3_REQ	CREDIT_Y4_REQ	CREDIT_Y5_REQ
7130173	BCom: Informatics	EBIT	415	145	150	120		
12130002	BEng: Chemical Engineering	EBIT	610	160	162	144	144	
12136002	BEng: Chemical Engineering (5Y)	EBIT	690	128	136	138	144	144
12130007	BEng: Civil Engineering	EBIT	608	144	152	154	158	
12136007	BEng: Civil Engineering (5Y)	EBIT	688	128	120	128	154	158
12130009	BEng: Computer Engineering	EBIT	568	144	144	144	136	
12136009	BEng: Computer Engineering (5Y)	EBIT	648	128	112	128	144	136
12130003	BEng: Electrical Engineering	EBIT	568	144	144	144	136	
12136003	BEng: Electrical Engineering (5Y)	EBIT	648	128	120	120	144	136

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Yearbooks 2018

Yearbooks Home

General Regulations, Rules & Glossary of Terms

Faculty of Economic and Management Sciences —

Faculty Rules

Undergraduate Degree

Postgrad Diploma/Certificate

Honours

Master's

Doctorate

Undergraduate modules

Postgraduate modules

Faculty of Education +

Faculty of Engineering, Built Environment and Information Technology +

Faculty of Health Sciences +

Faculty of Humanities +

## Programme: BAdmin Public Management Public Administration

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Rectangular Snip

07131174

Contact:

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[Prof LP Malan](#)

Minimum duration of study: 3 years

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Total credits: 362

Programme information

Curriculum: Year 1

Curriculum: Year 2

Curriculum: Final year

**Minimum credits: 124**

This three-year programme is offered in block release sessions to accommodate the working individual in the public sector.

Fundamental modules



# Methodology: P1

- Download “*modules registered by subject*” from PSCS: 12 and 21 Feb
- Used “*Term Units in progress*”: calculation of credits registered for 1<sup>st</sup> year (includes registered credits but excludes dropped credits)
- “*Term Units Required*” are sourced from the programme information sheet
- **Credit % difference** is calculated:  $\text{sum}((A - B)/B) * 100$
- Calculated **Credit low risk**: credit % difference greater than 10%\*
- Calculated **Credit high risk**: credit % difference greater than 20%



# Methodology: P1

- Focus on 3 and 4 year programmes in EMS, Law, Theology, Humanities, NAS, Education and EBIT using 12 February download
- Only ‘NEW’ registered students with no course changed at audit
- Email sent on 13 February through Qualtrics:
  - 146 emails sent to credit low: 3 year programmes
  - 147 emails sent to credit low: 4 year programmes
  - 80 emails sent to credit high: 3 and 4 year programmes
- End of message survey: 102 responses with a number of queries
- Evaluation of change in credit load with “credit low risk” and “credit high risk”: 12 February compared with 21 February

# Nudge message: 2018

Dear first-year student,

As part of the **FLY@UP** campaign, the University of Pretoria monitors the number of module credits which new first-year students register for. Research has shown that students who register for the optimum number of module credits for a programme, are more likely to graduate in the prescribed minimum time. We observed from the registration data that you might have registered for too many module credits during the registration process. If you are unsure of the module credits required for your programme, you can consult with your Faculty Administration Office to ensure that you have registered for the optimum credits for your programme such that you **graduate on time**.

You can make changes until 19 February 2018 without any financial penalties at your Faculty Administration Office.



# Nudge message: 2019

Dear first-year student,

As part of the **FLY@UP** campaign, the University of Pretoria monitors the number of credits which new first-year students register for. We observed from the registration data that you ***might have registered for too few module credits*** during the registration process.

Use the yearbook to determine the number of credits your degree requires and compare it with the module credits you registered for on the UP Student Service Center (Select: “Registration/Module Changes” tab). You could also contact your FSA and/or your Faculty Administration Office to ensure that you have registered for the required credits for your degree.

*The University of Pretoria would like you to finish your degree in the minimum time!*

Link to the Faculty yearbooks: <http://www.up.ac.za/yearbooks/home>

Information on adding and discontinuing modules: <https://www.up.ac.za/fees-and-funding/article/277275/adding-and-discontinuing-modules-study-programme>

FSA website: <https://www.up.ac.za/teaching-and-learning/article/2494904/faculty-student-advisors-fsas>

# Methodology: P2

## 2018 first-semester cluster analysis form BIRAP

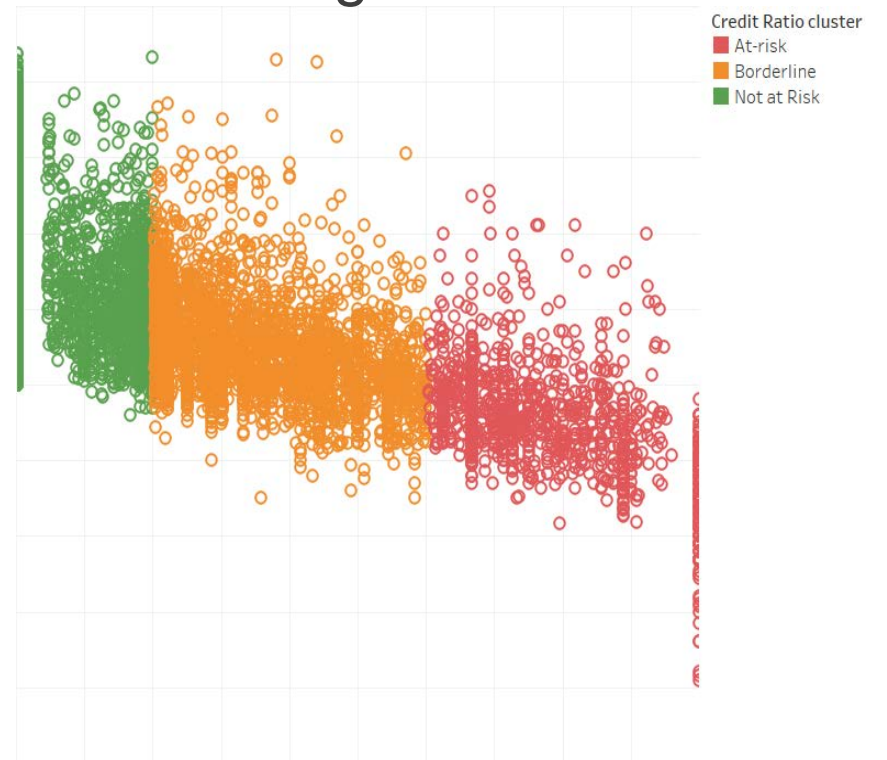
Variables used:

- Credit\_fail\_Ratio\*
- Ave\_1e = Average for first semester
- Tel\_1e = Number of modules enrolled for in the first semester

A cluster analysis procedure attempts to identify relatively homogeneous groups of cases based on selected characteristics, using an algorithm that can handle large numbers of cases.

([https://www.ibm.com/support/knowledgecenter/en/SSLVMB\\_22.0.0/com.ibm.spss.statistics.help/spss/base/idh\\_quic.htm](https://www.ibm.com/support/knowledgecenter/en/SSLVMB_22.0.0/com.ibm.spss.statistics.help/spss/base/idh_quic.htm))

### k-means algorithm to cluster



# Methodology: P2

- Credit-fail-Ratio = Number of credits fail divided by number credits initially enrolled\*

Credit-fail ratio range		Colour indicator	Likely to progress status
0	0	Blue	High performers
1	10	Green	Not at-risk
11	40	Yellow (dropped modules)	Moderate risk
11	40	Yellow (failed modules)	
41	70	Orange	At-risk: high
71	100	Red	At-risk: very high

\*includes modules cancelled from initially enrolled

BD	BE	BF	BG	BK
AVE_1E	Credit_ratio_Fail	Cluster	Nudge_Group	PSCS Credit Failed
56,60	26,47	Border line	Yellow	18
69,33	24,49	Not at risk	Yellow	0
54,33	0,00	Not at risk	Blue	0
56,00	36,11	Border line	Yellow	18
52,80	60,78	Border line	Orange	26
53,25	5,88	Not at risk	Green	0
53,33	0,00	Not at risk	Blue	0
77,67	0,00	Not at risk	Blue	0
59,50	14,29	Not at risk	Yellow	8
66,83	24,10	Not at risk	Yellow	16
68,60	0,00	Not at risk	Blue	0
80,71	0,00	Not at risk	Blue	0
42,50	75,00	At risk	Red	48
37,14	91,55	At risk	Red	65
64,17	13,95	Not at risk	Yellow	0
63,00	0,00	Not at risk	Blue	0
75,86	0,00	Not at risk	Blue	0
63,25	0,00	Not at risk	Blue	0
68,75	0,00	Not at risk	Blue	0
69,40	0,00	Not at risk	Blue	0
68,50	19,28	Not at risk	Yellow	0

# Methodology: P2

## Emailed students via Qualtrics

Credit-fail ratio range		Colour indicator	Likely to progress status	Nudges count
0	0	Blue	High performers	4 361
1	10	Green	Not at-risk	187
11	40	Yellow (dropped modules)	Moderate risk	580
11	40	Yellow (failed modules)		1 440
41	70	Orange	At-risk: high	836
71	100	Red	At-risk: very high	600

# Nudge message: P2

***Subject line: FLY@UP – we are proud of you!***

Dear First year student

As part of the FLY@UP campaign, the University of Pretoria monitors students' academic progress. We have observed from our data that you have performed very well in your modules in the first semester. We are proud of you!

Your “call-to-action”: keep working hard to maintain a good semester mark.

We know that life happens and that challenges are sometimes placed in your way – if that happens: consult your Faculty Student Advisor (FSA) about a course of action so that you stay on track to reach your academic goals.

FSA website: <https://www.up.ac.za/en/teaching-and-learning/article/2494904/faculty-student-advisors-fsas>

# Nudge message: P2

***Subject line: FLY@UP - a helping hand!***

Dear first year student

As part of the FLY@UP campaign, the University of Pretoria monitors students' academic progress. We have observed from our data that you have failed most of your modules in the first semester. Many students find the first semester challenging and wonder if they are good enough. Rest assured you are not alone in your thinking; however, at UP we believe that you can overcome your challenges (a growth mindset!).

Your “call-to-action”: consult your Faculty Student Advisor (FSA) about your challenges and to develop a plan to reach your academic goals.

FSA website: <https://www.up.ac.za/en/teaching-and-learning/article/2494904/faculty-student-advisors-fsas>

# Results: P1 (Low credit load at 21 February by nudge group status)

Credit risk status: 12 February	21 February	Outcome
Credits low	Credits optimum	35% students increased their credit load to optimum level (3 Year)
Credits low	Credits optimum	36% students increased their credit load to optimum level (4 Year)
Credits low	Discontinued	1% students had a zero credit load (3 Year)
Credits low	Discontinued	3% students had a zero credit load (4 Year)
Credits low	Credits low	64% students remain at-risk (3 Year)
Credits low	Credits low	61% students remain at-risk (4 Year)

# Results: P1 (Low credit load at 21 February by nudge group status)

## Three-year programmes

Credit low risk: 12 & 21 Feb	Blue	Green	Yellow: dropped modules	Yellow: failed modules	Orange	Red	Discontinue
<b>No</b>	58%	4%	5%	15%	9%	6%	3%
<b>Yes</b>	38%	4%	3%	15%	11%	22%	8%
<b>Grand Total</b>	58%	4%	5%	15%	9%	6%	3%

## Four-year programmes

Credit low risk 12 & 21 Feb	Blue	Green	Yellow: dropped modules	Yellow: failed modules	Orange	Red	Discontinue
<b>no</b>	48%	2%	11%	19%	11%	6%	3%
<b>yes</b>	42%	1%	3%	26%	13%	6%	9%
<b>Grand Total</b>	47%	2%	11%	20%	11%	6%	3%



# Results: P1 (High credit load at 21 February by nudge group status)

Credit risk status: 12 February	21 February	Outcome
Credits high	Credits optimum	12% students decreased their credit load to optimum level (3 Year)
Credits high	Credits optimum	43% students decreased their credit load to optimum level (4 Year)
Credits high	Discontinued	0% students had a zero credit load (3 Year)
Credits high	Discontinued	1% students had a zero credit load (4 Year)
Credits high	Credits high	88% students remain at-risk (3 Year)
Credits high	Credits high	56% students remain at-risk (4 Year)

# Results: P1 (High credit load at 21 February by nudge group status)

## Three-year programmes

Credit low risk 12 & 21 Feb	Blue	Green	Yellow: dropped modules	Yellow: failed modules	Orange	Red	Discontinue
no	58%	4%	5%	15%	9%	6%	2%
yes	29%	-	14%	14%	14%	14%	14%
Grand Total	58%	4%	5%	15%	9%	6%	2%

## Four-year programmes

Credit low risk 12 & 21 Feb	Blue	Green	Yellow: dropped modules	Yellow: failed modules	Orange	Red	Discontinued
no	47%	2%	11%	20%	11%	6%	3%
yes	25%	3%	11%	27%	15%	13%	6%
Grand Total	47%	2%	11%	20%	11%	7%	3%

# Summary: 2018 credit risk *(3 & 4 year programmes)*

## Credit risk low\*

- 292 at-risk on 12 Feb
- 183 at-risk on 21 Feb
- 103 no-risk on 21 Feb

- 35% real *difference* at 21 Feb

## Credit risk high\*\*

- 80 at-risk on 12 Feb
- 47 at-risk on 21 Feb
- 32 no-risk on 21 Feb

- 40% real *difference* at 21 Feb

# Results: P2 (Nudge category by academic status in 2019)

Nudge Group	Discontinued	Academic level: 1	Academic level: 2
Blue	1% (48)	16% (713)	83% (3 638)
Green	3% (5)	20% (38)	77% (144)
Yellow: dropped modules	2% (10)	28% (165)	71% (411)
Yellow: failed modules	6% (87)	34% (484)	61% (879)
Orange	23% (188)	46% (385)	32% (266)
Red	66% (398)	27% (163)	7% (39)
<b>Grand total (average)</b>	9% (739)	24% (1 948)	67% (5 377)

# Results: P2 (Nudge category by academic status in 2019 and consultation with FSA in 2018)

Nudge category in 2018 (FSA recommendation)	Academic status in 2019	Consulted FSA	No FSA consulted
Good job!	Discontinued	2% (1)	98% (63)
	Academic level: 1	1% (11)	99% (799)
	Academic level: 2	1% (50)	99% (4 414)
	Total	1% (62)	99% (5 230)
Need support?	Discontinued	5% (31)	95% (604)
	Academic level: 1	6% (63)	94% (943)
	Academic level: 2	5% (62)	95% (1 234)
	Total	5% (155)	95% (2 768)
Grand total (average)		3% (217)	97% (7 998)

# Results: P2 (Nudge risk groups by consultation with FSA and academic status in 2019)

		Academic status in 2019	
Nudge risk groups	FSA attendance status	Discontinued	Progression
Yellow * failed modules	Consulted FSA	- (0)	100% (50)
	No FSA consulted	6% (87)	94% (1303)
Orange **	Consulted FSA	18% (10)	82% (46)
	No FSA consulted	23% (178)	77% (601)
Red ***	Consulted FSA	45% (21)	55% (26)
	No FSA consulted	68% (377)	32% (176)
<b>Grand total (average)</b>		23% (673)	77% (2202)

\* Significance test with cross-tabulation and Cramer's V at  $p = 0,067$

\*\* Significance test with cross-tabulation and Cramer's V at  $p < 0,000$

\*\*\* Significance test with cross-tabulation and Cramer's V at  $p = 0,216$

# Survey results: P2

- Focus on 3 and 4 year programmes in EMS, Law, Theology, Humanities, NAS, Education and EBIT using Cluster analysis (16 July)
- Only 'NEW' registered students
- Red, Orange and Yellow bands
- Survey sent on 17 August with Qualtrics (n = 195 of 2729)

*Dear first-year student,*

*As part of the FLY@UP campaign, the University of Pretoria monitors students' academic progress. We sent you an email on 23 July 2018, informing you that you have failed some of your modules during the first semester. As part of the "call-to-action" we suggested that you make contact with your Faculty Student Advisor. We would like to follow up whether you consulted with the FSA or anybody else on campus and how you rate their support. Please complete the survey below:*

# Survey results: P2

- 63% students consulted an FSA after the nudge
- 70% attended between one and two sessions
- 83% rated the consultation 'very useful' to 'extremely useful'
- Sessions lasted 10 to 15 minutes (30%) and 16 to 30 minutes (36%)
- 47% were referred (e.g. tutors, mentors, lecturers and Faculty Administration)
- Of the 37% students who did not consult with the FSAs,
  - 75% consulted with someone else on campus (peers, mentors, lecturers and Faculty Administration)



# Recommendations

- Nudges must be included as ***part of an existing intervention and data analytics strategy*** to be most effective
- **Leading indicators** are necessary to determine the criteria for the selection of groups and to enable targeted messages to students.
- The tone of the nudges should be **positive, to the point** and with a **single call to action**.
- Determine the **output** and **outcome** variables from the onset.
- Plan the timeline of your **message strategies** according to the University's timelines.
- Market the nudging campaign to **key stakeholders** regularly, including methods and results.

# Enabling and success factors

- The report from the PAR Framework provided leading indicators to determine criteria for the selection of groups.
- The support service departments were already in existence and geared towards student queries, and limited additional resources were required.
- Individual student records were available to FSAs, together with the cluster analysis data, which enabled FSAs to have informed conversations with students, based on their individual needs.
- The UP nudging campaign was discussed at our institutional data analytics meeting (Tshebi), and the results were presented after each phase.
- A nudging campaign is inexpensive and relatively easy to implement.



# Conclusion

- Nudging is no panacea for all of the complex problems found in higher education (Desouza and Smith, 2016)
- The results of this evaluation showed promising findings that point to the success of the nudging of students to change their credit load to the optimal level
- The nudge message after the first semester was a broad initiative to provide information or feedback to students
  - The results suggest that students who were nudged to seek help from an FSA and actually consulted with one seem to be more likely to progress to the following academic year and are less likely to discontinue.

THANK YOU.

