

Can a social marketing framework provide insights
which enhance alumni relations programmes
in the UK?

Juliet Corbett

March 2018

Dissertation submitted as part requirement for the degree of Master of
Business Administration of Durham University, 2018

This dissertation is the result of my own work. Material from the published or unpublished work of others, which is referred to in the dissertation, is credited to the author in question in the text. The dissertation is 14,927 words in length. Research ethics issues have been considered and handled appropriately within the Durham University Business School guidelines and procedures.

Abstract

In an increasingly competitive higher education market, UK universities are encouraging more of their alumni to give money and engage in volunteering activities. This study addresses the problem of how to increase alumni engagement, focussing upon the insights which might be gained from a social marketing approach using the transtheoretical model (TTM) of behaviour change. This is a novel approach, as neither social marketing nor the TTM have previously been applied to alumni relations.

The research design included four interviews with alumni relations professionals, a focus group of alumni and a questionnaire with 193 participants. Triangulation was achieved by incorporating a range of perspectives and combining deductive and inductive approaches.

The evidence supported the applicability of the TTM to alumni behaviours. This included finding that decisions about getting involved in alumni activities are influenced by the individual's level of self-confidence in their ability to perform the activity (self-efficacy) and the weighting they give to its financial and non-financial costs. Some demographic attributes were found to influence alumni engagement. Women and alumni of non-collegiate universities were involved less, possibly due to lower levels of self-efficacy and higher weighting of the costs. No patterns were found for age, while education level had an unexpected effect with Master's alumni being more engaged.

The study concludes that a social marketing framework using the TTM provides insights which could enhance alumni relations programmes in the UK. However, experience as a student and of previous alumni activities were also found to influence alumni behaviours but are outside the TTM. The possibility that universities' fundraising activities might be preventing alumni from making non-financial contributions emerged inductively, and implies that strategic balancing of alumni relations and alumni fundraising programmes is necessary. The study concludes with recommendations for professionals and promising avenues for future research.

Table of contents

List of figures	6
List of tables.....	7
1 Introduction and background	9
1.1 University fundraising and alumni relations in the UK	9
1.2 Alumni relations from a marketing perspective	13
1.3 The problem being addressed	16
1.4 Mind mapping the problem	16
1.5 Research question, objectives and investigative questions.....	20
1.6 Overview of dissertation structure	22
2 Literature review	23
2.1 Review of the alumni relations literature.....	23
2.2 Defining social marketing.....	27
2.3 Social marketing techniques.....	29
2.4 Ethical considerations.....	30
2.5 The transtheoretical model (TTM).....	34
2.6 Testing the transtheoretical model with alumni behaviours	48
2.7 Literature review conclusion	55
3 Research design and methodology	56
3.1 Key features	57
3.2 Selection of research methods	59
3.3 Interview and focus group methodology	60
3.4 Questionnaire methodology	61
3.5 Analysis methods.....	63
3.6 Research methodology conclusion	64
4 Qualitative results and analysis.....	65
4.1 Template analysis	65
4.2 Network display.....	71
4.3 Qualitative results and analysis conclusion	71
5 Quantitative results and analysis	73
5.1 Sample representativeness	73
5.2 Stage distribution	76
5.3 Individual items within the TTM constructs	77
5.4 Internal reliability	79
5.5 Normality of distribution.....	79

5.6	Correlation	81
5.7	Testing decisional balance.....	83
5.8	ANOVA analysis	84
5.9	Regression analysis.....	86
5.10	Impact of demographic attributes	87
5.11	Alumni initiatives.....	91
5.12	Quantitative results and analysis conclusion.....	92
6	Discussion.....	95
6.1	Research objective 1.....	95
6.2	Research objective 2.....	99
6.3	Research objective 3.....	103
6.4	Inductive themes.....	112
6.5	A social marketing framework for alumni relations	114
7	Conclusion and recommendations.....	116
7.1	Answering the research question and problem.....	116
7.2	Recommendations for alumni relations professionals	117
7.3	Contribution to academic and practitioner understanding	120
7.4	Limitations and reflections.....	120
7.5	Further research	121
8	References.....	122
	Appendix 1: Ethics forms	131
	Appendix 2: Data requirements tables.....	139
	Appendix 3: Questions used in interviews	142
	Appendix 4: Questions used in focus group	144
	Appendix 5: Interviews and focus group contextual data	145
	Appendix 6: Interview participant information sheet	147
	Appendix 7: Focus group participant information sheet	149
	Appendix 8: Question and measurement sources.....	151
	Appendix 9: Questionnaire	154
	Appendix 10: Statistical tests	159
	Appendix 11: Qualitative results summaries	163
	Appendix 12: Statistical results	169

List of figures

Figure 1: Fundraising and alumni relations data (medians for UK universities in 2015/16) ..	10
Figure 2: Example Development Office structure and outcomes	12
Figure 3: Exchange in different types of marketing	14
Figure 4: Mind map of external PESTEL factors influencing UK alumni relations.....	17
Figure 5: Mind map of alumni relations from a marketing perspective	18
Figure 6: Mind map of alumni relations from a social marketing perspective.....	19
Figure 7: Problem, research question and research objectives	20
Figure 8: Investigative questions for research objectives 1-3.....	22
Figure 9: Alumni affinity, engagement and philanthropy.....	23
Figure 10: Alumni relationship-building cycle	25
Figure 11: Links between affinity and engagement behaviours	25
Figure 12: Ethical questions about impacts.....	31
Figure 13: Impacts and unintended consequences of alumni relations programmes.....	31
Figure 14: Ethical questions about methods	32
Figure 15: Constructs of the TTM	35
Figure 16: Stages of change and validated statements for alumni behaviours.....	36
Figure 17: Example relationships between weighting of pros and cons.....	37
Figure 18: Relationship between self-efficacy and stage	38
Figure 19: Types of individuals in the precontemplation stage	44
Figure 20: Social exchange theory applied to alumni relations	49
Figure 21: Expectancy theory applied to alumni relations	50
Figure 22: General pattern of hypothesised relationships	52
Figure 23: Research design	56
Figure 24: Triangulation from three perspectives	57
Figure 25: Final template for qualitative analysis	66
Figure 26: Network display showing links between codes	72
Figure 27: Bar charts for gender, age, university type and education level.....	74
Figure 28: Percentage of population in higher education by gender	75
Figure 29: Number of students obtaining degrees in the UK by year	75
Figure 30: Bar chart of stages of change for alumni behaviours.....	76
Figure 31: Bar chart of combined stages of change for alumni behaviours.....	76

Figure 32: Histograms of distributions, with normal distributions shown by the curves	80
Figure 33: Chart of mean Likert score for pros and cons across the stages.....	82
Figure 34: Chart of mean Likert score for self-efficacy across the stages.....	82
Figure 35: Chart of respondents in each stage by gender	87
Figure 36: Chart of respondents in each stage by age bracket	88
Figure 37: Chart of respondents in each stage by university type	89
Figure 38: Chart of respondents in each stage by education level	90
Figure 39: Chart of initiatives in descending order of importance.....	91
Figure 40: Research objective 1 and investigative questions	95
Figure 41: Research objective 2 and investigative questions	99
Figure 42: Research objective 3 and investigative questions	103
Figure 43: Decisional balance hypothesis results	104
Figure 44: Self-efficacy hypothesis results	105
Figure 45: Summary of findings for gender	108

List of tables

Table 1: Correlations between alumni programme variables and number of volunteers	24
Table 2: Empirical evidence for demographic attributes affecting alumni behaviours	26
Table 3: Benefits of alumni relations programmes for university stakeholder groups.....	28
Table 4: Social marketing benchmarks applied to alumni relations.....	29
Table 5: Processes of change	39
Table 6: Behaviour types tested with the TTM.....	41
Table 7: Summary of criticisms of TTM model as a whole	43
Table 8: Summary of criticisms of stages of change construct	46
Table 9: Comparing strengths and limitations of TTM constructs	51
Table 10: Hypotheses tested.....	53
Table 11: Recommendations for selecting a behaviour theory	54
Table 12: Strengths and limitations of qualitative analysis techniques.....	63
Table 13: Quotations from interviews about alumni relations goals	67
Table 14: Quotations from interviews about alumni motivation research.....	67
Table 15: Quotation from interviews about competition	67
Table 16: Quotations from interviews about segmentation.....	68
Table 17: Quotations from qualitative research about pros	69

Table 18: Quotations from qualitative research about cons	69
Table 19: Quotations from qualitative research about bad alumni experiences	70
Table 20: Quotations from qualitative research about self-efficacy	70
Table 21: Quotations from qualitative research about demographic attributes	70
Table 22: Quotations from qualitative research about data protection.....	71
Table 23: Quotations from qualitative research about strategic alumni relations.....	71
Table 24: Representativeness of the sample.....	73
Table 25: Percentage of UK population and alumni population by education level	75
Table 26: Ranked pro items.....	77
Table 27: Ranked con items	77
Table 28: Ranked self-efficacy items.....	77
Table 29: Ranked pro items for each stage	78
Table 30: Hypothesis testing for engagement type	78
Table 31: Cronbach's α for the pros, cons and self-efficacy variables.....	79
Table 32: Skewness and kurtosis statistics.....	79
Table 33: Spearman's rho and hypothesis testing	81
Table 34: Dependent t-test results for decisional balance and hypothesis testing.....	83
Table 35: Levene statistics testing variance	84
Table 36: Post hoc test results for pros and cons and hypothesis testing	85
Table 37: Post hoc test results for self-efficacy and hypothesis testing	85
Table 38: Standardised coefficients for beta for self-efficacy and cons	86
Table 39: Summary of regression analysis and hypothesis testing	86
Table 40: Hypothesis testing for gender	87
Table 41: Hypothesis testing for age.....	88
Table 42: Hypothesis testing for university type	89
Table 43: Hypothesis testing for education level.....	90
Table 44: Frequency and mean for each initiative	91
Table 45: Summary of hypothesis results	93
Table 46: Summary of additional significant findings	94
Table 47: R^2 results testing the TTM for various behaviours	106
Table 48: Application of recommendations for selecting a behaviour model	115

1 Introduction and background

1.1 University fundraising and alumni relations in the UK

The increasingly competitive market in which UK universities operate has been well documented in recent years, with falling government funding and increasingly global competition for students and academics (Alnawas and Phillips, 2015; Iskhakova, Hilbert and Hoffmann, 2016; Papadimitriou, 2017). Against this background former students of a university, known as ‘alumni’, are becoming an increasingly important resource, offering both financial donations and non-financial support (Weerts, Cabrera and Sanford, 2010; Iskhakova, Hilbert and Hoffmann, 2016).

In order to capitalise on these opportunities UK universities have increasingly invested in both fundraising and alumni relations (Figure 1). In the UK currently only 0.7% of alumni donate (CASE, 2017e) and 0.6% volunteer non-financial support for their university (CASE, 2015). These median figures hide significant differences between established programmes in elite universities and those of newer universities (CASE, 2017e). However, there appears to be significant growth potential for both alumni volunteering and giving in the UK.

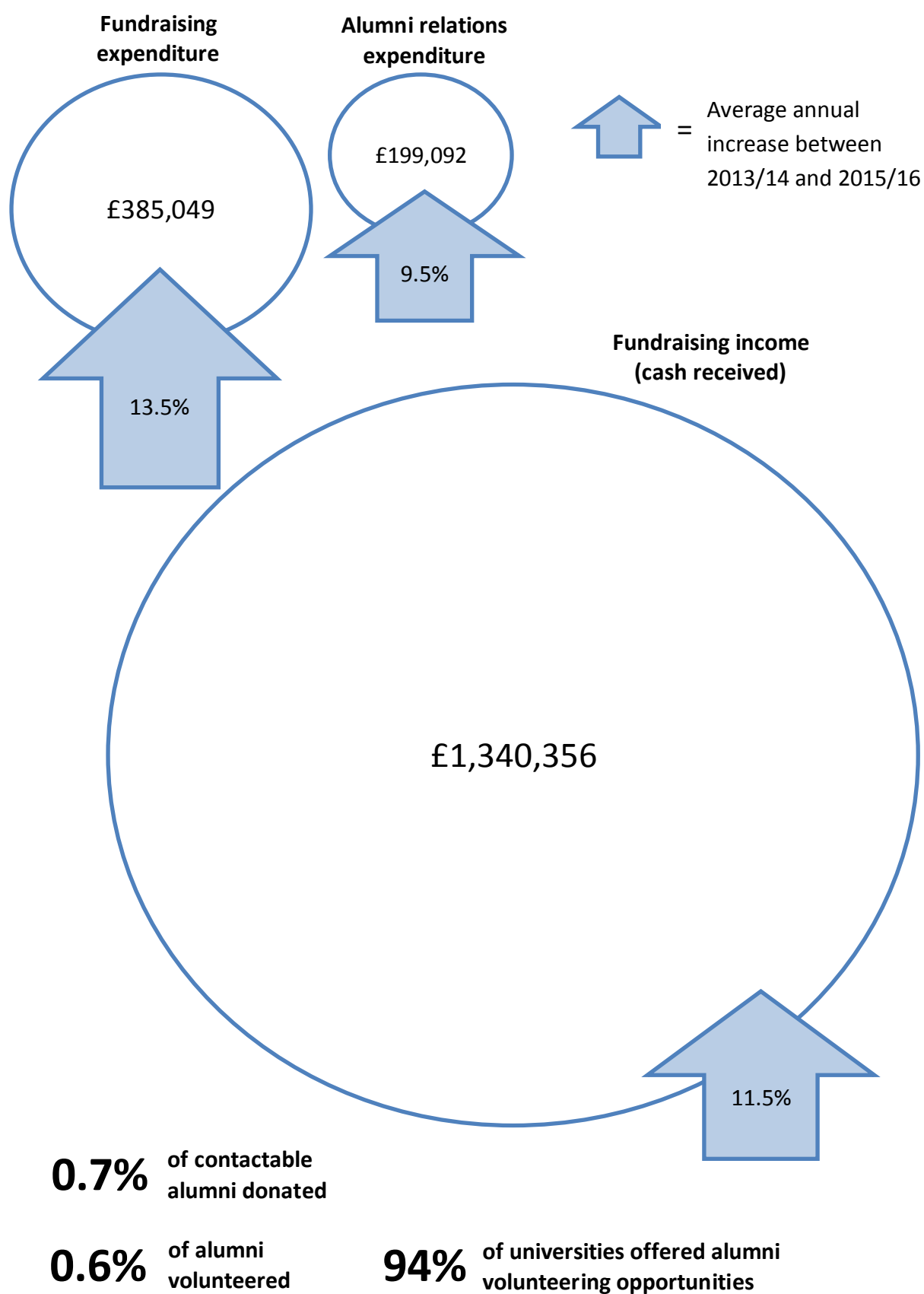


Figure 1: Fundraising and alumni relations data (medians for UK universities in 2015/16)
Sources: CASE (2015); CASE (2017e)

The term 'development' is used to cover both alumni relations and educational fundraising. University Development Offices often include three functions: fundraising, alumni relations and operational support (CASE, 2017c) (Figure 2). This structured approach first started in the US but universities across Europe, Canada, Australia, New Zealand and Asia are following their lead (Squire, 2014) (CASE, 2017f). Levels of fundraising maturity and alumni cultures vary between countries (Squire, 2014), and on average UK universities currently raise the same philanthropic income as an average US university did in 1982 (Salmon, 2016).

Fundraising programmes encourage alumni to give philanthropic gifts to support the strategic objectives of the university (CASE, 2017a) (Figure 2). The financial results of these programmes are measurable (CASE, 2107d), and are often a critical part of university funding.

Alumni relations programmes encourage former students to feel affinity to their university and become engaged with it by giving non-financial support for the university's strategy (CASE, 2017a). This can include careers mentoring, internships, political advocacy and brand advocacy (Weerts, Cabrera and Sanford, 2010; Iskhakova, Hilbert and Hoffmann, 2016; CASE, 2017b). Alumni relations activities commonly include print and digital publications, events, social media, careers mentoring and internships (Figure 2). The results of these activities are more difficult to measure, although anecdotal evidence suggests alumni volunteering is making a strategic contribution to universities (CASE, 2015). Alumni relations activities also provide the foundation for successful fundraising (CASE, 2017b).

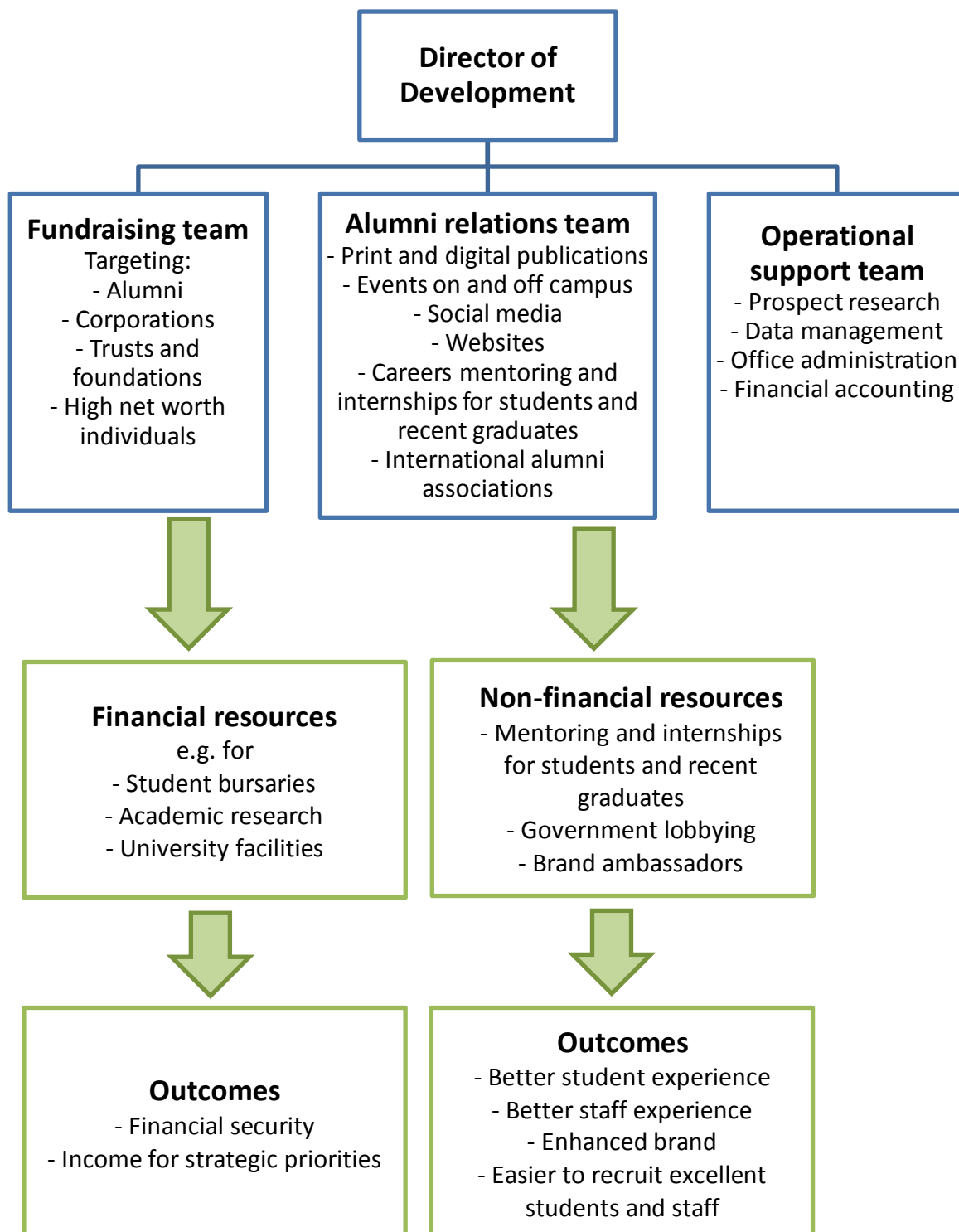


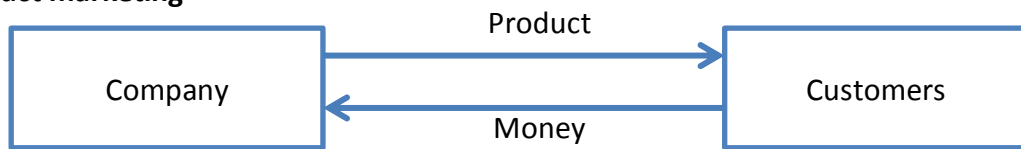
Figure 2: Example Development Office structure and outcomes
Source: structure adapted from CASE (2017c)

1.2 Alumni relations from a marketing perspective

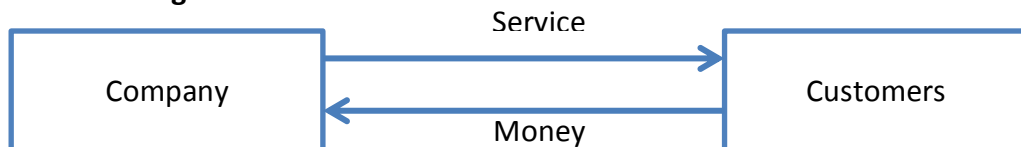
Although the student recruitment literature often applies a marketing approach (Hemsley-Brown and Oplatka, 2006) the alumni giving and engagement literature rarely makes an explicit connection with marketing theory (Drezner, 2017). However, a closer analysis confirms that alumni relations is a form of marketing.

Marketing is based on exchange theory, where two parties have something to exchange with a mutually beneficial outcome (Kotler and Andreasen, 1995). Traditional marketing theory was developed for exchanges of money for goods, but this has been adapted for other types of exchange such as the exchange of money for services (Andreasen, 2012) (Figure 3). Although alumni relations exchanges may be more complex (Figure 3), it is still an exchange which can be viewed from a marketing perspective.

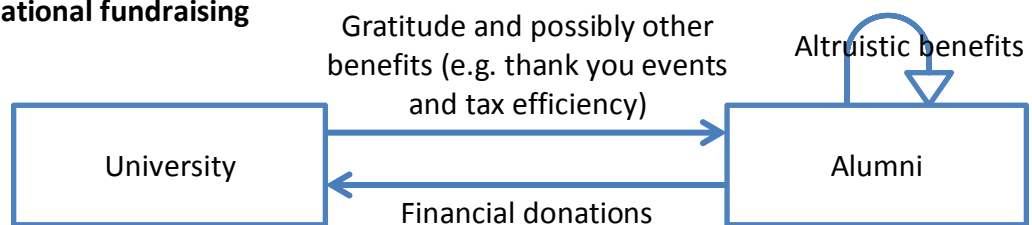
Product marketing



Services marketing



Educational fundraising



Alumni relations

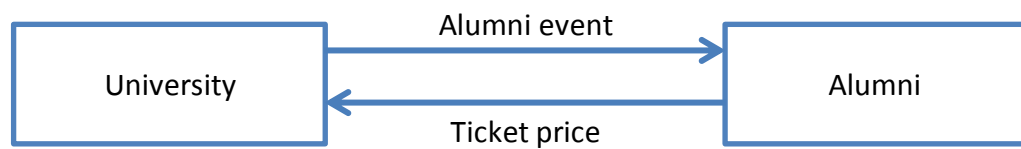
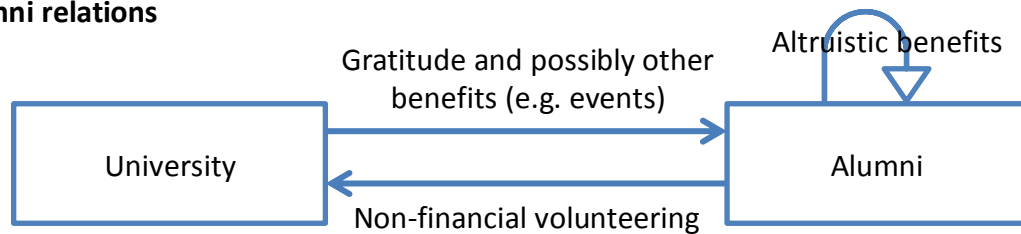


Figure 3: Exchange in different types of marketing

Although not plentiful (Drezner, 2017), there are examples of marketing concepts being applied to alumni relations.

The marketing orientation concept has been adapted into a 'development orientation' (Kotler and Fox, 1995) and an 'alumni orientation' (Alnawas and Phillips, 2015) which focusses on the role departments across the university play in building alumni engagement and giving.

Kotler and Fox (1995) also apply the concept of marketing myopia to a development office which continues to run traditional events without finding out what alumni really want from their university.

The increasing marketing focus in universities has followed a similar path to that in commercial companies from product orientation to marketing orientation (Kotler and Fox, 1995). But this process has been controversial in universities due to concerns from stakeholders that marketing is inherently profit-focussed (Drezner, 2017). Although this is an understandable fear, marketing can be adapted to consider social goals instead (Drezner, 2017). The social marketing approach investigated in this research is an example of this.

Universities find it challenging to define and defend a unique selling proposition (USP) because the market is highly competitive and most universities are broadly similar (Matzler and Abfalter, 2013). However, if undertaken strategically the outcomes of alumni volunteering and giving could be used to generate a USP in areas as diverse as careers mentoring and internship opportunities through to more generous student travel grants or outstanding sports facilities.

Considering alumni relations strategically from a marketing perspective could therefore have significant benefits.

1.3 The problem being addressed

Alumni volunteering and giving is increasingly important to universities in a competitive marketplace (Weerts, Cabrera and Sanford, 2010; Iskhakova, Hilbert and Hoffmann, 2016), but despite this there are still significant gaps in the theories and frameworks used to analyse it (Lilly Family School of Philanthropy, 2014; Alnawas and Phillips, 2015; Iskhakova, Hilbert and Hoffmann, 2016).

The low percentages of alumni volunteering and giving currently in the UK (CASE, 2015; CASE 2017e) and the success of development programmes in the US (Salmon, 2016) indicate there is further growth potential in this sector. Therefore, this study addresses the problem of how UK universities can further increase alumni engagement.

1.4 Mind mapping the problem

Given the large scope of this problem, mind mapping was used to focus on an area which could be researched in depth (Saunders, Lewis and Thornhill, 2009). Firstly, the external forces affecting the UK university sector were identified and their implications for alumni relations explored (Figure 4). The factors in green boxes are considered within this study.

Looking at alumni relations from a marketing perspective results in a complex network of inter-related topics (Figure 5). Social marketing uses a wide definition of exchange and focusses on social benefits rather than profit (Andreasen, 2012). This may help bridge the gap between traditional marketing and alumni relations. Therefore, applying social marketing to alumni relations (box shaded green, Figure 5) is the focus of this study.

The various topics which could be considered when applying social marketing to alumni relations are outlined in Figure 6. Many different theories of human behaviour have been applied to social marketing campaigns (Lefebvre, 2001). This study focuses on the transtheoretical model (TTM), but alternative theories could be applied to alumni relations in future research.

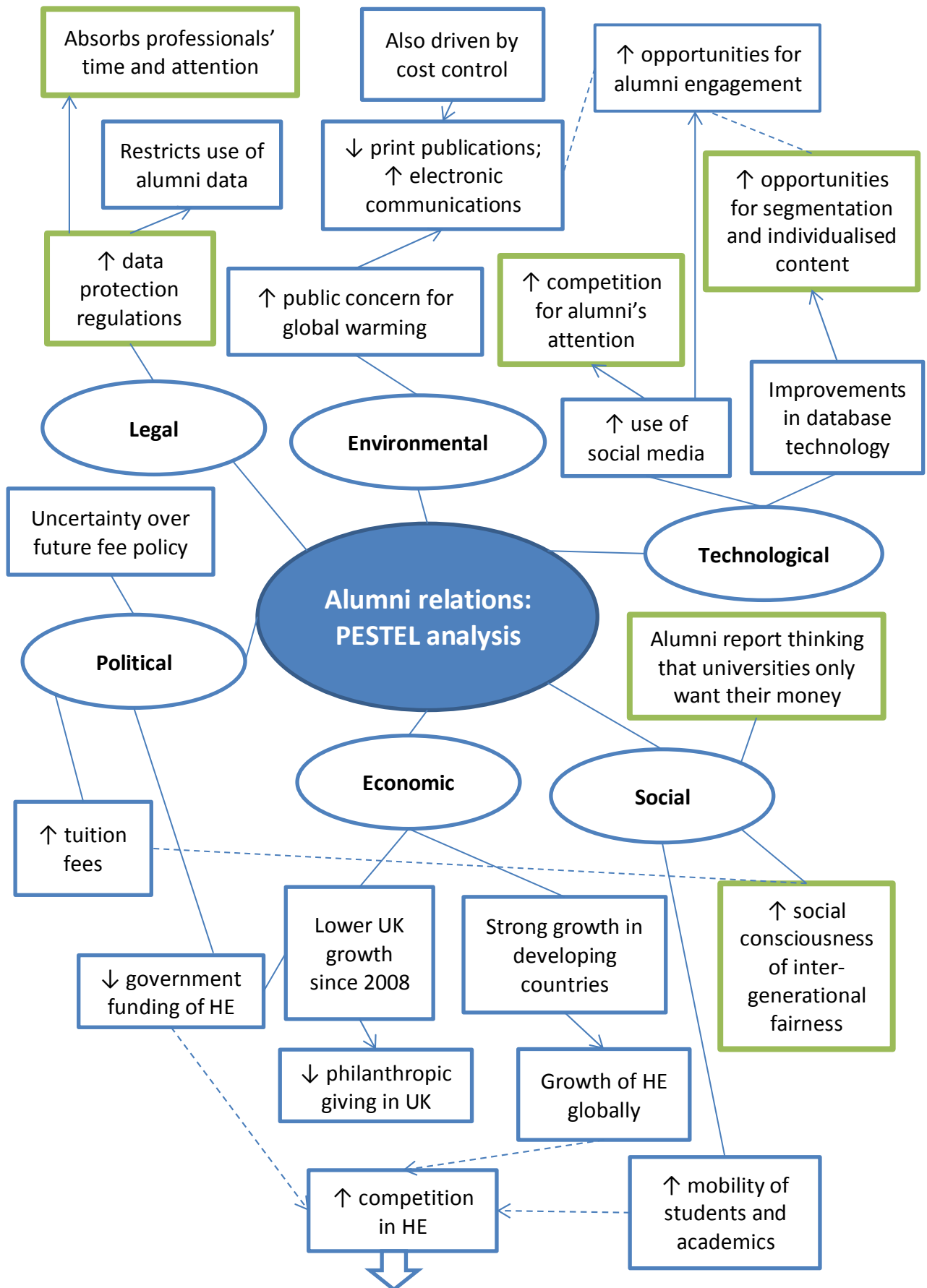


Figure 4: Mind map of external PESTEL factors influencing UK alumni relations

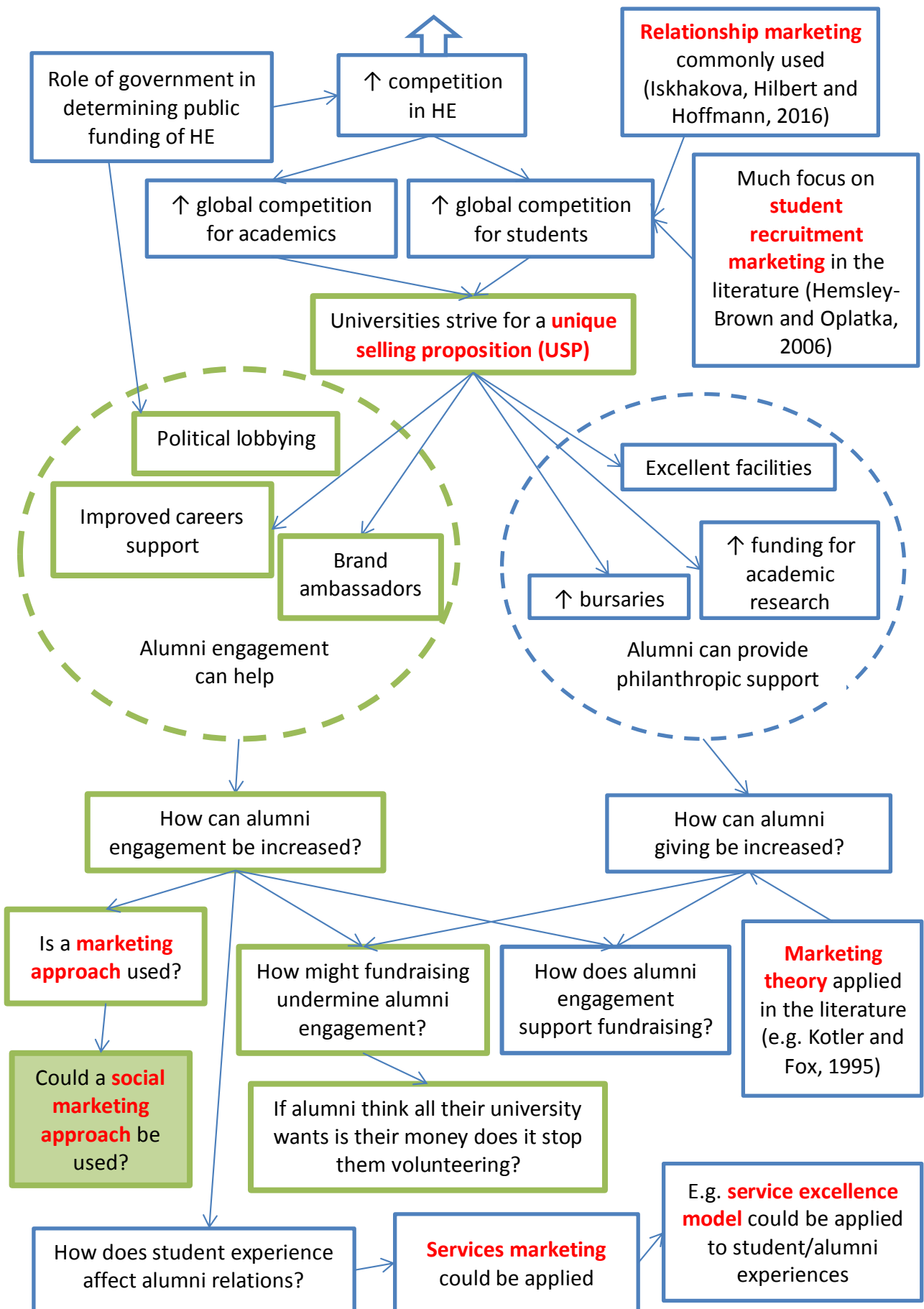


Figure 5: Mind map of alumni relations from a marketing perspective

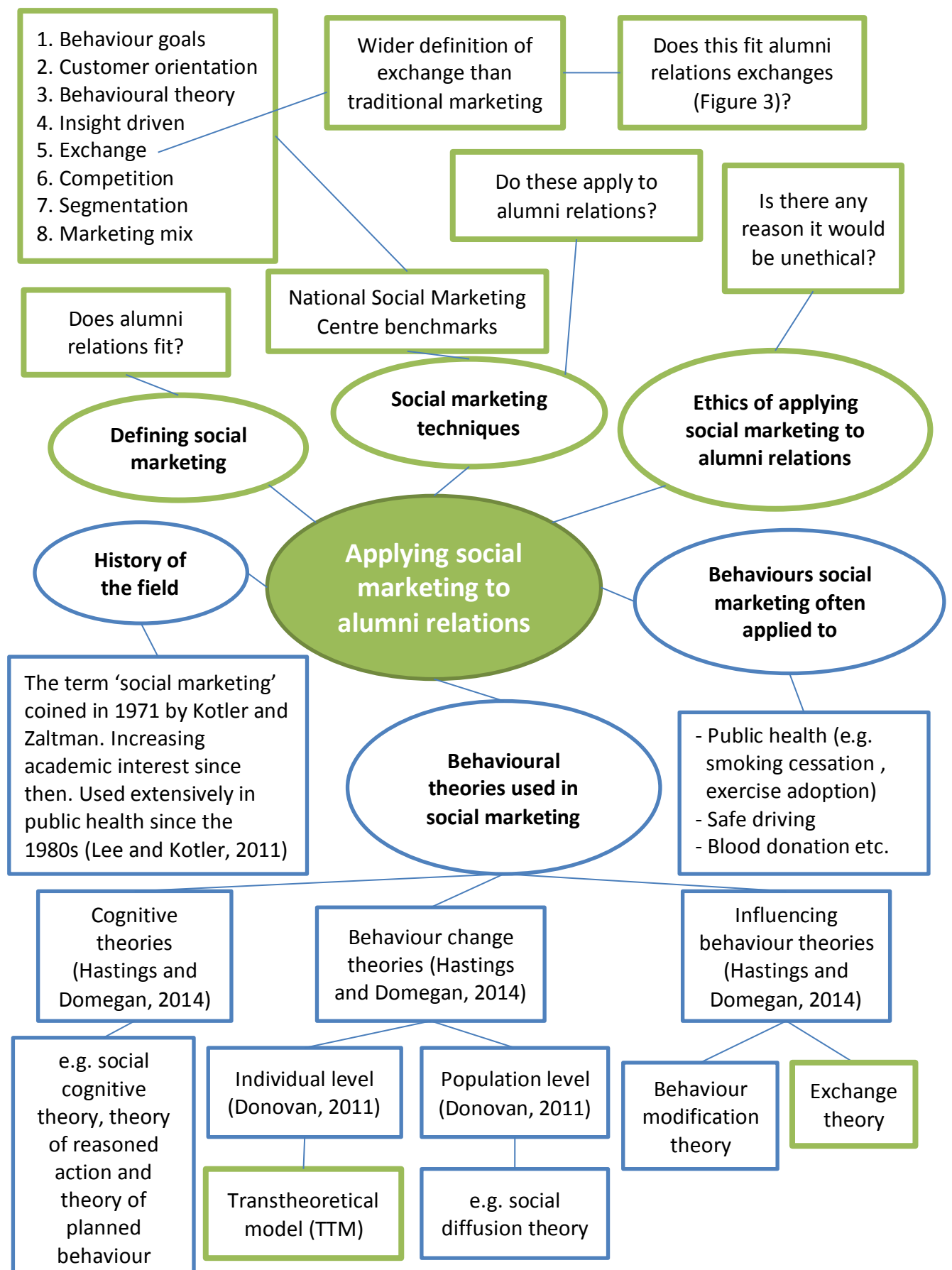


Figure 6: Mind map of alumni relations from a social marketing perspective

1.5 Research question, objectives and investigative questions

Based on the mind mapping of the problem the research question for this study is:

Can a social marketing framework using the transtheoretical model provide insights which enhance alumni relations programmes in the UK?

To answer this question four research objectives were identified (Figure 7). The first three required primary research and so had associated investigative questions (Figure 8).

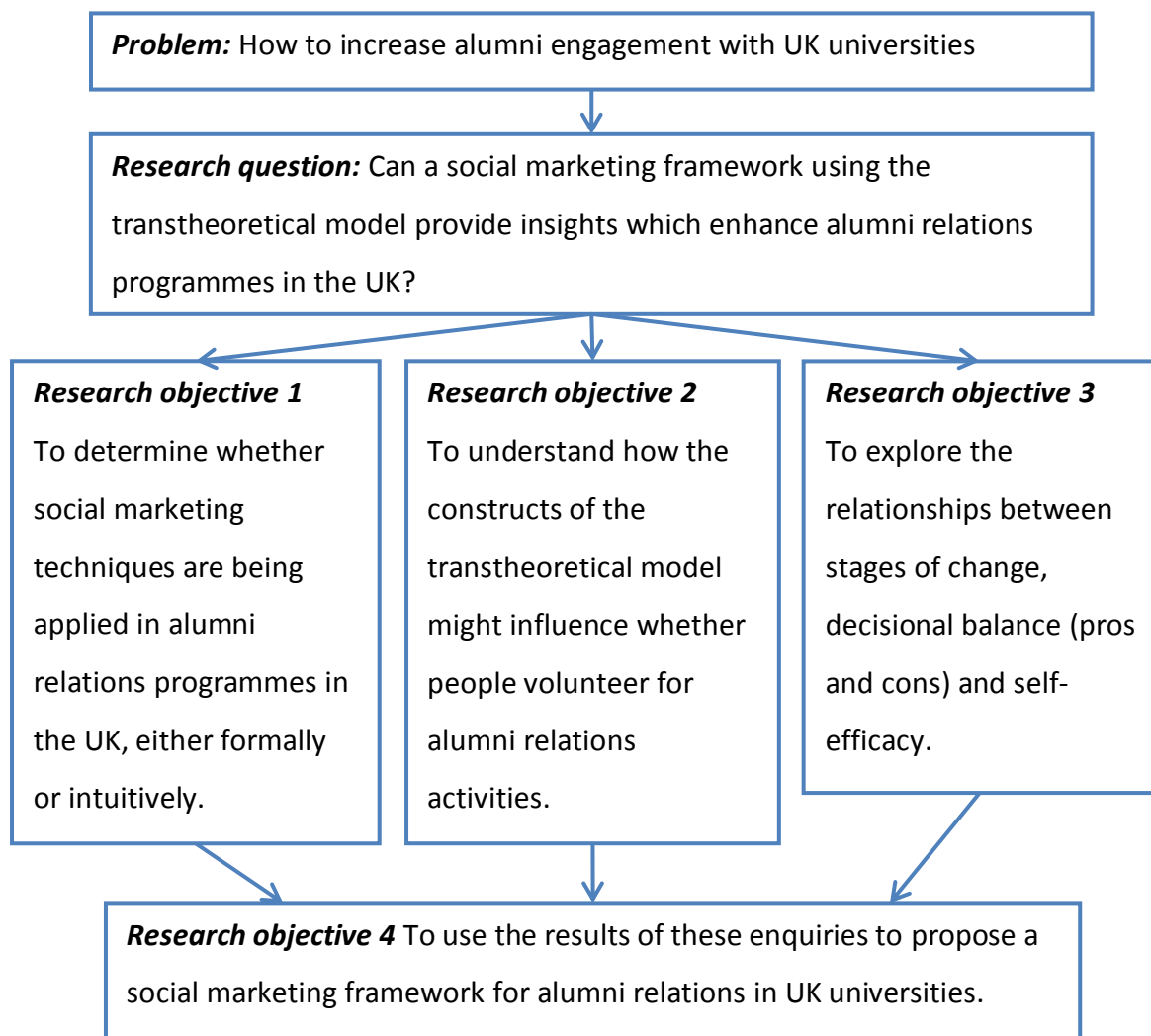
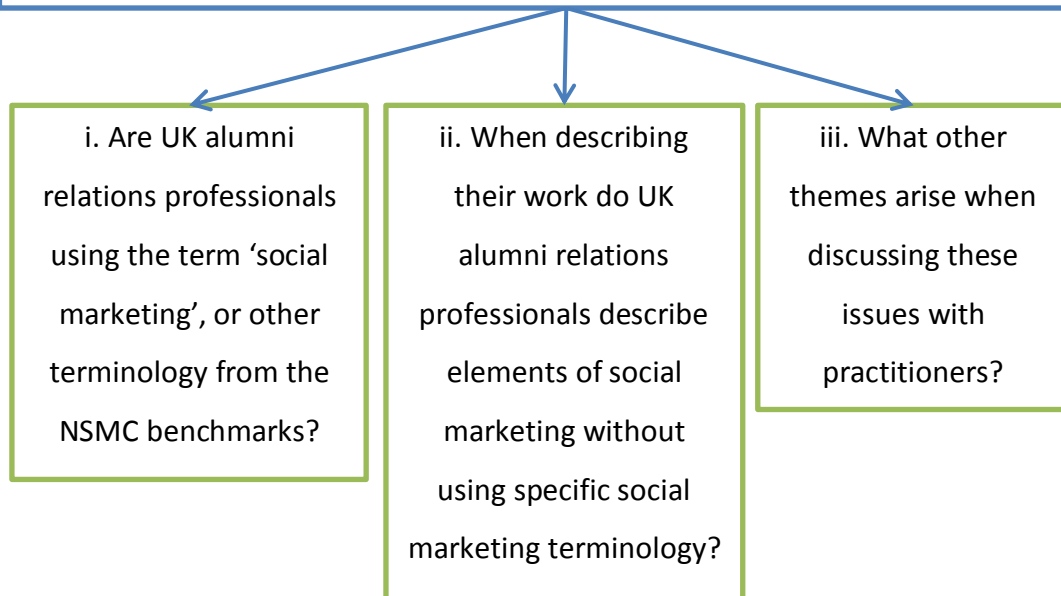
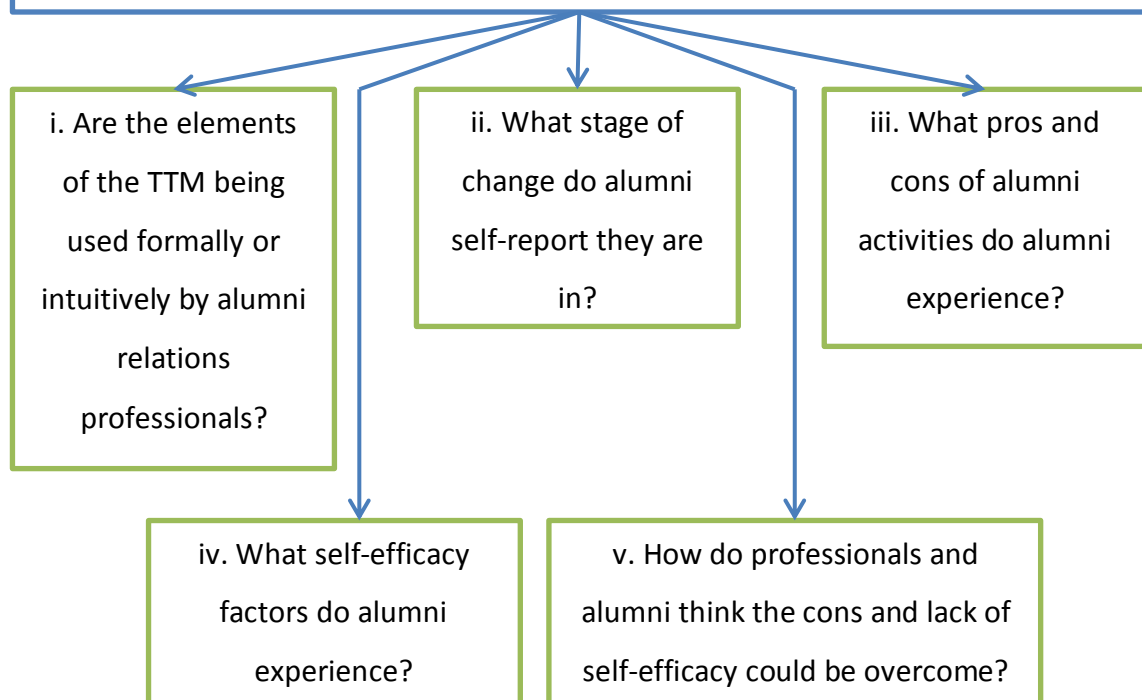


Figure 7: Problem, research question and research objectives

Research objective 1: To determine whether social marketing techniques are being applied in alumni relations programmes in the UK, either formally or intuitively



Research objective 2: To understand how the constructs of the transtheoretical model might influence whether people volunteer for alumni relations activities.



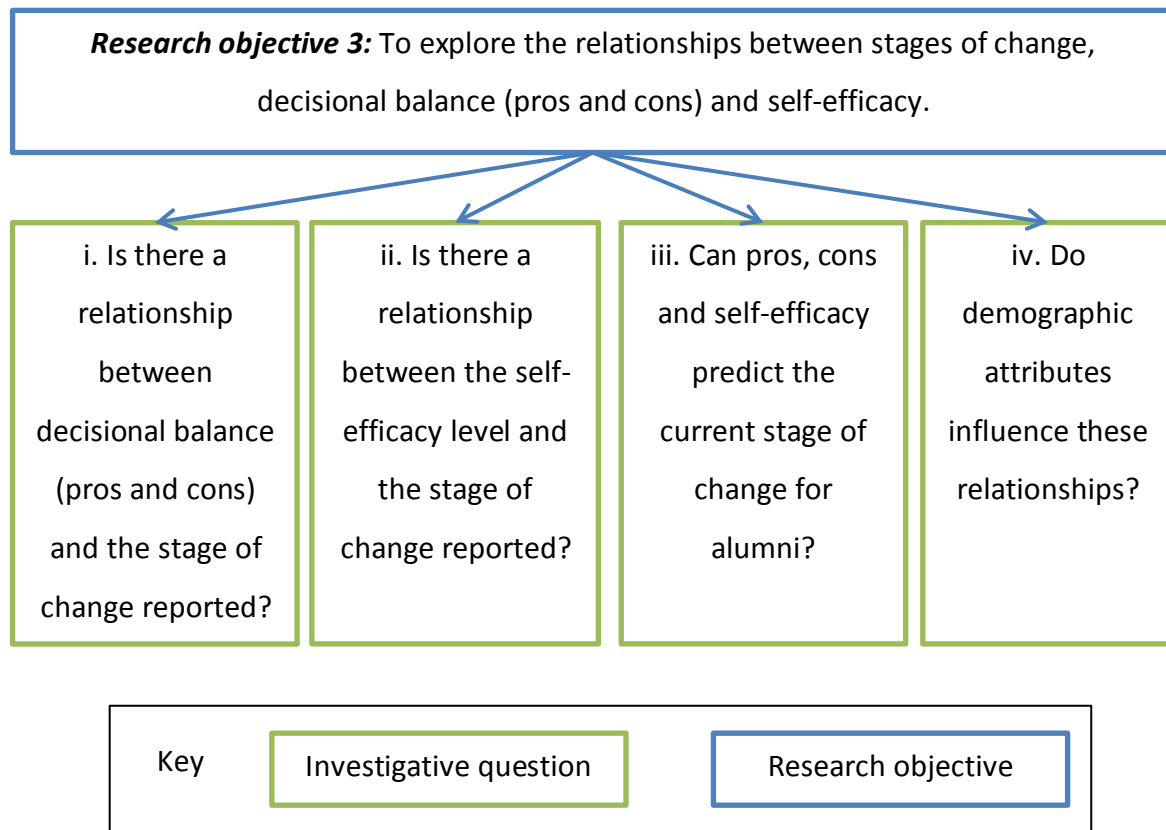


Figure 8: Investigative questions for research objectives 1-3

1.6 Overview of dissertation structure

The literature review critically assesses the alumni relations and social marketing literature as it applies to the research question (section 2). The research design, research methodology and analysis methodology are discussed in section 3. This is followed by a relatively brief analysis of the qualitative results (section 4) and quantitative results (section 5). There follows a triangulation and discussion of all the findings (section 6), during which the investigative questions and research objectives are answered. Finally, the study concludes (section 7) by answering the research question and the problem addressed in this study, and outlining recommendations for alumni professionals, the contributions and limitations of this study and opportunities for further research.

2 Literature review

The literature review commences by critically assessing the alumni relations literature for relevance to the research question (section 2.1). It then assess whether social marketing can be applied to alumni relations by considering social marketing's definition (section 2.2), key techniques (section 2.3) and ethical dimensions (section 2.4). The transtheoretical model (TTM) is then critically assessed as a behavioural theory underpinning social marketing campaigns (section 2.5). Finally, the applicability of the TTM to alumni relations is considered (section 2.6).

2.1 Review of the alumni relations literature

There is a growing body of research on alumni affinity and giving (Lilly Family School of Philanthropy, 2014), but this almost exclusively focusses on philanthropic giving rather than non-financial contributions (Weerts, Cabrera and Sanford, 2010). This section reviews the available literature, focussing on areas relevant to the research question.

2.1.1 Alumni affinity, engagement and philanthropy

Alumni can have three types of involvement with their university (Figure 9). Affinity is their level of identification with the university and is concerned with opinions and beliefs; engagement is their interaction with the university and is behavioural; and philanthropy is the donation of money (Lilly Family School of Philanthropy, 2014). This study focuses on increasing alumni engagement behaviours.

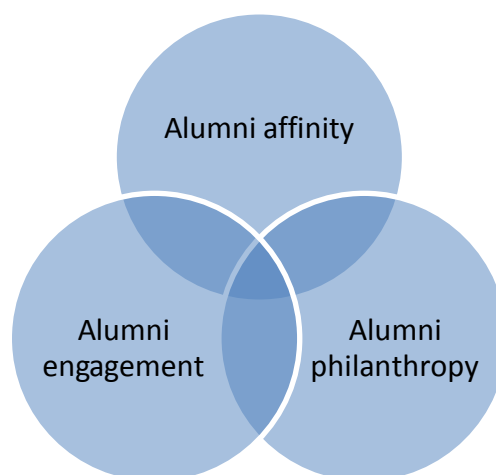


Figure 9: Alumni affinity, engagement and philanthropy
Source: Lilly Family School of Philanthropy (2014)

Unfortunately, there is no accepted framework which explains how alumni move between these forms of involvement (Lilly Family School of Philanthropy, 2014). Two studies which address this question are considered here.

An analysis of UK and European universities found that variables related to alumni events were strongly correlated with the number of alumni volunteers (CASE, 2015) (Table 1). This suggests a connection between the engagement behaviours of event attendance and volunteering. Alumni communications, which tend to target affinity, were not correlated with number of volunteers, although electronic communications were correlated with event attendance (CASE, 2015).

Alumni programme variables	Correlation with number of volunteers
No. of networking events per 10,000 contactable alumni	0.893**
Budget per 10,000 contactable alumni	0.869**
FTE alumni relations staff per 10,000 contactable alumni	0.837**
No. of reunions organised by alumni per 10,000 contactable alumni	0.756**
No. of events per 10,000 contactable alumni	0.740**
% contactable alumni attending events	0.679**
% contactable alumni with email address on the database	0.439**
Magazine variables	Not significant
E-newsletter variables	Not significant
Length of volunteering programme	Not significant

** Pearson's r significant at the 0.01% level (n=55)

Table 1: Correlations between alumni programme variables and number of volunteers
Source: CASE (2015)

A qualitative study in an Irish university found evidence of an alumni relationship-building cycle where affinity is built into engagement and then support (Gallo, 2012) (Figure 10). The research found that on entering the engagement stage alumni often selected activities which were personally beneficial and then later became more likely to volunteer for altruistic activities benefiting others (Gallo, 2012). The research also emphasised the importance of understanding alumni motivations (Gallo, 2012).

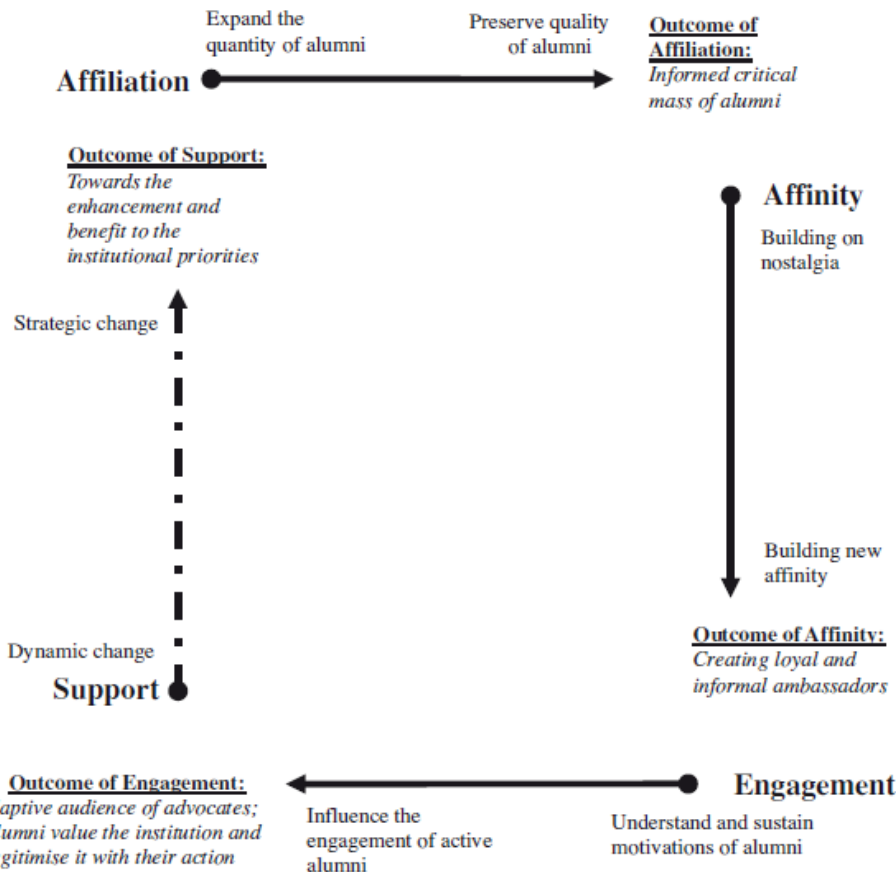


Figure 10: Alumni relationship-building cycle
 Source: Gallo (2012)

Although these two studies were relatively small the results are consistent with each other, suggesting that the affinity generated by alumni communications can be built into engagement behaviours with personal benefits, such as events, and then into engagement behaviours with altruistic benefits, such as careers mentoring (Figure 11). This hypothesised relationship is tested in this study.

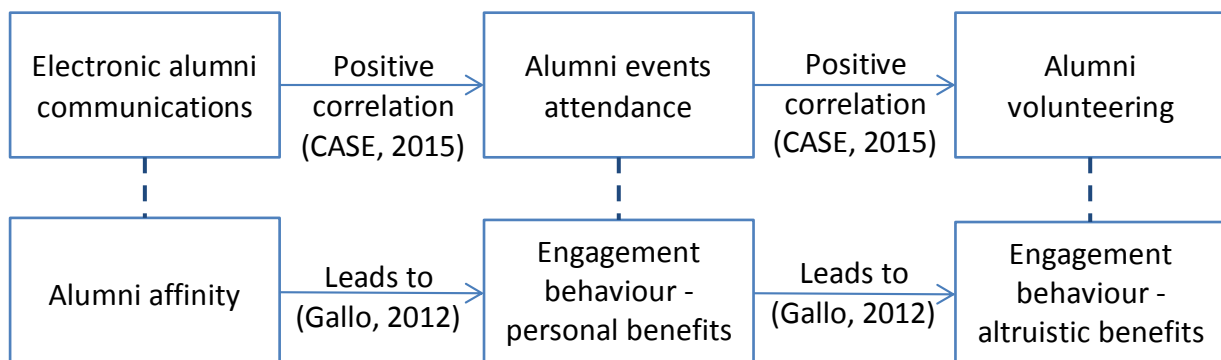


Figure 11: Links between affinity and engagement behaviours
 Sources: Gallo (2012); CASE (2015)

2.1.2 Demographic attributes and alumni behaviours

Much of the alumni giving and engagement literature focusses on identifying the attributes that predict which individuals are most likely to donate (Kelly, 2002) or volunteer (Weerts and Ronca, 2008). Table 2 summarises some of the empirical evidence from the US and how it informs the hypotheses for this study.

Demographic attribute	Empirical findings	Hypothesised relationship
Gender	Women more generous with their time and money in general and within higher education (Sun, Hoffman and Grady, 2007; Weerts and Ronca, 2007)	Women more involved
Age	Older alumni are more generous with their time and money (Sun, Hoffman and Grady, 2007; Weerts and Ronca, 2007)	Older alumni more involved
University type	Alumni of smaller universities feel more connected (McAlexander and Koenig, 2010). So alumni of collegiate universities may feel more connected to their college.	Collegiate alumni more involved
Education level	Alumni who only have an undergraduate degree are more likely to get involved in alumni activities than those with higher degrees (Newman and Petrosko, 2011). May be because individuals with multiple degrees have split loyalties (Newman and Petrosko, 2011).	Undergraduate degree alumni more involved

Table 2: Empirical evidence for demographic attributes affecting alumni behaviours

2.2 Defining social marketing

Many social marketing definitions have been proposed, but they all tend to include three common themes: social marketing is (1) the application of commercial marketing theories and techniques; (2) to influence the behaviour of target audiences; (3) in ways which benefit individuals and society at large (Lee and Kotler, 2011). However, in recent years many academics have widened their definitions by replacing the requirement of benefit to society with simply a need for campaigns to help people rather than make a profit (e.g. Gordon, McDermott and Hastings, 2008; Spotswood et al., 2012; Wood, 2012).

Addressing the first two parts of these definitions, alumni relations was established to be a form of marketing in section 1.2, and its behavioural goals are established in section 2.3. Addressing the final part, alumni relations activities have direct benefits for alumni, students, staff and university leaders, whereas the benefits to society are only indirect (Table 3).

In 2014/15 universities added £63billion to the value of graduates' human capital, demonstrating a substantial increase in productivity which contributed to the UK's economic growth (Oxford Economics, 2017). Although much of this is the result of the academic education provided, the report specifically acknowledges that internships and careers advice contribute to the productivity increase (Oxford Economics, 2017). So this indirect benefit alone could be substantial.

While harder to quantify, the provision of internships and funding of bursaries can also improve the UK's currently low levels of social mobility (Cullinane and Montacute, 2017; Montacute, 2018; Russell Group, 2017). Therefore, it is concluded that alumni relations activities display enough benefit to society to be considered within the definition of social marketing.

Stakeholder group	Direct benefits	Indirect benefits
Alumni	Many benefits explored in this study	
Current students	Internships and mentoring ⇒ better jobs after university	↑alumni affinity ⇒ ↑fundraising income ⇒ better facilities, bursaries etc. ⇒ ↑student experience ⇒ ↑alumni affinity (this is a self-reinforcing cycle)
University staff	Alumni speakers	↑alumni affinity ⇒ ↑giving ⇒ better facilities and ↑research funding ⇒ Better staff experience
University leadership	Alumni advice and consulting	Better student experience ⇒ better rankings in league tables and enhanced brand ⇒ attract excellent students ↑staff experience ⇒ attract excellent academics ↑alumni affinity ⇒ ↑giving ⇒ ↑funding strategic projects
Business community		Internships and careers mentoring for students ⇒ better prepared workforce ⇒ better graduate recruits
Government		↑alumni affinity ⇒ ↑giving ⇒ ↓reliance on public funds ⇒ ↑funding for other public services or tax cuts
Wider society		Internships and mentoring ⇒ better prepared workforce ⇒ ↑productivity ⇒ ↑economic growth (Oxford Economics, 2017) Internships and mentoring ⇒ disadvantaged students get better jobs ⇒ ↑social mobility (Montacute, 2018) ↑affinity ⇒ ↑giving ⇒ ↑bursaries ⇒ ↑social mobility (Cullinane and Montacute, 2017; Russell Group, 2017) ↑alumni affinity ⇒ ↑giving ⇒ ↓reliance on public funds ⇒ ↑funding for other public services or tax cuts

Table 3: Benefits of alumni relations programmes for university stakeholder groups
Source: stakeholder groups based on Kotler and Fox (1995)

2.3 Social marketing techniques

The National Social Marketing Centre in the UK created eight benchmarks which outline the techniques adapted from traditional marketing and used by best-practice social marketing campaigns (Hastings, 2011; NSMC, 2017).

A search of the literature found no examples of social marketing being applied to alumni relations. However, all of the social marketing techniques in the NSMC benchmarks could potentially be applied to alumni relations (Table 4). The implications of these for professionals are considered in section 7.2.

NSMC benchmark	Applicability to alumni relations
1. Behaviour: Aims to change behaviour	Targets alumni engagement behaviours as well as affinity, which is not behavioural
2. Customer orientation: Fully understands audience's behaviour using multiple research methods	Audience research could be undertaken, such as alumni interviews, focus groups or questionnaires
3. Theory: Applies behavioural theories to the behaviour to inform the campaign	Behavioural theories could be applied, such as the transtheoretical model (TTM)
4. Insight: Research identifies 'actionable insights' which inform the campaign	Alumni insight from the audience research could improve alumni relations programmes
5. Exchange: Considers benefits and costs of adopting a new behaviour	Considering benefits and costs and applying these insights could increase engagement
6. Competition: Seeks to understand what competes for the audience's time or attention	Considering alternative uses of alumni's time/attention could inform alumni programmes
7. Segmentation: Identifies audience segments then tailors campaigns appropriately	Segmentation and targeting of groups of alumni could improve outcomes. Activities could be tailored for each target group
8. Methods mix: Uses a mix of marketing methods to bring about behaviour change	The full marketing mix (product, price, place and promotion) could be applied to alumni programmes

Table 4: Social marketing benchmarks applied to alumni relations
Source: benchmarks from NSMC (2017)

2.4 Ethical considerations

Marketing does not contain a moral compass (Hastings, 2011), and so it is critical that social marketers question the ethical dimensions of their campaigns (Sargeant, 2009). It is not possible to determine whether the application of social marketing techniques to alumni relations would be universally ethical as each programme is different. However, the following sections address some of the ethical questions which may arise. Open discussion of these questions with internal and external stakeholders would help reduce the risk of unethical practices (Evans and Moutinho, 1999).

.

2.4.1 Are the impacts ethical?

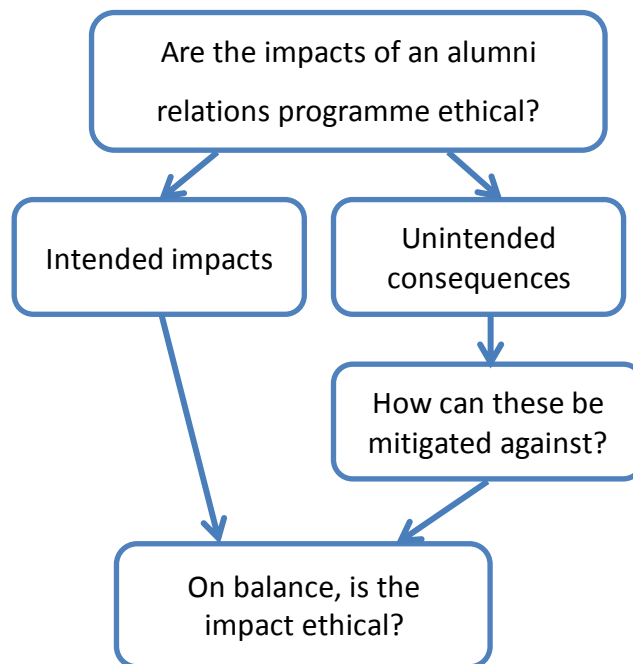


Figure 12: Ethical questions about impacts

Kotler and Roberto (1989) suggest asking about the ethics of the intended and unintended impacts of a social marketing campaign (Figure 12). An internship and mentoring programme may intend to improve social mobility, but if disadvantaged students don't make use of the programme it may unintentionally decrease social mobility (Figure 13). In this case the intended impact is ethical, but the unintended consequence wouldn't be. By exploring the ethicality of these impacts in advance professionals can identify ways to mitigate against unethical consequences.

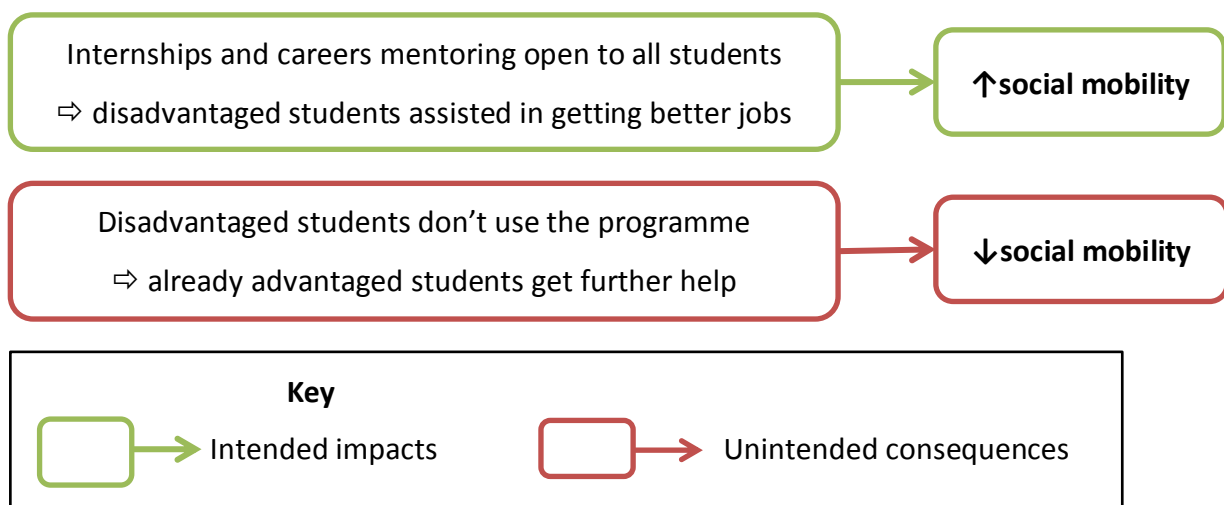


Figure 13: Impacts and unintended consequences of alumni relations programmes

2.4.2 Are the methods ethical?

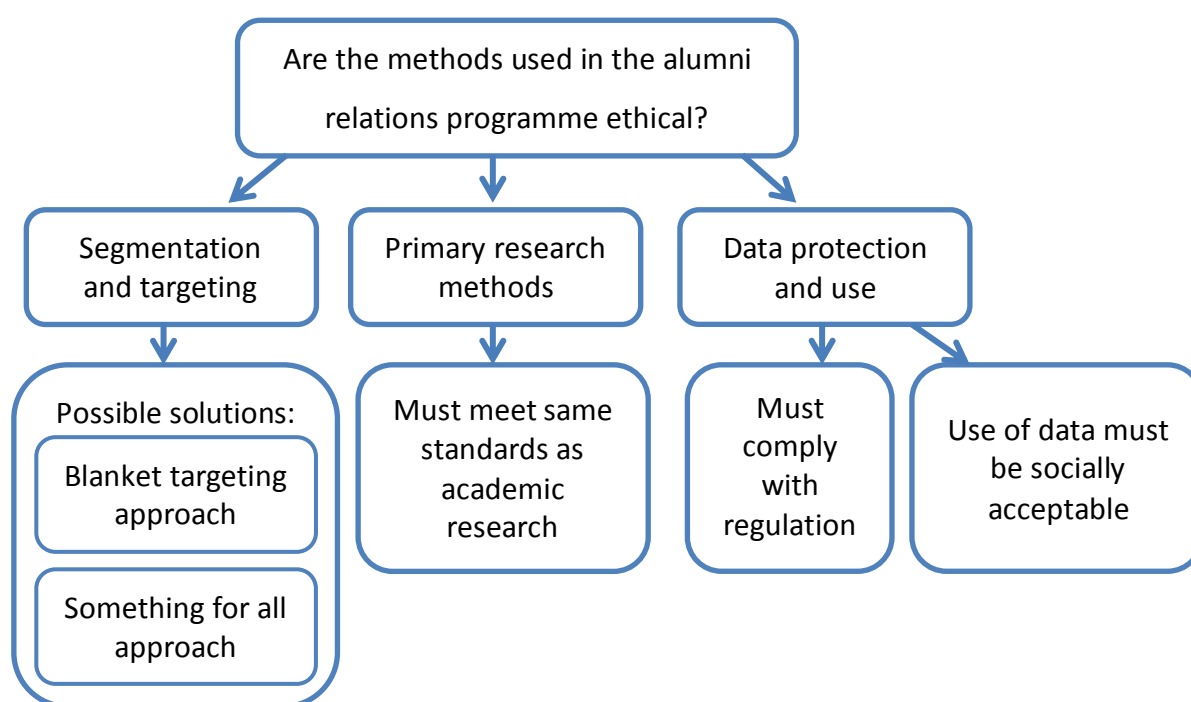


Figure 14: Ethical questions about methods

2.4.2.1 Segmentation and targeting

Segmentation and targeting of social marketing campaigns can prompt significant ethical questions (Hastings and Domegan, 2014). Empirical evidence suggests campaigns targeted at carefully selected groups work better than a mass-market approach (Hastings and Domegan, 2014). Given that universities are charities (HEFCE, 2017b) and partly tax-payer funded (HEFCE, 2017a) it is ethically important that they use their limited resources effectively, supporting the use of segmentation and targeting. However, it would be unethical to exclude a group from the whole alumni relations programme because they could not gain the benefits available to others.

Two solutions present themselves. Firstly, a 'blanket-targeting' approach partly solves the ethical issues (Hastings and Domegan, 2014), where alumni activities are open to all but are made particularly appealing to the target group. For example, an event targeting retired alumni could be open to all but scheduled during the working day so that working alumni are unlikely to attend. The second solution is to ensure that all segments are offered something within the alumni relations programme, although particular activities may only be offered to a target group.

2.4.2.2 Primary research

Primary research undertaken as part of an alumni relations programme must follow the same ethical guidelines as academic research. This includes gaining the informed consent of all participants, storing all data confidentially and not using any deception or covert observation (Saunders, Lewis and Thornhill, 2009).

2.4.2.3 Data protection

It is important that social acceptability of the use of personal data is actively considered. Even if a university stays within the law the reputational risk of doing something socially unacceptable can be great, as experienced by a number of charities in recent years (Jenkin, 2016).

This discussion does not raise any insurmountable ethical issues. Therefore, assuming that alumni relations professionals consider the ethical dimensions of their programmes and adjust their plans accordingly there is no ethical barrier to applying social marketing techniques to alumni relations.

2.5 The transtheoretical model (TTM)

Human behaviour is highly complex, so it is critical that behavioural theory underpins social marketing campaigns to maximise their effectiveness in influencing behaviour change (Hastings and Domegan, 2014). However, many different human behaviour theories have been developed in fields as diverse as psychology, health research and behavioural economics (Lefebvre, 2001; Gordon, McDermott and Hastings, 2008; Donovan, 2011).

The transtheoretical model (TTM) of behaviour change was selected as the behavioural theory for this study (section 1.4). In this section the model is described, its empirical support critically assessed and its strengths and limitations evaluated.

The TTM emerged from James Prochaska and Carlo DiClemente's analysis of leading psychotherapy and behaviour change theories in the early 1980s (Lefebvre, 2001). The model has since been thoroughly tested and refined (Lee and Kotler, 2011) and is now one of the most widely used behaviour theories in social marketing (Lefebvre, 2001). The version described here is based on Prochaska, Redding and Evers (2008) and illustrates the model as it currently stands.

The TTM proposes that individuals go through various stages as they progress towards adopting a new behaviour. Each stage is associated with different beliefs about the new behaviour regarding its pros and cons (decisional balance) and the individual's level of self-confidence in their ability to perform it (self-efficacy) (Figure 15). Individuals use a different set of strategies (processes of change) to progress through the stages.

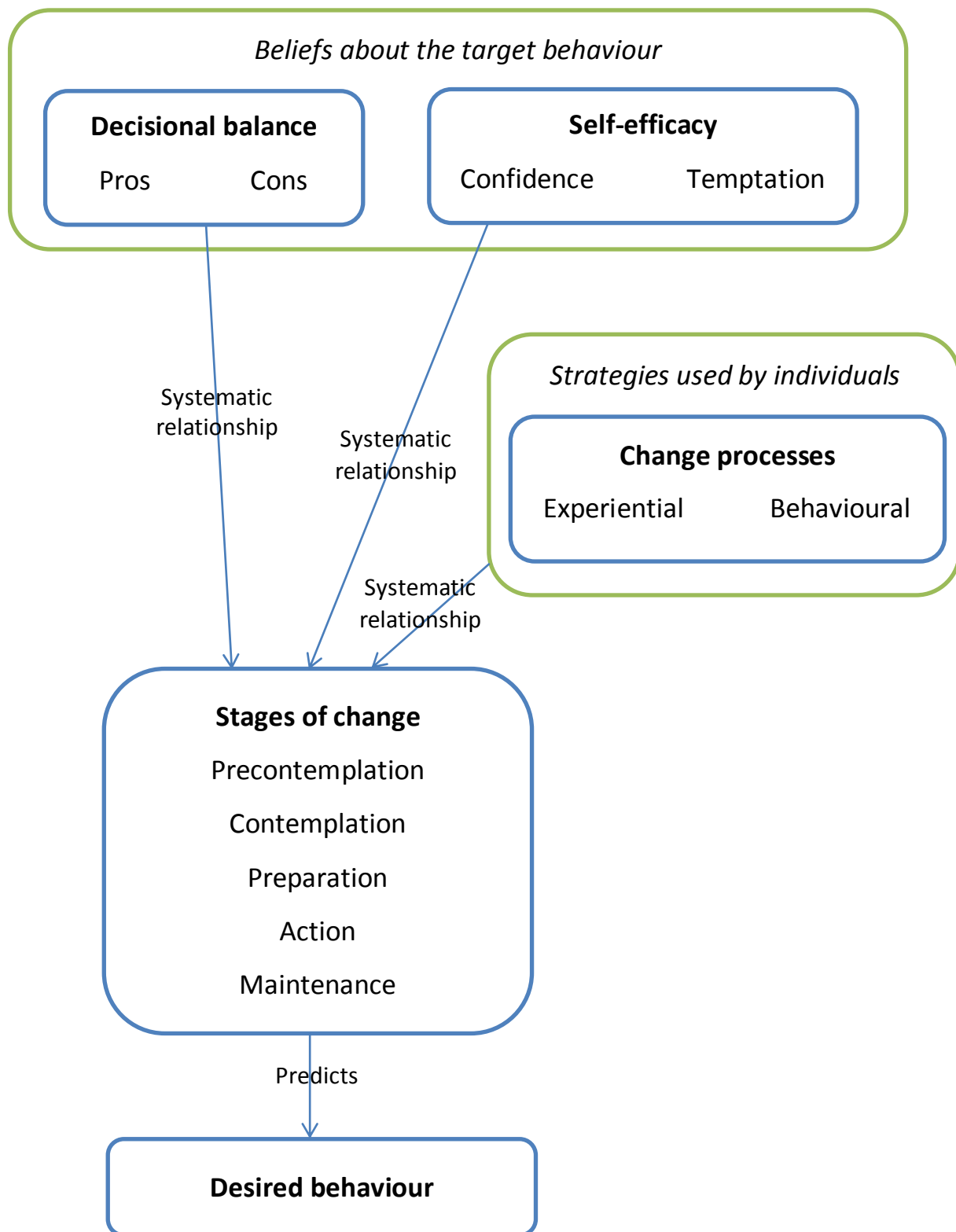


Figure 15: Constructs of the TTM
Source: Prochaska, Redding and Evers (2008)

2.5.1 Stages of change

The TTM proposes that common stages of change are experienced in all behaviour change (Figure 16).

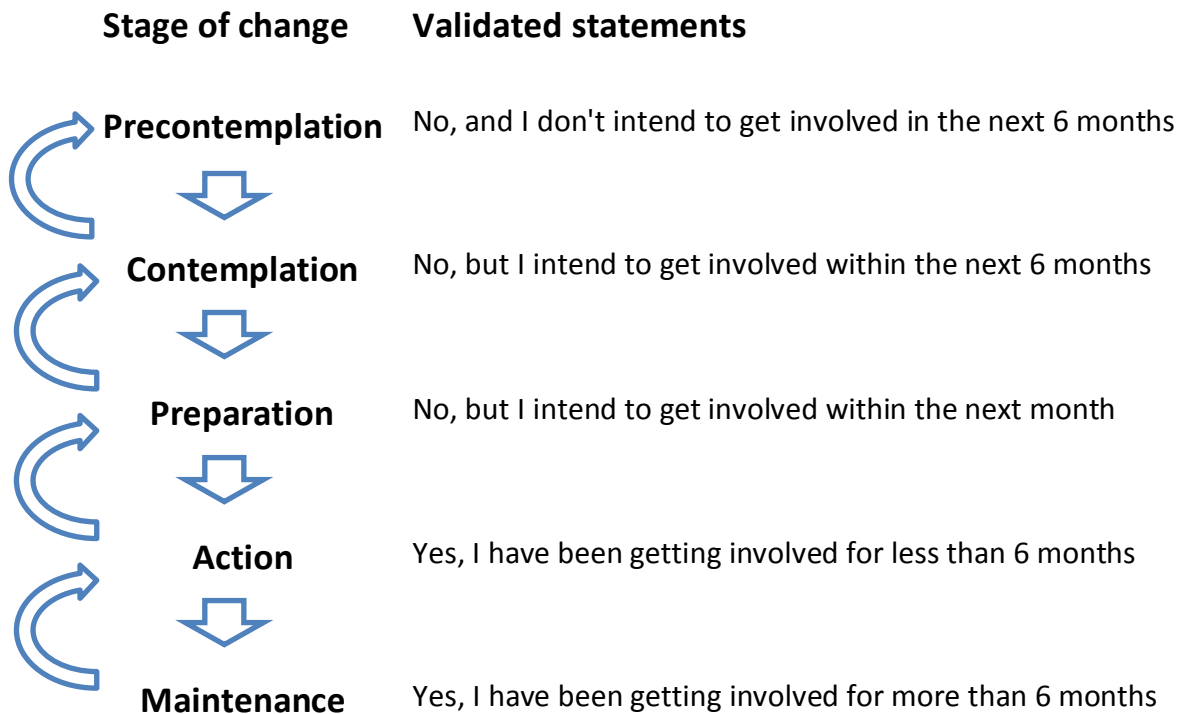


Figure 16: Stages of change and validated statements for alumni behaviours

Source: adapted from Lee and Kotler (2011)

Although the stages of change are often described in a linear fashion, in fact people move in both directions through them (Prochaska, Redding and Evers, 2008). People can also progress through the stages very quickly, making them appear to spontaneously change when in fact they may have moved through the stages more slowly previously, relapsed and then made a final quick progression to the action stage (Hastings, 2011).

The number of people in each stage, known as the stage distribution, differs for each behaviour. However, empirical research for addictive behaviours has consistently found that 50-60% are in precontemplation, 30-40% are in contemplation and 10-15% are in preparation (Prochaska, DiClemente and Norcross, 1992).

2.5.2 Decisional balance

Decisional balance is the relative weighting of the pros and cons of changing to the desired behaviour (Prochaska, Redding and Evers, 2008).

Empirical studies have consistently demonstrated a systematic relationship between decisional balance and stage of change (Prochaska and Velicer, 1997). Although the exact changes in the weightings of the pros and cons differ by behaviour, generally the cons outweigh the pros at the precontemplation stage. As people progress to the contemplation stage the pros increase, surpassing the cons which remain roughly static. Then as people progress to the action stage the cons fall while the pros may continue to rise slightly (Prochaska and Velicer, 1997) (Figure 17).

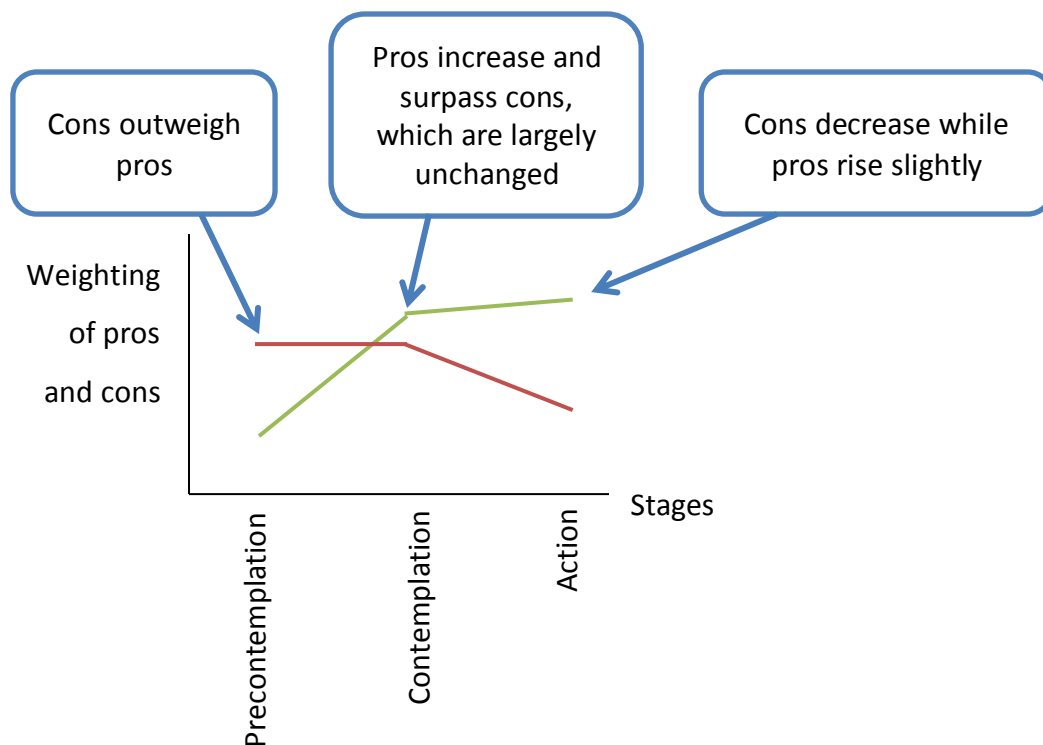


Figure 17: Example relationships between weighting of pros and cons
Source: based on Prochaska et al. (1994)

2.5.3 Self-efficacy

Self-efficacy is the situation-specific confidence that people have in their ability to perform the desired behaviour, even in adverse circumstances. The construct also includes the opposite concept: the strength of temptation to relapse into negative behaviours in adverse circumstances (Prochaska, Redding and Evers, 2008).

There is very strong empirical evidence across many behaviours and populations to support self-efficacy as a significant driver of behaviour change, both within the TTM, in other behavioural models and as a variable on its own (Donovan, 2011) (Figure 18). It has also been shown that there is a positive relationship between self-efficacy and volunteering behaviours (Eden and Kinnar, 1991) which suggests it may be relevant to alumni behaviours.

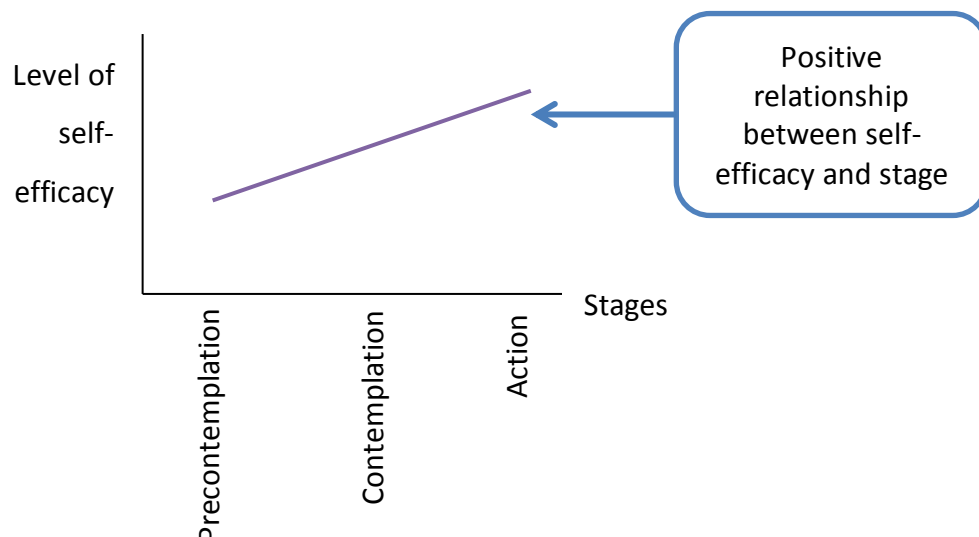


Figure 18: Relationship between self-efficacy and stage

2.5.4 Processes of change

The processes of change are the activities individuals use to progress between stages. The TTM proposes that individuals use different activities in different stages (Table 5).

Processes	Description	Stage(s) used in
Experiential processes		
Consciousness raising	Finding and learning new facts, ideas, and tips that support the healthy behaviour change	Precontemplation Contemplation
Dramatic relief	Experiencing the negative emotions (fear, anxiety, worry) that go along with unhealthy behavioural risks	Precontemplation Contemplation
Environmental reevaluation	Realizing the negative impact of the unhealthy behaviour or the positive impact of the healthy behaviour on one's proximal social and/or physical environment	Precontemplation Contemplation
Self-reevaluation	Realizing that the behaviour change is an important part of one's identity as a person	Contemplation Preparation
Social liberation	Realizing that the social norms are changing in the direction of supporting the healthy behaviour change	Inconsistent evidence
Behavioural processes		
Self-liberation	Making a firm commitment to change	Action
Helping relationships	Seeking and using social support for the healthy behaviour change	Maintenance
Counter-conditioning	Substitution of healthier alternative behaviours and cognitions for the unhealthy behaviour	Maintenance
Reinforcement Management	Increasing the rewards for the positive behaviour change and decreasing the rewards of the unhealthy behaviour	Maintenance
Stimulus control	Removing reminders or cues to engage in the unhealthy behaviour and adding cues or reminders to engage in the healthy behaviour	Maintenance

Table 5: Processes of change

Source: copied from Prochaska, Redding and Evers (2008)

Although there is evidence supporting the relationship between each process of change and the stage it is most useful in, this hasn't been consistently replicated across different behaviours (Prochaska, Redding and Evers, 2008).

However, the empirical evidence suggests the processes are more generalisable across behaviours when they are grouped into two higher-order variables: experiential and behavioural processes (Prochaska, Redding and Evers, 2008) (Table 5).

2.5.5 Applying the transtheoretical model to social marketing campaigns

Applying the TTM to social marketing campaigns results in a number of recommendations.

Firstly, the population should be segmented by stage of change and one stage identified as the target group (Lee and Kotler, 2011). A strength of the TTM is that an individual's stage of change can be easily determined using a set of validated statements (Andreasen, 1995) (Figure 16).

Secondly, the target group's assessment of the pros and cons of the new behaviour, levels of self-efficacy and attitudes to the processes of change should be investigated through primary research (Andreasen, 1995).

Finally, social marketing interventions should be 'stage-matched' to influence decisional balance, self-efficacy and processes of change. The pattern of decisional balance (Figure 17) suggests that campaigns targeting the precontemplation stage should emphasise the pros of the new behaviour, whereas campaigns targeting the contemplation stage should emphasise ways in which cons can be reduced (Andreasen, 1995).

The self-efficacy construct suggests that building the target individuals' self-confidence helps them progress through the stages. The processes of change construct suggests that campaigns should focus on encouraging the processes which help those in the target stage to progress (Lefebvre, 2001).

This type of social marketing campaign encourages people to progress to the next stage ('stage progression') even if they are not yet ready for behaviour change. Any attempt to move them directly to the maintenance stage is unlikely to result in sustained behaviour change (Prochaska, DiClemente and Norcross, 1992).

2.5.6 Critical assessment of the transtheoretical model

This section draws together the strengths and limitations of the TTM and then concludes by discussing whether it stands up to a critical assessment.

2.5.6.1 General strengths

The TTM has a number of strengths. Firstly, it has been empirically tested with supportive results across at least 48 behaviours and in many different countries (Prochaska, Redding and Evers, 2008). Table 6 illustrates the wide variety of behaviour types that have been tested (Andreasen, 1995), with the blue bold text showing the characteristics of alumni behaviours. In addition, studies have found that better results are achieved by interventions which use all the TTM constructs (Prochaska, Redding and Evers, 2008).

Behaviour characteristics tested with the TTM	
Acquisition	Cessation
Addictive	Non-addictive
Frequent	Infrequent
Legal	Illegal
Public	Private
Socially acceptable	Not socially acceptable

Blue bold text = Alumni behaviour characteristics

Table 6: Behaviour types tested with the TTM

Source: Andreasen (1995)

2.5.6.2 General limitations

The first limitation of the TTM is the mixed evidence regarding whether it includes all the relevant variables affecting behaviour change. Some studies support the TTM by finding that adding non-TTM constructs, such as social norms, resulted in interventions with either worse or similar results to those only using TTM constructs (Prochaska, Redding and Evers, 2008). However, other studies found that adding a non-TTM variable improved outcomes (Brug, 2005). Even the creators of the TTM recommend further research to test whether constructs such as framing could help predict stage progression (Prochaska, Redding and Evers, 2008). To mitigate this criticism alternative variables affecting behaviour were identified from the primary research in this study (sections 6.4.2 and 6.4.3).

A second criticism is that, like many behaviour theories, the TTM fails to incorporate population-level affects (Lefebvre, 2001). However, alumni behaviours are unlikely to fit a population-level theory as the alumni of any single university would be a very small proportion of the general population. Therefore, no single alumni initiative would generate much momentum at a population level.

Finally, the TTM is only applicable to high-involvement behaviours where the individual feels decisions about the behaviour are important and so a structured decision-making process is used (Andreasen, 1995). In contrast, low-involvement behaviours have a small impact on the individual and so are more spontaneous and are unlikely to go through various stages of change (Andreasen, 1995). Therefore, it is recommended that the TTM is only applied to high-involvement alumni behaviours, such as the committing to careers mentoring on an ongoing basis.

Table 7 summarises these criticisms of the TTM and their impact on an application to alumni behaviours.

Criticism and authors	Defence and authors	Relevance for alumni relations	Conclusion on criticism
TTM doesn't include all the variables that influence behaviour change (Brug, 2005)	Any model can be improved by further research, and should be adapted to the situation it is being applied in (Prochaska, Redding and Evers, 2008)	Important to identify other variables which could be relevant for alumni behaviours	Look for other possible variables in inductive primary research
TTM fails to incorporate population-level effects (Lefebvre, 2001)		Population-level campaign unlikely to work as alumni of each university are a small proportion of the population	Weak criticism for alumni behaviours
The TTM is only applicable to high involvement behaviours (Andreasen, 1995)		Some alumni behaviours are high-involvement behaviours while others are low-involvement	Recommended only for high-involvement alumni behaviours

Table 7: Summary of criticisms of TTM model as a whole

2.5.6.3 Stages of change construct limitations

The stages of change construct is the best known and most commonly used part of the TTM (Lefebvre, 2001), partly due to its intuitive appeal and ease of use for segmentation (Andreasen, 1995). However, the stages of change construct has attracted criticism.

Firstly, the stages are described using a mixture of beliefs, intentions and behaviours, with no rigorous scientific method for deciding which were concepts are included (West, 2005a). Some consider this to be a flaw in the TTM's scientific rigour (Herzog, 2005; West, 2005a), but the creators of the model consider it to be a strength: human behaviour is complex and so each stage of change should combine a variety of psychological processes (DiClemente, 2005). Either way, it certainly poses a challenge for practitioners targeting the precontemplation stage, which may contain a mixture of people in different situations who would respond to very different social marketing campaigns (Figure 19).

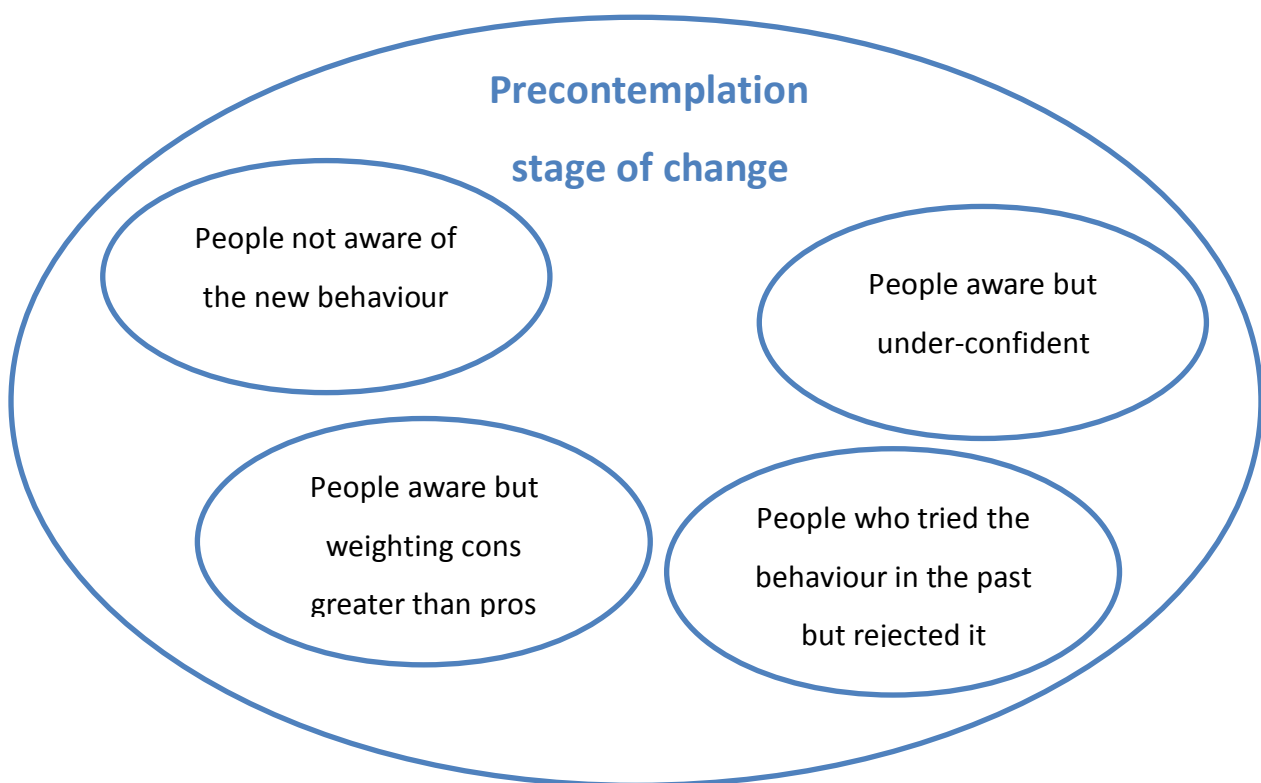


Figure 19: Types of individuals in the precontemplation stage

The second criticism is that in reality people sit on a continuum between precontemplation and maintenance, not in separate stages. However, DiClemente (2005) points out that operationalising an underlying phenomenon is always somewhat arbitrary, although it should be based on thoughtful criteria. The aim is to create groups of individuals which enable the testing of the TTM and segmentation, not to prove that these discrete groups of people exist in the real world (Andreasen, 1995; DiClemente, 2005; Hodgins, 2005). This criticism would apply to any attempt to model behaviour change and so should not prevent use of the TTM.

Thirdly, the TTM accepts that people can move forwards and backwards through the stages, either slowly or quickly, and can cycle through the stages multiple times (Prochaska, DiClemente and Norcross, 1992). While this flexibility is necessary to accurately reflect human behaviour it presents challenges to practitioners attempting to segment the market based on stage of change which can change quickly (West, 2005b). Further research is needed to assess how quickly people move through the stages for alumni behaviours. If stage is relatively stable then this criticism doesn't undermine use of the TTM.

The final criticism of the stages of change construct is that it encourages focus on stage progression rather than behaviour change, on the assumption that if individuals are further along the stages their behaviour is more likely to change in future (Andreasen, 1995). There is strong theoretical support for this being true, but there is an urgent need for empirical research to test this hypothesis (Hodgins, 2005).

Table 8 summarises these criticisms and considers their relevance for alumni behaviours.

Criticism and authors	Defence and authors	Relevance for alumni relations	Conclusion on criticism
Stages are a mixture of psychological concepts (Herzog, 2005; West, 2005a)	This is a strength, as it reflects complex human behaviour (DiClemente, 2005)	Makes targeting the precontemplation stage difficult as it contains a mixture of people	Possibly inevitable, but makes it harder to use in practice
In reality people sit on a continuum, not in stages. Stages are arbitrarily determined (West, 2005a)	Operationalising always involves arbitrary decisions (DiClemente, 2005) Not meant to reflect exact reality, but for segmentation and testing (Andreasen, 1995; Hodgins, 2005)	Probably no worse than any other operationalised theory	Criticism applies equally to all behavioural theories
People can move forwards and backwards through stages quickly, making segmentation difficult (West, 2005b)	This accurately reflects behaviour change (Prochaska, DiClemente and Norcross, 1992)	Further research needed to assess how quickly people can move through stages for alumni behaviours	If stage is relatively stable then this criticism doesn't undermine use of the TTM
Lack of evidence that stage progression increases likelihood of behaviour change (Adams and White, 2004; West, 2005a)	Strong theoretical reasons for this hypothesis (Hodgins, 2005)	Further empirical research should assess this for alumni behaviours. If hypothesis rejected this seriously undermines the TTM.	Accept hypothesis for now, but recommend further empirical work

Table 8: Summary of criticisms of stages of change construct

2.5.6.4 Processes of change construct limitations

The evidence for processes of change suggests that while there may be some general patterns for experiential and behavioural processes, the specific processes used in each stage are not generalisable across all behaviours (Prochaska, Redding and Evers, 2008). This means that primary research has to be undertaken for each behaviour to identify the relevant processes, which limits the use of the construct for social marketing practitioners.

2.5.6.5 TTM conclusion

Some authors (e.g. Adams and White, 2004; Herzog, 2005; West, 2005a) feel the limitations of the TTM are severe enough to recommend against its use. However, the majority (e.g. Brug, 2005; DiClemente, 2005; Harré, 2005; Hodgins, 2005) argue that while the TTM has limitations and elements that require further research overall it is a useful model of behaviour change.

A number of authors specifically warn against becoming too caught up in theoretical discussions about the TTM's ability to accurately reflect underlying psychological processes, and instead recommend using it in social marketing campaigns as a practical behaviour change model (Brug, 2005; Donovan, 2011; Hastings, Angus and Bryant, 2011).

In summary, no model accurately reflects all the complexity of human behaviour, but the TTM has strong empirical support and offers useful practical suggestions for its application (Hastings, 2011). In addition, many of its limitations are either not relevant to alumni behaviours or can be mitigated. Therefore, the TTM stands up to a critical assessment, and is therefore applied to alumni behaviours in this study.

2.6 Testing the transtheoretical model with alumni behaviours

The TTM has not been previously applied to alumni behaviours. This section assesses the evidence for two similar constructs in the alumni relations literature (sections 2.6.1 and 2.6.2). It then identifies the TTM constructs (section 2.6.3) and hypotheses (section 2.6.4) which are tested in this study. It concludes by considering the criteria which are used to assess the applicability of any behavioural theory to new behaviours (section 2.6.5).

2.6.1 Social exchange theory

Social exchange theory uses the balance of costs and benefits over time to explain reciprocal relationships (Weerts, Cabrera and Sanford, 2010), and has been applied to both alumni giving (Kelly, 2002; Dodge, 2015) and alumni volunteering (Weerts, Cabrera and Sanford, 2010). Its applicability to alumni behaviours is supported by empirical evidence that quality of student experience (Lilly Family School of Philanthropy, 2014) and positive alumni experiences (Newman and Petrosko, 2011) are significant predictors of future behaviours.

Although similar to decisional balance it considers costs and benefits over a longer time frame (Figure 20). Unfortunately, empirical studies have not operationalised the pros and cons of alumni activities (e.g. Weerts and Ronca, 2007; Weerts and Ronca, 2008) (Figure 20). Therefore, these studies don't provide empirical evidence for the relevance of decisional balance for alumni behaviours.

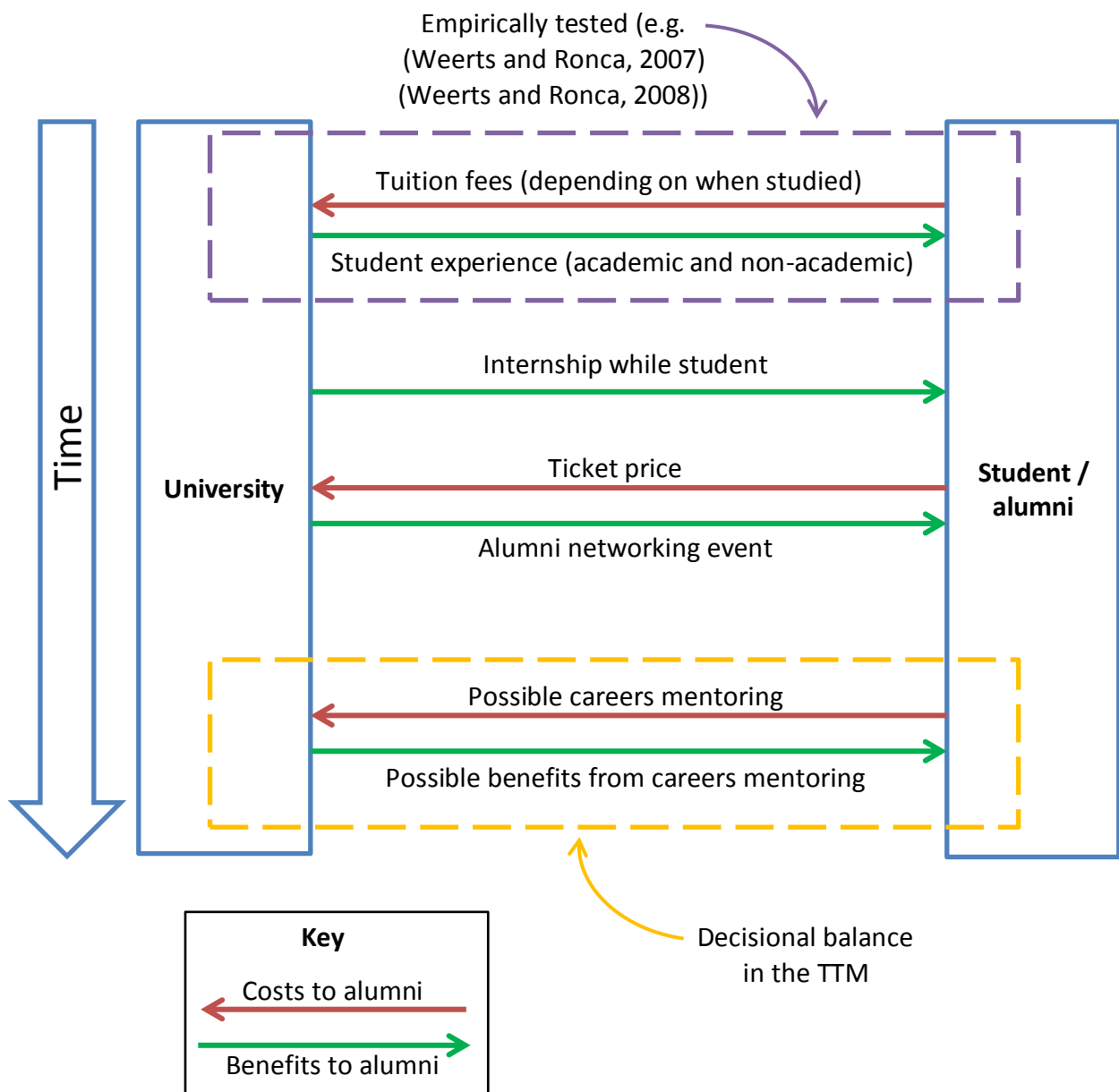


Figure 20: Social exchange theory applied to alumni relations

Source: Weerts and Ronca (2007); Weerts and Ronca (2008); Weerts, Cabrera and Sanford (2010)

2.6.2 Expectancy theory

Expectancy theory has been used to explain alumni decisions to volunteer (Weerts, Cabrera and Sanford, 2010). The expectancy construct (Figure 21) is very similar to self-efficacy in the TTM and is often operationalised in a very similar way (Eden and Kinnar, 1991). However, this construct has not been operationalised in the studies applying expectancy theory to alumni behaviours (Weerts and Ronca, 2007; Weerts and Ronca, 2008) (Figure 21).

In summary, no empirical evidence for the applicability of TTM constructs to alumni behaviours was found in the literature.

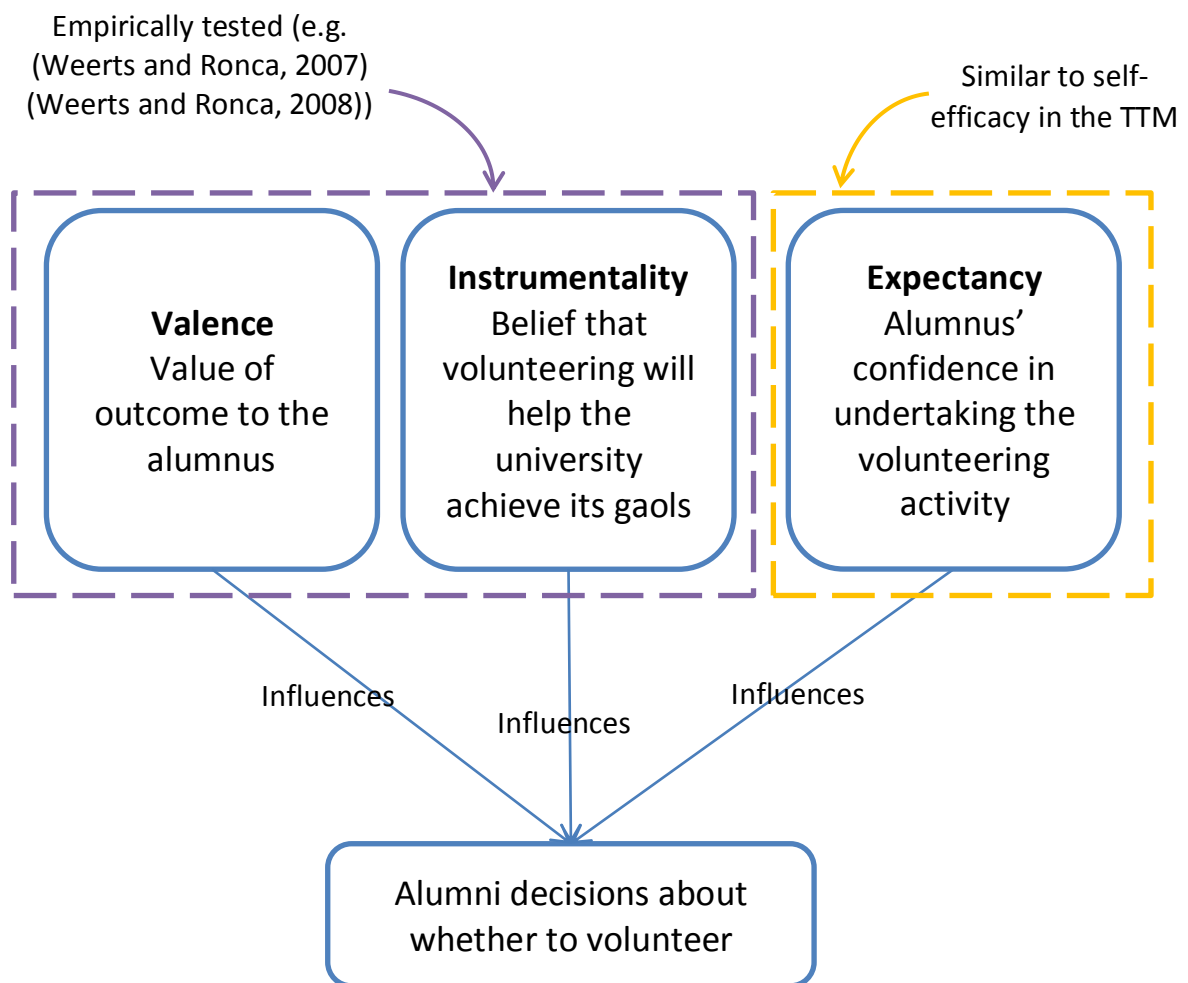


Figure 21: Expectancy theory applied to alumni relations

Source: Weerts and Ronca (2007); Weerts and Ronca (2008); Weerts, Cabrera and Sanford (2010)

2.6.3 Identifying constructs for testing

Although some studies testing the applicability of the TTM to a new behaviour include all its constructs, many initially test the relationship between only some of them (e.g. Buxton, Wyse and Mercer, 1996; Dallow and Anderson, 2003; Ferguson and Chandler, 2005). Given the time available for this study it was therefore decided to only test decisional balance and self-efficacy as these showed the most promise for alumni behaviours (Table 9).

TTM construct	Strengths when applied to alumni behaviours	Limitations when applied to alumni behaviours	Include?
Decisional balance	- Strong evidence of a systematic relationship between decisional balance and stages of change	- No major limitations	Yes
Self-efficacy	- Strong evidence of a systematic relationship between self-efficacy and stages of change	- No major limitations - Temptation element of the construct is not relevant for alumni behaviours	Yes, but only include confidence construct
Processes of change		- No generalisable relationships between individual processes of change and stages of change - This makes it difficult to create and test a hypothesis to test alumni behaviours against	No

Table 9: Comparing strengths and limitations of TTM constructs

2.6.4 Hypotheses

Based on the literature review, the following relationships have been hypothesised between the selected constructs of the TTM (Figure 22).

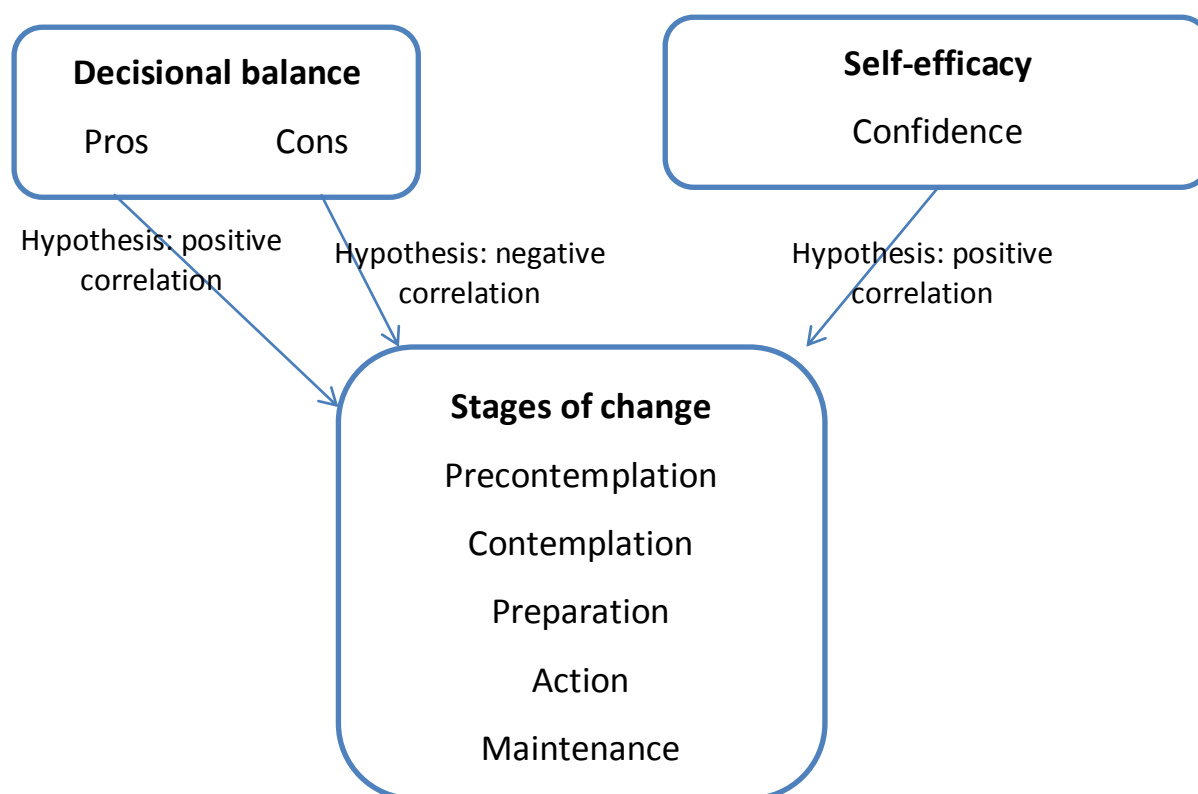


Figure 22: General pattern of hypothesised relationships

The hypotheses identified in this study appear in Table 10 and are tested in the quantitative analysis (section 5).

Construct	Hypothesis	Source
Decisional balance 1: general correlation	HDB1.1 There is a <i>positive</i> correlation between the <i>pros</i> and progression through the <i>stages</i>	Prochaska and Velicer (1997)
	HDB1.2 There is a <i>negative</i> correlation between the <i>cons</i> and progression through the <i>stages</i>	Section 2.5.2
Decisional balance 2: within each stage	HDB2.1 At the <i>precontemplation</i> stage the weighting given to the <i>cons</i> is <i>greater</i> than the weighting given to the <i>pros</i>	Prochaska and Velicer (1997)
	HDB2.2 At the <i>contemplation</i> stage the weighting given to the <i>cons</i> is <i>lower</i> than the weighting given to the <i>pros</i>	Section 2.5.2
	HDB2.3 At the <i>action</i> stage the weighting given to the <i>cons</i> is <i>lower</i> than the weighting given to the <i>pros</i>	

Construct	Hypothesis	Source
Decisional balance 3: comparing stages	HDB3.1 The <i>pros</i> in the <i>contemplation</i> stage are <i>higher</i> than the <i>pros</i> in the <i>precontemplation</i> stage	Prochaska and Velicer (1997) Section 2.5.2
	HDB3.2 The <i>cons</i> in the <i>action</i> stage are <i>lower</i> than the <i>cons</i> in the <i>precontemplation</i> stage	
Decisional balance 4: predicting stages	HDB4.1 The <i>pros</i> can <i>predict the stage of change</i>	Prochaska and Velicer (1997) Section 2.5.2
	HDB4.2 The <i>cons</i> can <i>predict the stage of change</i>	
Self-efficacy 1: general correlation	HSE1 There is a <i>positive</i> correlation between <i>self-efficacy</i> and progression through the <i>stages</i>	Donovan (2011) Section 2.5.3
Self-efficacy 2: comparing stages	HSE2.1 Self-efficacy in the <i>contemplation</i> stage is <i>higher</i> than in the <i>precontemplation</i> stage	Donovan (2011) Section 2.5.3
	HSE2.2 Self-efficacy in the <i>action</i> stage is <i>higher</i> than in the <i>contemplation</i> stage	
Self-efficacy 3: predicting stages	HSE3 The level of <i>self-efficacy</i> can <i>predict the stage of change</i>	Donovan (2011) Section 2.5.3
Engagement types	HEngtype Alumni in the <i>earlier</i> stages of change rate <i>personal pros</i> higher and alumni in the <i>later</i> stages rate <i>altruistic pros</i> higher	Gallo (2012); CASE (2015) Section 2.1.1
Demographic differences	HGend Women are <i>more likely</i> to be in the <i>action or maintenance</i> stage than men	Sun, Hoffman and Grady (2007); Weerts and Ronca (2007); McAlexander and Koenig (2010); Newman and Petrosko (2011) Section 2.1.2
	HAge People in the <i>60+ age bracket</i> are <i>more likely</i> to be in the <i>action or maintenance</i> stage than younger people	
	HColl People who attended <i>collegiate</i> universities are <i>more likely</i> to be in the <i>action or maintenance</i> stage than people who attended non-collegiate universities	
	HEd People who attained an <i>undergraduate</i> degree from their university are <i>more likely</i> to be in the <i>action or maintenance</i> stage than people who attained higher degrees	

Table 10: Hypotheses tested

2.6.5 Assessment criteria for a behavioural theory

The social marketing literature contains recommendations for assessing the applicability of a potential behavioural theory to a new behaviour (Table 11). These recommendations were applied to the assessment of the TTM for alumni behaviours in this study.

Recommendation	Recommended by	Applied to this study
Selected behaviour theory is assessed for its relevance to target behaviour	Lefebvre (2001) Donovan (2011)	The TTM was assessed for its relevance to alumni behaviours through the qualitative research
Selected behaviour theory is empirically tested before being used for campaigns	Donovan (2011) Hastings (2011)	The TTM was applied to alumni behaviours and empirically tested in the quantitative research
Selected behaviour theory is adapted to the specific behaviour, if necessary	Brug (2005)	Additional variables outside the TTM were identified (sections 6.4.2 and 6.4.3)
Limitations of the behaviour theory selected are acknowledged and mitigated where possible	Hastings and Domegan (2014)	The limitations of the TTM were considered and mitigation options were identified (section 2.5.6)

Table 11: Recommendations for selecting a behaviour theory

2.7 Literature review conclusion

The alumni literature largely focuses on building affinity and giving rather than increasing alumni engagement (Weerts, Cabrera and Sanford, 2010). However, there is evidence that affinity can be built into engagement behaviour with personal benefits, which in turn can lead to engagement behaviour with altruistic benefits (Gallo, 2012; CASE, 2015). This hypothesis is tested in this study.

An assessment of whether social marketing could be applied to alumni relations concluded that it fitted the social marketing definition, all of the social marketing techniques could potentially be applied to alumni relations and that provided professionals question the ethics of their programmes this would be an ethically sound use of social marketing techniques.

The TTM was critically assessed and it was concluded that although it has limitations it is a useful and practical behaviour change model. However, the lack of any academic literature applying social marketing techniques or the TTM to alumni behaviours means this literature review doesn't provide answers for any of the research objectives. A programme of primary research was therefore undertaken. Hypotheses for this were developed based on the alumni and TTM literature. This research programme followed the recommendations from the social marketing literature for applying a behavioural model to a new behaviour.

3 Research design and methodology

An overview of the research design is shown in Figure 23 and its key features are explored in the following sections.

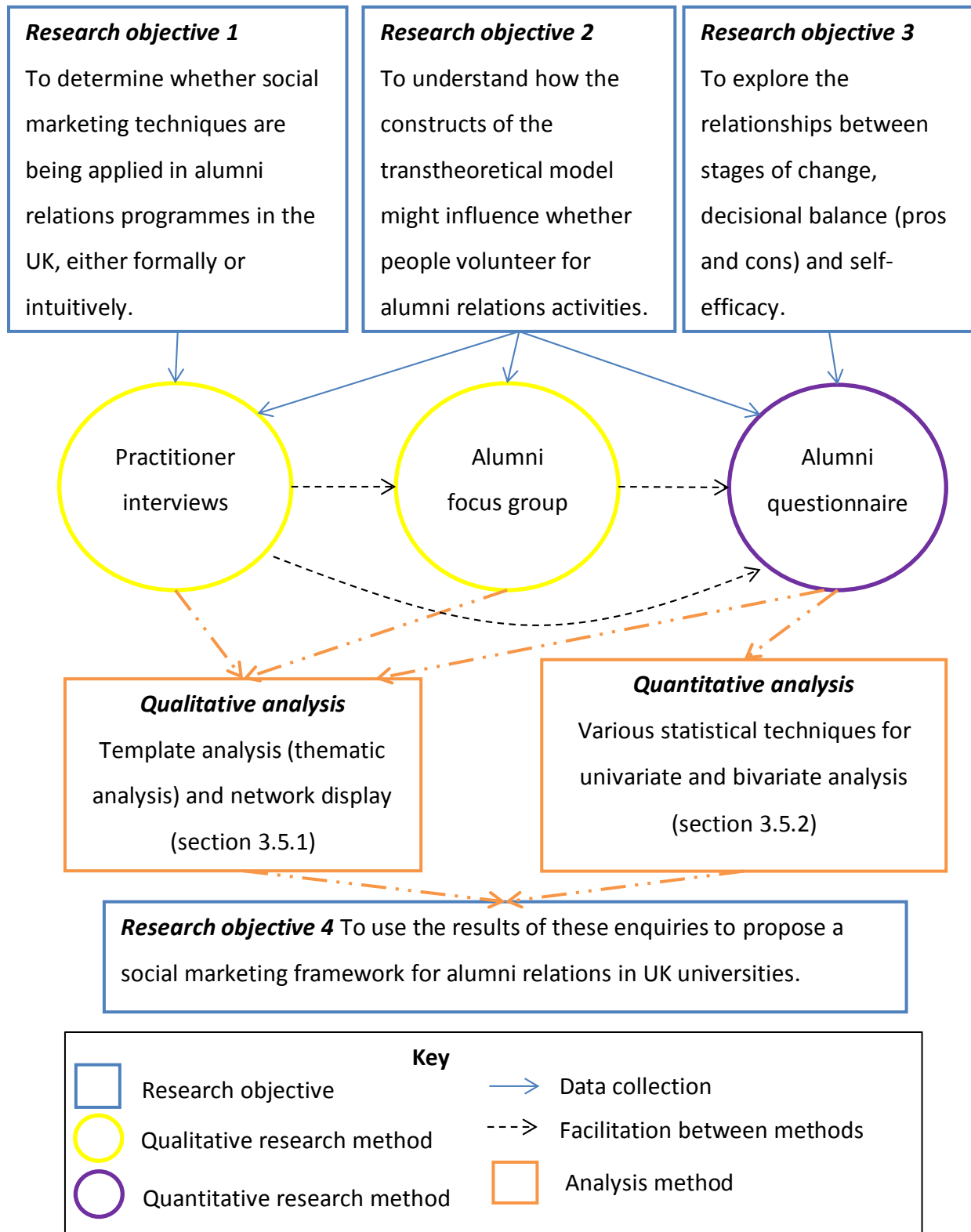


Figure 23: Research design

3.1 Key features

3.1.1 Triangulating three perspectives

In order to gain a thorough understanding of the research question it was investigated from three perspectives: academic researchers, alumni relations professionals and alumni of UK universities (Figure 24). Triangulating the results corroborated relationships between variables to reduce the risk they were misunderstood, increasing the validity of the research (Bryman, 2006).

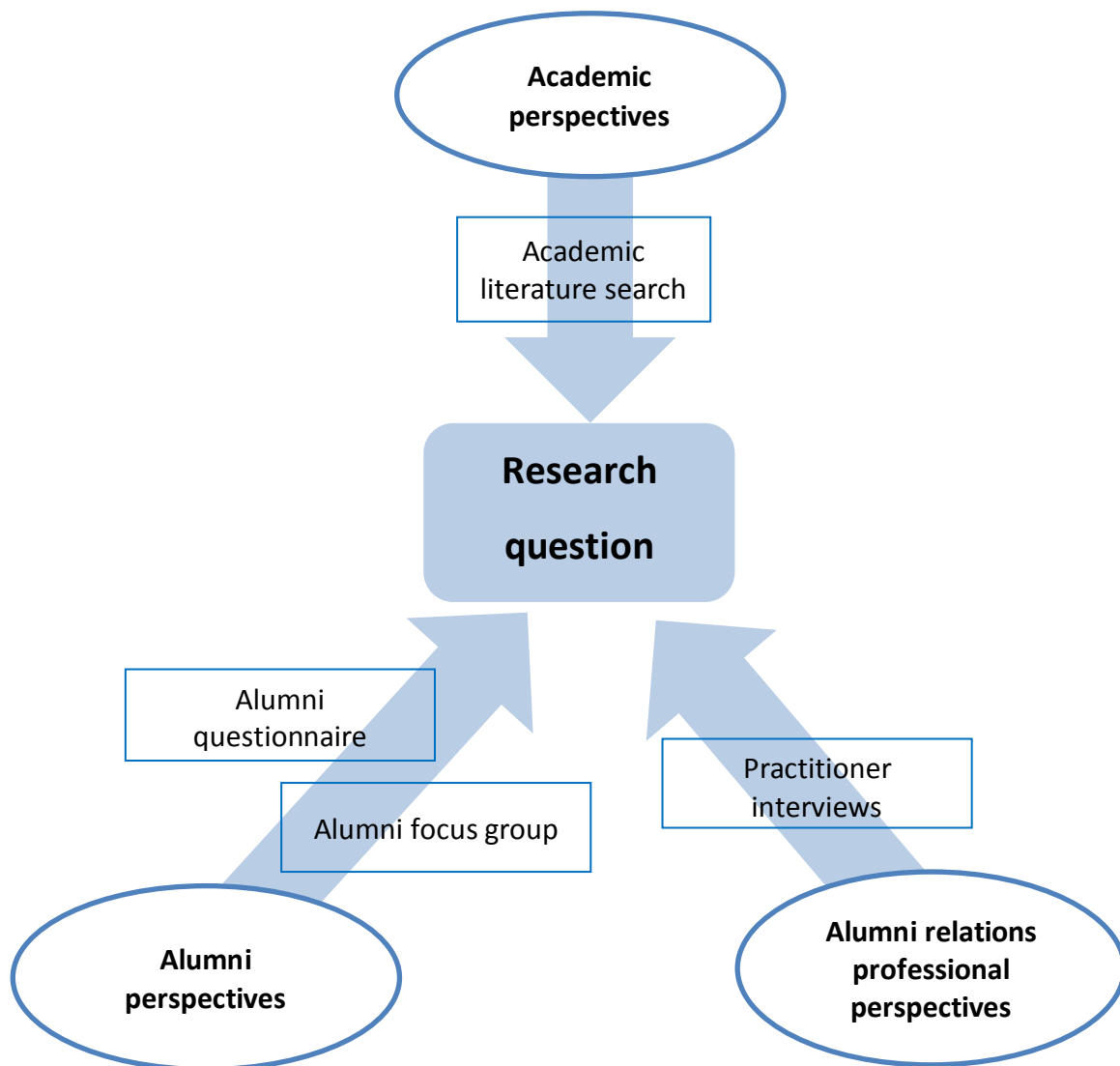


Figure 24: Triangulation from three perspectives

3.1.2 Balancing deductive and inductive approaches

The research question required a balance of deductive and inductive approaches. A deductive approach was used to test whether elements of the TTM can be applied to alumni relations, including the testing of hypotheses developed from the literature.

However, because social marketing and the TTM have not been applied to alumni behaviours before there are also benefits in an inductive approach. This involved discussing the research with alumni professionals and alumni to get a feel for individual experiences and keeping an open mind to alternative explanations for behaviour (Saunders, Lewis and Thornhill, 2009).

Combining deductive and inductive approaches is often advantageous and allows for triangulation which can increase validity (Saunders, Lewis and Thornhill, 2009).

3.1.3 Mixed methods

The design is a mixed methods approach because it incorporates both qualitative and quantitative methods (Bryman, 2006). Each of the research methods was undertaken sequentially, to allow the results of one to facilitate the development of those that followed (Figure 23). For example, the interview and focus group questions were designed to provide a list of possible pros and cons for the questionnaire. Facilitation is a key benefit of a mixed methods approach (Saunders, Lewis and Thornhill, 2009).

3.1.4 Focussing on the research objectives

In order to ensure the research question could be answered from the data collected an adapted version of the data requirements table recommended by Saunders, Lewis and Thornhill (2009, p.368) was created for each research objective (Appendix 2). Following this method reduced the risk of data redundancy: collecting data which doesn't address the research objectives (Bryman, 2006).

3.2 Selection of research methods

The strengths and limitations of the selected research methods are considered next.

3.2.1 Interviews and focus groups

Semi-structured interviews and focus groups lend themselves to research combining both deductive and inductive approaches because they allow the researcher to concentrate on the research topics while allowing the participants to direct conversation towards areas they feel are important (Saunders, Lewis and Thornhill, 2009).

Interviews and focus groups are also frequently used in social marketing (Sargeant, 2009), providing insights into the motivations behind behaviour, confirming their appropriateness for research objectives 1 and 2.

The validity of semi-structured interviews and focus groups is generally high because the interviewer and participants are able to ask for clarification, reducing the risk of misunderstandings (Saunders, Lewis and Thornhill, 2009).

However, generalisability of results is not possible from a small number of interviews or focus groups because the responses are specific to their context (Saunders, Lewis and Thornhill, 2009). Reliability is also challenged as it is highly unlikely that a different researcher would produce the same data because the issues being discussed are complex and dynamic (Saunders, Lewis and Thornhill, 2009). However, these two limitations are outweighed by the great advantages of being able to explore a complex subject in depth (Saunders, Lewis and Thornhill, 2009).

3.2.2 Questionnaires

Questionnaires are particularly useful in research which aims to establish relationships between variables (Saunders, Lewis and Thornhill, 2009). They are also quicker to administer and participate in than interviews or focus groups, so a larger number of participants can be reached in a short space of time (Bryman and Bell, 2011). Both of these strengths made an online questionnaire particularly appropriate for research objectives 2 and 3.

One of the limitations of questionnaires is they don't allow researchers or participants to ask follow-up questions, which can challenge validity due to the risk of misinterpretation of the data collected (Bryman and Bell, 2011).

This study overcomes this limitation in three ways. Firstly, the questionnaire was tested by six alumni prior to launch and changes were made to enhance clarity. Secondly, the internal validity of the constructs was checked using Cronbach's α (section 5.4) (Field, 2005). And finally, the results were triangulated with the qualitative results to ensure relationships between the variables were accurately understood.

3.3 Interview and focus group methodology

3.3.1 Question development

One set of questions was prepared for the interviews and another for the focus group (Appendix 3 and 4). All the questions were phrased neutrally to minimise interviewer bias and improve reliability (Saunders, Lewis and Thornhill, 2009). The interview questions covered the NSMC benchmarks (NSMC, 2017) and both the interview and focus group questions covered the constructs of the TTM.

3.3.2 Sampling

As is often the case in qualitative research, purposive sampling was used (Miles, Huberman and Saldana, 2014). In this case professionals and alumni with experience of different types of UK university were identified to obtain a range of viewpoints on the research question. An element of convenience sampling was also used, because easy access to participants was necessary given the short timeframe.

Four professionals and three alumni who satisfied these purposive and convenience criteria were selected from the researcher's professional and personal networks for the interviews and focus group respectively. See Appendix 5 for anonymised details of the participants.

This resulted in some sample bias: most of the participants were already known to the researcher, and therefore were possibly of the same world-view. However, one advantage of this sampling method was that the researcher had already established a level of trust and credibility with most of the participants, increasing the likelihood that the participants felt

comfortable giving complete and honest answers, thus reducing response bias (Saunders, Lewis and Thornhill, 2009).

3.3.3 Ethical considerations

Each participant was provided with a participant information sheet ensuring informed consent (Appendix 6 and 7). Appendix 1 contains the ethics approval forms for this study.

3.4 Questionnaire methodology

3.4.1 Question development and ethical considerations

The questionnaire was undertaken using the Bristol Online Surveys (BOS) website. The questions were developed taking into account the literature review, data requirements tables (section 3.1.4) and qualitative analysis of the interviews and focus group.

Wherever possible the questions, multiple choice responses and Likert scales were based on previously published research and validated questions, thus reducing the chance of misunderstanding and therefore increasing validity (Saunders, Lewis and Thornhill, 2009). The more important questions are summarised here, with further information about question development in Appendix 8, and the full questionnaire in Appendix 9.

Following the advice of Saunders, Lewis and Thornhill (2009) the first page contained a brief welcome message which ensured informed consent was obtained.

Question 5 collected self-reported stage of change for alumni activities. Each of the five possible answers was an adapted validated statement for the stages (section 2.5.1).

Question 7 measured decisional balance by asking respondents to rate on a 5-point Likert scale how strongly they agreed or disagreed with 10 pros and 10 cons of getting involved in alumni activities. This method for measuring decisional balance was adapted from Prochaska et al. (1994) and Prapavessis, Maddison and Brading (2004). Following the example of Ferguson and Chandler (2005) the pro and con statements were adapted from the qualitative research.

Question 9 measured self-efficacy by asking respondents to rate their confidence in their ability to get involved in alumni activities in specific situations using a 5-point Likert scale.

This question and Likert scale were adapted from Prapavessis, Maddison and Brading (2004) and the sub-question statements were adapted from the qualitative research.

Question 11 asked alumni to rate on a 5-point Likert scale how likely it was that various initiatives would overcome the barriers, costs and lack of self-efficacy. Eight alumni initiatives were adapted from the qualitative research.

Questions 2 (university attended), 3 (educational level), 14 (gender) and 15 (age) collected demographic data which was used to divide the respondents into sub-groups for analysis.

A number of open questions were included to provide qualitative data which was analysed alongside the other qualitative research methods.

3.4.2 Sampling

In order to maximise the sample size a communications plan was created combining different sampling techniques. Initially the questionnaire was publicised via social media to the researcher's personal and professional networks (convenience sampling). It soon became clear that almost all responses were from alumni in the precontemplation stage. Agreement from three universities was then secured to publicise the questionnaire to their alumni, thus targeting those already actively involved with alumni activities (purposive sampling). Active alumni were also asked to forward it on to their own networks via social media (snowball sampling).

Convenience, purposive and snowball sampling can result in a biased sample which doesn't represent the population (Saunders, Lewis and Thornhill, 2009). However, given alumni in the active and maintenance stages of change were surprisingly hard to find, these sampling techniques were the only way to access this population in the time available.

The questionnaire had 193 respondents. The extent to which this sample represents the population of alumni of UK universities is analysed in section 5.1.

3.5 Analysis methods

3.5.1 Qualitative analysis

Template analysis, which is a form of thematic analysis, was used due to its ability to combine the structure needed for a deductive approach with the flexibility of an inductive approach (Saunders, Lewis and Thornhill, 2009; Symon and Cassel, 2012). To overcome some of its criticisms (Table 12) excessive focus on refining the coding or template was avoided to ensure context was retained and interpretation took centre stage (Bryman and Bell, 2011; Symon and Cassel, 2012).

Network display is good for visually exploring links between codes, and was used to identify inductive themes (Saunders, Lewis and Thornhill, 2009). To mitigate some of its criticisms (Table 12) an intuitive procedure for creating the network was used (Saunders, Lewis and Thornhill, 2009).

Technique and brief description	Advantages	Criticisms
Template analysis <ul style="list-style-type: none">- A form of thematic analysis- Transcripts coded using both a priori deductive codes and inductive codes- Codes assembled into a hierarchical template (Symon and Cassel, 2012)	<ul style="list-style-type: none">- Balances deductive and inductive approach (Saunders, Lewis and Thornhill, 2009; Symon and Cassel, 2012)- Non-experienced researchers can use it (Symon and Cassel, 2012)	<ul style="list-style-type: none">- Coding can cause loss of context, data fragmentation (Bryman and Bell, 2011), loss of personal connection with the data and can prevent interpretation (Symon and Cassel, 2012)
Network display <ul style="list-style-type: none">- Produces collections of nodes and links in a diagram- Used to explore, describe and explain data (Miles, Huberman and Saldana, 2014)	<ul style="list-style-type: none">- Visual technique allowing relationships and patterns to emerge (Saunders, Lewis and Thornhill, 2009)- Can be used for analysis and presentation (Saunders, Lewis and Thornhill, 2009)	<ul style="list-style-type: none">- Rigid procedures defined, but there is flexibility in their application (Saunders, Lewis and Thornhill, 2009)- Not as useful for deductive research (Saunders, Lewis and Thornhill, 2009)

Table 12: Strengths and limitations of qualitative analysis techniques

3.5.2 Quantitative analysis

The questionnaire data was exported from the BOS website into IBM SPSS Statistics (version 22) and prepared for analysis. A variety of statistical techniques were used, which are outlined in Appendix 10.

3.6 Research methodology conclusion

The research design combined interviews with alumni professionals, a focus group with alumni and an alumni questionnaire to collect data which was closely aligned to the research objectives. Triangulation of perspectives and research methods increased the validity of the research, while combining deductive and inductive approaches ensured the required data was collected without closing off alternative interpretations.

4 Qualitative results and analysis

Template analysis and network display were identified as the most appropriate qualitative analysis techniques (section 3.5.1). This section briefly describes the results of this analysis. It is triangulated with the quantitative results and discussed more fully in section 6.

4.1 Template analysis

The final template of codes for the qualitative analysis is shown in Figure 25. The themes which emerged from this analysis are briefly described in the following sections.

1. Social marketing techniques

- 1.1. Behaviour theory
- 1.2. Marketing mix
- 1.3. Alumni relations goals
 - 1.3.1. Behaviour goals
 - 1.3.1.1. *Fundraising behaviours*
 - 1.3.1.2. *Volunteering behaviours*
 - 1.3.1.3. *Social media behaviours*
 - 1.3.2. Behaviour change
 - 1.3.3. Non-behaviour goals
- 1.4. Alumni motivation research
 - 1.4.1. Structured in-house research
 - 1.4.2. Informal in-house research
 - 1.4.3. External research
- 1.5. Competition
- 1.6. Segmentation
 - 1.6.1. Segmentation used
 - 1.6.2. Segmentation not used
 - 1.6.3. Researching segments
 - 1.6.4. Prioritising segments
 - 1.6.5. Segmentation criteria
 - 1.6.5.1. *Age*
 - 1.6.5.2. *Geographic*
 - 1.6.5.3. *Gender*
 - 1.6.5.4. *Subject/department*
 - 1.6.5.5. *Family status*

1.6.5.6. *Interests*

1.6.5.7. *ACORN data*

1.7. Usefulness of social marketing approach

2. TTM constructs

- 2.1. Decisional balance
 - 2.1.1. Decisional balance relevant
 - 2.1.2. Decisional balance not relevant
- 2.2. Pros
 - 2.2.1. Seeing old friends
 - 2.2.2. Brand affiliation/pride
 - 2.2.3. Professional development
 - 2.2.4. Altruistic fulfilment
 - 2.2.5. Wider sense of community
 - 2.2.6. Intellectual stimulation
 - 2.2.7. Quality and enjoyment of alumni activities
 - 2.2.8. Feeling a responsibility to students due to high fees
 - 2.2.9. Family culture
 - 2.2.10. Graduate recruitment
 - 2.2.11. Filling a perceived gap at the university
 - 2.2.12. Giving back what they received

2.3. Cons 2.3.1. Distance 2.3.1.1. <i>Overcoming distance</i> 2.3.2. Time 2.3.2.1. <i>Overcoming time barrier</i> 2.3.3. Lack of affinity 2.3.3.1. <i>University size</i> 2.3.3.2. <i>Overcoming lack of affinity</i> 2.3.4. Bad alumni experience 2.3.4.1. <i>Overcoming bad alumni experience</i> 2.3.5. Suspicion of fundraising 2.3.5.1. <i>Overcoming suspicion of fundraising</i> 2.3.6. Financial cost 2.3.6.1. <i>Overcoming financial cost</i> 2.3.7. Bad student experience 2.3.8. Restricting alumni involvement in decision making 2.3.9. Attention bandwidth	2.3.9.1. <i>Overcoming attention bandwidth</i> 2.3.10. Unclear expectations 2.3.10.1. <i>Overcoming unclear expectations</i> 2.3.11. Other cons 2.4. Self-efficacy 2.4.1. Self-efficacy relevant 2.4.2. Professionals' personal experience 2.4.3. Examples of lack of self-efficacy 2.4.4. Overcoming lack of self-efficacy 3. Impact of demographic attributes 3.1. Age 3.2. Families 3.3. Gender 4. Data protection 5. Strategic alumni relations
---	--

Figure 25: Final template for qualitative analysis

4.1.1 Social marketing techniques

The first group of codes explored the use of the social marketing techniques by UK alumni relations professionals (research objective 1) and its structure was based on the NSMC benchmarks (NSMC, 2017). The responses are summarised in Appendix 11 and quotations demonstrating the various themes are in Tables 13-16. These findings are discussed in section 6.1.

1.3. Alumni relations goals: quotations	Theme
“It’s about engaging alumni strategically. For me it’s helping graduate employability, it’s about that student recruitment piece, it’s about providing the value-add that a good university needs these days to differentiate.” (Interview participant 3)	Using alumni strategically to differentiate the university
“Some universities are becoming more sophisticated in how they use their alumni. And I think volunteering is definitely something that has come much higher up on the agenda.” (Interview participant 1)	Growing importance of volunteering

Table 13: Quotations from interviews about alumni relations goals

1.4. Alumni motivation research: quotations	Theme
“No, we’ve never done any structured research so in that sense we’ve haven’t analysed in any way what causes people to get involved. I’ve never really thought about it to be honest with you.” (Interview participant 2)	Research into alumni motivation
“There is nothing better than a qualitative and qualitative survey to reinforce with hard facts that we know we are doing this for these right reasons. So the survey is very much about gathering that knowledge to understand why people are being involved and also why people aren’t being involved.” (Interview participant 4)	Research into alumni motivation

Table 14: Quotations from interviews about alumni motivation research

1.5. Competition: quotation	Theme
“I think the barriers there are probably around time and literally around bandwidth. How much am I going to privilege this activity over other activities? Whether that be over social media or whether that be engaging with this group rather than the local Friends of the Earth, or the local drama society.” (Interview participant 3)	Consideration of competition

Table 15: Quotation from interviews about competition

1.6. Segmentation: quotations	Theme
“We do it [segment] all the time, with everything. It’s all about the data... Using sub-sets of data to be making the right ask at the right time to the right person through the right channel.” (Interview participant 4)	Segmentation used; data-driven approach
“We do that [segment] all the time because we work in a modern university that has very different narratives for very different groups... It’s a slightly non-sophisticated suck it and see at this point if I’m honest.” (Interview participant 3)	Segmentation used; informal approach
“But I think in an alumni office where time is tight, precious resources are few and they have to prioritise on a particular group then I think that is what they prioritise the most – the over 50s.” (Interview participant 1)	Prioritisation of older alumni
“We are trying to give them all the same package of activity and experience... So with the matriculation year group approach they’ll all get the same package, it’s just aimed at different years. So were not making it any different for different groups.” (Interview participant 2)	Segmentation used, but events similar for each group

Table 16: Quotations from interviews about segmentation

4.1.2 Transtheoretical model constructs

The second group of codes focussed on the constructs of the TTM (pros, cons, decisional balance and self-efficacy) and any differences between demographic groups (research objective 2). The responses are summarised in Appendix 11.

This qualitative research facilitated the questionnaire (section 3.1.3) and examples are given of pros and cons which were then adapted for the questionnaire (Tables 17 and 18). Further quotations demonstrate findings for the other TTM constructs (Tables 19-21).

These findings are triangulated with the quantitative research in section 6.2.

2.2 Pros : quotations	Example pro and con statements in questionnaire
"Developing a brand with which alumni would wish to be affiliated ... you get that sense of pride in being affiliated with a university." (Interview participant 3)	I'd feel proud of an ongoing association with my university
"Being altruistic isn't purely altruistic - you still get something in return for it. Self-worth." (Focus group participant 3)	Doing something altruistic for students or other alumni would make me feel good
"I would like a change career, and it would be something on my CV" (Focus group participant 1)	It would look good on my CV

Table 17: Quotations from qualitative research about pros

2.3 Cons: quotations	Example pro and con statements in questionnaire
"We see a common trend is when people reach their 30s they become very time poor and cash poor... and that's where they dip out." (Interview participant 4)	I would have less time for my family and friends
"One of the things that maybe is perceived to be a barrier is the idea that often alumni offices are just there to get money out of you. So I think: 'they are asking me to give my time, the next thing they'll be asking for some money out of me'." (Focus group participant 3)	The university would be more likely to ask me for money, which I don't want to give

Table 18: Quotations from qualitative research about cons

2.3.4. Bad alumni experiences: quotations	Theme
"I've offered to mentor students... but have never received any contact or follow up." (Questionnaire participant)	Lack of follow-up
"The worst experience is when the communications to volunteers break down or are patchy. A great experience leads to repeat volunteers. A bad one kills involvement." (Questionnaire participant)	Lack of follow-up
"I went to a meeting in Germany, a couple of years ago, and that was the last time I heard from the [university A] Alumni contact in Germany. Nobody contacted me after that, whereas [university B] did, and as a result, I'm heavily involved in their activities!" (Questionnaire participant)	Lack of follow-up

Table 19: Quotations from qualitative research about bad alumni experiences

2.4 Self-efficacy: quotations	Theme
"They wouldn't get involved if they didn't believe that they could help us." (Interview participant 2)	Self-efficacy relevant
"I think, unless you tell someone that they're going to have a valuable input into something they won't know." (Interview participant 4)	Self-efficacy relevant
"If I was asked to go back to my old university to talk about my career I'd probably have that reaction. "Really? Why me? I haven't done anything particularly amazing." (Interview participant 1)	Professionals using their own experience
"I'm not really a massive career person.... I don't see how I would be useful really." (Focus group participant 2)	Self-efficacy example

Table 20: Quotations from qualitative research about self-efficacy

3. Impact of demographic attributes: quotations	Theme
"People who are younger and are frantically working hard may not have the time but older people have" (Focus group participant 3)	Impact of age on time
"The distance, cost and time involved would stop me. If I didn't have a family I would be much more likely to get involved." (Questionnaire participant)	Impact of family status
"It could quite possibly be something that affects female alumni more than male alumni. Just because women don't have quite the same level of self-confidence that men do in these areas." (Interview participant 1)	Impact of gender on self-efficacy

Table 21: Quotations from qualitative research about demographic attributes

4.1.3 Inductive themes

Two inductive themes emerged from the qualitative data: data protection and a lack of time for thinking strategically about alumni relations. These are summarised in Appendix 11 with sample quotations in Tables 22 and 23. These themes are discussed in section 6.4.

4. Data protection: quotations	Theme
"I think we have been so exercised by things like GDPR and getting comfortable with the level of consent that we've been given. That's taken up a lot of our bandwidth this year." (Interview participant 3)	Data protection consuming a lot of time
"European privacy laws massively inhibit the amount and range of contact from the university to alumni. Don't assume that the university alumni office has your up to date contact details, or that your local alumni group can access these details." (Questionnaire participant)	Data protection limiting alumni activities

Table 22: Quotations from qualitative research about data protection

5. Strategic alumni relations: quotations	Theme
"The thing is because you're busy trying to fit it in and think strategically about this [alumni relations], at the same time as everyone is going "where's the first million?" (Interview participant 3)	Lack of time to think strategically
"At CASE conferences, that is often where people have the head-space to actually think about these kinds of things... They just don't have time the rest of the day to focus on these kind of things [strategic thinking]." (Interview participant 1)	Lack of time to think strategically

Table 23: Quotations from qualitative research about strategic alumni relations

4.2 Network display

The network display in Figure 26 visually illustrates the links between codes. This is discussed in section 6.1.

4.3 Qualitative results and analysis conclusion

The qualitative research produced useful insights into research objectives 1 and 2. To increase validity (Bryman, 2006) these results were triangulated with the quantitative data and discussed fully in section 6.

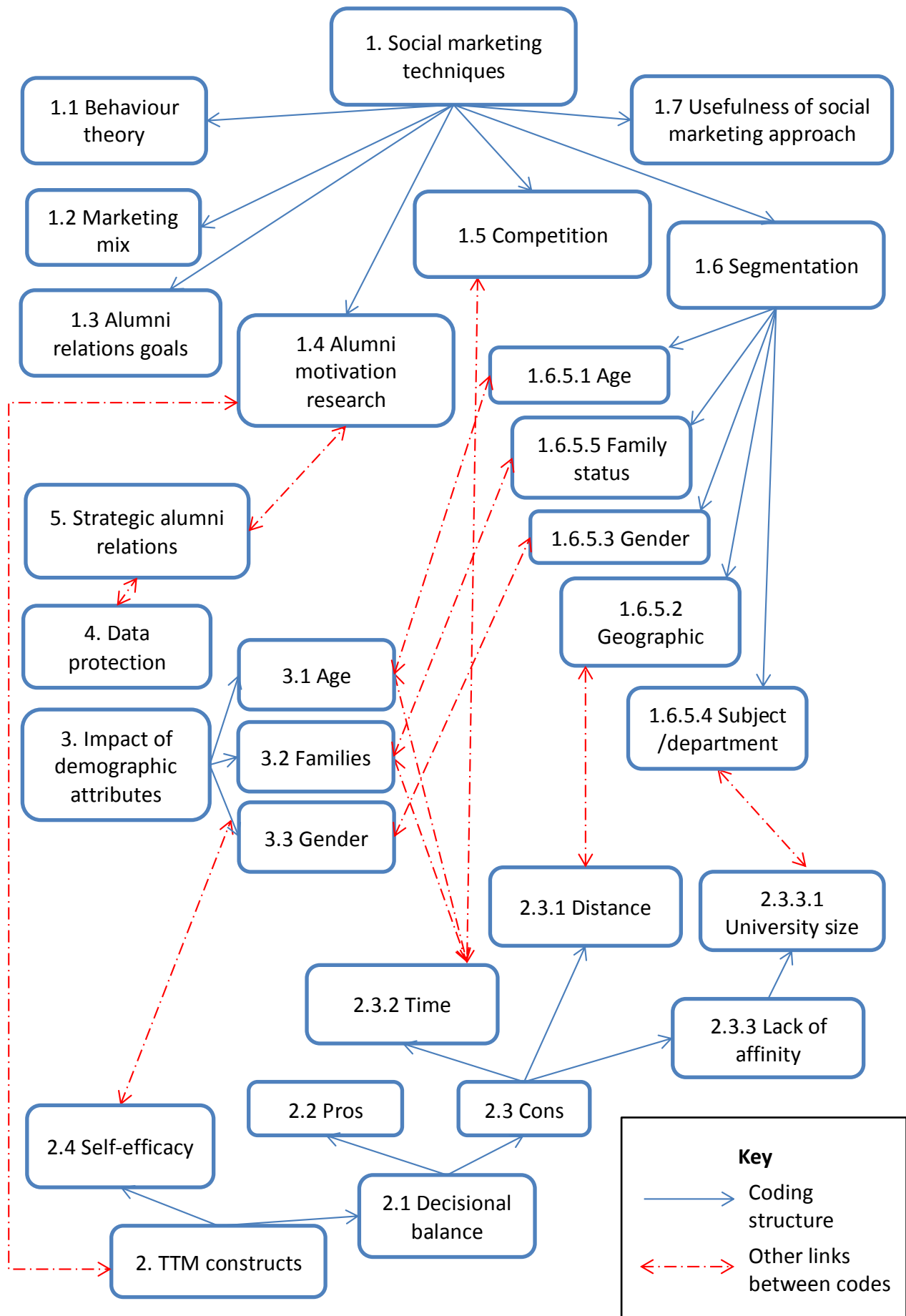


Figure 26: Network display showing links between codes
 (Only 1st and 2nd level codes shown unless there are links to other codes)

5 Quantitative results and analysis

Various statistical tests (section 3.5.2 and Appendix 10) were used to test the hypotheses (Table 10). Many of the full SPSS results are contained in Appendix 12. The results from this section are triangulated with the qualitative results in section 6.

5.1 Sample representativeness

The sample fails to represent the population for age and university type, but is more representative for gender and education level (Table 24). This is one of the limitations of the study. However, the sample is sufficient to give initial results into the applicability of the TTM to alumni behaviours.

Demo-graphic attribute	Sample distribution	Population distribution	Sample representativeness
Gender	54% male; 46% female (Figure 27)	More men than women, as up to 1990 more men than women attended UK universities (Hillman and Robinson, 2016) (Figure 28).	Roughly represents the population
Age	Distribution seen in Figure 27	Decreasing number in each age bracket, as number of people graduating has steadily increased over time (House of Commons Library, 2012) (Figure 29)	Under-represents younger alumni; over-represents older alumni
University type	64% attended collegiate universities (i.e. Oxford, Cambridge or Durham) (Figure 27)	Much smaller percentage attended collegiate universities, as only three of them. This is due to sampling bias (section 3.4.2) because the researcher has links with these collegiate universities.	Over-represents alumni of collegiate universities.
Education level	57% undergraduate; 33% Master's (Figure 27)	65% undergraduate degree; 35% postgraduate degree (Lindley and Machin, 2013) (Table 25)	Roughly represents the population

Table 24: Representativeness of the sample

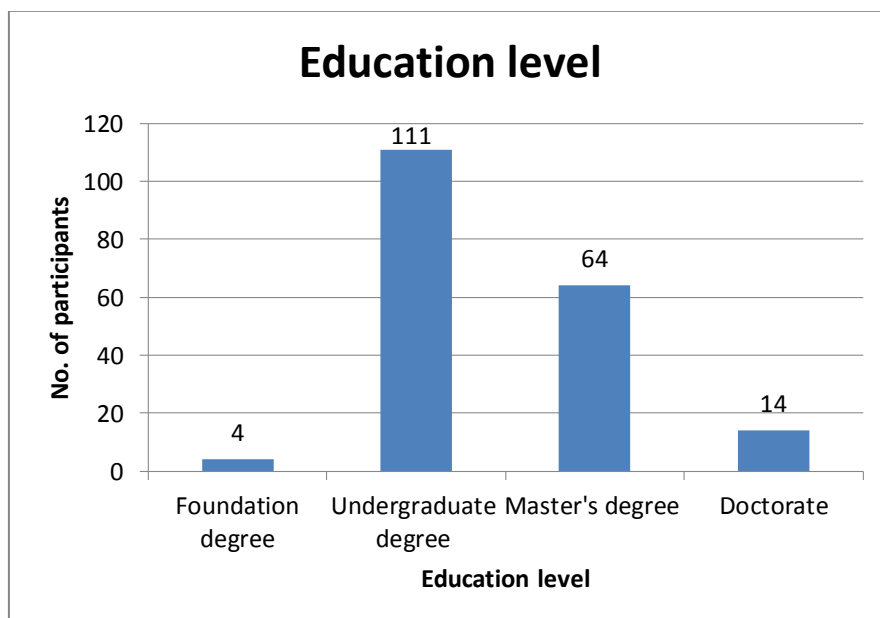
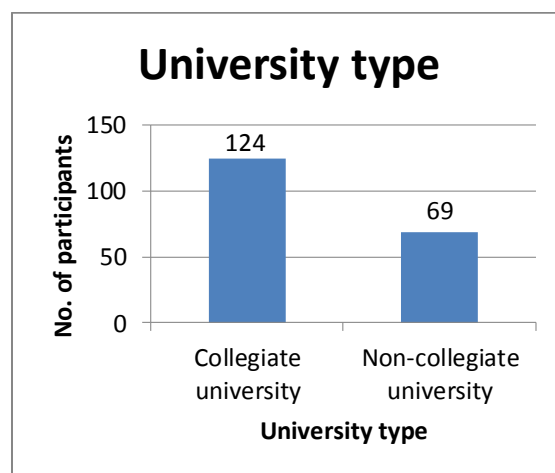
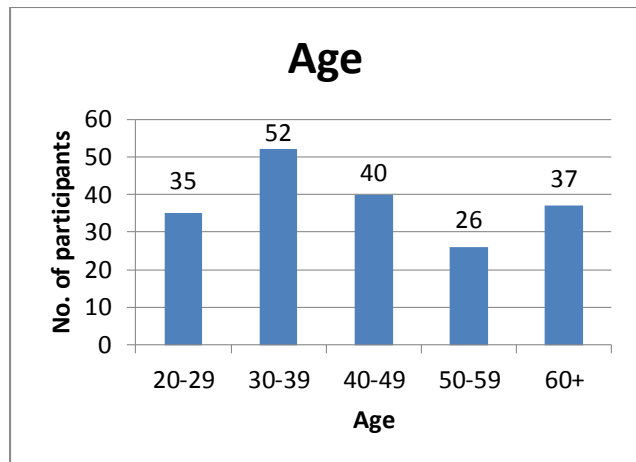
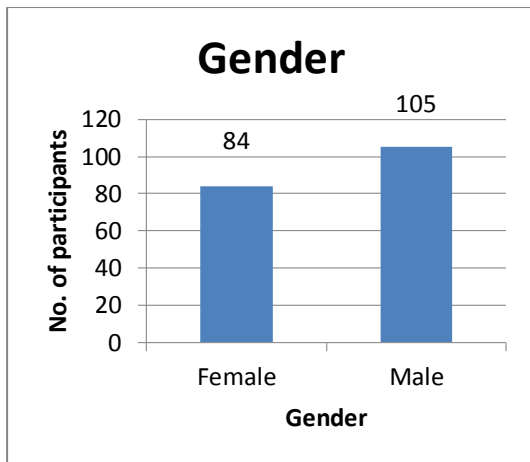


Figure 27: Bar charts for gender, age, university type and education level

Participation in higher education by gender

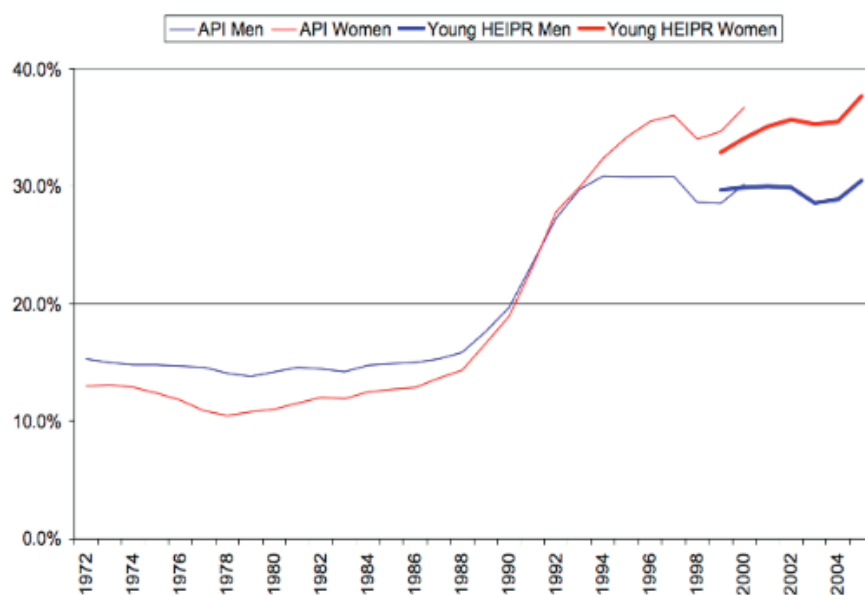


Figure 28: Percentage of population in higher education by gender
Source: Hillman and Robinson (2016)

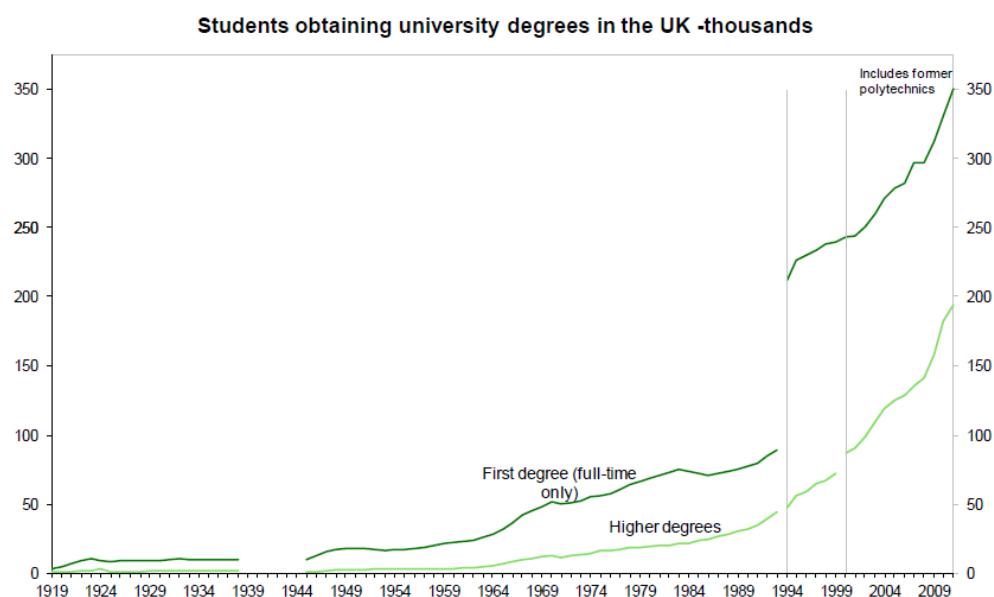


Figure 29: Number of students obtaining degrees in the UK by year
Source: House of Commons Library (2012)

Education level	% of UK working population (Lindley and Machin, 2013)	% of alumni population (calculated from previous column)
Undergraduate	20%	65%
Postgraduate	11%	35%

Table 25: Percentage of UK population and alumni population by education level
Source: Lindley and Machin (2013)

5.2 Stage distribution

59.6% of respondents were in the precontemplation stage for alumni behaviours (Figure 30). The preparation and action samples were too small to produce statistically significant results (Field, 2005) so they were combined with the stages on either side (Figure 31). This should not affect the testing of the TTM as previous studies have also combined stages (Prochaska, DiClemente and Norcross, 1992).

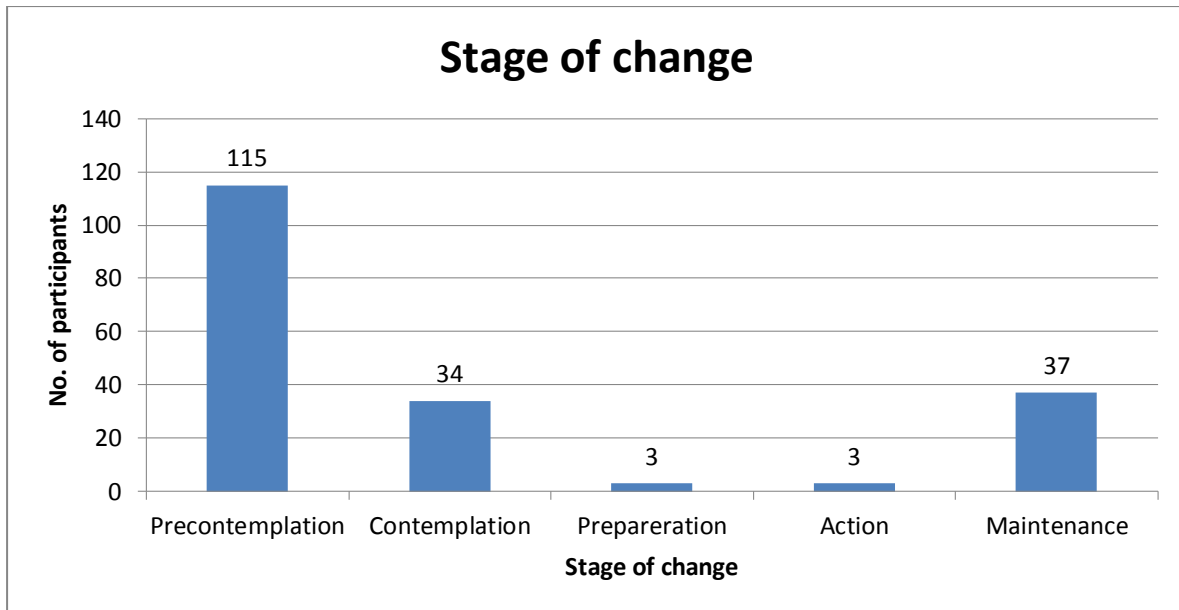


Figure 30: Bar chart of stages of change for alumni behaviours

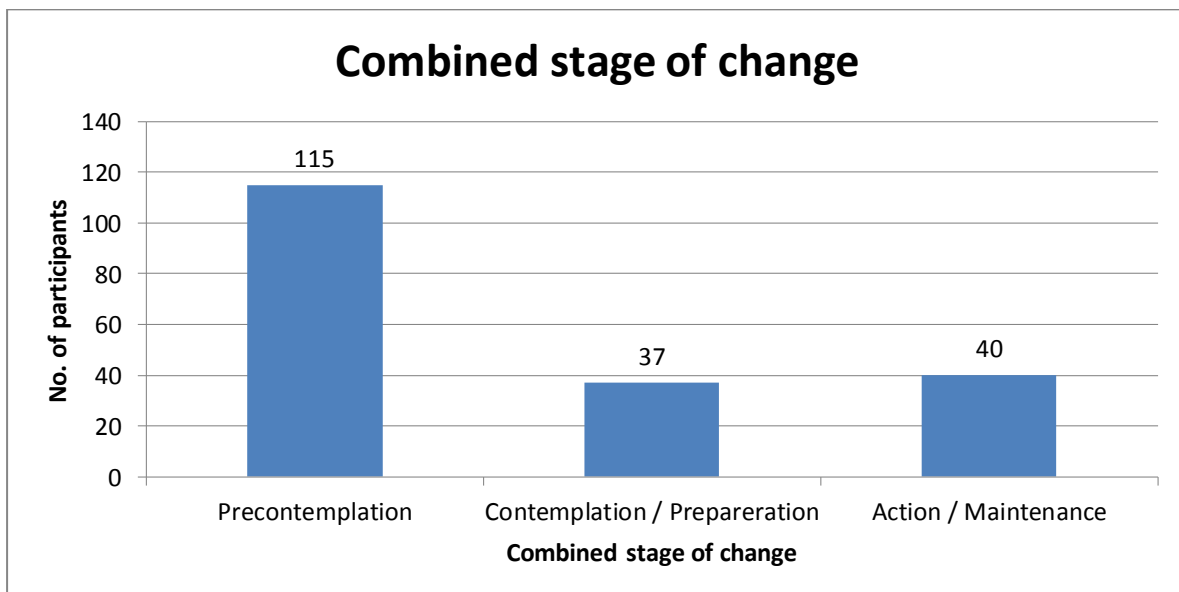


Figure 31: Bar chart of combined stages of change for alumni behaviours

5.3 Individual items within the TTM constructs

The ranked individual pro items (Table 26), con items (Table 27) and self-efficacy items (Table 28) for the whole sample show the most important items at the top.

Pro items	N	Mean
I'd feel proud of an ongoing association with my university	192	3.92
Doing something altruistic for students or other alumni would make me feel good	193	3.81
The alumni activities would be enjoyable in themselves	193	3.79
The sense of belonging to an active alumni community would be rewarding	191	3.76
Students' tuition fees are substantial, so supporting them in their career choice is the right thing to do and would be rewarding	193	3.62
The intellectual stimulation would be rewarding	193	3.61
Providing something I felt was missing from my university experience would feel good	192	3.22
It would contribute to my CPD (Continuing Professional Development)	191	2.97
It would look good on my CV	190	2.95
It would help me recruit good employees	190	2.92

Table 26: Ranked pro items

Con items	N	Mean
I would have to spend money and time travelling to the university	193	3.36
The university would be more likely to ask me for money, which I don't want to give	193	3.24
Reading messages from my university would add to the information-overload I'm already experiencing	191	3.06
It would be expensive to get involved	193	2.73
I would have less time for my family and friends	193	2.73
It would distract me from more important things	193	2.48
I'd get frustrated at not being able to influence university decisions	193	2.41
It would make me nervous or uncomfortable	193	2.3
It would negatively impact on my work	191	2.25
It would make me re-live negative feelings about my time at university	192	1.85

Table 27: Ranked con items

Self-efficacy items	N	Mean
Even if I'm suddenly busier at work, I could still volunteer for alumni activities	184	2.35
Even if it would have a financial cost, I could still volunteer for alumni activities	187	2.51
Even if I live a long way from my university, I could still volunteer for alumni activities	188	2.78
Even if I have to take care of my family, I could still volunteer for alumni activities	184	2.81
Even if I don't know much about life at the university today, I could still volunteer for alumni activities	189	3.21
I believe I have something worthwhile to offer the alumni or student communities	189	3.27
Even if I can't donate to the university, I could still volunteer for alumni activities	186	3.28

Table 28: Ranked self-efficacy items

The ranked pro items for each stage (Table 29) do not show that personal benefits are more important in early stages and altruistic benefits are more important in later stages. If anything, the opposite was true. Therefore, this hypothesis was rejected (Table 30).

Precontemplation		Contemplation/preparation		Action/maintenance	
1	Altruistic	1	Pride	1	Pride
2	Pride	2	Community	2	Enjoyable
3	Enjoyable	3	Enjoyable	3	Community
4	Intellectual stimulation	4	Altruistic	4	Altruistic
5	Tuition fees	5	Intellectual stimulation	5	Tuition fees
6	Community	6	Tuition fees	6	Intellectual stimulation
7	Something missing	7	Something missing	7	Something missing
8	CV	8	CPD	8	Recruitment
9	CPD	9	CV	9	CPD
10	Recruitment	10	Recruitment	10	CV

Colour coding

Mostly personal benefits
Mixture of personal and altruistic benefits
Mostly altruistic benefits

Abbreviations

Altruistic	Doing something altruistic for students or other alumni would make me feel good
Pride	I'd feel proud of an ongoing association with my university
Enjoyable	The alumni activities would be enjoyable in themselves
Intellectual stimulation	The intellectual stimulation would be rewarding
Tuition fees	Students' tuition fees are substantial, so supporting them in their career choice is the right thing to do and would be rewarding
Community	The sense of belonging to an active alumni community would be rewarding
Something missing	Providing something I felt was missing from my university experience would feel good
CV	It would look good on my CV
CPD	It would contribute to my CPD (Continuing Professional Development)
Recruitment	It would help me recruit good employees

Table 29: Ranked pro items for each stage

Findings	Hypothesis
No support found	Reject HEngtype Alumni in the <i>earlier</i> stages of change rate <i>personal pros</i> higher and alumni in the <i>later</i> stages rate <i>altruistic pros</i> higher

Table 30: Hypothesis testing for engagement type

5.4 Internal reliability

The pro items and self-efficacy items both had good internal reliability and so were combined into a pro variable and a self-efficacy variable (Table 31). One of the con items was not correlated with the others and was excluded from the con variable, but the remaining 9 items had good internal reliability.

Items	Cronbach's α	Notes
All 10 pro items	0.822	
9 correlated con items	0.802	"I'd get frustrated at not being able to influence university decisions" excluded as not correlated
All 7 self-efficacy items	0.924	

Table 31: Cronbach's α for the pros, cons and self-efficacy variables

5.5 Normality of distribution

All three variables deviated from a normal distribution to some extent (Table 32 and Figure 32), but were considered normal enough to satisfy the assumptions which underlie some of the following statistical techniques.

Variable	Skewness		Kurtosis	
	Statistic	Interpretation	Statistic	Interpretation
Pros	-0.239	Slightly piled up on the right	0.596	More pointed than normal
Cons	-0.108	Slightly piled up on the right	0.019	Approximately normal
Self-efficacy	0.003	Central	-0.687	More flat than normal

Table 32: Skewness and kurtosis statistics

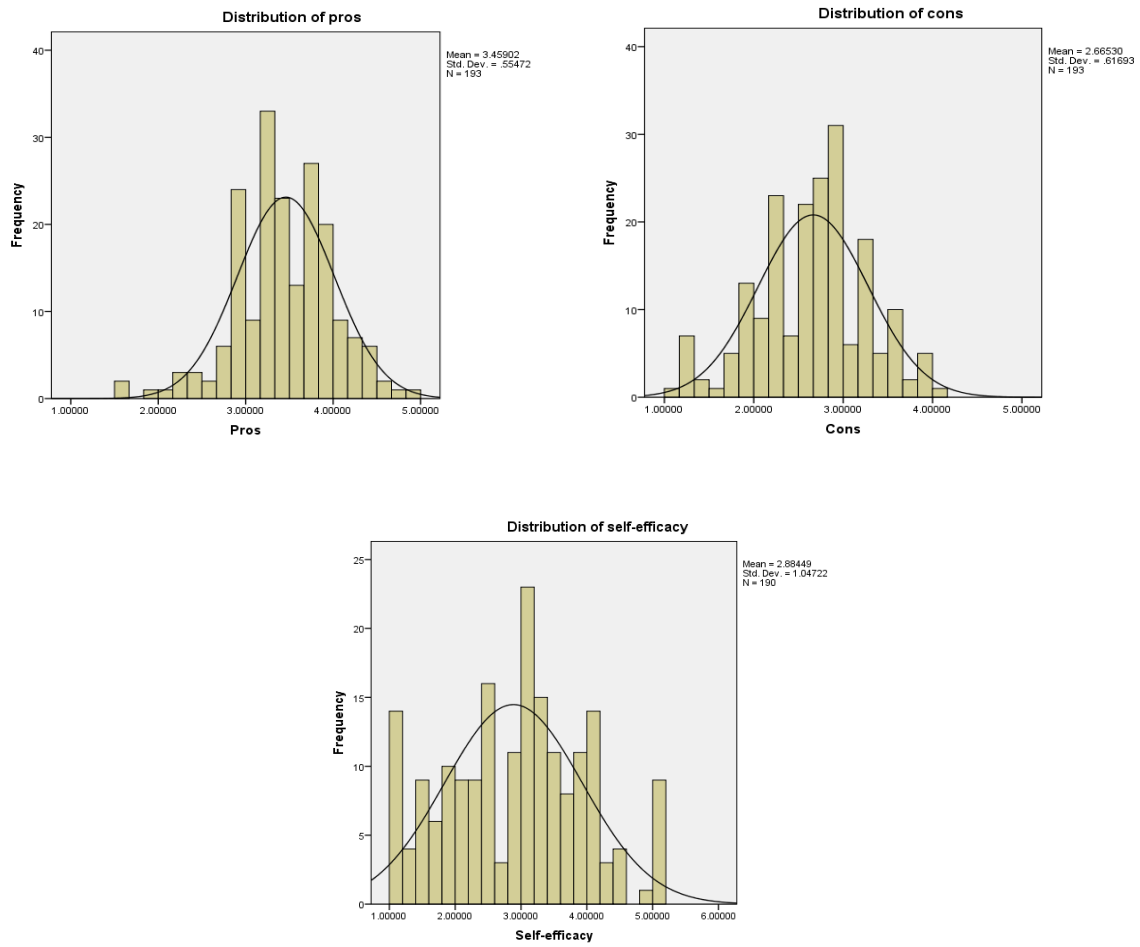


Figure 32: Histograms of distributions, with normal distributions shown by the curves

5.6 Correlation

Spearman's rho statistics (Table 33) support the hypotheses that the stages of change have statistically significant correlations with the pros, cons and self-efficacy at the 1% level, all in the directions predicted by the literature. These correlations are shown visually in Figure 33 and Figure 34.

Variable	Spearman's rho	Interpretation	Hypotheses
Pros	0.387**	There is a statistically significant positive correlation between the stages of change and the pros	Accept HDB1.1 There is a positive correlation between the pros and progression through the stages
Cons	-0.458**	There is a statistically significant negative correlation between the stages of change and the cons	Accept HDB1.2 There is a negative correlation between the cons and progression through the stages
Self-efficacy	0.547**	There is a statistically significant positive correlation between the stages of change and self-efficacy	Accept HSE1 There is a positive correlation between self-efficacy and progression through the stages

** significant at $p < 0.01$ (1-tailed)

Table 33: Spearman's rho and hypothesis testing

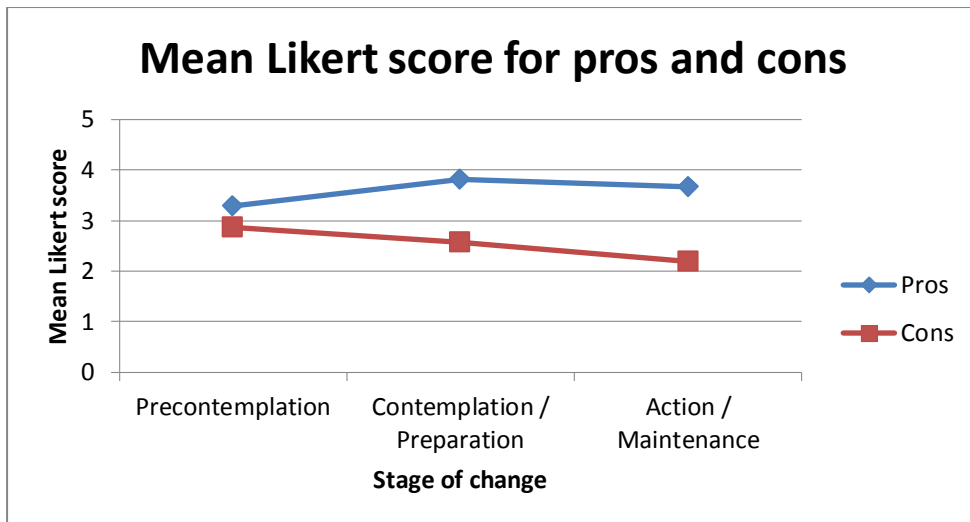


Figure 33: Chart of mean Likert score for pros and cons across the stages

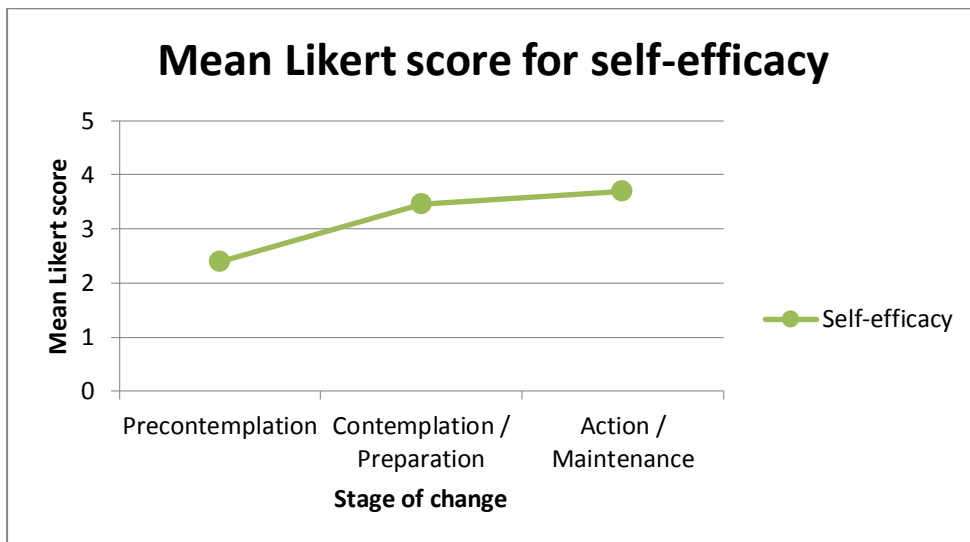


Figure 34: Chart of mean Likert score for self-efficacy across the stages

5.7 Testing decisional balance

The mean score given to the pros was significantly higher than that given to the cons in all stages at the 0.1% level (Table 34). This was unexpected at the precontemplation stage but as predicted for the other stages. As predicted by the TTM, the difference between the pros and cons progressively increases for alumni in higher stages.

Stage	Dependent t-test	Interpretation	Hypotheses
Precontemplation	5.659**	The mean of the cons is statistically lower than the mean of the pros in the precontemplation stage	Reject HDB2.1 At the precontemplation stage the weighting given to the cons is greater than the weighting given to the pros
Contemplation / preparation	9.967**	The mean of the cons is statistically lower than the mean of the pros in the contemplation/preparation stage	Accept HDB2.2 At the contemplation stage the weighting given to the cons is lower than the weighting given to the pros
Action / Maintenance	11.214**	The mean of the cons is statistically lower than the mean of the pros in the action/maintenance stage	Accept HDB2.3 At the action stage the weighting given to the cons is lower than the weighting given to the pros

** significant at $p < 0.001$ (1-tailed)

Table 34: Dependent t-test results for decisional balance and hypothesis testing

5.8 ANOVA analysis

ANOVA analysis tested whether the TTM construct variables were statistically different between the stages.

The self-efficacy variable failed the ANOVA assumption that variances are homogenous (Saunders, Lewis and Thornhill, 2009) (Table 35). However, since the largest group (precontemplation) has a variance between the two smaller groups and the Levene test only just fails the 0.05 threshold the ANOVA results are likely to be accurate (Field, 2005).

Variable	Levene statistic (sig.)	Implication
Pros	0.195	Passes the test for homogeneity of variances, so ANOVA is robust
Cons	0.987	Passes the test for homogeneity of variances, so ANOVA is robust
Self-efficacy	0.045	Fails the test for homogeneity of variances

Table 35: Levene statistics testing variance

ANOVA tests indicated that the level of pros ($F(2,191)=19.118$, $p<0.001$), cons ($F(2,191)=23.835$, $p<0.001$) and self-efficacy ($F(2,188)=42.421$, $p<0.001$) were all highly significantly different in each stage of change.

The Bonferroni corrected Tukey post hoc test showed that pros were higher in contemplation/preparation than precontemplation and the cons progressively fell across the stages, confirming the two hypothesis (Table 36).

Variable	Post hoc tests (p<0.05)	Hypotheses
Pros	Precontemplation < Contemplation/preparation Precontemplation < Action/maintenance No relationship found between Contemplation/preparation and Action/maintenance	Accept HDB3.1 The pros in the contemplation stage are higher than the pros in the precontemplation stage.
Cons	Precontemplation > Contemplation/preparation Precontemplation > Action/maintenance Contemplation/preparation > Action/maintenance	Accept HDB3.2 The cons in the action stage are lower than the cons in the precontemplation stage.

Table 36: Post hoc test results for pros and cons and hypothesis testing

Games-Howell's post hoc test was used for self-efficacy as it copes better with both heterogeneous variances and different group sizes (Field, 2005). Self-efficacy was higher in contemplation/preparation and action/maintenance than in precontemplation, confirming this hypothesis, but no relationship was found between contemplation/preparation and Action/maintenance (Table 37).

Variable	Post hoc tests (p<0.05)	Hypotheses
Self-efficacy	Precontemplation < Contemplation/preparation Precontemplation < Action/maintenance No relationship found between Contemplation/preparation and Action/maintenance	Accept HSE2.1 Self-efficacy in the contemplation stage is higher than in the precontemplation stage
		Reject HSE2.2 Self-efficacy in the action stage is higher than in the contemplation stage

Table 37: Post hoc test results for self-efficacy and hypothesis testing

5.9 Regression analysis

Regression analysis tested whether the TTM construct variables predicted the stage of change each individual was in.

The pros variable failed to make a significant contribution to model 1 ($p=0.236$) and so the regression was re-run without the pros (model 2). Self-efficacy and the cons both made a significant contribution to model 2 ($p<0.001$), so two of the hypotheses were accepted (Table 39). R^2 was 0.346, meaning 34.6% of the variation in stage is explained by self-efficacy and cons. The standardised coefficients for beta (Table 38) show that self-efficacy was more important than cons in predicting stage of change.

Variable	Standardised coefficients for beta	Interpretation
Self-efficacy	0.414	Positive relationship with stage. More important for predicting stage than the cons
Cons	-0.269	Negative relationship with stage

Table 38: Standardised coefficients for beta for self-efficacy and cons

Variable	Regression analysis	Hypothesis
Pros	Does not make a significant contribution to predicting stage of change (significance=0.236)	Reject HDB4.1 The pros can predict the stage of change
Cons	Does make a significant contribution to predicting stage of change (Beta=-0.269, $p<0.01$)	Accept HDB4.2 The cons can predict the stage of change
Self-efficacy	Does make a significant contribution to predicting stage of change (Beta=0.414, $p<0.01$)	Accept HSE3 The level of self-efficacy can predict the stage of change

Table 39: Summary of regression analysis and hypothesis testing

5.10 Impact of demographic attributes

5.10.1 Gender

The chi-square test and Cramer's V test showed that the number of women in the contemplation/preparation and action/maintenance stages were significantly lower than the number of men ($\chi^2(2)=6.524$, $p<0.05$ and $V=0.186$, $p<0.05$) (Figure 35).

The opposite relationship was predicted so H_{Gend} was rejected (Table 40).

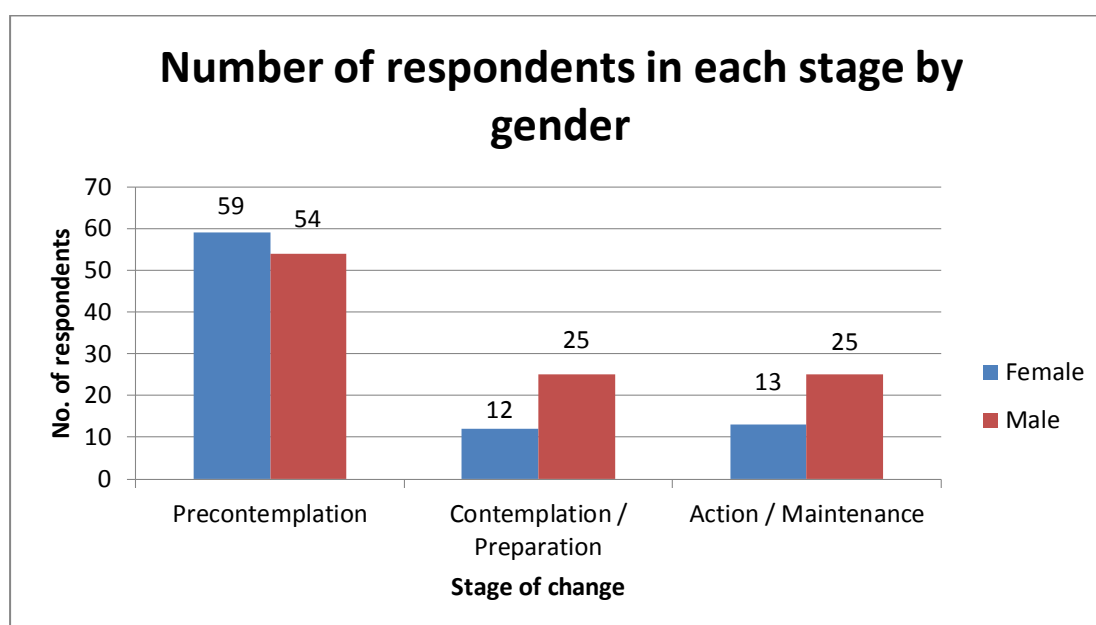


Figure 35: Chart of respondents in each stage by gender

Findings	Hypothesis
Significant chi-square test result and Cramer V result at the 5% level and bar chart shows higher numbers of men at the action/maintenance stage	Reject H_{Gend} Women are <i>more likely</i> to be in the <i>action or maintenance</i> stage than men

Table 40: Hypothesis testing for gender

T-test results show that in the precontemplation stage women rated the cons higher than the men ($t(108)=2.152$ ($p<0.05$)) and self-efficacy lower than the men ($t(104)=-2.019$ ($p<0.05$)). No differences were found in the other stages.

Re-running the regression analysis for just men resulted in the pros and self-efficacy being significant predictors of stage, but not cons. This was a different result to that for the whole sample or for just women, where cons and self-efficacy predicted stage.

5.10.2 Age

All the age brackets had a similar percentage of alumni in the action/maintenance stage (Figure 36) so hypothesis HAge was rejected (Table 41).

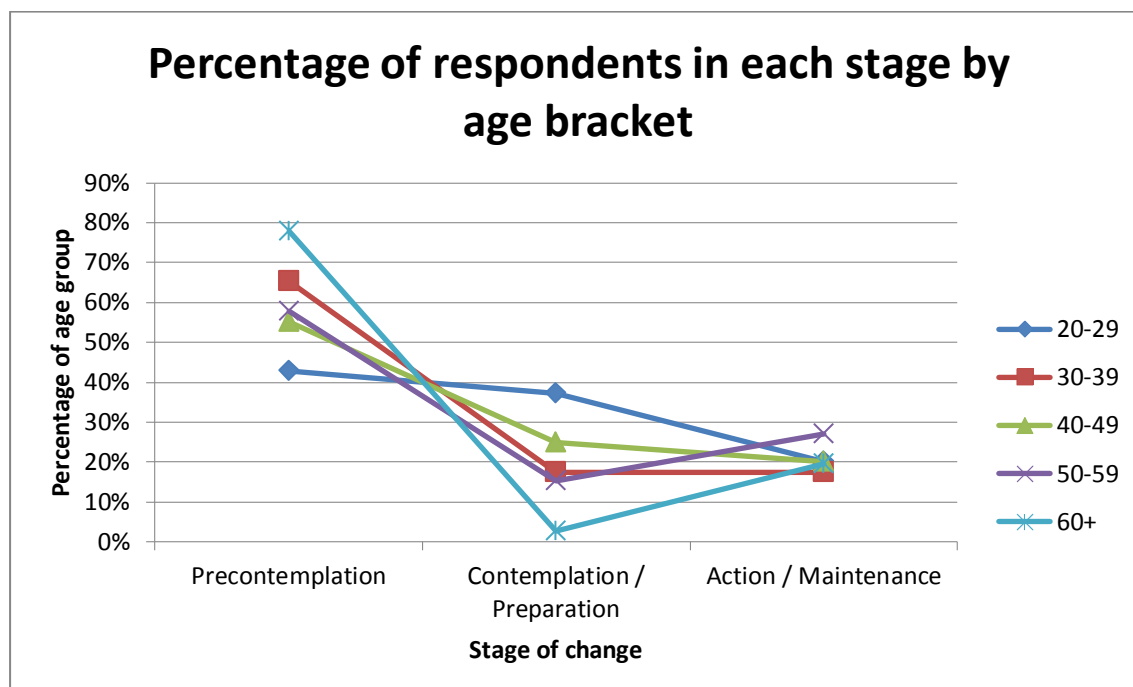


Figure 36: Chart of respondents in each stage by age bracket

Findings	Hypothesis
No supportive evidence found	Reject HAge People in the 60+ age bracket are more likely to be in the action or maintenance stage than younger people

Table 41: Hypothesis testing for age

5.10.3 University type

The chi-square test ($\chi^2(2)=36.452$, $p<0.001$) and Cramer V test ($V=0.436$, $p<0.001$) confirmed the number of non-collegiate alumni in the contemplation/preparation and action/maintenance stages was lower than the number of collegiate university alumni (Figure 37). This was highly significant at the 0.1% level and supports the acceptance of hypothesis HColl (Table 42).

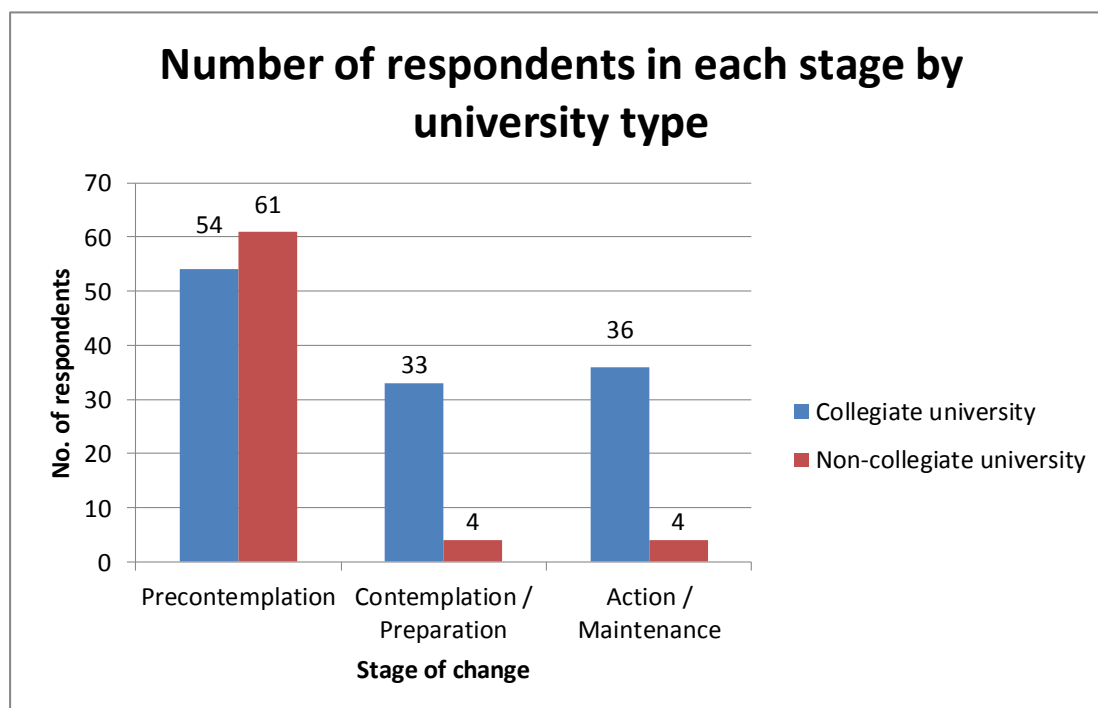


Figure 37: Chart of respondents in each stage by university type

Findings	Hypothesis
Highly significant chi-square test result and Cramer V result at the 0.1% level. Bar chart shows significantly higher levels of alumni from collegiate universities at the action/maintenance stage	Accept HColl People who attended <i>collegiate</i> universities are <i>more likely</i> to be in the <i>action or maintenance</i> stage than people who attended non-collegiate universities

Table 42: Hypothesis testing for university type

The t-test results show that in precontemplation non-collegiate university alumni rated the cons higher ($t(100)=-2.554$ ($p<0.05$)) and self-efficacy lower ($t(110)=-2.993$ ($p<0.01$)) than collegiate university alumni. The pros were not found to be statistically different between the groups.

5.10.4 Education level

The chi-square test ($\chi^2(2)=17.352$, $p<0.001$) and Cramer's V test ($V=0.316$, $p<0.001$) both indicated a highly significant association between education level and the number of respondents in each stage. However, the direction of the relationship was opposite to that predicted, with Master's alumni being more involved (Figure 38). Therefore, hypothesis HEd was rejected (Table 43).

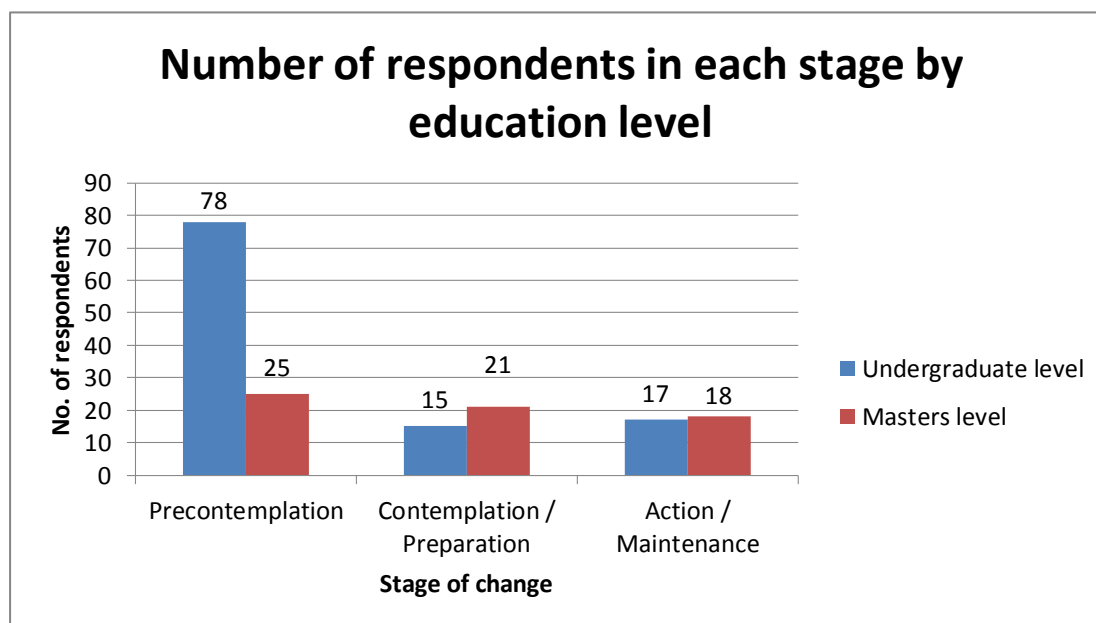


Figure 38: Chart of respondents in each stage by education level

Findings	Hypothesis
Highly significant chi-square test and Cramer's V test at the 0.1% level, but actually supports the Master's level alumni being more likely to be in action/maintenance stage	Reject HEd People who attained an <i>undergraduate</i> degree from their university are <i>more likely</i> to be in the <i>action or maintenance</i> stage than people who attained higher degrees

Table 43: Hypothesis testing for education level

In the precontemplation stage Master's level alumni rated the pros higher than the undergraduate level alumni ($t(51)=-2.339$ ($p<0.05$)) and in the contemplation/preparation stage Master's level alumni rated self-efficacy higher than the undergraduate level alumni ($t(34)=-2.307$ ($p<0.05$)). The other combinations were not found to be statistically different between education levels.

5.11 Alumni initiatives

The average Likert score given to each alumni initiative is shown in Table 44 and Figure 39.

The range of average scores was relatively small.

Initiative	N	Mean
Someone asking you personally to help with a particular activity	191	4.09
Clear objectives for each alumni activity	190	3.95
Fuller information on the time demands of each alumni activity	189	3.86
A clear explanation of how to get involved if you live a long way away	191	3.83
Information about the impact of alumni activities (e.g. case studies)	187	3.73
'How to' guides for volunteers	187	3.62
A fund to reclaim expenses (e.g. travel costs)	190	3.60
Training for volunteers	189	3.41

Table 44: Frequency and mean for each initiative

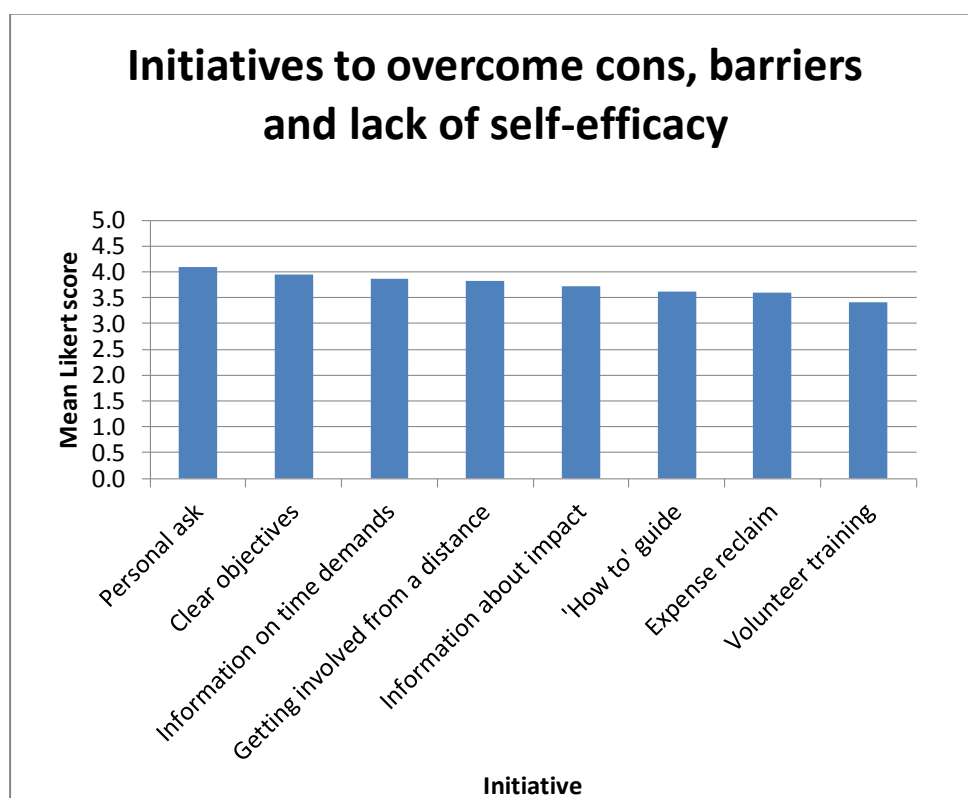


Figure 39: Chart of initiatives in descending order of importance

5.12 Quantitative results and analysis conclusion

Table 45 summarises the hypothesis testing (based on Table 10) and Table 46 summarises the additional significant findings of this quantitative data analysis. These results are triangulated with the qualitative findings in section 6.

Construct	Hypothesis accepted/rejected	Notes
Decisional balance 1: general correlation	Accept HDB1.1 There is a <i>positive</i> correlation between the <i>pros</i> and progression through the <i>stages</i>	Supported at the 1% level
	Accept HDB1.2 There is a <i>negative</i> correlation between the <i>cons</i> and progression through the <i>stages</i>	Supported at the 1% level
Decisional balance 2: within each stage	Reject HDB2.1 At the <i>precontemplation</i> stage the weighting given to the <i>cons</i> is <i>greater</i> than the weighting given to the <i>pros</i>	Opposite relationship supported at the 0.1% level
	Accept HDB2.2 At the <i>contemplation</i> stage the weighting given to the <i>cons</i> is <i>lower</i> than the weighting given to the <i>pros</i>	Very strong support at the 0.1% level
	Accept HDB2.3 At the <i>action</i> stage the weighting given to the <i>cons</i> is <i>lower</i> than the weighting given to the <i>pros</i>	Very strong support at the 0.1% level
Decisional balance 3: comparing stages	Accept HDB3.1 The <i>pros</i> in the <i>contemplation</i> stage are <i>higher</i> than the <i>pros</i> in the <i>precontemplation</i> stage	Supported at the 5% level
	Accept HDB3.2 The <i>cons</i> in the <i>action</i> stage are <i>lower</i> than the <i>cons</i> in the <i>precontemplation</i> stage	Supported at the 5% level
Decisional balance 4: predicting stages	Reject HDB4.1 The <i>pros</i> can <i>predict the stage of change</i>	No significant contribution made
	Accept HDB4.2 The <i>cons</i> can <i>predict the stage of change</i>	Supported at the 1% level

Construct	Hypothesis accepted/rejected	Notes
Self-efficacy 1: general correlation	Accept HSE1 There is a <i>positive</i> correlation between <i>self-efficacy</i> and progression through the <i>stages</i>	Supported at the 1% level
Self-efficacy 2: comparing stages	Accept HSE2.1 Self-efficacy in the <i>contemplation</i> stage is <i>higher</i> than in the <i>precontemplation</i> stage	Supported at the 5% level
	Reject HSE2.2 Self-efficacy in the <i>action</i> stage is <i>higher</i> than in the <i>contemplation</i> stage	No relationship found
Self-efficacy 3: predicting stages	Accept HSE3 The level of <i>self-efficacy</i> can <i>predict the stage of change</i>	Supported at the 1% level
Engagement types	Reject HEngtype Alumni in the <i>earlier</i> stages of change rate <i>personal pros</i> higher and alumni in the <i>later</i> stages rate <i>altruistic pros</i> higher	No support found
Demographic differences	Reject HGend Women are <i>more likely</i> to be in the <i>action or maintenance</i> stage than men	Opposite relationship supported at the 5% level
	Reject HAge People in the <i>60+ age bracket</i> are <i>more likely</i> to be in the <i>action or maintenance</i> stage than younger people	No support found
	Accept HColl People who attended <i>collegiate</i> universities are <i>more likely</i> to be in the <i>action or maintenance</i> stage than people who attended non-collegiate universities	Very strong support at the 0.1% level
	Reject HEd People who attained an <i>undergraduate</i> degree from their university are <i>more likely</i> to be in the <i>action or maintenance</i> stage than people who attained higher degrees	Opposite relationship found

Table 45: Summary of hypothesis results

Variable	Finding	Significance
Decisional balance	The difference between the pros and cons progressively increases for alumni in higher stages	
Gender	In the precontemplation stage women rated the cons higher than the men.	Supported at the 5% level
Gender	In the precontemplation stage women rated self-efficacy lower than the men.	Supported at the 5% level
University type	In the precontemplation stage non-collegiate university alumni rated the cons higher than collegiate university alumni.	Supported at the 5% level
University type	In the precontemplation stage non-collegiate university alumni rated self-efficacy lower than collegiate university alumni.	Supported at the 1% level
Education level	In the precontemplation stage Master's level alumni rated the pros higher than the undergraduate level alumni.	Supported at the 5% level
Education level	In the contemplation/preparation stage Master's level alumni rated self-efficacy higher than the undergraduate level alumni.	Supported at the 5% level

Table 46: Summary of additional significant findings

6 Discussion

To increase the validity of the findings (Bryman, 2006) each investigative question and research objective is answered by triangulating the results of the qualitative and quantitative research and considering differences between the perspectives of academics, professionals and alumni.

6.1 Research objective 1

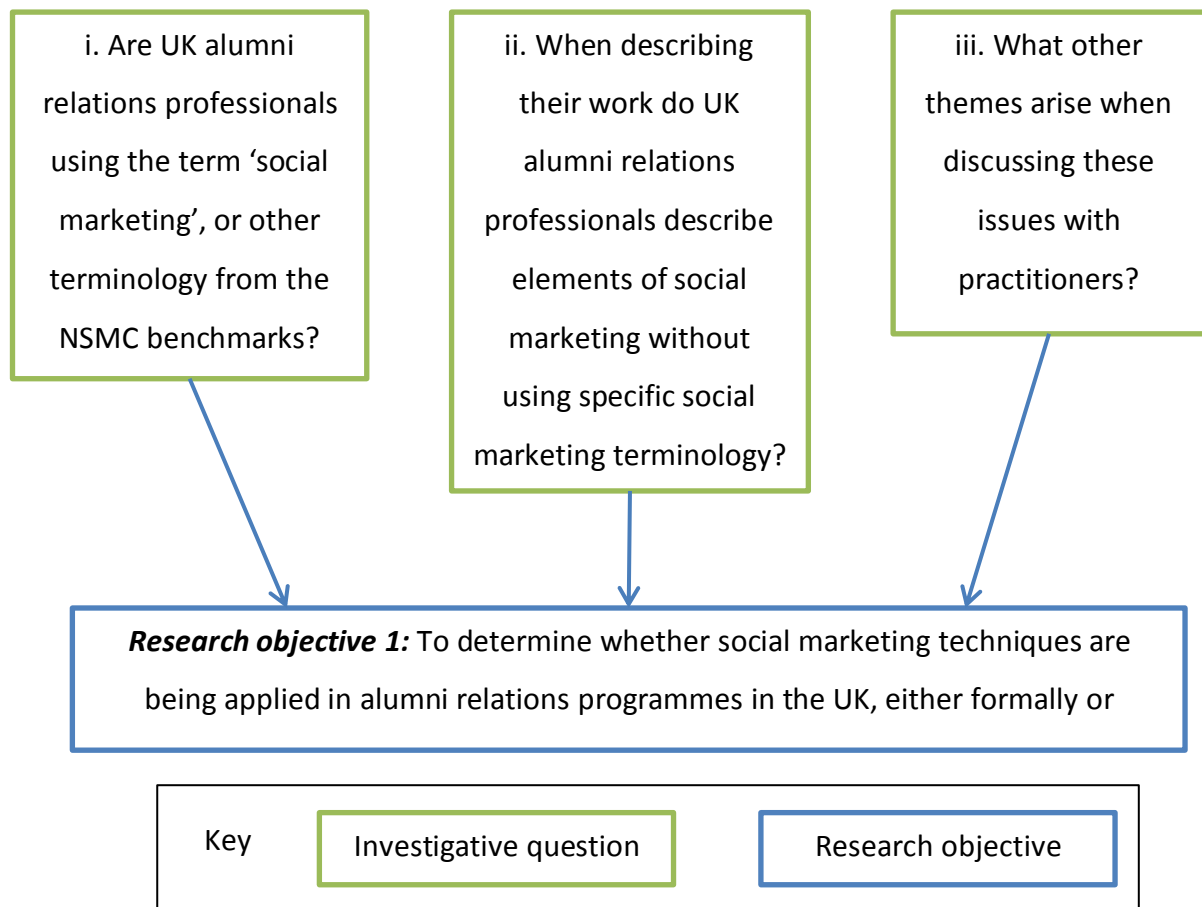


Figure 40: Research objective 1 and investigative questions

6.1.1 Social marketing terminology (investigative question i.)

With the exception of segmentation, none of the professionals spontaneously used terminology associated with social marketing or the NSMC benchmarks during the interviews. In addition, none had heard of social marketing being applied to alumni relations. This is consistent with the literature, in which no example was found of social marketing being applied to alumni relations (section 2.6).

6.1.1.1 Segmentation

Segmentation was widely used by the professionals with varying degrees of sophistication, ranging from data-driven segmentation for all programme activities through to intuitive segmentation for events only.

Two participants prioritised the best fundraising prospects. A third reported being in the early stages of their development programme so alumni that self-select and become more engaged are then prioritised for further activities. This could be considered an intuitive prioritisation of alumni in the action stage of change, although the professional didn't describe it in this way.

A variety of segmentation criteria were reported, with age, geographic, gender and subject criteria all frequently used. The network display analysis (section 4.2) illustrated that all segmentation criteria were based on either demographic differences or overcoming a con of alumni activities, such as geographic segmentation to overcome distance barriers. This insight may help professionals be more strategic in their segmentation.

6.1.2 Social marketing techniques (investigative question ii.)

The professionals described some elements of a social marketing approach when describing their alumni programmes, but without using marketing terminology.

6.1.2.1 Behavioural goals

All four participants described behaviour goals such as fundraising and volunteering as central to their work, but none used the terms 'behavioural goal' or 'behaviour change' spontaneously.

While fundraising is an established goal, three of the participants felt there was an increasing focus on volunteering. This supports the literature's claims that alumni are becoming a more important resource (Weerts, Cabrera and Sanford, 2010; Iskhakova, Hilbert and Hoffmann, 2016). Two of the professionals mentioned that engaging alumni strategically contributed to the distinctiveness of their universities. This is an example of universities trying to create a USP (Matzler and Abfalter, 2013) in an increasingly competitive higher education market (Papadimitriou, 2017).

6.1.2.2 Competition

The majority of the professionals interviewed felt it was important to consider the competition for alumni's time and attention. However, they did not use the term 'competition' spontaneously.

The network display analysis (section 4.2) indicated a link between time, which was the most important con of alumni activities, and considering the competition. This suggests the important pros and cons may help focus consideration of a long list of possible competition. For example, if lack of time is the biggest barrier and altruistic fulfilment is the biggest benefit, focusing on competing ways alumni could invest their time in altruistic activities could produce useful insights for improving a careers mentoring scheme.

6.1.2.3 Alumni motivation research

Three of the professionals had not undertaken any structured research into alumni motivation, while the fourth had recently launched an alumni survey which addressed this area.

One participant had noticed an increase in academic donor motivation research being presented at professional conferences but noted this is focussed on philanthropy rather than other forms of alumni engagement.

So there is a small amount of formal research being undertaken into alumni motivation, but this is not yet widespread.

6.1.2.4 Behaviour theory and marketing mix

None of the interview participants had heard of behavioural theory or the marketing mix being used in alumni relations.

In summary, when describing their work UK alumni professionals describe some elements of social marketing, such as behaviour goals and competition, although they do not use social marketing terminology.

6.1.3 Inductive themes (investigative question iii.)

At the end of the interviews three of the professionals expressed an interest in the application of social marketing techniques to alumni relations, indicating some appetite for a new approach. However, three professionals mentioned they have limited time to think strategically about alumni relations, partly because complying with the new EU General Data Protection Regulation (GDPR) had taken a lot of their focus.

6.1.4 Research objective 1 conclusion

With the exception of segmentation, social marketing techniques are not being applied formally in alumni relations programmes in the UK. However, behavioural goals, alumni motivation research and consideration of competition are being applied intuitively by some professionals.

Therefore, with the exception of behavioural theory and the marketing mix, evidence was found of successful application of all the NSMC benchmarks (NSMC, 2017) to alumni relations in the UK. This supports the applicability of a social marketing approach to alumni relations. There is some interest in applying social marketing to alumni behaviours amongst UK professionals, but lack of time for strategic thinking may act as a barrier to the uptake of any new approach.

6.2 Research objective 2

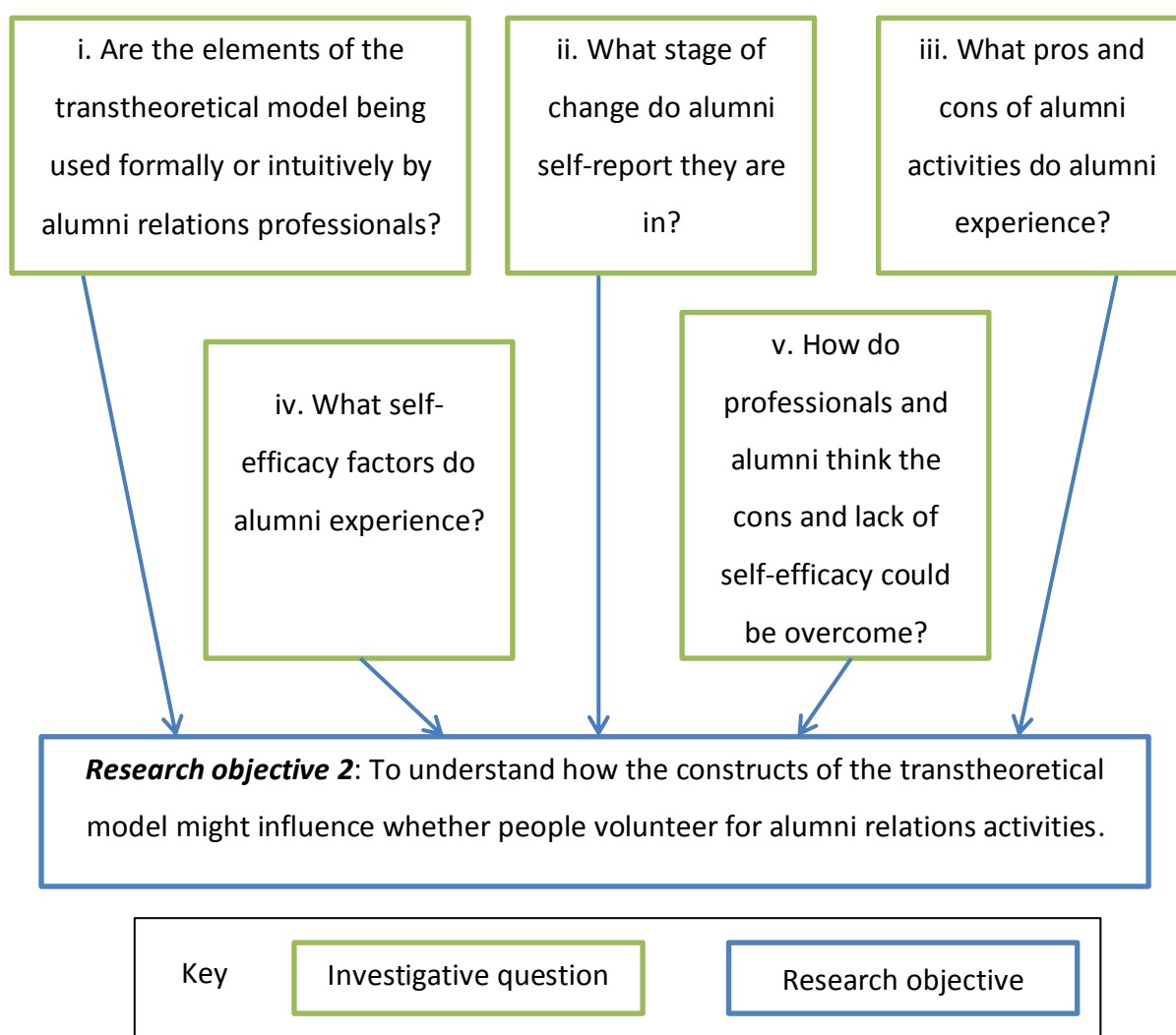


Figure 41: Research objective 2 and investigative questions

6.2.1 The transtheoretical model in alumni relations (investigative question i.)

None of the professionals used the terminology of the TTM (pros, cons or self-efficacy). All four readily identified pros and cons when asked and apply this intuitively in their work, but only one felt that decisional balance was relevant. All four felt self-efficacy was relevant but hadn't applied this to their work before. This is consistent with the academic literature where the TTM has not been applied to alumni behaviours (section 2.6).

6.2.2 Stages of change in alumni behaviours (investigative question ii.)

The majority of questionnaire respondents (59.6%) were in the precontemplation stage with the remainder divided between contemplation/preparation (19.3%) and action/maintenance (20.8%) (section 5.2). It is not known if this generalises to the population as

this is the first application to alumni behaviours, but the high number in precontemplation mirrors that reported for addictive behaviours (Prochaska, DiClemente and Norcross, 1992).

6.2.3 Pros and cons in alumni behaviours (investigative question iii.)

6.2.3.1 Pros

Pride in their former university, which one professional described as “brand affiliation”, was one of the most frequently mentioned pros across all research methods (section 5.3). Interestingly, questionnaire participants from non-collegiate universities only ranked this pro third after altruistic benefits. Therefore, it may be that non-collegiate universities should emphasise altruistic fulfilment more than generating pride.

Altruistic fulfilment was ranked second in the quantitative research. The feeling that students pay high fees now and that it would feel good to help them emerged strongly from the focus group and questionnaire. This was not mentioned by the professionals, and could represent a missed opportunity for increasing alumni engagement.

The quality and enjoyment of the actual alumni activities came through strongly in the focus group and questionnaire, but was only mentioned by one professional. This is discussed further in section 6.4.3.

Contributing to Continuing Professional Development (CPD) and strengthening alumni’s CVs were ranked 8th and 9th in the questionnaire and were only mentioned briefly by the professionals. However, professional development was frequently mentioned as a benefit in the focus group. Further research to investigate this area could therefore be beneficial.

No support was found for the hypothesis that alumni in earlier stages of change rate pros with personal benefits higher and those in later stages rate pros with altruistic benefits higher (Table 29). It is unfortunate that this finding is inconsistent with two of the very few academic studies investigating how to increase alumni engagement behaviours, as opposed to affinity or giving behaviours (Weerts, Cabrera and Sanford, 2010; Gallo, 2012; CASE, 2015).

6.2.3.2 Cons

Lack of time and distance were considered the biggest barriers to involvement in alumni activities across all the research methods (section 5.3).

Financial cost was rated fairly low by professionals as a barrier, but cost featured in two of the top four cons identified in the questionnaire. It could therefore be that professionals are under-rating the barrier that cost represents.

An important con to emerge from the focus group and questionnaire was the belief that getting involved in alumni activities would trigger an increase in unwelcome fundraising requests. This is discussed further in section 6.4.1.

Bad experiences of previous alumni activities being a barrier was mentioned by only one professional but came up in seven questionnaire comments (Table 19). This is discussed in section 6.4.3.

6.2.4 Self-efficacy in alumni behaviours (investigative question iv.)

The top four self-efficacy barriers in the questionnaire (section 5.3) all relate to time, distance or financial cost, mirroring the important cons. Belief in having something worthwhile to offer was quite high, indicating this is not a significant barrier.

This was a somewhat different finding from the qualitative research, where the most frequently cited examples were under-confidence about offering careers mentoring or a careers talk. Further research could be helpful in better understanding this difference.

6.2.5 Overcoming cons and lack of self-efficacy (investigative question v.)

None of the initiatives tested in the questionnaire stood out as significantly more effective (section 5.11). Consequently, professionals should conduct research to identify the biggest barriers for their target group and then create initiatives to overcome these.

The alumni initiative which rated the highest in the questionnaire was a personal request to get involved. This was also mentioned in the focus group for overcoming lack of self-efficacy, but was not mentioned by professionals. This could be a missed opportunity for increasing engagement, although it would be a time-consuming approach.

Having clear objectives for alumni activities was rated second most important, linking to comments about the quality of alumni programmes being important (section 6.4.3).

Information on time demands was ranked third in the questionnaire, and information about getting involved from a distance was ranked fourth, both mirroring the importance of time and distance as a barrier. In overcoming the distance barrier the professionals emphasised regional UK and international events, while alumni emphasised better use of Skype and social media. This could indicate that professionals should use technology more to overcome distance barriers.

6.2.6 Research objective 2 conclusion

The high proportion of individuals in the precontemplation stage reveals growth opportunities for alumni engagement but also demonstrates the challenges universities face in engaging their alumni.

There appear to be commonly experienced pros of alumni activities (such as pride and altruistic fulfilment), cons (such as time and distance) and self-efficacy barriers which are linked to these cons. This supports the relevance of the TTM to alumni behaviours. The lack of research into alumni motivations and barriers means professionals may currently under-rate the impact of cost, suspicion of fundraising and poor quality activities and communication.

There are no stand-out initiatives which work in all circumstances, so professionals need to conduct primary research to identify the barriers faced by alumni in their target group and how best to overcome them.

6.3 Research objective 3

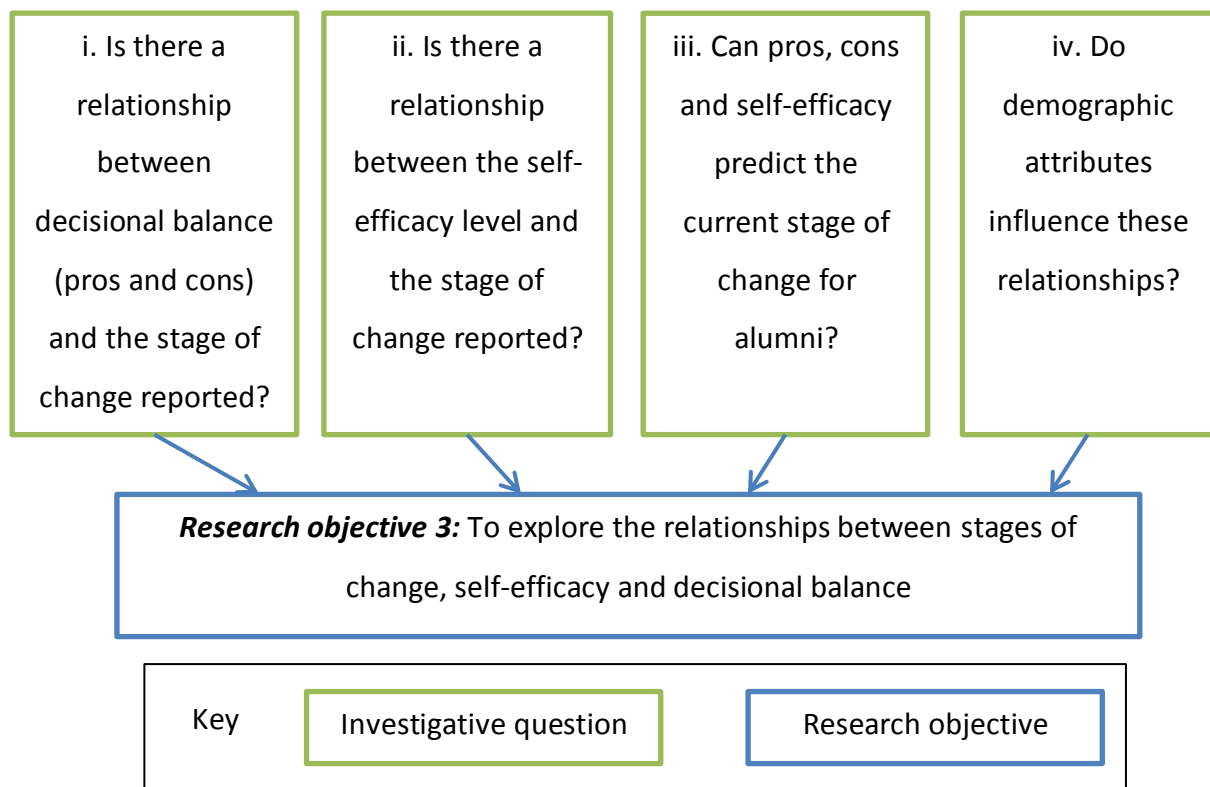


Figure 42: Research objective 3 and investigative questions

6.3.1 Decisional balance and stage of change (investigative question i.)

The hypotheses relating to decisional balance are summarised in Figure 43, with six of the seven hypotheses being accepted. Hypothesis HDB2.1 was rejected because the pros were weighted higher than the cons in precontemplation (section 5.7). This undermines the TTM's prediction that it is cons outweighing pros that prevents people in precontemplation from changing their behaviour. However, the difference between the pros and cons did progressively increase for alumni in higher stages, as predicted by the TTM.

These patterns inform the stage-matched recommendations for alumni professionals (section 7.2.7).

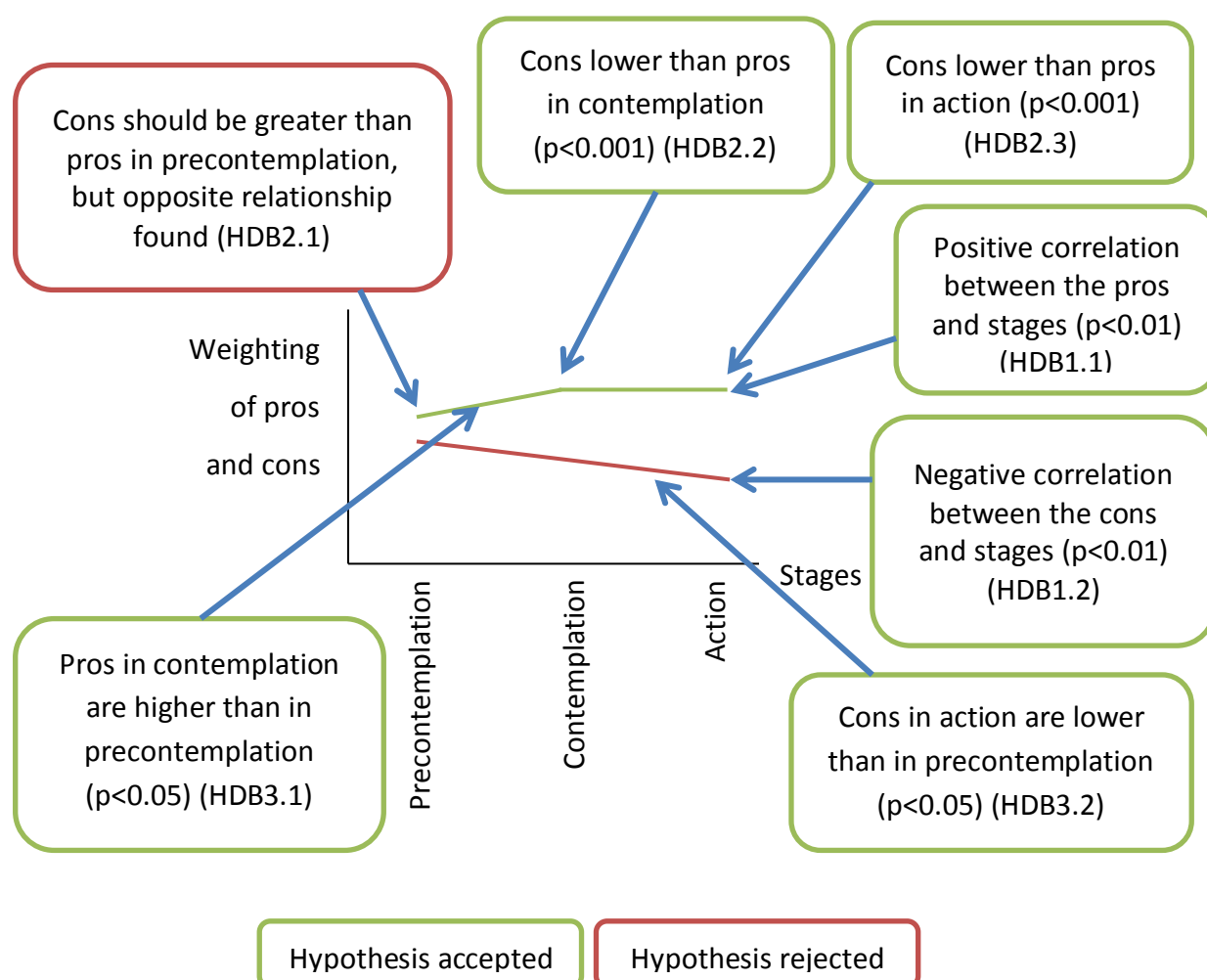


Figure 43: Decisional balance hypothesis results

6.3.2 Self-efficacy and stage of change (investigative question ii.)

The hypotheses relating to self-efficacy are summarised in Figure 44. Self-efficacy is positively correlated with stage (section 5.6) and increases between precontemplation and contemplation (section 5.8). However, the hypothesised increase between contemplation and action was not found. This pattern across the stages is used to inform stage-matched recommendations for alumni professionals (section 7.2.7).

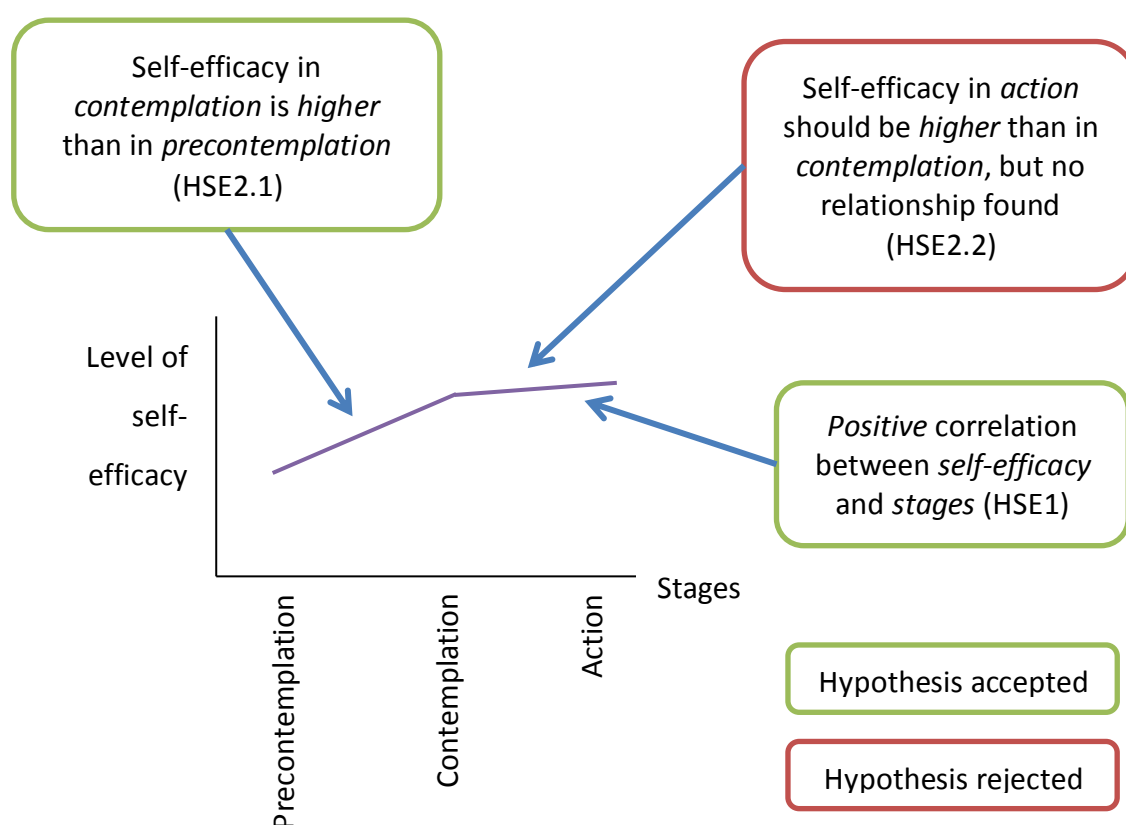


Figure 44: Self-efficacy hypothesis results

6.3.3 Predicting stage of change (investigative question iii.)

The weighting of cons and self-efficacy were found to be significant predictors of stage of change but the pros were not (section 5.9). The regression model resulted in 34.6% of the variation in stage of change being explained by self-efficacy and cons. This R^2 is similar to empirical studies which concluded that the TTM was applicable to other behaviours (Table 47). However, there is still 65.4% of variation unexplained by the model which must be due to other significant factors outside the TTM constructs being tested.

Behaviour	Author	R^2 result	Conclusion
Fruit and vegetable consumption	Van Duyn et al. (1998)	0.29	TTM can be applied to fruit and vegetable consumption behaviours
Exercise	Findorff et al. (2007)	0.3	Most constructs of the TTM useful in predicting exercise behaviours
Alumni behaviours	This study	0.346	
Blood donation	Ferguson and Chandler (2005)	0.38	Stage of change approach has validity for blood donation behaviours

Table 47: R^2 results testing the TTM for various behaviours

The standardised coefficients for beta indicate that self-efficacy is more important in predicting stage than cons (section 5.9). This is consistent with the literature, where there is greater empirical support for self-efficacy (Donovan, 2011). It is also consistent with the focus group findings where alumni reported self-efficacy as being very important.

In contrast to these supportive results, the pros were not significant in predicting stage of change (section 5.9). This was not consistent with either the TTM literature (Prochaska and Velicer, 1997) or qualitative research which indicated the pros were important.

The cons and self-efficacy helped to predict the stage of change for all age groups, university types and education levels, although differences were found between genders (section 6.3.4.1).

6.3.4 Impact of demographic attributes (investigative question iv.)

6.3.4.1 Gender

Figure 45 visually links together the findings for gender. Both the qualitative and quantitative research (section 5.10.1) found that women report lower levels of self-efficacy for alumni behaviours than men, although this was only statistically significant in precontemplation. In this stage women also rated the cons higher than men, which is consistent with the finding that the most important self-efficacy items were linked to cons (section 6.2.4).

Regression analysis showed that cons and self-efficacy predicted stage of change for women. Combining the findings that self-efficacy and cons were lower for women and that they predict stage, it is therefore consistent that the number of women in the contemplation/preparation and action/maintenance stages were statistically lower than men.

Although these findings support the TTM's applicability to alumni behaviours, the lower number of women involved in activities is contrary to the predictions of the alumni relations literature (Weerts and Ronca, 2007). This is discussed in section 7.1.

It appears that pros are not as important to women, as they were not found to help predict stage. This is in contrast to men, where the pros and self-efficacy were found to be a significant predictor of stage, but cons weren't.

In conclusion, these findings suggests that when making decisions about alumni activities the pros of the activities are more important to men and the cons are more important to women. Self-efficacy helped to predict the stage of change for both genders, but is particularly important for women. This information informs the stage-matched recommendations for alumni professionals (section 7.2.7).

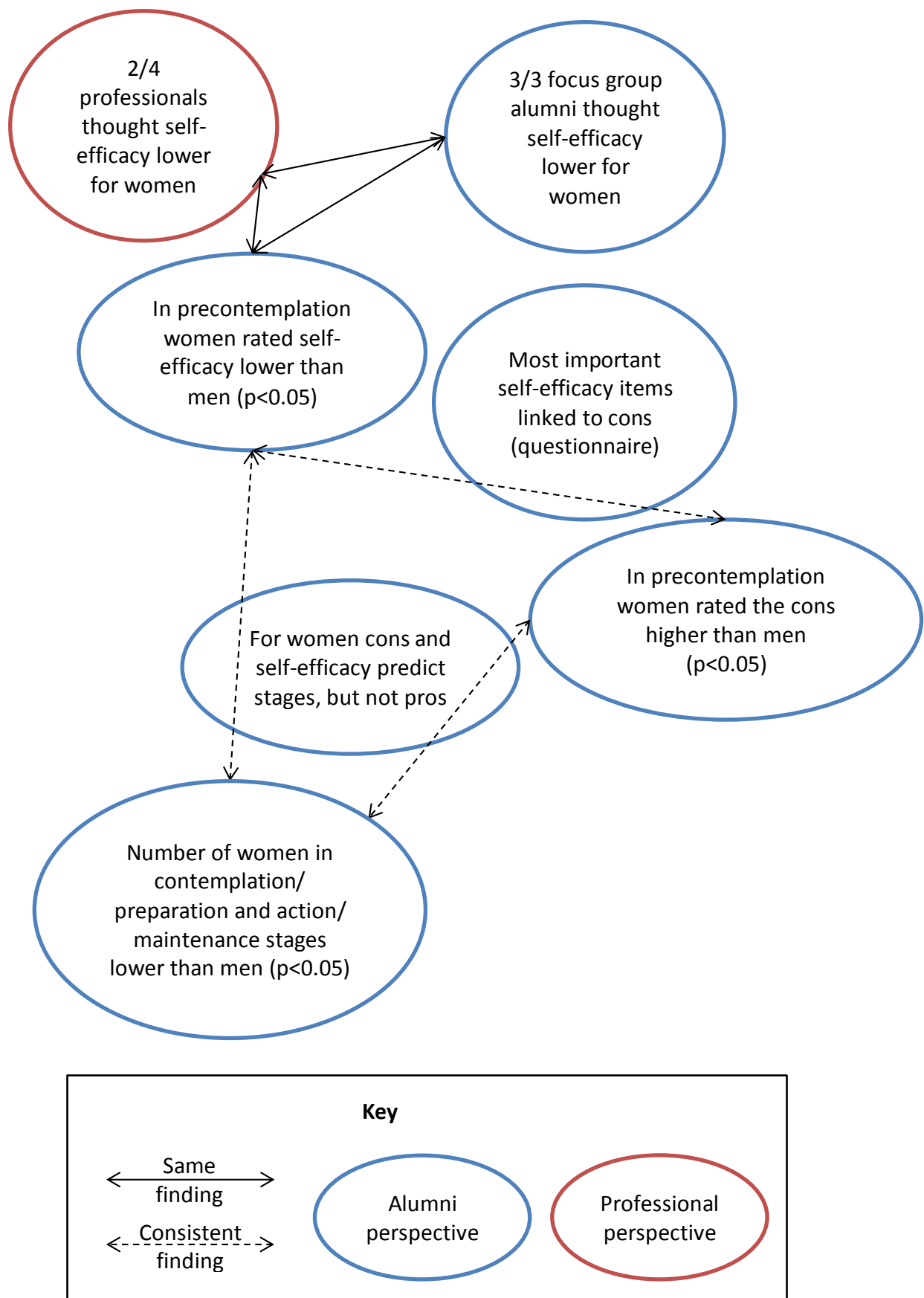


Figure 45: Summary of findings for gender

6.3.4.2 Age and family status

The qualitative research suggested that older people have more time and would therefore be more involved in alumni activities, which was as predicted by the literature (Weerts and Ronca, 2007). However, the quantitative research didn't find any statistically significant patterns for age (section 5.10.2). This could be due to small sample sizes from each age group in each stage rather than an absence of relationship between age and stage of change.

The qualitative research suggested that alumni with families could have less time, and so would be less involved. The quantitative research did not address this particular question, but given many alumni have families this could be a useful line of enquiry for future research.

6.3.4.3 University type

The number of alumni from non-collegiate universities in precontemplation was significantly higher than the number from collegiate universities (section 5.10.3). The results also indicated that university type has a greater impact on engagement levels than either gender or education level.

Non-collegiate alumni in precontemplation rated the cons higher and self-efficacy lower than collegiate alumni. The pros were not found to be statistically different between the groups.

Therefore, it appears that alumni from collegiate universities are more likely to be involved in alumni activities and that this may be explained by lower weightings for cons and higher levels of self-efficacy. These findings are consistent with the predictions of the TTM and alumni relations literature (McAlexander and Koenig, 2010).

6.3.4.4 Education level

Contrary to the hypothesis, the quantitative research found that alumni who studied at Master's level were more likely to be in higher stages of change than those who studied at undergraduate level (section 5.10.4).

There could be two explanations for this unexpected finding. Firstly, alumni who studied both undergraduate and Master's degrees at the same university may report themselves as Master's alumni but are likely to have higher levels of affinity. Even a small number of individuals like this could have influenced the results.

Secondly, the sampling techniques (section 3.4.2) meant that MBA alumni from Durham University Business School were probably over-represented. It may be that the stronger interpersonal ties developed during an MBA leads to higher levels of affinity than other Master's degrees. Further research would be needed to ascertain this.

6.3.5 Research objective 3 conclusion

The research provides support for the TTM being applicable to alumni behaviours. The relationships between the stages and decisional balance and self-efficacy were largely as predicted by the literature. The finding that self-efficacy and cons predict the stages also supports the application of the TTM to alumni behaviours.

However, three of the findings were contrary to the TTM literature. Firstly, the pros were always higher than the cons so decisional balance cannot fully explain why alumni in the precontemplation stage don't get involved. However, the difference between the pros and cons progressively increased for alumni in higher stages, which could explain stage progression.

Secondly, self-efficacy didn't increase as predicted between contemplation/preparation and action/maintenance. Despite this, self-efficacy was found to be an important predictor of stage of change for all demographic groups.

Finally, pros were not found to predict stage of change for the general population, despite supportive evidence from the qualitative research that pros were important. Interestingly, when run for just men the regression analysis showed that the pros did predict stage of

change but cons didn't. It therefore appears that cons are more important for women and pros more important for men.

Strong evidence supported the literature's prediction that alumni from collegiate universities are more involved. However, men and Master's alumni were found to be more involved and no systematic differences were found across age groups, all contradicting the alumni literature. This is discussed further in section 7.1.

Although somewhat contrary to the alumni literature, the findings for demographic differences were generally consistent with the TTM literature. For example, the fact that women and alumni from non-collegiate universities were less involved was supported by findings that these groups also had lower levels of self-efficacy and higher ratings of cons. This provides further support for the applicability of the TTM to alumni behaviours.

A limitation of this study is that the relationships between the TTM constructs may be interpreted as causation when they are simply chance correlation. However, this risk was reduced by triangulating the qualitative and quantitative research to ensure the relationships between the variables were properly understood.

6.4 Inductive themes

Three themes emerged which are outside the research objectives but relevant to the problem being addressed and the research question.

6.4.1 Suspicion of fundraising

Alumni rated increasing the chance of unwelcome fundraising requests as the second biggest con of alumni activities. The feeling that their university was only asking them to get involved because it wanted them to donate in the future also came across strongly in the focus group and four questionnaire comments. However, the item 'Even if I can't donate to the university, I could still volunteer for alumni activities' received strong support, indicating that this wasn't a significant self-efficacy barrier.

Although seemingly contradictory, these findings indicate that many alumni are not contemplating making a financial donation to their university. Relating this back to the model of alumni involvement (Lilly Family School of Philanthropy, 2014) (section 2.1.1), they may be willing to move from affinity to engagement behaviours, but they are not contemplating giving.

These findings suggest that fundraising activities could be acting as a barrier for some, preventing increased alumni engagement. This barrier may be overcome if alumni are convinced that their non-financial contributions are genuinely valued and that their involvement will not trigger a significant increase in fundraising requests.

This presents a strategic challenge for UK universities, which is considered in the recommendations for professionals (section 7.2.9).

6.4.2 Quality of student experience

In order to mitigate a limitation of the TTM (section 2.5.6.2) two additional variables affecting alumni behaviour were identified. The first such variable was the quality of student experience.

Participants in both the interviews and focus group felt that student experience influences whether alumni get involved with their university, supporting the findings in the literature (Lilly Family School of Philanthropy, 2014).

The quality of student experience is not incorporated into the TTM because it is not an immediate benefit or cost. However, social exchange theory would include student experience because it incorporates the benefits and costs experienced throughout the alumni relationship with the university (Weerts, Cabrera and Sanford, 2010) (section 2.6.1). Future research to identify a social marketing approach based on social exchange theory could therefore be beneficial for alumni behaviours.

6.4.3 Quality of alumni experience

The second additional variable identified was the quality of previous alumni experiences.

The importance of the quality of the alumni programme and follow-up communications emerged as a theme throughout the research, influencing the pros, cons and initiatives to overcome barriers. This is consistent with evidence that previous alumni experience predicts future alumni engagement (Newman and Petrosko, 2011). The quality of follow-up systems are particularly important for ensuring people in the action stage progress to maintenance rather than dropping back into non-involvement. As one questionnaire participant said, “A great experience leads to repeat volunteers. A bad one kills involvement.”

Some elements of the quality of the alumni programme, such as expected enjoyment of the activity on offer, are built into the TTM. However, where people are dissuaded from getting involved due to previous bad alumni experiences this would not be included in the TTM constructs. In contrast, social exchange theory would include these experiences (Weerts, Cabrera and Sanford, 2010) (section 2.6.1). This reinforces the call for future research to identify a social marketing approach for alumni behaviours based on social exchange theory.

6.5 A social marketing framework for alumni relations

The answers to research objectives 2 and 3 support the applicability of the transtheoretical model (TTM) to alumni behaviours, and so a social marketing framework based on the TTM is proposed for alumni relations in UK universities (research objective 4). This offers a new perspective for professionals, as they are not formally using a social marketing approach currently (research objective 1).

In making this proposal the recommendations for selecting an appropriate behavioural model (section 2.6.5) were followed (Table 48). Following the first two recommendations, the qualitative research and quantitative research found strong evidence to support the applicability of the TTM to alumni behaviours.

Adhering to the third recommendation, two additional variables were identified as being relevant to alumni behaviours but outside the TTM: student experience and previous alumni experience.

Addressing the final recommendation, the limitations of the TTM were fully considered and mitigated where possible (section 2.5.6). Two limitations may affect the application of this framework to alumni behaviours.

Firstly, the TTM is best suited to high-involvement alumni behaviours with a structured decision-making process (Andreasen, 1995), such as committing to careers mentoring. It may be less suitable for more spontaneous alumni behaviours such as posting on social media. Secondly, there may be people in a variety of different situations included in the precontemplation stage (West, 2005a) (section 2.5.6.3).

The practical implications of this social marketing framework and these limitations are explored in section 7.2.

Recommendation	Applied to this study	Outcome
Selected behaviour theory is assessed for its relevance to target behaviour	The TTM was assessed for its relevance to alumni behaviours through the qualitative research	TTM found to be relevant to alumni behaviours (research objective 2, section 6.2.6)
Selected behaviour theory is empirically tested before being used for campaigns	The TTM was applied to alumni behaviours and empirically tested in the quantitative research	Empirical support found for application of TTM to alumni behaviours (research objective 3, section 6.3.5)
Selected behaviour theory is adapted to the specific behaviour, if necessary	Additional variables outside the TTM were identified	Two additional variables found: student experience (section 6.4.2) and alumni experience (section 6.4.3)
Limitations of the behaviour theory selected are acknowledged and mitigated where possible	The limitations of the TTM were considered and mitigation options were identified (section 2.5.6)	Two significant limitations acknowledged: TTM designed for high-involvement behaviours only; precontemplation may contain a varied mix of people

Table 48: Application of recommendations for selecting a behaviour model

7 Conclusion and recommendations

Having addressed the four research objectives (section 6) this study concludes by answering the research question and considering how the findings help solve the problem of increasing alumni engagement (section 7.1). It then offers recommendations to alumni professionals (section 7.2), outlines the contribution of this study (section 7.3), explores its limitations (section 7.4) and suggests promising avenues for further research (section 7.5).

7.1 Answering the research question and problem

To answer the research question: this study finds that a social marketing framework based on the transtheoretical model does provide new insights which could enhance alumni relations programmes in the UK. These insights are outlined in the recommendations for professionals (section 7.2).

It was promising to find that alumni in all stages of change felt the pros of alumni activities outweighed the cons. However, it is sobering to realise that despite this 59.6% of people in this study were not even contemplating getting involved in alumni activities. The social marketing approach outlined here offers new insights on this problem facing UK universities.

This research also provides new insights on the wider problem of increasing alumni engagement with UK universities. With the exception of the finding that collegiate alumni are more engaged, this research found no empirical support for the hypothesised impacts of demographic attributes on alumni behaviours. This could be because all the academic research has so far been undertaken in the US (Sun, Hoffman and Grady, 2007; Weerts and Ronca, 2007; McAlexander and Koenig, 2010; Newman and Petrosko, 2011) which has a different alumni culture to the UK (Squire, 2014). This further reinforces the need for UK universities to undertake their own primary research to ensure their alumni programmes are based on evidence applicable to their audience.

7.2 Recommendations for alumni relations professionals

7.2.1 Behaviour theory

Alumni programmes try to encourage people to change their behaviour and engage with their former university in various ways, including attending events, volunteering to be a careers mentor or providing internships for students (Weerts, Cabrera and Sanford, 2010; Iskhakova, Hilbert and Hoffmann, 2016; CASE, 2017b). Therefore, it is important that alumni programmes are based on a behavioural theory which explains why alumni get involved and how their behaviour can be influenced (Hastings and Domegan, 2014).

This study proposes the use of the transtheoretical model (TTM) as an underlying theory of alumni behaviour change. The empirical findings support the applicability of the TTM and suggest that the weightings people give to the pros and cons of alumni activities and their level of self-efficacy all influence involvement.

The findings of this study also support consideration of the influence of student experience and previous alumni experience, although these are not part of the TTM (sections 6.4.2 and 6.4.3).

7.2.2 Behavioural goals

Social marketing techniques work best when applied to high-involvement behavioural goals (Andreasen, 1995), such as volunteering for careers mentoring. Non-behaviour goals, such as building affinity, are an important foundation for future alumni engagement but social marketing techniques specifically focus on behaviour change.

7.2.3 Alumni motivation research

Universities should undertake formal research into alumni motivation to better understand their own audience (Gallo, 2012). Focus groups are often used for this purpose in social marketing (Sargeant, 2009) and the time and expense involved is an investment in future alumni affinity, engagement and giving.

Applying the TTM to alumni behaviours would involve researching the pros, cons and self-efficacy barriers. While not generalisable, this study offers initial insights into the most important pros, cons and self-efficacy (section 6.2).

7.2.4 Competition

Actively considering the competition is a key component of a social marketing approach. Identifying a full list of these alternatives may be impossible, but focussing on considering the most important pros and cons alongside the competition may provide welcome focus (section 6.1.2.2).

7.2.5 Marketing mix

Social marketing campaigns frequently use the marketing mix (consideration of product, price, place and promotion), but this approach is not currently used in alumni relations. Applying the marketing mix to alumni relations is beyond the scope of this study, but consideration of this approach could be beneficial.

7.2.6 Segmentation

Segmentation is frequently used in alumni relations programmes in the UK with varying degrees of sophistication. Applying the TTM to alumni relations means segmenting the alumni by stage of change, identifying a target group and then creating a stage-matched alumni programme.

7.2.7 Stage-matched alumni programmes

Stage-matched programmes should be informed by each universities' primary research into pros, cons and self-efficacy and should aim to progress alumni to the next stage of change rather than straight to behaviour change (Prochaska, Redding and Evers, 2008).

For example, this study found that cons fell across all stages, whereas pros and self-efficacy initially fell but were then stable between contemplation and action (section 6.3). Therefore, when attempting to progress people from precontemplation to contemplation the pros of alumni activities should be promoted, methods to overcome the cons should be emphasised and self-efficacy should be built up. However, when attempting to progress alumni from contemplation to action only overcoming the cons should be emphasised, because pros and self-efficacy did not influence stage progression between these two stages.

Patterns may differ between groups. For example, this study found that the pros of activities were more important to men whereas the cons were more important to women, and that

pride was more important to alumni of collegiate universities than non-collegiate universities. So primary research for the target alumni population would help identify differences between groups.

Alumni activities and initiatives should then be developed to specifically address the pros, cons and self-efficacy barriers which are affecting the target group. Examples of such initiatives were empirically tested in this study (section 6.2.5). One interesting finding was that professionals consistently emphasised regional UK and international events to overcome the distance barrier, whereas alumni consistently emphasised better use of Skype and social media. Therefore, greater focus on technology to overcome distance barriers could be more effective.

One of the limitations of the TTM is that it combines a mixture of people into the precontemplation stage (West, 2005a) (section 2.5.6.3). Therefore, extra care is needed when creating stage-matched campaigns for this group.

7.2.8 Ethics

Professionals should explore the ethical dimensions of their programmes using a structured approach (Sargeant, 2009), such as that in section 2.4.

7.2.9 Link to fundraising

This study found that universities' fundraising activities could be preventing alumni from contributing in non-financial ways (section 6.4.1). This presents a challenge for universities as the need for financial resources is one of the driving forces behind the growth in investment in alumni relations (CASE, 2017b). However, universities are increasingly recognising the benefits of non-financial support from alumni (Iskhakova, Hilbert and Hoffmann, 2016). Balancing the need to increase philanthropic income with the benefits of non-financial support should therefore be considered at a strategic level.

7.2.10 Quality of alumni relations programme

The importance of the quality of the alumni programme emerged as a theme throughout this research (section 6.4.3). Professionals are undoubtedly aware of the need for high quality alumni programmes, but considering this as a barrier to future involvement may

provide new insights. Every alumnus lost because of lack of follow-up is a lost opportunity, as they may not give alumni activities a second chance.

7.3 Contribution to academic and practitioner understanding

This research is the first to apply social marketing techniques and the TTM to alumni behaviours. The findings therefore offer a new perspective to academic and practitioner understanding, helping to fill some of the gaps in the alumni relations literature (Lilly Family School of Philanthropy, 2014; Alnawas and Phillips, 2015; Iskhakova, Hilbert and Hoffmann, 2016).

The study also offers practical recommendations for professionals. There appears to be some interest in this new approach, although lack of time for strategic thinking may act as a barrier to its uptake.

Although this research focussed on UK universities and its findings are not generalisable, it offers insights which may also be helpful to alumni professionals in other countries or independent schools.

7.4 Limitations and reflections

Although this research provided new insights into alumni engagement it had some limitations. The sampling techniques (section 3.3.2 and 3.4.2), non-representativeness of the sample (section 5.1) and use of qualitative research methods (section 3.2.1) meant the results are not generalisable to all UK universities. In addition, the sample was too small to allow testing of all five stages of change separately (section 5.2). The large number of alumni in the precontemplation stage compared to the other stages also made the ANOVA analysis less robust (section 5.8).

The questionnaire asked which alumni activities the respondents recalled seeing (question 4 in Appendix 9). On reflection, this question should not have been included as it failed to address any of the research objectives and was not linked to the literature review.

7.5 Further research

A number of avenues for further research were identified throughout this study, with the most promising considered here. Firstly, empirically testing the applicability of the processes of change construct of the TTM (section 2.5.4) to alumni behaviours could provide further insights to enhance alumni programmes. Secondly, identifying a social marketing approach to alumni relations based on social exchange theory (section 2.6.1) instead of the TTM would enable student experience and previous alumni experience to be incorporated into the behavioural model. Finally, further testing of the possibility that fundraising activities are preventing alumni from making non-financial contributions (section 6.4.1) could be very beneficial given the growing importance of both alumni relations and fundraising (Iskhakova, Hilbert and Hoffmann, 2016) in an increasingly competitive higher education market (Papadimitriou, 2017).

8 References

- Adams, J. and White, M. (2004) 'Why don't stage-based activity promotion interventions work?', *Health Education Research*, 20(2), pp. 237-243.
- Alnawas, I. and Phillips, C. (2015) 'Alumni orientation: Development of the construct', *Journal of Nonprofit Marketing*, 27, pp. 183-215.
- Andreasen, A.R. (1995) *Marketing social change: Changing behavior to promote health, social development and the environment*. San Francisco: Jossey-Bass.
- Andreasen, A.R. (2012) 'Rethinking the relationship between social/nonprofit marketing and commercial marketing', *Journal of Public Policy and Marketing*, (Spring), pp. 36-41.
- Brug, J. (2005) 'The transtheoretical model and stages of change: A critique. Observations by five commentators on the paper by Adams, J. and White, M. (2004) 'Why don't stage-based activity promotion interventions work?', *Health Education Research*, 20(2), pp. 244-258.
- Bryman, A. (2006) 'Integrating quantitative and qualitative research: How is it done?', *Qualitative Research*, 6(1), pp. 97-113.
- Bryman, A. and Bell, E. (2011) *Business research methods*, 3rd edition. Oxford: Oxford University Press.
- Buxton, K., Wyse, J. and Mercer, T. (1996) 'How applicable is the stages of change model to exercise behavior? A review', *Health Education Journal*, (55), pp. 239-257.
- CASE (2009) *Alumni relations benchmarking template*. Available at: www.case.org/Samples_Research_and_Tools/Benchmarking_and_Research/Benchmarking_Resources/CASE_Benchmarking_Toolkit/Alumni_Relations_Benchmarking_Template.html (Accessed: 3 December 2017).
- CASE (2015) *Engaging for excellence: Alumni relations programmes in European higher education*. Available at: www.case.org/Documents/Research/ICARS/ICARS_Report_2015_v2.pdf (Accessed: 11 December 2017).

CASE (2017a) *About the disciplines*. Available at:
www.case.org/About_CASE/About_Advancement/About_the_Disciplines.html (Accessed: 11 December 2017).

CASE (2017b) *Fundraising fundamentals, section 1.2: The role and importance of alumni relations*. Available at:
www.case.org/Publications_and_Products/Fundraising_Fundamentals_Intro/Fundraising_Fundamentals_section_1/Fundraising_Fundamentals_section_12.html (Accessed: 11 December 2017).

CASE (2017c) *Fundraising fundamentals, section 8.1: Office structures*. Available at:
www.case.org/Publications_and_Products/Fundraising_Fundamentals_Intro/Fundraising_Fundamentals_section_8/Fundraising_Fundamentals_section_81.html (Accessed: 11 December 2017).

CASE (2017d) *Fundraising fundamentals, section 13.2: What to measure and what to report*. Available at:
www.case.org/Publications_and_Products/Fundraising_Fundamentals_Intro/Fundraising_Fundamentals_section_13/Fundraising_Fundamentals_section_132.html (Accessed: 11 December 2017).

CASE (2017e) *Giving to excellence: Generating philanthropic support for UK higher education*. Available at: www.case.org/Documents/Research/Ross-CASE/Ross_CASE_UK_2017_v5.pdf (Accessed: 11 December 2017).

CASE (2017f) *International initiatives*. Available at:
www.case.org/About_CASE/International_Initiatives.html (Accessed: 11 December 2017).

Cullinane, C. and Montacute, R. (2017) *Fairer fees: Reforming student finance to increase fairness and widen access*. Available at: www.suttontrust.com/research-paper/fairer-fees-student-finance-reform/ (Accessed: 18 December 2017).

Dallow, C.B. and Anderson, J. (2003) 'Using self-efficacy and a transtheoretical model to develop a physical activity intervention for obese women', *American Journal of Health Promotion*, 17(6), pp. 373-381.

DiClemente, C.C. (2005) 'A premature obituary for the transtheoretical model: A response to West (2005)', *Addiction*, (100), pp. 1040-1050.

Dodge, L.B.E. (2015) 'Alumni giving and social exchange: A study of alumni giving behavior', in Alphin, H.C. (ed.) *Facilitating higher education growth through fundraising and philanthropy*. IGI Global.

Donovan, R. (2011) 'Theoretical models of behavior change', in Hastings, G.A.K. and Bryant, C. (ed.) *SAGE Handbook of Social Marketing*. London: SAGE Publications.

Drezner, N.D. (2017) 'Alumni engagement in higher education: A matter of marketing and leveraging social identities', in Papadimitriou, A. (ed.) *Competition in higher education branding and marketing: National and global perspectives*. Cham: Springer.

Eden, D. and Kinnar, J. (1991) 'Modeling galatea: Boosting self-efficacy to increase volunteering', *Journal of Applied Psychology*, 76(6), pp. 770-780.

Evans, M. and Moutinho, L. (1999) *Contemporary issues in marketing*. Basingstoke: MacMillan.

Ferguson, E. and Chandler, S. (2005) 'A stage model of blood donor behavior: Assessing volunteer behavior', *Journal of Health Psychology*, 10(3), pp. 359-372.

Field, A. (2005) *Discovering statistics using SPSS*, 2nd edition. London: SAGE Publications.

Findorff, M.J., Hatch Stock, H., Gross, C.R. and Wyman, J.F. (2007) 'Does the transtheoretical model (TTM) explain exercise behavior in a community-based sample of older women?', *Journal of Aging and Health*, 19(6), December, pp. 985-1003.

Gallo, M. (2012) 'Beyond philanthropy: Recognising the value of alumni to benefit higher education institutions', *Tertiary Education and Management*, 18(1), pp. 41-55.

Gordon, R., McDermott, L. and Hastings, G. (2008) 'Critical issues in social marketing: A review and research agenda', in Sargeant, A. and Wymer, W. (ed.) *The Routledge companion to nonprofit marketing*. Abingdon: Routledge.

Gov.uk (2017) *What qualification levels mean*. Available at: www.gov.uk/what-different-qualification-levels-mean/list-of-qualification-levels (Accessed: 3 December 2017).

Harré, N. (2005) 'The transtheoretical model and stages of change: A critique. Observations by five commentators on the paper by Adams, J. and White, M. (2004) 'Why don't stage-based activity promotion interventions work?', *Health Education Research*, 20(2), pp. 244-258.

Hastings, G. (2011) *Social marketing: Why should the devil have all the best tunes?* Oxford: Elsevier.

Hastings, G., Angus, K. and Bryant, C. (ed.) (2011) *SAGE handbook of social marketing*. London: SAGE Publications.

Hastings, G. and Domegan, C. (2014) *Social marketing: From tunes to symphonies*. Abingdon: Routledge.

HEFCE (2017a) *Annual funding allocations*. Available at: www.hefce.ac.uk/funding/annallocns/ (Accessed: 16 February 2018).

HEFCE (2017b) *Regulating HEIs as charities - FAQs*. Available at: www.hefce.ac.uk/reg/charityreg/crfaq (Accessed: 16 February 2018).

Hemsley-Brown, J. and Oplatka, I. (2006) 'Universities in a competitive global marketplace: A systematic review of the literature on higher education marketing', *International Journal of Public Sector Management*, 19(4), pp. 316-338.

Herzog, T.A. (2005) 'When popularity outstrips the evidence: Comment on West (2005)', *Addiction*, (100), pp. 1040-1050.

Hillman, N. and Robinson, N. (2016) *Boys to men: The underachievement of young men in higher education - and how to start tackling it*. Available at: www.hepi.ac.uk/wp-content/uploads/2016/05/Boys-to-Men.pdf (Accessed: 18 February 2018).

Hodgins, D.C. (2005) 'Weighing the pros and cons of changing change models: A comment on West (2005)', *Addiction*, (100), pp. 1040-1050.

House of Commons Library (2012) *Education: Historical statistics*. Available at: <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN04252> (Accessed: 18 February 2018).

Iskhakova, L., Hilbert, A. and Hoffmann, S. (2016) 'An integrative model of alumni loyalty: An empirical validation among graduates from German and Russian universities', *Journal of Nonprofit and Public Sector Marketing*, 28(2), pp. 129-163.

Jenkin, B. (2016) 'Charity trustees are to blame for the fundraising scandal', *The Guardian*. 28 January, Available at: www.theguardian.com/voluntary-sector-network/2016/jan/28/trustees-responsibility-charity-fundraising-scandal (Accessed: 16 February 2018).

Kelly, K.S. (2002) 'The state of fund-raising theory and research', in Worth, M. (ed.) *New strategies for educational fund raising*. Westport: American Council on Education and Praeger Publishers.

Kirkpatrick, L.A. and Feeney, B.C. (2015) *A simple guide to IBM SPSS: For version 22.0*. Boston: Cengage Learning.

Kotler, R. and Andreasen, A.R. (1995) *Strategic marketing for nonprofit organizations*, 5th edition. New Jersey: Prentice Hall.

Kotler, P. and Fox, K.F.A. (1995) *Strategic marketing for educational institutions*, 2nd edition. Englewood Cliffs: Prentice-Hall.

Kotler, P. and Roberto, E. (1989) *Social marketing: Strategies for changing public behavior*. New York: The Free Press.

Lee, N.R. and Kotler, P. (2011) *Social marketing: Influencing behaviors for good*, 4th edition. Thousand Oaks: SAGE Publications.

Lefebvre, R.C. (2001) 'Theories and models in social marketing', in Bloom, P.N. and Gundlach, G.T. (ed.) *SAGE handbook of marketing and society*. Thousand Oaks: SAGE Publications.

Lilly Family School of Philanthropy (2014) *A review of current scholarly research on alumni relations and advancement*. Available at:
http://api.boomity.com/media/assets/group/133/documents/84/1461018227/CAAE_Annotated_Bibliography_FINAL.pdf (Accessed: 2 November 2017).

Lindley, J. and Machin, S. (2013) *The postgraduate premium: Revisiting trends in social mobility and educational inequalities in Britain and America*. Available at
www.suttontrust.com/research-paper/the-postgraduate-premium-earnings-increase/
(Accessed: 20 February 2018).

Matzler, K. and Abfalter, D. (2013) 'Learning from the best: Implications from successful companies for higher education management', in Altmann, A. and Ebersberger, B. (ed.) *Universities in change: Managing higher education institutions in the age of globalization*. New York: Springer.

McAlexander, J.H. and Koenig, H.F. (2010) 'Contextual influences: Building brand community in large and small colleges', *Journal of Marketing for Higher Education*, 20(1), pp. 69-84.

Miles, M.B., Huberman, A.M. and Saldana, J. (2014) *Qualitative data analysis: A methods sourcebook*, 3rd edition. Thousand Oaks: SAGE Publications.

Montacute, R. (2018) *Internships - Unpaid, unadvertised, unfair*. Available at
www.suttontrust.com/research-paper/internships-unpaid-unadvertised-unfair/ (Accessed: 18 December 2017).

Newman, M.D. and Petrosko, J.M. (2011) 'Predictors of alumni association membership', *Research in Higher Education*, 52, pp. 738–759.

NSMC (2017) *Social marketing benchmark criteria*. Available at:
www.thensmc.com/sites/default/files/benchmark-criteria-090910.pdf (Accessed: 14 November 2017).

Oxford Economics (2017) *The economic impact of universities in 2014-15: A report for Universities UK*. Available at: www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2017/the-economic-impact-of-universities.pdf (Accessed: 3 November 2017).

Papadimitriou, A. (ed.) (2017) *Competition in higher education branding and marketing: National and global perspectives*. Cham: Springer.

Prapavessis, H., Maddison, R. and Brading, F. (2004) 'Understanding exercise behavior among New Zealand adolescents: A test of the transtheoretical model', *Journal of Adolescent Health*, 35(2), p. 346.e17.

Prochaska, J.O., DiClemente, C.C. and Norcross, J.C. (1992) 'In search of how people change: Applications to addictive behaviors', *American Psychologist*, 47(9), pp. 1102-1114.

Prochaska, J.O., Redding, C.A. and Evers, K.E. (2008) 'The transtheoretical model and stages of change', in Glanz, K., Rimer, B.K. and Viswanath, K. (ed.) *Health behavior and health education: Theory, research and practice*, 4th edition. San Francisco: Jossey-Bass.

Prochaska, J.O. and Velicer, W.F. (1997) 'The transtheoretical model of health behavior change', *American Journal of Health Promotion*, 12(1), pp. 38-48.

Prochaska, J.O., Velicer, W.F., Rossi, J.S., Goldstein, M.G., Marcus, B.H., Rakowski, W., Fiore, C., Harlow, L.L., Redding, C.A., Rosenbloom, D. and Rossi, S.R. (1994) 'Stages of change and decisional balance for 12 problem behaviors', *Health Psychology*, 13(1), pp. 39-46.

Random.org (2017) *Random sequence generator*. Available at: www.random.org/sequences/?min=1&max=22&col=1&format=html&rnd=new1 (Accessed: 3 December 2017).

Russell Group (2017) *How Russell Group universities facilitate social mobility*. Available at: www.russellgroup.ac.uk/media/5674/social-mobility-briefing-short-revised.pdf (Accessed: 12 December 2017).

Salmon, A. (2016) *The Ross-CASE survey 2016 : What we said in our webinar*. Available at: www.grenzebachglier.com/2016/06/20/the-ross-case-survey-2016-what-we-said-in-our-webinar/ (Accessed: 25 February 2018).

Sargeant, A. (2009) *Marketing management for nonprofit organizations*, 3rd edition. Oxford: Oxford University Press.

Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research methods for business students*, 5th edition. Harlow: FT Prentice Hall.

Spotswood, F., French, J., Tapp, A. and Stead, M. (2012) 'Some reasonable but uncomfortable questions about social marketing', *Journal of Social Marketing*, 2(3), pp. 163-175.

Squire, W. (2014) *University fundraising in Britain: A transatlantic partnership*. Kibworth Beauchamp: Matador.

Sun, X., Hoffman, S.C. and Grady, M.L. (2007) 'A multivariate causal model of alumni giving: Implications for alumni fundraisers', *International Journal of Educational Advancement*, 7(4), pp. 307–332.

Symon, G. and Cassel, C. (2012) *Qualitative organizational research: Core methods and current challenges*. London: SAGE Publications.

Van Duyn, M.A.S., Heimendinger, J., Ussek-Cohenc, E., DiClemente, C.C., Sims, L.S., Subar, A.F., Krebs- Smith, S.M., Pivonka, K. and L, L. (1998) 'Use of the transtheoretical model of change to successfully predict fruit and vegetable consumption', *Journal of Nutrition Education*, 30(6), pp. 371-380.

Weerts, D.J., Cabrera, A.F. and Sanford, T. (2010) 'Beyond giving: Political advocacy and volunteer behaviors of public university alumni', *Research in Higher Education*, 51(4), pp. 346-365.

Weerts, D.J. and Ronca, J.M. (2007) 'Profiles of supportive alumni: Donors, volunteers, and those who “do it all”', *International Journal of Educational Advancement*, 7(1), pp. 20-34.

Weerts, D.J. and Ronca, J.M. (2008) 'Characteristics of alumni donors who volunteer at their alma mater', *Research in Higher Education*, 49, pp. 274–292.

West, R. (2005a) 'Time for a change: putting the transtheoretical (stages of change) model to rest', *Addiction*, (100), pp. 1036-1039.

West, R. (2005b) 'What does it take for a theory to be abandoned? The transtheoretical model of behavior change as a test case', *Addiction*, (100), pp. 1040-1050.

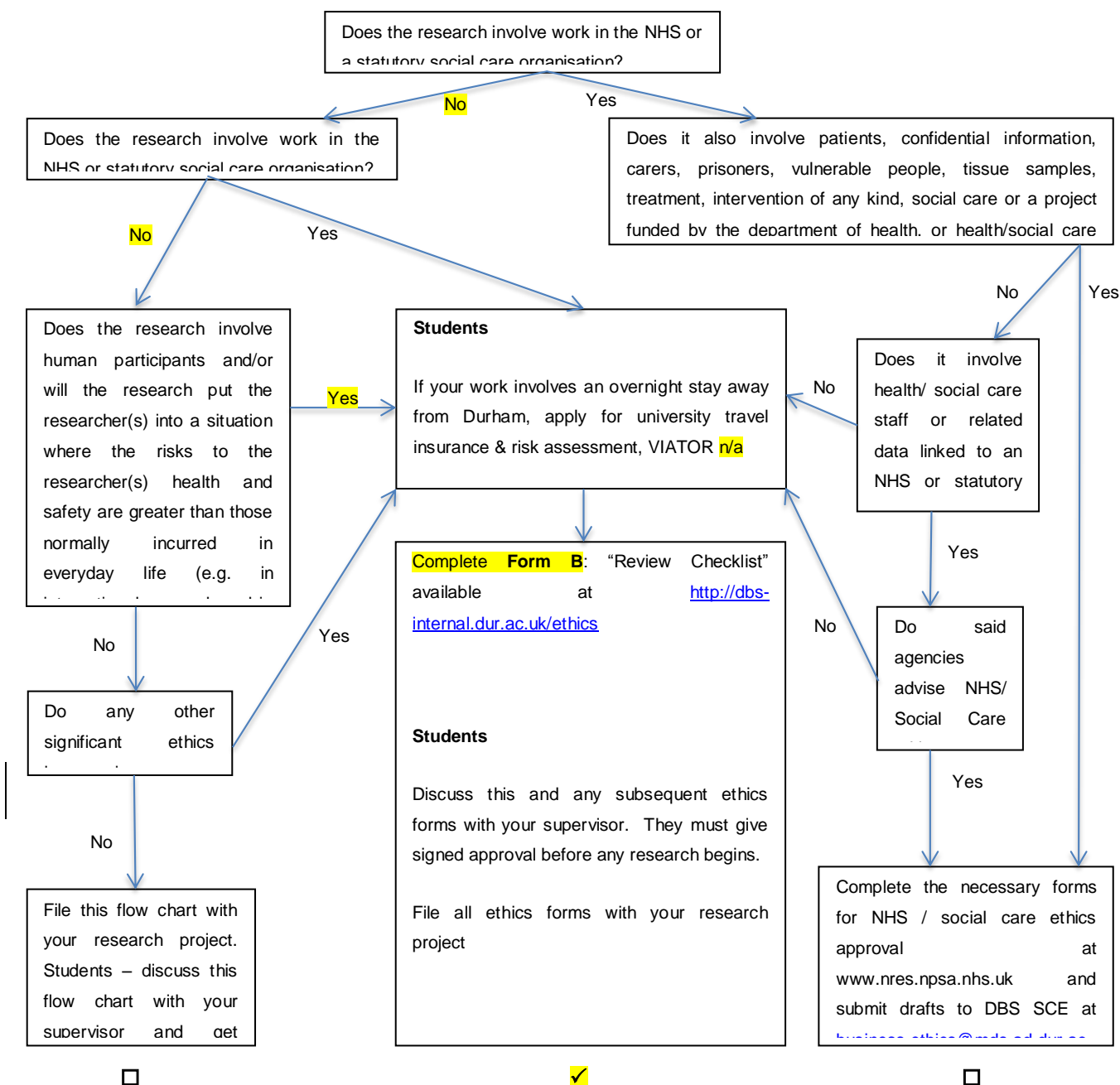
Wood, M. (2012) 'Marketing social marketing', *Journal of Social Marketing*, 2(2), pp. 94-102.

Appendix 1: Ethics forms

ETHICS FORM 'A' – Process flow chart for students & staff

Title of Project: Assessing the effectiveness of a social marketing framework when applied to alumni relations in UK universities

Name of Principal Researcher or Student: Z0929590



Signature of Principal Researcher or Supervisor:

Signed:.....Fiona Urquhart.....Date:....14/11/17.....

ETHICS FORM B: REVIEW CHECKLIST

“DUBS SCE” refers to Durham University Business School’s Sub-Committee for Ethics throughout.

This checklist should be completed for every research project that involves human participants. It should also be completed for all ESRC funded research, once funding has been obtained. It is used for approval or to identify whether a full application for ethics approval needs to be submitted.

Before completing this form, please refer to the University’s “Ensuring Sound Conduct in Research” available at <http://dbs-internal.dur.ac.uk/ethics/default.aspx> – all researchers should read Sections A, B and F; Principal Investigators should also read Section D. The researcher and, where the researcher is a student, the student and supervisor are responsible for exercising appropriate professional judgement in this review.

This checklist must be completed before potential participants are approached to take part in any research.

Section I: Project Details

1. Project title: Assessing the effectiveness of a social marketing framework when applied to alumni relations in UK universities
2. Start date: October 2017 Expected End date: March 2018

Section II: Applicant Details

3. Name of researcher (applicant)
Or student: Z0929590
4. Status (please delete those which are not applicable)
Taught Postgraduate Student
5. Email address
(staff only):
6. Contact address: [address of researcher]
7. Telephone number: [phone number of researcher]

Section III: For Students Only

8. Programme title: Online MBA
9. Mode (delete as appropriate)
Distance Learning
10. Supervisor’s or module leader’s name: Fiona Urquhart

11. Aims and Objectives: Please state the aims/objectives of the project

Research question: Can social marketing be an effective driver in increasing alumni engagement?

Research objectives:

1. To determine whether social marketing principles are being applied in alumni relations programmes in the UK, either consciously or unconsciously
2. To understand how elements of the transtheoretical model of change (stages of change, self-efficacy, decisional balance and processes of change) might influence whether people volunteer for alumni relations activities
3. To explore the relationships between stages of change, self-efficacy, decisional balance and/or processes of change
4. To investigate whether self-efficacy, decisional balance and/or processes of change predict the current stage of change each alumna/alumnus is in
5. To use the results of these enquiries to propose a social marketing framework for alumni relations in UK universities
6. To make recommendations which will help alumni relations practitioners to increase alumni engagement
7. To identify the limitations of this research and make recommendations for future research

12. Methodology: Please describe in brief the methodology of the research project

In addition to research of secondary sources (academic and practitioner literature), the following primary research is proposed:

Semi-structured interviews:

- 3-5 interviews with alumni relations professionals working at different UK universities.
- Some face-to-face and some over skype.
- Participation will be voluntary without any reward. A participant information sheet will be provided to each participant – see attached
- Topics to be covered:
 - whether they apply the principles of social marketing to their work (objective 1)
 - exploring whether stages of change, self-efficacy, decisional balance and/or processes of change are currently used in their alumni relations programmes (objective 1) or whether they might be useful in the future (objective 2)

Focus group:

- One small face-to-face focus group of 3-4 alumni from a variety of UK universities
- Participation will be voluntary without any reward. A participant information sheet will be provided to each participant – see attached
- Topics to be covered:
 - exploring whether they describe their engagement with their university, or possible future engagement, in terms which are similar to the transtheoretical model of change (i.e. stages of change, self-efficacy, decisional balance and/or processes of change) (objective 2)

Online questionnaire:

- Using the results of these two inductive research methods, one or more areas of the transtheoretical model of change will then be identified for further investigation (i.e. stages of change, self-efficacy, decisional balance and/or processes of change). (If no support for his model is found then I'll have to rethink.)
- An online questionnaire will be developed which will be open to alumni of any UK university. The questions will address objectives 3 and 4.
- Participation will be voluntary without any reward. A brief information sheet will be provided on the first page.
- Informed consent will be collected from each participant and each will have the right to withdraw at any time.
- The questionnaire will be completed anonymously and all raw data will be held confidentially.

13. Will data be collected from participants who have not consented to take part in the study e.g. images taken from the internet; participants covertly or overtly viewed in social places? If yes, please give further details. **No**

*Does the research take place in a public or private space (be it virtual / physical)? Please explain: -

Explain whether the research is overt or covert: -

Explain how you will verify participants' identities: -

†Explain how informed consent will be obtained: -

*Ethical guidelines (BPS, 2005) note that, *unless consent has been sought, observation of public behaviour takes place only where people would reasonably expect to be observed by strangers.*

†It is advised that interactive spaces such as chat rooms and synchronous and asynchronous forums be treated as private spaces requiring declaration of a research interest and consent.

Additional guidance on internet research can be obtained at:

http://www.bps.org.uk/sites/default/files/documents/conducting_research_on_the_internet-guidelines_for_ethical_practice_in_psychological_research_online.pdf

14. Risk assessment: If the research will put the researcher(s) into a situation where risks to the researcher(s)' health and safety are greater than those normally incurred in everyday life, please indicate what the risks are and how they will be mitigated. (Please note that this also includes risks to the researcher(s)' health and safety in cases of international research and in cases where locally employed Research Assistants are deployed).

Research which will take place outside the UK requires specific comment. (Note that research outside the UK is not automatically covered by the University's insurance. See the DUBS intranet site (<http://dbs-internal.dur.ac.uk/ethics/default.aspx>) for further details).

n/a

For student research the supervisor should tick the following, as appropriate. The study should not begin until all appropriate boxes are ticked:

- ☒ The topic merits further research
- ☒ The participant information sheet or leaflet is appropriate (where applicable)
- ☒ The procedures for recruitment and obtaining informed consent are appropriate (where applicable)

Comments from supervisor:

Section IV: Research Checklist

Research that may need to be reviewed by NHS NRES Committee or an external Ethics Committee (if yes, please give brief details as an annex)

- | | YES | NO |
|---|--------------------------|-------------------------------------|
| 1 Will the study involve recruitment of patients or staff through the NHS or the use of NHS data or premises and / or equipment? ¹ | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2 Does the study involve participants age 16 or over who are unable to give informed consent? (e.g. people with learning disabilities: see Mental Capacity Act (MCA) 2005). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- Please note:** - That with regard to 1 and 2 on the previous page, all research that falls under the auspices of MCA must be reviewed by NHS NRES.

Research that may need a full review by Durham University Business School Sub –Committee for Ethics (DBS SCE)

- | | | |
|--|--------------------------|-------------------------------------|
| 3 Does the study involve other vulnerable groups: children, those with cognitive impairment, or those in unequal relationship e.g. your own students? ² | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4 Will the study require the co-operation of a gatekeeper for initial access to the groups or individuals to be recruited? (e.g. students at school, members of a self-help group, residents of a Nursing home) ³ | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 Will it be necessary for participants to take part in the study without their knowledge and consent at the time? (e.g. deception, covert observation of people in non-public places) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6 Will the study involve discussion of sensitive topics? (e.g. sexual activity, drug use) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7 Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Research that may need a full review by Durham University Business School Sub – Committee for Ethics (DBS SCE) (continued)

- | | | |
|---|--------------------------|-------------------------------------|
| 8 Will tissue samples (including blood) be obtained from participants? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9 Is pain or more than mild discomfort likely to result from the study? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Footnotes

¹ Research in the NHS may be classified as “service evaluation” and, if so, does not require NHS research ethics approval. In such cases, prior written confirmation that the research is considered to

Footnotes

¹ Research in the NHS may be classified as “service evaluation” and, if so, does not require NHS research ethics approval. In such cases, prior written confirmation that the research is considered to be service evaluation is required from the appropriate authority, and on receipt of this the “No” box may be ticked and this form used for ethics approval. Advice and assistance is available from business.ethics@mds.ad.dur.ac.uk

be service evaluation is required from the appropriate authority, and on receipt of this the “No” box may be ticked and this form used for ethics approval. Advice and assistance is available from business.ethics@mds.ad.dur.ac.uk

² Vulnerable persons are defined for these purposes as those who are legally incompetent to give informed consent (i.e. those under the age of 16, although it is also good practice to obtain permission from all participants under the age of 18 together with the assent of their parents or guardians), or those with a mental illness or intellectual disability sufficient to prevent them from giving informed consent), or those who are physically incapable of giving informed consent, or in situations where participants may be under some degree of influence (e.g. your own students or those recruited via a gatekeeper - see footnote 3). Where students are perfectly able to choose to be involved and to give informed consent then, so long as there is no impact on assessment, the “No” box may be ticked.

³ This applies only where the recruitment of participants is via a gatekeeper, thus giving rise to particular ethical issues in relation to willing participation and influence on informed consent decisions particularly for vulnerable individuals. It does *not* relate to situations where contact with individuals is established via a manager but participants are willing and able to give informed consent. In such cases, the answer to this question should be “No.”

		YES	NO
10	Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	Will the study involve prolonged or repetitive testing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12	Will the research involve administrative or secure data that requires permission from the appropriate authorities before use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	Does the research involve members of the public in a research capacity (participant research)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Will the research involve respondents to the internet or other visual / vocal methods where methods are covert, intrude into privacy without consent, or require observational methods in spaces where people would not reasonably expect to be observed by strangers? ⁴	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15	Will the research involve the sharing of data or confidential information beyond the initial consent given?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants? ⁵	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Section V: What to do next

If you have answered ‘**No**’ to all of the questions:

Undergraduate and Postgraduate taught students should discuss this with their supervisor, obtain his or her signature and submit it with their business project or dissertation.

DBA / MPhil / PhD students should discuss this with their supervisor, obtain his or her signature and submit it as part of the transfer / 9 month review process and with their thesis.

Work that is submitted without the appropriate ethics form may be returned un-assessed.

Members of staff should retain a copy for their records, but may submit the form for approval by DUBS SCE if they require approval from funding bodies such as ESRC. *In such cases, the letter of invitation to participate, Participant Information Sheet, Consent Form and, where appropriate, the access agreement should also be submitted with this form.*

Please note that DBS SCE may request sight of any form for monitoring or audit purposes.

If you have answered ‘**Yes**’ to any of the questions in Section IV, you will need to describe more fully how you plan to deal with the ethical issues raised by your research. This does not mean that you cannot do the research, only that your proposal will need to be approved by the DUBS SCE.

Contact the Chair of the DUBS SCE in the first instance to discuss how to proceed. You may need to submit your plans for addressing the ethical issues raised by your proposal using the ethics approval application form REAF, which should be sent to the committee at business.ethics@mds.ad.dur.ac.uk.

(Continued overleaf)

Footnotes

⁴ This does not include surveys using the internet providing that the respondent is identifiable only at their own discretion.

⁵ In experiments in economics and psychology in particular it is common to pay participants. Provided such payments are within the normal parameters of the discipline, the answer to this question should be "No."

(Form REAF can be obtained from the School Intranet site at <http://dbs-internal.dur.ac.uk/Pages/Default.aspx> or using the student / visitor access:-

<http://dbs-internal.dur.ac.uk/ethics>

Username: dubs\ethicsvisitors
Password: durham

If you answered 'yes' to Questions 1 or 2 in Section IV, you will also have to submit an application to the appropriate external health authority ethics committee, but only **after** you have received approval from the DUBS SCE. In such circumstances complete the appropriate **external** paperwork and submit this for review by the DUBS SCE to business.ethics@mds.ad.dur.ac.uk.

Please note that whatever answers you have given above, it is your responsibility to follow the University's "Ensuring Sound Conduct in Research" and any relevant academic or professional guidelines in the conduct of your study. **This includes providing appropriate participant information sheets and consent forms, abiding by the Data Protection Act and ensuring confidentiality in the storage and use of data.**

Any significant change in research question, design or conduct over the course of the research project should result in a review of research ethics issues using the "Process Flow Chart for Students and Staff Undertaking Research" and completing a new version of this checklist if necessary.

Declaration

Signed
(staff only, students insert anonymous code): Z0929590

Date: 13 November 2017

Student / Principal Investigator

Signed:Fiona Urquhart

Date:14/11/17.....

Supervisor or module leader (where appropriate)

Appendix 2: Data requirements tables

Research objective 1: To determine whether social marketing techniques are being applied in alumni relations programmes in the UK, either formally or intuitively.		
Research approach: Deductive because applying the NSMC benchmarks, but also inductive because looking for new ways to apply social marketing to alumni relations.		
Investigative questions	Data required	Research design
i. Are UK alumni relations professionals using the term 'social marketing', or other terminology from the NSMC benchmarks?	Qualitative data about how alumni relations professionals describe the process of developing an alumni relations programme, with particular focus on terms used in the NSMC benchmarks (Table 4)	Primary qualitative research: - Interviews
ii. When describing their work do UK alumni relations professionals describe elements of social marketing without using specific social marketing terminology?	Same as investigative question i.	Primary qualitative research: - Interviews
iii. What other themes arise when discussing these issues with practitioners?	Qualitative data arising from discussions	Primary qualitative research: - Interviews
Research methods selected: Interviews with UK alumni relations professionals		

Research objective 2: To understand how the constructs of the transtheoretical model might influence whether people volunteer for alumni relations activities.		
Research approach: Deductive because applying the TTM constructs, but also inductive because looking for new ways to apply the TTM to alumni relations.		
Investigative questions	Data required	Research design
i. Are the elements of the transtheoretical model being used formally or intuitively by alumni relations professionals?	Qualitative information about TTM constructs being tested (pros, cons and self-efficacy)	Primary qualitative research: - Interviews
ii. What stage of change do alumni self-report they are in?	Stage of change question (Q5)	Primary quantitative research: - Questionnaire
iii. What pros and cons of alumni activities do alumni experience?	- Qualitative information about pros and cons from professionals and alumni - Pros and cons questions in questionnaire (Q7 & Q8)	Primary quantitative research: - Interviews - Focus group - Questionnaire
iv. What self-efficacy factors do alumni experience?	- Qualitative information about self-efficacy from professionals and alumni - Self-efficacy questions in questionnaire (Q9 & Q10)	Primary quantitative research: - Interviews - Focus group - Questionnaire
v. How do professionals and alumni think the cons and lack of self-efficacy could be overcome?	Qualitative information about overcoming cons and lack of self-efficacy from professionals and alumni - Initiatives questions in questionnaire (Q11 & Q12)	Primary qualitative research: - Interviews - Focus group - Questionnaire
Research methods selected: Interviews, focus group and questionnaire		

Research objective 3: To explore the relationships between stages of change, decisional balance (pros and cons) and self-efficacy.		
Research approach: Deductive because testing the hypotheses suggested by the literature		
Investigative questions	Data required	Research design
i. Is there a relationship between decisional balance (pros and cons) and the stage of change reported?	- Data on stage of change question (Q5) - Data on pros and cons (Q7)	Primary quantitative research: - Questionnaire
ii. Is there a relationship between the self-efficacy level and the stage of change reported?	- Data on stage of change (Q5) - Data on self-efficacy (Q9)	Primary quantitative research: - Questionnaire
iii. Can pros, cons and self-efficacy predict the current stage of change for alumni?	- Data on pros and cons (Q7) - Data on self-efficacy (Q9) - Data on stage of change (Q5)	Primary quantitative research: - Questionnaire
iv. Do demographic attributes influence these relationships?	- Gender question (Q14) - Age question (Q15) - University attended question (Q2) (determine whether each is collegiate or not) - Level of education question (Q3) - Level of alumni communications experienced (Q4)	Primary quantitative research: - Questionnaire
Research method selected: Questionnaire		

Appendix 3: Questions used in interviews

Behaviour

- a) What would you say is the main goal of most alumni programmes?
 - i. Would you describe that as a behaviour change you are targeting?
 - ii. *OR* What about behaviour change – is that one of your goals?
- b) Which alumni activities do you think most involve a behaviour change?

Pros and cons of alumni activities

- a) What benefits do you think alumni experience from engaging with alumni programmes?
 - i. Do you think the perceived and real benefits are different? How?
- b) What barriers or costs do you think alumni experience?
 - i. Do you think the perceived and real barriers or costs are different? How?

Decisional balance

- a) Do you think alumni weigh up the benefits and costs when deciding whether to engage in alumni activities?
 - i. Do you use this way of thinking when developing alumni activities?
 - ii. Would this approach be useful?

Audience orientation

- a) Have you done any structured research to help you better understand what motivates alumni to engage?
 - i. *If formal research:* Did the research:
 - use a variety of data (e.g. qualitative and quantitative)?
 - Involve alumni in the development of the research?
 - ii. *OR if no research:* How do you go about identifying alumni's motivations?

Self-efficacy

- a) How do you think alumni's belief in their own abilities to get involved in alumni activities might affect whether they engage?
 - i. What form might a lack of self-belief take?
- b) Which parts of the alumni programme might this be most relevant to?

- i. What about the behaviour change elements of the programme you identified earlier?

Competition

- a) Have you ever considered what alternatives are competing with alumni programmes for alumni's time and attention?
 - i. What might these be?

Theory and marketing mix

- a) Have you ever heard of anyone using a theory of human behaviour to inform an alumni programme?
 - i. If so, which ones?
- b) Have you come across people using the 4Ps of marketing: product, price, place and promotion? (aka the marketing mix)
 - i. If so, where these helpful?

Segmentation

- a) Does <university name> target different alumni activities at different groups of alumni?
 - i. Which criteria do you use to identify these groups?.
 - ii. Is this based on research into what each group has in common? Or what each group wants?
 - iii. How do these alumni activities differ from each other?
 - iv. How do you prioritise which group to target?

Appendix 4: Questions used in focus group

Pros of alumni activities

- a) What benefits do you think alumni might experience from volunteering for alumni activities?
- b) Do you think these would change over your lifetime?

Cons of alumni activities

- a) What barriers or costs do you think alumni experience?
- b) Do you think these would change over your lifetime?

Decisional balance

- a) Do you feel that you weigh up the benefits and costs when deciding whether to volunteer for alumni activities?

Self-efficacy

- a) Do you think your belief in your ability to get involved in alumni activities might affect whether you engage?
- b) Would this be more relevant for some alumni activities than others?

Appendix 5: Interviews and focus group contextual data

Interview participants	1	2	3	4
Professional experience	Fundraising and alumni relations consultant working with UK universities; prior experience at Oxford University and colleges.	Director of Development at a Cambridge college, responsible for alumni relations and fundraising.	Director of Development at a post-1992 university; prior experience in Oxford, Cambridge and other post-1992 universities.	Head of Supporter Engagement (including alumni relations) for a Russell Group university
Gender	Female	Male	Female	Male
Date and time of interview	20 November 2017, 10.30am	20 November 2017, 11.50am	21 November 2017, 1pm	4 December 2017, 12 noon
Length of interview	39 minutes	30 minutes	51 minutes	64 minutes
Communication method	Skype, with video and audio	Skype, with video and audio	Telephone	Face-to-face
Setting	Researcher at home; participant at work. Some difficulties with connection but not enough to affect the conversation.	Researcher at home; participant at work. Good skype connection.	Researcher at home; participant at work. Good connection over the phone.	At the university

Focus group participants	1	2	3
Universities attended	Sheffield (undergrad) and York (postgrad)	Cambridge University	Nottingham Trent (undergrad), Monash, Australia (year abroad) and University of the West of England (postgrad)
Gender	Female	Female	Female
Stage of change for alumni activities	Pre-contemplation	Contemplation	Pre-contemplation
Other relevant information	Part-time solicitor, mother of two	Former primary school teacher, volunteers for various local activities, mother of two	Part-time university marketer, mother of two
Date and time	1/12/17; 10.30am		
Length of focus group	44 minutes		
Communication method	Face-to-face		
Setting	At researcher's home		

Appendix 6: Interview participant information sheet

What's the research?

This research is for my MBA (Masters in Business) dissertation which will be submitted to Durham University. I'm investigating whether aspects of social marketing might be usefully applied to alumni relations activities in the UK. Social marketing is frequently used to encourage people to change their behaviour to benefit society, for example in blood donation and road safety campaigns. However, I believe many of these techniques could also help improve the effectiveness of alumni relations programmes.

I'll be interviewing 3-5 professionals with experience of alumni relations in UK universities, conducting a focus group with 3-5 alumni from various universities, and creating an online questionnaire for alumni across the UK.

What's involved for participants?

I'm asking you to allow me to interview you for 45-60 minutes either face to face or over skype (depending on location).

The interview will be semi-structured: I'll ask some open ended questions as we go along, but it'll also be guided by you and what you'd like to talk about. The questions will revolve around typical alumni relations activities in the UK. There won't be any right or wrong answers – I'm interested in your approach to alumni relations and whether you think any of the elements of social marketing I'll explain in the interview could help the profession.

I'd like to record the interview so that I can type up a transcript to analyse as part of my research.

Ideally the interview would take place on one of the following dates, but I can be flexible if you'd prefer to do it one evening or weekend.

Monday 20 November

Monday 27 November

Tuesday 21 November

Tuesday 28 November

Your rights during this research

- ☒ Participation is entirely voluntary
- ☒ Participants can decline to answer any question
- ☒ Participants can withdraw at any time
- ☒ Participants have the right to decline to be recorded
- ☒ The names of participants will be anonymous to all except [name of researcher].
- ☒ All responses will be stored anonymously and confidentially. Any quotations used in the final report will be anonymous.

Use of data collected

Only [name of researcher] will have access to the recording of the interview. On request, those marking the MBA dissertation will be given access to anonymised transcripts.

The research will be submitted to Durham University as part of [name of researcher]'s dissertation. An electronic copy of the dissertation will also be offered to all participants.

The recordings will be kept for 8 months, in accordance with Durham University's requirements, and will then be deleted.

Any questions? Please contact me: [name, postal address, email address and phone number of researcher]

Participation form

Thank you for agreeing to participate in this research. Please sign below to confirm that you are happy to take part in accordance with the information above. If you have any questions don't hesitate to ask.

Signed: Name:

Date:

Appendix 7: Focus group participant information sheet

What's the research?

This research is for my MBA (Masters in Business) dissertation which will be submitted to Durham University. I'm investigating whether aspects of social marketing might be usefully applied to alumni relations activities in the UK. Social marketing is frequently used to encourage people to change their behaviour to benefit society, for example in blood donation and road safety campaigns. However, I believe many of these techniques could also help improve the effectiveness of alumni relations programmes.

I'll be interviewing 3-5 professionals with experience of alumni relations in UK universities, conducting a focus group with 3-5 alumni from various universities, and creating an online questionnaire for alumni across the UK.

What's involved for participants?

I'm asking you to participate in a focus group with a handful of alumni from various UK universities. The focus group will last 45-60 minutes and will take place at my home address (see below).

The focus group will be semi-structured: I'll ask some open ended questions as we go along, but it'll also be guided by you and what you'd like to talk about. The questions will revolve around typical alumni relations activities in the UK. There won't be any right or wrong answers, and it doesn't matter whether you get involved with your university or not – I'm interested in getting a whole range of views on alumni relations in the UK.

I'd like to record the focus group discussion so that I can type up a transcript to analyse as part of my research.

Your rights during this research

- ☒ Participation is entirely voluntary
- ☒ Participants can decline to answer any question
- ☒ Participants can withdraw at any time

☒ Participants have the right to decline to be recorded

☒ The names of participants will be anonymous to all except [name of researcher] and other focus group participants.

☒ All responses will be stored anonymously and confidentially. Any quotations used in the final report will be anonymous.

Use of data collected

Only [name of researcher] will have access to the recording of the focus group discussion. On request, those marking the MBA dissertation will be given access to anonymised transcripts.

The research will be submitted to Durham University as part of [name of researcher]'s dissertation. An electronic copy of the dissertation will also be offered to all participants.

The recordings will be kept for 8 months, in accordance with Durham University's requirements, and will then be deleted.

Any questions? Please contact me: [name, postal address, email address and phone number of researcher]

Participation form

Thank you for agreeing to participate in this research. Please sign below to confirm that you are happy to take part in accordance with the information above. If you have any questions don't hesitate to ask.

Signed: Name:

Date:

Appendix 8: Question and measurement sources

Question	Detail measured	Source(s)	Data type
Welcome message	n/a	Ensured informed consent, anonymity and confidentiality (Saunders, Lewis and Thornhill, 2009).	n/a
Q1 Have you completed a qualification at a university in the UK?	- Yes - No [<i>shown polite screening message</i>]		n/a
Q2 Which UK university did you study at? If you have studied at more than one UK university then please enter the one you feel most loyalty towards.	Free text box. Researcher categorised into collegiate and non-collegiate universities		Descriptive dichotomous data (categorical)
Q3 Which level of education were you studying at this university?	4 possible education levels identified, plus an “other” option.	Qualification levels taken from Gov.uk (2017)	Descriptive nominal data (categorical)
Q4 Which alumni activities do you recall seeing from any part of your university?	6 possible alumni activities identified, plus an “other” option.	Alumni activities adapted from CASE (2009)	Descriptive nominal data (categorical)
Q5 Do you currently get involved in any alumni activities?	5 stages of change statements (Figure 16).	Stages of change questions adapted from Lee and Kotler (2011)	Ranked ordinal data (categorical)

Question	Detail measured	Source(s)	Data type
Q6 If yes, which alumni activities have you been involved with?	Free text box		Qualitative data
Q7 How strongly do you agree or disagree with each of the following pros and cons of getting involved in alumni activities? (E.g. attending events, offering careers mentoring to students, interacting with an alumni group over social media.)	Likert scale options: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 20 sub-questions; 10 pros and 10 cons. Order randomised, using Random.org (2017)	Question adapted from Prapavessis, Maddison and Brading (2004) and Prochaska et al. (1994). Likert scale from Prochaska et al. (1994). Sub-question statements adapted from the qualitative research (Ferguson and Chandler, 2005)	Ranked ordinal data (categorical)
Q8 Are there any other pros or cons of getting involved in alumni activities not listed here?	Free text box		Qualitative data
Q9 Please rate your ability to get involved in alumni activities in the following situations.	Likert scale options: 1. Not at all confident 2. Slightly confident 3. Moderately confident 4. Confident 5. Very confident 7 sub-questions. Order randomised (Random.org, 2017)	Question and Likert scale adapted from Prapavessis, Maddison and Brading (2004). Sub-question statements adapted from the qualitative research (Ferguson and Chandler, 2005)	Ranked ordinal data (categorical)

Question	Detail measured	Source(s)	Data type
Q10 Is there anything else that influences your ability to get involved?	Free text box		Qualitative data
Q11 How likely is it that each of the following initiatives would encourage you to get involved in alumni activities?	Likert scale options: 1. Extremely unlikely 2. Unlikely 3. Neutral 4. Likely 5. Extremely likely 8 sub-questions. Order randomised (Random.org, 2017)	Sub-question statements adapted from the qualitative research (Ferguson and Chandler, 2005)	Ranked ordinal data (categorical)
Q12 Is there anything else your university could do to encourage you to get involved?	Free text box		Qualitative data
Q13 Do you have any other comments about volunteering for alumni activities which might be helpful for this research?	Free text box		Qualitative data
Q14 What is your gender?	Female; Male; Prefer not to say		Descriptive dichotomous data (categorical)
Q15 Which age range are you in?	20-29; 30-39; 40-49; 50-59; 60+		Descriptive nominal data (categorical)
Thank you message	n/a	n/a	n/a

Question and measurement sources for questionnaire

Appendix 9: Questionnaire

p. 1 Welcome

Most universities in the UK want to keep in touch with their former students - their alumni. To do this they run various alumni activities including magazines, events, social media discussions and careers mentoring.

This questionnaire explores whether some commonly used marketing techniques could be applied to these activities. The research is for my Masters in Business Administration (MBA) with Durham University.

It's all anonymous and confidential, so please be honest. You can decline to answer any question. The questionnaire will take about 10 minutes to complete.

Many thanks

[name and email address of researcher]

p. 2 Did you study in the UK?

Q1 Have you completed a qualification at a university in the UK?

- Yes
- No

If answered Yes then proceeded to the questionnaire.

If answered No then shown this message: Thank you for your interest, but unfortunately this questionnaire is only open to people who have completed a qualification at a UK university.

p. 3 About your university

Q2 Which UK university did you study at? If you have studied at more than one UK university then please enter the one you feel most loyalty towards. Please consider this university when answering all the remaining questions.

Free text box

Q3 Which level of education were you studying at this university?

- Up to foundation degree level
- Undergraduate degree level
- Master's degree or postgraduate certificate level
- Doctorate level or higher
- Other

If you selected Other, please specify:

p. 4 Keeping in touch with your university

Q4 Which alumni activities do you recall seeing from any part of your university? (Select all that apply. Leave blank if none.)

- Emails from the university
- Alumni magazine
- Social media alumni groups
- Alumni website
- Alumni events
- Opportunities to offer careers mentoring
- Other

If you selected Other, please specify:

Q5 Do you currently get involved in any alumni activities? Tick the statement which most closely applies to you.

- No, and I don't intend to get involved in the next 6 months
- No, but I intend to get involved within the next 6 months
- No, but I intend to get involved within the next month
- Yes, I have been getting involved for less than 6 months
- Yes, I have been getting involved for more than 6 months

If yes, which alumni activities have you been involved with?

p. 5 The pros and cons of getting involved

Q7 How strongly do you agree or disagree with each of the following pros and cons of getting involved in alumni activities? (E.g. attending events, offering careers mentoring to students, interacting with an alumni group over social media.)

Likert scale options:

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Sub-questions:

- a) The intellectual stimulation would be rewarding
- b) The alumni activities would be enjoyable in themselves
- c) I'd get frustrated at not being able to influence university decisions
- d) I'd feel proud of an ongoing association with my university
- e) The university would be more likely to ask me for money, which I don't want to give
- f) Students' tuition fees are substantial, so supporting them in their career choice is the right thing to do and would be rewarding
- g) It would make me nervous or uncomfortable
- h) Providing something I felt was missing from my university experience would feel good
- i) It would be expensive to get involved
- j) It would help me recruit good employees
- k) Reading messages from my university would add to the information-overload I'm already experiencing
- l) I would have less time for my family and friends
- m) Doing something altruistic for students or other alumni would make me feel good
- n) The sense of belonging to an active alumni community would be rewarding
- o) I would have to spend money and time travelling to the university
- p) It would look good on my CV
- q) It would contribute to my CPD (Continuing Professional Development)
- r) It would negatively impact on my work
- s) It would make me re-live negative feelings about my time at university
- t) It would distract me from more important things

Q8 Are there any other pros or cons of getting involved in alumni activities not listed here?

Free text box

p. 6 Your ability to get involved

Thank you for keeping going - this is all really helpful.

Q9 Please rate your ability to get involved in alumni activities in the following situations. You can skip any statement you have no opinion on.

Likert scale options:

- Not at all confident
- Slightly confident
- Moderately confident
- Confident
- Very confident

Sub-questions:

- a) Even if I don't know much about life at the university today, I could still volunteer for alumni activities
- b) Even if I have to take care of my family, I could still volunteer for alumni activities
- c) Even if I can't donate to the university, I could still volunteer for alumni activities
- d) I believe I have something worthwhile to offer the alumni or student communities
- e) Even if I live a long way from my university, I could still volunteer for alumni activities
- f) Even if I'm suddenly busier at work, I could still volunteer for alumni activities
- g) Even if it would have a financial cost, I could still volunteer for alumni activities

Q10 Is there anything else that influences your ability to get involved?

Free text box

p. 7 Encouraging you to get involved

Almost there! (This is the last big question.)

Q11 How likely is it that each of the following initiatives would encourage you to get involved in alumni activities?

Likert scale options:

- Extremely unlikely
- Unlikely
- Neutral
- Likely
- Extremely likely

Sub-questions:

- a) A clear explanation of how to get involved if you live a long way away
- b) Fuller information on the time demands of each alumni activity
- c) Clear objectives for each alumni activity
- d) A fund to reclaim expenses (e.g. travel costs)
- e) 'How to' guides for volunteers
- f) Someone asking you personally to help with a particular activity
- g) Training for volunteers
- h) Information about the impact of alumni activities (e.g. case studies)

Q12 Is there anything else your university could do to encourage you to get involved?

Free text box

Q13 Do you have any other comments about volunteering for alumni activities which might be helpful for this research?

p. 8 About you

Nearly finished! Just a couple of questions about you:

Q14 What is your gender?

- Female
- Male
- Prefer not to say

Q15 Which age range are you in?

- 20-29
- 30-39
- 40-49
- 50-59
- 60+

p. 9 Finished!

Thank you for taking part in this research.

If you have questions or want further information about this research please email me at [email address of researcher].

[name of researcher]

Appendix 10: Statistical tests

Almost all the tests involved testing for statistical significance. A significance figure of less than 0.05 ($p < 0.005$) indicates the result was statistically significant at the 5% level. This means the relationship being tested would only occur by chance 5% of the time, and so the result is considered significant (Field, 2005).

If the significance figure rounded down to zero at three decimal places then SPSS reported a significance level of .000. This is actually an impossible result, so these results are considered highly significant at $p < 0.001$, or 0.1% (Kirkpatrick and Feeney, 2015).

Test	Used to test...	Interpretation of results
Chi-square test	Whether there is an association between two categorical variables (e.g. gender and stage of change) (Field, 2005)	Significance testing to see if there is an association between the variables (Field, 2005).
Contingency table	Comparing two categorical variables (e.g. gender and stage of change) (Bryman and Bell, 2011)	To meet assumptions of the chi-square and Cramer's V expected values should be greater than 1 and no more than 20% below 5 (Field, 2005).
Cramer's V	Comparing two categorical variables (e.g. gender and stage of change) (Bryman and Bell, 2011)	Significance testing to see if there is an association between the variables (Field, 2005). The closer the number to ± 1 the greater the association.
Cronbach's α	Internal reliability of the pros, cons and self-efficacy constructs (Bryman and Bell, 2011)	A Cronbach's α greater than 0.8 indicates good internal reliability (Bryman and Bell, 2011).
Dependent t-test	Differences between means when the same participants produced both sets of data (Field, 2005). Assumes normal distribution (Field, 2005).	Significance testing -ve = mean 1 is smaller than mean 2 +ve = mean 1 is larger than mean 2 larger number = bigger difference (Field, 2005)

Test	Used to test...	Interpretation of results
Independent t-test	Differences between means when different participants produced each set of data (e.g. difference between pros for each gender) (Field, 2005). It assumes normal distributions (Field, 2005).	Different statistic calculated depending on whether the variance in each group is homogeneous. So need to use Levene test first. Then significance testing to see if difference between groups is significant. -ve = mean 1 is smaller than mean 2 +ve = mean 1 is larger than mean 2 larger number = bigger difference (Field, 2005)
Levene test	Homogeneity of variances (e.g. to see if fits the ANOVA assumptions) (Field, 2005)	If significance figure is less than 0.05 then the variances are homogeneous (Field, 2005).
One-way analysis of variance (ANOVA)	Differences in a numerical variable between three or more groups based on a descriptive variable (Saunders, Lewis and Thornhill, 2009) Assumptions: 1. Each data value is independent; 2. Normal distribution, but not critical if sample size in each group is over 30; 3. Variance of each group is the same. (Saunders, Lewis and Thornhill, 2009).	Significance testing determines whether there is a statistical difference in the values across groups. But post hoc tests (see below) needed to indicate what that difference might be (Field, 2005).
Post hoc test: Bonferroni corrected Tukey Post hoc test	Identifies differences between groups following ANOVA. Powerful when the number of groups is small, variances are homogeneous and group size similar (Field, 2005).	Compares the values for each pair of groups and gives a significance figure (Field, 2005).

Test	Used to test...	Interpretation of results
Post hoc test: Gabriel's post hoc test	Same as Bonferroni corrected Tukey post hoc test but copes better with different sample sizes (Field, 2005).	Compares the values for each pair of groups and gives a significance figure (Field, 2005).
Post hoc test: Games-Howell post hoc test	Same as Bonferroni corrected Tukey post hoc test but more robust with both heterogeneous variances and different sample sizes (Field, 2005).	Compares the values for each pair of groups and gives a significance figure (Field, 2005).
Regression analysis	Whether independent variables predict the dependent variable. Each combination of variables tested is a different model (Field, 2005)	<p>R^2 = % of variation in the dependent variable explained by the independent variables.</p> <p>Significance testing of ANOVA analysis indicates whether the model is significantly better than using the means of the independent variables as a best estimate of dependent variable.</p> <p>Significance testing of t-tests indicates whether each independent variable is contributing to the model.</p> <p>Standardised coefficients for beta: +ve = positive relationship -ve = negative relationship</p> <p>Bigger standardised coefficient for beta = more important that independent variable is. (Field, 2005)</p>

Test	Used to test...	Interpretation of results
Skewness, kurtosis and distribution histogram	Whether the distribution is normal, when sample size is about 200 or more (Field, 2005)	Skewness statistic: +ve = piled to the left -ve = piled to the right The smaller the number the more normal the distribution (Field, 2005) Kurtosis: +ve = a more pointy distribution -ve = a flatter distribution The smaller the number the more normal the distribution (Field, 2005)
Spearman's rho	Correlation between ordinal data (e.g. stages of change) and continuous ratio data (e.g. the new combined pro variable) (Bryman and Bell, 2011).	Significance testing +ve = positive correlation -ve = negative correlation the larger the number the stronger the correlation (Bryman and Bell, 2011)

Statistical tests used, assumptions and how the results were interpreted

Appendix 11: Qualitative results summaries

Summary of qualitative data for social marketing techniques

Code	Social marketing technique used	Not used	Conclusion
1.1. Behaviour theory	None	All four	Not used currently
1.2. Marketing mix	None	All four	Not used currently
1.3. Alumni relations goals	All four target behaviour goals such as fundraising and volunteering. Three mentioned volunteering is becoming more important.	All also target non-behaviour affinity goals, which underpinned their behaviour goals.	Used, but not described in using social marketing terminology
1.4. Alumni motivation research	One participant recently launched an alumni survey including motivation questions. One participant noted increasing academic work on donor motivation.	Three participants did no formal research, but all do informal research not focussed on alumni motivation.	Starting to be implemented, but mostly focuses on philanthropy
1.5. Competition	Two participants consider the competition. One noted this is increasing in the profession.	One participant	Increasingly considered but with different terminology
1.6. Segmentation	All participants used this differently: - Data-driven segmentation across the alumni programme - Less formal segmentation across the programme - Segmentation for events only - Segmentation for events only, but then each event had similar format	None	Used extensively, but formality of approach varies

Code	Social marketing technique used	Not used	Conclusion
1.6.4. Prioritising segments	Three participants do this: - Prioritisation based on engagement scores and giving potential data - Prioritisation of older alumni as an indicator of better giving potential - Informal prioritisation of those who self-select and become involved	One reported no prioritisation between groups	Used frequently but level of formalisation differs
1.6.5. Segmentation criteria	Criteria and number of participants mentioning it: Age (4), Geographic (3), Gender (2), Subject/department (2), Family status (1), alumni interests (1) and ACORN data (1)		Various segmentation criteria used
1.7. Usefulness of social marketing approach	Three participants spontaneously expressed their interest in the idea of applying social marketing to alumni relations	One didn't express any views on the usefulness of the approach	Some interest in this new approach

Summary of qualitative data for TTM constructs

Code	Interviews	Focus group	Questionnaire
Decisional balance			
2.1 Decisional balance	1/4: decisional balance used. 3/4: much less structured decision-making process used.	1/3: decisional balance. 2/3: much less structured decision-making process used	
Pros (number of participants mentioning each pro, followed by notes where applicable)			
2.2.1. Seeing old friends	2/4	0/4	11
2.2.2. Brand affiliation/pride	4/4 Important for all universities	3/3 Important for 'top-tier universities'	3
2.2.3. Professional development	1/4	3/3	5
2.2.4. Altruistic fulfilment	3/4	3/3	0
2.2.5. Wider sense of community	2/4	0/3	4
2.2.6. Quality and enjoyment of alumni activities	1/4	1/4	2
2.2.7. Intellectual stimulation	2/4	0/3	1
2.2.8. Feeling a responsibility to students due to high fees	0/4	3/3	0
2.2.9. Family culture	0/4	3/3	0

Code	Interviews	Focus group	Questionnaire
2.2.10. Graduate recruitment	1/4	1/3	0
2.2.11. Filling a perceived gap at the university	1/4	1/3	0
2.2.12. Giving back what they received	1/4	0/3	0
Cons (number of participants mentioning each con, followed by ways to overcome)			
2.3.1. Distance	3/4 To overcome: Regional UK and international events	1/3	17 To overcome: Better use of Skype and social media; events
2.3.2. Time	4/4 To overcome: Try to make involvement as easy as possible to reduce time needed	3/3 To overcome: Promote social media because more flexible	11
2.3.3. Lack of affinity	1/4 To overcome: Segmented communications	2/3	5
2.3.3.1. Size of university	0/4	0/3	2: large university causes a lack of affinity To overcome: subject/department communications
2.3.4. Bad alumni experience	1/4 To overcome: All initiatives carefully planned in advance, feedback sought and acted on	0/3	7 Lack of follow-up frequently mentioned (Table 19)

Code	Interviews	Focus group	Questionnaire
2.3.5. Suspicion of fundraising	1/4 To overcome: Volunteering targets alongside fundraising targets. Valuing and thanking volunteers	1/3	4
2.3.6. Financial cost	2/4 To overcome: Volunteer Support Fund for expenses. Some free events	0/3	2
2.3.7. Bad student experience	3/4	2/3	1
2.3.8. Restricting alumni involvement in decision making	2/4	0/3	0
2.3.9. Attention bandwidth	1/4 To overcome: Clear goals and compelling content	0/3	0
2.3.10. Unclear expectations	1/4 To overcome: Clear goals communicated	0/3	0
Self-efficacy			
2.4.1. Self-efficacy relevant	All four thought it was relevant	All three thought it was relevant	
2.4.2. Professionals' personal experience	Three directly related it to their own experiences as alumni		
2.4.3. Examples of lack of self-efficacy	Would be unsure if asked to mentor or give a careers talk	Under-confident about their career success	

Code	Interviews	Focus group	Questionnaire
2.4.4. Overcoming lack of self-efficacy	Showcasing volunteering with quotations, video and news stories	A personal approach	
Impact of demographic attributes			
3.1. Age	Older alumni have more time: 1 participant	Older alumni have more time: 2 participants	Older so have more time: 1 participant Older so can't get involved: 1
3.2. Families	Having a family limits time available: 2 participants	Having a family limits time available: 3 participants	Having a family limits time available: 4 participants
3.3. Gender	Self-efficacy more relevant for women: 1 participant	Self-efficacy more relevant for women: 3 participants	

Summary of qualitative data for inductive themes

Code	Interviews	Focus group	Questionnaire (qualitative data)
Data protection			
4. Data protection	Three mentioned the new EU General Data Protection Regulation (GDPR) has consumed a lot of time.		One participant mentioned data protection rules prevent local alumni groups accessing the data they need.
Lack of time to think strategically about alumni relations			
5. Strategic alumni relations	Three mentioned the lack of time for strategic thinking.		

Appendix 12: Statistical results

Ranked pro items by stage

Precontemplation (n=115)	Mean
Doing something altruistic for students or other alumni would make me feel good	3.6
I'd feel proud of an ongoing association with my university	3.58
The alumni activities would be enjoyable in themselves	3.53
The intellectual stimulation would be rewarding	3.5
Students' tuition fees are substantial, so supporting them in their career choice is the right thing to do and would be rewarding	3.5
The sense of belonging to an active alumni community would be rewarding	3.45
Providing something I felt was missing from my university experience would feel good	3.14
It would look good on my CV	2.85
It would contribute to my CPD (Continuing Professional Development)	2.84
It would help me recruit good employees	2.75

Contemplation / Preparation (n=37)	Mean
I'd feel proud of an ongoing association with my university	4.46
The sense of belonging to an active alumni community would be rewarding	4.22
The alumni activities would be enjoyable in themselves	4.08
Doing something altruistic for students or other alumni would make me feel good	4.08
The intellectual stimulation would be rewarding	3.89
Students' tuition fees are substantial, so supporting them in their career choice is the right thing to do and would be rewarding	3.73
Providing something I felt was missing from my university experience would feel good	3.56
It would contribute to my CPD (Continuing Professional Development)	3.41
It would look good on my CV	3.33
It would help me recruit good employees	3.27

Action / Maintenance (n=39)	Mean
I'd feel proud of an ongoing association with my university	4.41
The alumni activities would be enjoyable in themselves	4.25
The sense of belonging to an active alumni community would be rewarding	4.2
Doing something altruistic for students or other alumni would make me feel good	4.17
Students' tuition fees are substantial, so supporting them in their career choice is the right thing to do and would be rewarding	3.85
The intellectual stimulation would be rewarding	3.67
Providing something I felt was missing from my university experience would feel good	3.15
It would help me recruit good employees	3.05
It would contribute to my CPD (Continuing Professional Development)	2.92
It would look good on my CV	2.9

Mostly personal benefits
Mixture of personal and altruistic benefits
Mostly altruistic benefits

Correlation

Correlations			Stage of change	Pros
Spearman's rho	Stage of change	Correlation Coefficient	1.000	.387**
		Sig. (1-tailed)	.	.000
		N	192	192
	Pros	Correlation Coefficient	.387**	1.000
		Sig. (1-tailed)	.000	.
		N	192	193

** . Correlation is significant at the 0.01 level (1-tailed).

Spearman's rho results for pros

Correlations			Stage of change	Cons
Spearman's rho	Stage of change	Correlation Coefficient	1.000	-.458**
		Sig. (1-tailed)	.	.000
		N	192	192
	Cons	Correlation Coefficient	-.458**	1.000
		Sig. (1-tailed)	.000	.
		N	192	193

** . Correlation is significant at the 0.01 level (1-tailed).

Spearman's rho results for cons

Correlations			Stage of change	Self-efficacy
Spearman's rho	Stage of change	Correlation Coefficient	1.000	.547**
		Sig. (1-tailed)	.	.000
		N	192	189
	Self-efficacy	Correlation Coefficient	.547**	1.000
		Sig. (1-tailed)	.000	.
		N	189	190

** . Correlation is significant at the 0.01 level (1-tailed).

Spearman's rho results for self-efficacy

	N	Min	Max	Mean	Std. Deviation	Variance
Precontemplation						
Pros	115	1.5	4.4	3.27525	0.51967516	0.270062272
Cons	115	1.44444	4	2.87174	0.53271242	0.283782522
Self-efficacy	112	1	4	2.39864	0.88227617	0.77841124
Contemplation/preparation						
Pros	37	3.1	4.6	3.80338	0.38945128	0.151672299
Cons	37	1.33333	4.11111	2.56156	0.58263977	0.339469102
Self-efficacy	37	2	5	3.46268	0.71107171	0.505622977
Action/maintenance						
Pros	40	2	4.9	3.66278	0.57386661	0.329322886
Cons	40	1.11111	4	2.1816	0.58916656	0.347117235
Self-efficacy	40	1.14286	5	3.68929	0.97744715	0.955402931

Descriptive statistics for the three stage of change groups

ANOVA

ANOVA

Pros

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.932	2	4.966	19.118	.000
Within Groups	49.091	189	.260		
Total	59.022	191			

ANOVA test for pros

ANOVA

Cons

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14.656	2	7.328	23.835	.000
Within Groups	58.110	189	.307		
Total	72.766	191			

ANOVA test for cons

ANOVA

Self-efficacy

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	64.711	2	32.355	42.421	.000
Within Groups	141.867	186	.763		
Total	206.578	188			

ANOVA test for self-efficacy

ANOVA post hoc tests

Multiple Comparisons

Dependent Variable: Pros

	(I) Stage of change	(J) Stage of change	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Bonferroni	Precontemplation	Contemplation / Preparation	-.52812648*	.09632557	.000	-.7607987	-.2954543
		Action / Maintenance	-.38752588*	.09355274	.000	-.6135004	-.1615514
	Contemplation / Preparation	Precontemplation	.52812648*	.09632557	.000	.2954543	.7607987
		Action / Maintenance	.14060060	.11624762	.684	-.1401928	.4213940
	Action / Maintenance	Precontemplation	.38752588*	.09355274	.000	.1615514	.6135004
		Contemplation / Preparation	-.14060060	.11624762	.684	-.4213940	.1401928
Gabriel	Precontemplation	Contemplation / Preparation	-.52812648*	.09632557	.000	-.7517415	-.3045114
		Action / Maintenance	-.38752588*	.09355274	.000	-.6056861	-.1693657
	Contemplation / Preparation	Precontemplation	.52812648*	.09632557	.000	.3045114	.7517415
		Action / Maintenance	.14060060	.11624762	.538	-.1393097	.4205109
	Action / Maintenance	Precontemplation	.38752588*	.09355274	.000	.1693657	.6056861
		Contemplation / Preparation	-.14060060	.11624762	.538	-.4205109	.1393097

*. The mean difference is significant at the 0.05 level.

Results for post hoc tests for pros

Multiple Comparisons

Dependent Variable: Cons

	(I) Stage of change	(J) Stage of change	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Bonferroni	Precontemplation	Contemplation / Preparation	.31017757*	.10480097	.010	.0570333	.5633219
		Action / Maintenance	.69014191*	.10178417	.000	.4442846	.9359992
	Contemplation / Preparation	Precontemplation	-.31017757*	.10480097	.010	-.5633219	-.0570333
		Action / Maintenance	.37996434*	.12647591	.009	.0744647	.6854640
	Action / Maintenance	Precontemplation	-.69014191*	.10178417	.000	-.9359992	-.4442846
		Contemplation / Preparation	-.37996434*	.12647591	.009	-.6854640	-.0744647
Gabriel	Precontemplation	Contemplation / Preparation	.31017757*	.10480097	.007	.0668873	.5534679
		Action / Maintenance	.69014191*	.10178417	.000	.4527864	.9274974
	Contemplation / Preparation	Precontemplation	-.31017757*	.10480097	.007	-.5534679	-.0668873
		Action / Maintenance	.37996434*	.12647591	.009	.0754256	.6845031
	Action / Maintenance	Precontemplation	-.69014191*	.10178417	.000	-.9274974	-.4527864
		Contemplation / Preparation	-.37996434*	.12647591	.009	-.6845031	-.0754256

*. The mean difference is significant at the 0.05 level.

Results for post hoc tests for cons

Multiple Comparisons

Dependent Variable: Self-efficacy
Games-Howell

(I) Stage of change	(J) Stage of change	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Precontemplation	Contemplation / Preparation	-1.06403751*	.14358129	.000	-1.4073028	-.7207722
	Action / Maintenance	-1.29064626*	.17559947	.000	-1.7121228	-.8691698
Contemplation / Preparation	Precontemplation	1.06403751*	.14358129	.000	.7207722	1.4073028
	Action / Maintenance	-.22660875	.19377967	.475	-.6904627	.2372452
Action / Maintenance	Precontemplation	1.29064626*	.17559947	.000	.8691698	1.7121228
	Contemplation / Preparation	.22660875	.19377967	.475	-.2372452	.6904627

*. The mean difference is significant at the 0.05 level.

Results for post hoc tests for self-efficacy

Regression analysis

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.300	.445		2.921	.004
	Self-efficacy	.291	.058	.375	5.052	.000
	Pros	.122	.103	.081	1.189	.236
	Cons	-.354	.089	-.267	-3.992	.000

a. Dependent Variable: Stage of change

Dependent variable coefficients (model 1) showing pros were insignificant

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.588 ^a	.346	.339	.662

a. Predictors: (Constant), Cons, Self-efficacy

b. Dependent Variable: Stage of change

Regression analysis results using self-efficacy and cons as predictors (model 2)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.137	2	21.569	49.264	.000 ^b
	Residual	81.434	186	.438		
	Total	124.571	188			

a. Dependent Variable: Stage of change

b. Predictors: (Constant), Cons, Self-efficacy

ANOVA results for regression (model 2)

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.647	.337		4.890	.000
Self-efficacy	.321	.052	.414	6.192	.000
Cons	-.357	.089	-.269	-4.025	.000

a. Dependent Variable: Stage of change

Dependent variable coefficients (model 2)

Gender

Stage of change * Gender Crosstabulation

			Gender		Total
			Female	Male	
Stage of change	Precontemplation	Count	59	54	113
		Expected Count	50.5	62.5	113.0
	Contemplation / Preparation	Count	12	25	37
		Expected Count	16.5	20.5	37.0
	Action / Maintenance	Count	13	25	38
		Expected Count	17.0	21.0	38.0
Total	Count	84	104	188	
	Expected Count	84.0	104.0	188.0	

Contingency table for stage of change and gender

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.524 ^a	2	.038
Likelihood Ratio	6.611	2	.037
N of Valid Cases	188		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.53.

Chi-square test for stage of change and gender

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.186	.038
	Cramer's V	.186	.038
N of Valid Cases		188	

Cramer's V test for stage of change and gender

Independent Samples Test ^a									
	Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pros									
Equal variances assumed	1.153	.285	1.720	111	.088	.16813290	.09776555	-.025559607	.36186187
Equal variances not assumed			1.729	110.921	.087	.16813290	.09726264	-.02460102	.36086683
Cons									
Equal variances assumed	.683	.410	2.160	111	.033	.20974576	.09710882	.01731815	.40217338
Equal variances not assumed			2.152	107.887	.034	.20974576	.09746002	.01656080	.40293072
Self-efficacy									
Equal variances assumed	.830	.364	-2.030	108	.045	-.33473538	.16489832	-.66159245	-.00787831
Equal variances not assumed			-2.019	103.664	.046	-.33473538	.16576182	-.66345983	-.00601093

a. Stage of change = Precontemplation

Independent t-test for gender differences in precontemplation stage

University type

Stage of change * University type Crosstabulation

			University type		Total
			Collegiate university	Non-collegiate university	
Stage of change	Precontemplation	Count	54	61	115
		Expected Count	73.7	41.3	115.0
	Contemplation / Preparation	Count	33	4	37
		Expected Count	23.7	13.3	37.0
	Action / Maintenance	Count	36	4	40
		Expected Count	25.6	14.4	40.0
Total	Count	123	69	192	
	Expected Count	123.0	69.0	192.0	

Contingency table for stage of change and university type

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.452 ^a	2	.000
Likelihood Ratio	40.422	2	.000
N of Valid Cases	192		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.30.

Chi-square test for stage of change and university type

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.436	.000
	Cramer's V	.436	.000
N of Valid Cases		192	

Cramer's V test for stage of change and university type

		Precontemplation		Contemplation / Preparation		Action / Maintenance	
Construct	University type	N	Mean	N	Mean	N	Mean
Pros	Collegiate university	54	3.359259	33	3.831061	36	3.658642
	Non-collegiate university	61	3.200885	4	3.575	4	3.7
Cons	Collegiate university	54	2.738169	33	2.525253	36	2.192515
	Non-collegiate university	61	2.989982	4	2.861111	4	2.083333
Self-efficacy	Collegiate university	51	2.659664	33	3.449495	36	3.626984
	Non-collegiate university	61	2.180406	4	3.571429	4	4.25

Mean Likert scores for pros, cons and self-efficacy by university type

Independent Samples Test ^a									
	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	F	Sig.						Lower	Upper
Pros									
Equal variances assumed	.148	.702	1.643	113	.103	.15837453	.09638398	-.03257952	.34932859
Equal variances not assumed			1.636	108.812	.105	.15837453	.09682063	-.03352453	.35027360
Cons									
Equal variances assumed	3.613	.060	-2.593	113	.011	-.25181306	.09712843	-.44424200	-.05938412
Equal variances not assumed			-2.554	99.794	.012	-.25181306	.09859952	-.44743663	-.05618949
Self-efficacy									
Equal variances assumed	1.364	.245	2.961	110	.004	.47925793	.16183477	.15853940	.79997646
Equal variances not assumed			2.993	109.595	.003	.47925793	.16010411	.16195612	.79655974

a. Stage of change = Precontemplation

Independent t-test for university type differences in precontemplation stage

Education level

Stage of change * Educational level Crosstabulation

			Educational level		Total
			Undergraduate degree level	Master's degree or postgraduate certificate level	
Stage of change	Precontemplation	Count	78	25	103
		Expected Count	65.1	37.9	103.0
	Contemplation / Preparation	Count	15	21	36
		Expected Count	22.8	13.2	36.0
	Action / Maintenance	Count	17	18	35
		Expected Count	22.1	12.9	35.0
Total	Count	110	64	174	
	Expected Count	110.0	64.0	174.0	

Contingency table for stage of change and education level

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.352 ^a	2	.000
Likelihood Ratio	17.351	2	.000
N of Valid Cases	174		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.87.

Chi-square test for stage of change and education level

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.316	.000
	Cramer's V	.316	.000
N of Valid Cases		174	

Cramer's V test for stage of change and education level

		Precontemplatio n		Contemplation / Preparation		Action / Maintenance	
Construct	Educational level	N	Mean	N	Mean	N	Mean
Pros	Undergraduate degree level	78	3.207102	15	3.755	17	3.612418
	Master's level	25	3.46	21	3.871429	18	3.75
Cons	Undergraduate degree level	78	2.866809	15	2.659259	17	2.176471
	Master's level	25	2.945556	21	2.529101	18	2.131944
Self- efficacy	Undergraduate degree level	75	2.341651	15	3.160318	17	3.478992
	Master's level	25	2.591429	21	3.659864	18	3.753968

Mean Likert scores for pros, cons and self-efficacy by education level

Independent Samples Test ^a									
Levene's Test for Equality of Variances			t-test for Equality of Means						
F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
							Lower	Upper	
Pros	.416	.521	101	.041	-.25289784	.12188026	-.49467549	-.01112019	
			50.705	.023	-.25289784	.10812081	-.46999010	-.03580559	
Cons	2.513	.116	101	.509	-.07874644	.11887261	-.31455772	.15706484	
			35.251	.551	-.07874644	.13081447	-.34424645	.18675357	
Self-efficacy	1.333	.251	98	.212	-.24977778	.19870456	-.64410051	.14454495	
			41.045	.217	-.24977778	.19909721	-.65184948	.15229392	

a. Stage of change = Precontemplation

Independent Samples Test ^a									
Levene's Test for Equality of Variances			t-test for Equality of Means						
F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
							Lower	Upper	
Pros	.658	.423	34	.367	-.11642857	.12745877	-.37545596	.14259882	
			32.835	.355	-.11642857	.12405219	-.36886278	.13600563	
Cons	.276	.602	34	.511	.13015873	.19610724	-.26837913	.52896659	
			33.872	.491	.13015873	.18700242	-.24992884	.51024630	
Self-efficacy	2.381	.132	34	.038	-.49954649	.23088407	-.96875937	-.03033360	
			33.933	.027	-.49954649	.21656682	-.93969542	-.05939755	

a. Stage of change = Contemplation / Preparation

Independent t-test for education level in precontemplation and contemplation/ preparation stages