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Gender differences in entrepreneurial types graduating into veterinary and other disciplines: implications and comparisons.

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Why is this important?

VISION – where is the vet profession heading?

- Innovation
- Leadership
- Productivity
- Enterprising individuals and organisations

Have you noticed?

- Student debt at graduation
- Salary issues for veterinarians especially females
- Who are our enterprising individuals?



Entrepreneurial leaders and organisations

Repeatedly initiate new service or product ideas

Redirect their people and assets to new uses and new ideas

Generate new ideas, assemble of resources, produce new services or products and deliver these to users by organization-wide redirection and cooperation



"must sustain such effort again and again"

Jelinek & Litterer, 1995, pp. 137–138

Entrepreneurship is multi-dimensional

Innovation

New thing (services or products) or new way of doing things (processes)

Adapt and adopt processes to improve own business model

Opportunity-seeking

Management

Delivery of service or product People Financial

Enterprising individuals

Uncertainty-bearing

c.f. risk taking - entrepreneurs weigh up gain against risk seeking of high gain for moderate risk

This research

Enterprising individuals can be different types

Growth EIEntrepreneurial intent (EI)Flexibility EISocial EI

Why does it matter to the health sciences e.g. vet profession?

Ajzen's Theory of Planned Behaviour (1991) Kim and Hunter(1993)

Entrepreneurship is important to the veterinary profession

Bok et al., 2011, Bok et al., 2014, Vet Futures Project Board, 2015

Our understanding of entrepreneurial dispositions and intent of veterinarians is limited

As environments become more dynamic and increasingly competitive, organisations (and people) must become more entrepreneurial.





Entrepreneurial orientation tied empirically to firm performance.

Covin & Slevin, 1989; Rauch et al., 2009; Runyan, Droge, & Swinney, 2008; Wiklund & Shepherd, 2005

Entrepreneurial abilities and attitudes desirable in employment situations

Douglas & Shepherd 2000

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Intentions predict behaviour - Informing theory



Veterinary programs x 3Entrepreneurship

• Nursing

Methods

- Engineering
- Science students (in process)

Survey

- single items for entrepreneurial and corporate work intent, response range 1-10
- validated scales with 4-5 items and response ranges 1 7, from which factor scores were created for growth, flexibility and social entrepreneurship

(Douglas 2013; Douglas, Venugopal et al. unpublished)

Study population – Australian final year students of

Quantitative analysis



Respondents – discipline, sex



Respondents – age, university

Mean age All 24.5 years Males 24.1 years Females 25.2 years



University A n = 328 (96 vet students)
University B n = 112 (only vet students)
University C n = 52 (only vet students)

1.1 Types of entrepreneurial intent - scale item examples

G	rowth El	FACTOR LOADIN
	Exploits a new technology or adopts a new process or service that promises to generate high profits over many years	.614
F	exibility El	
	Allows you to have great flexibility to decide your work hours, your product lines etc.	.735
S	ocial El	
	Includes volunteer service to help people who have social and/or economic problems	.812

1.2 Types of entrepreneurial intent - all respondents



1.3 Proportions of EI types x discipline *x* **sex**

(Proportion with factor scores \geq 4.5 where 1 = highly unlikely to 7 = highly likely)



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2. Start or buy own business intent (general EI)

(where 1 = no intention and 10 is complete intention)

	Ν	Entrepreneurial intent (EI) mean score (sd)				
Engineering	49	3.8 (2.6)				
Entrepreneurship	98	6.4 (2.4) ^e				
Nursing	85	2.8 (2.6) ^t				
Veterinary 260 5.2 (3.0) ^{etn}						
Superscripts ^{e, t, n and v} indicate statistical difference to engineering, entrepreneurship, nursing and veterinary (all) respondents using ANOVA and Tukey HSD post hoc test (p<0.05)						

3.1 Mean factor scores for females wanting to start/buy a business



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* P<.05 using ANOVA and Tukey HSD post hocs

3.2 Mean factor scores for males wanting to start/buy a business



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Though more female veterinary students intend to start/buy a business....

Few female veterinary students are growth entrepreneurs (6% overall) 60 (32%) of the 191 female vet respondents indicated intention to start/buy business 11 (18%) of these indicated growth entrepreneurial intent (* Feakes, Hyams et al. 2016)

More male veterinary students are growth entrepreneurs (28% overall)

36 (59%) of the 61 male vet respondents indicated intention to start/buy business 17 (46%) of these indicated growth entrepreneurial intent (nearly half)

Higher male veterinarian salary expectations* and salary levels maybe related to this

(* Feakes, Hyams et al. 2016)

Veterinary students less socially entrepreneurial

No gender difference

Actually lower social entrepreneurial intent than other disciplines

Female veterinarian lower salary expectations and real salary deflation probably not related to this

Its all OK, there is always the corporate field...

Veterinary students indicated the lowest level of wishing to work in the corporate field/large company

Intent to work in corporate field

(where 1 = no intention and 10 is complete intention)

	Ν	Corporate (CWI) mean (sd)
Engineering	49	6.7 (2.2) ^v
Entrepreneurship	98	7.2 (2.2) ^{nv}
Nursing	85	6.0 (2.8) ^{env}
Veterinary	260	4.6 (2.2) ^{etn}

Superscripts ^{e, t, n and v} indicate statistical difference to engineering, entrepreneurship, nursing and veterinary (all) respondents using ANOVA and Tukey HSD post hoc test (p<0.05).

Expectations not matching reality as stressors ?

A question of fit





Implications for the profession

There are discipline and gender differences

Admissions or educator intervention to boost entrepreneurship especially for female vets





So what can we do? not only are our female vets lower in EI, but also in all entrepreneurial orientations

Implications for educational policy makers Implications for the profession

Where are our future innovators, leaders and visionaries going to come from? Shall we just leave them to be worker bees?

Future research directions

What strategies can be put into place to improve entrepreneurial intent of the female student cohort?

Are there differences in entrepreneurial self-efficacies per gender, level and type of entrepreneurial intent?

Does the importance of income affect level and type of entrepreneurial intent?

Do altruism values have an affect on EI?

Do veterinary students have higher levels of altruism than other students?

Limitations

Sample size & response rate for engineering Gender bias engineering and nursing



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Acknowledgments

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3. Types of entrepreneurial intent - high El respondents

(those indicating 7, 8, 9 or 10 on scale of 1 – 10 for intent to start/buy a business)



• Although the high EI veterinary females do outnumber the high EI veterinary males, only 18% of them compared to 46% of the males stated high growth entrepreneurial intent (GEI).

Corporate or El intentions vs reality

	Total Sites	%	Vets in Australia	Total businesses	Final year students per year	Supply per annum
	3500	100	10,000	3000	600	
Corporate	175	5%	500-1000	? 5	26 - 46% CWI	156-210
Trad practices	3000	94%	9400	3000	33 – 51% El (198 – 306)	60 – 92 buyers p.a.*
Not-for- profit	20-30	1%	100	? 21	n/a	n/a

*198 – 306 final years state high EI, and behaviour ~ 30% of intent so **therefore 60 – 92 buyers per annum**

Estimated sellers of practices

Based on AVA membership data 2014

Assume employers = owners

Caveats

 unclear if vet shareholders in listed and non-listed companies "employers"?

- sell outs to corporates likely to reduce practices available

(McAndrew 2014)

AVA 2014	Employer	
Age in years	Number	
21-30	6	
31-40	115	
41-50	193	
51-60	221	
61-70	98	
71-80	7	
81-90	1	
Total	641	

Lower El of females

PROBLEM looming ?

Gender and ownership polarisation continues

	Total	%	Female	% of females	Male	% of males
Employee	669	51%	490	70%	179	29%
Employer	641	49%	206	30%	435	71%
Total	1310	100%	696	100%	614	100%

AVA Member data 2014



(McAndrew 2014)

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Different businesses have different foci (PICS)

(Katz, 2007)

	Focus of Entrepreneurship*				
	Creation	Customer	Efficiency	Innovation	Gains \$ or non\$
Public		•	•		•
Independent (small business)	•	•	•	•	•
C orporate		•	•		•
Social (not-for-profit)	•	•	•		•

* Whatever type of entrepreneurship, all aim to make gains – monetary or non-monetary



High GEO% High IndEO% High SocEO% Types of entrepreneurial orientation

?A reflection of overall males > females for EI, and self-confidence

No significant difference in mean levels of interest between males and females (n = 106)

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30%

20% 10% 0% Male (n = 20)







■ Engineering n=8/41 ■ Entrepreneurship n=31/56 ■ Nursing n=3/7 ■ Veterinary 36/61

* P<.05 using ANOVA and Tukey HSD post hocs

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Gender and ownership

- AVA membership AVA 2014

	Female	Male	Total
21-30	203	52	255
Employee	200	49	249
Employer	3	3	6
31-40	200	113	313
Employee	146	52	198
Employer	54	61	115
41-50	153	139	292
Employee	80	19	99
Employer	73	120	193
51-60	120	191	311
Employee	56	34	90
Employer	64	157	221
61-70	20	109	129
Employee	8	23	31
Employer	12	86	98
71-80		9	9
Employee	-	2	2
Employer	-	7	7
81-90		1	1
Employer	-	1	1
Grand Total	696	614	1310

(McAndrew 2014)

Gender and career sector intent





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University affects sector intent

