



Dublin Business School
excellence through learning

**Effect of pet ownership on student's stress, self-esteem, self-
efficacy and impact on their academic performance.**

Student researcher: Tergel Khashbat (10170423)

**Thesis submitted in partial fulfilment of the requirements of the BA
psychology**

Supervisor: Margaret Walsh

Programme leader: Dr. Rosie Reid

March 2017

Table of Contents

Acknowledgement	2
Abstract	3
Chapter 1: Introduction	4
1.1 History of pet ownership.....	4
1.2 Effects of pets on human health	6
1.3 Stress.....	6
1.31 Stress and pet ownership	8
1.4 Self-esteem.....	10
1.41 Self-esteem and pet ownership	12
1.5 Self-efficacy	13
1.51 Self-efficacy and pet ownership.....	16
1.6 Academic performance	16
1.7 Measuring my concept	17
1.8 Rationale, Conclusion and Hypothesis	18
Chapter 2: Methodology	19
2.1 Research design	19
2.2 Participants	19
2.3 Materials/apparatus	19
2.4 Procedure	21
Chapter 3: Results	23
3.1 Descriptive statistics	23
3.2 Inferential statistics	23
3.21 Hypothesis 1.....	23
3.22 Hypothesis 2.....	23
3.23 Hypothesis 3.....	23
3.24 Hypothesis 4.....	23
Chapter 4: Discussion	27
4.1 Interpretation of findings	27
4.2 Strength	30
4.3 Limitation.....	31
4.4 Further research.....	31
4.5 Conclusion.....	32
References	33
Appendices	39

Acknowledgement

I would like to express my sincere gratitude for my supervisor Margaret Walsh for helping me throughout this thesis by giving me a continuous support, supervision and guidance. I would also like to thank family and my boyfriend for continuously supporting me even during the most difficult times. Also I would like to thank my friends Colleen and Luana for putting up with me, going through the same journey and for supporting each other. I would also like to extend my regards to the lecturers John Hyland, Jonathan Murphy, Gary Prentice and my supervisor Margaret Walsh for letting me use their classes for data collection. I would like to offer my great appreciation to all my friends, the DBS students and students from other colleges who took part in my study because without them, none of this would have been possible. Lastly I would like to thank all the lecturers who taught me for the past 3 years. Now I am not only a better student, but a better person and again I am thankful for everyone who has supported me and made this achievement possible for me.

Abstract

Many studies have been carried out proving that effects of pets are beneficial to overall human health. The current study aims to extend these research by measuring the effect of pet ownership on student's level of stress, self-esteem, self-efficacy and if it impacts their grade. Data from 135 participants (male=40, female=85) were used in this between-groups correlational, quantitative method study where each students completed set of three demographic questions, a question rating their perceived academic performance and additional three quantitative self-report questionnaires regarding their stress, self-esteem and self-efficacy. The data analysis showed non-significant results for the first two hypotheses. Hypotheses three showed negative significant result and hypothesis four were supported with partly negative significant result. Implications of the findings are discussed. Further research into the area of the effect of pet ownership on students should be developed as there is no adequate research concerning the relationship between pets and students.

Chapter 1: Introduction

There is no doubt that animals play an important and special role in people's lives (Flynn, 2000). Most people who own pets think of them as a part of their family. It is estimated that approximately 70-80 million dogs and 74-96 million cats are owned by humans in the United States alone (ASPCA, 2016). Yet, till this day, the nature of human-animal bond remains hard to measure. Although there are many studies which suggest that pets keep their owners happy and healthier than non pet owners, the topic still remains complicated as it is impacted by several factors.

Whilst looking through the literature, it suggests that the human-animal bond is not the most popular topic that is researched, as studying the effect of pet ownership may not be seen as a legitimate issue by some researchers. However other researchers have realized the importance of this special relationship between the two species and have carried out many studies using different research designs, participants, context and certain life circumstances which will be discussed in this literature review.

This literature review examines the previous researches regarding the human-animal bond, the effect of the relationship on human health. Specifically, this literature review will look at the effect of pet ownership on student's stress, self-esteem, self-efficacy and an impact on their academic performance.

1.1 History of pet ownership

History has shown that humans have kept animals as pets since ancient times, with the earliest pet and human relationship dating back to c. 10000 BC. The relationship between humans and animals has always been fluid and dynamic and forever evolving (Serpell, 2003). This relationship first began as hunter and prey, and through the next 12-14,000 years, the relationship has evolved as the two species grew dependent on each other and not just for food

but also for companionship (Pohnert, 2010). The most common type of pet was dogs. Originally used for hunting, guarding and herding. This function of dogs eventually transitioned, becoming companions of humans. The importance of dogs as human companions were illustrated by the tombs discovered in Israel about 12,000 years ago, where a man is buried holding his dog in his arm (Serpell, 2003). This vouch the valuable role dogs played in their owner's lives and what could be indicated as the owner's wish to take their dog to after life (Pohnert, 2010).

Cats, being the second most popular pets around the world, wasn't always seen as being useful to humans until about 8,000 years ago (Wilson & Turner, 1998). Initially, the purpose of cats was to control rodents for humans as humans transitioned from nomadic to agricultural life. The Egyptians used the cats as symbol of esteem and reverence (Pohnert, 2010). During the middle ages, dogs predominantly were owned by wealthy people and their families (Serpell, 1996). This relationship is illustrated by the portraits of many noble and rich people with their dogs, mainly lapdogs for the ladies and hunting dogs for the male partners (Pohnert, 2010). Throughout the 16th and 17th century, people's perceptions of pets, especially of cats were seen as witchcraft, devil and evil spirits. Superstition lead people to develop the belief that black cats were witches, and were possessed by evil spirits (Animal friends, 2016).

In the 18th century, pet ownership grew popular within middle class, notions surrounding the idea about animals being a perfect companionship for treating mental illnesses. During the 20th century the idea of human-animal bond and its benefits grew popular (Levinson, 1972). Levinson (1972) believed having relationship with animals restored health in many ways and encouraged the idea of incorporating animals for treatments. Friedman et al. (1980) found that out of 92 cardiac outpatients, those with pets lived longer than those who did not have pets. This discovery triggered the following researchers to explore the idea of pets and human health (Siegel, 1996). But in the recent years, the choices of pets outgrew the traditional pets such as dogs and cats to fish, reptiles, pet rodents, gerbils, pet insects and many more.

1.2 Effects of pets on human health

Animals play very important role in many people's lives. Animals have a high sense of intuition that humans do not acquire, thus making their owner's life much more fulfilled. Work (1995) suggests that pets supply ongoing comfort and reduce feelings of sadness, stress and loneliness during transitions from bereavement or divorce (Work, 1995). There are dogs that are trained to detect a seizure before it comes on, thus warning its owner to get down on the floor, or a safe place. Many animals are also used in therapies such as speech therapy, physical rehabilitation and help patients recover from PTSD and various other mental illnesses ("Irish therapy dogs," n.d.). Setting aside the therapeutic roles of animals, they are also valued companionship to humans. It is estimated that there are approximately 70-80 million dogs and 74-96 million cats are owned by humans in the United States alone (ASPCA, 2016). Also the largest study of pet ownership in Ireland carried out by the Pawsitive Living campaign result identified that 61% of all Irish households own either a cat or a dog where 91% recognised them as a member of the family ("Independent." n.d.).

Many areas of pet therapy are currently being implemented all around the world, helping humans in many ways. Dogs interact with nursing homes, helping those with dementia, hospital patients, sick children and some colleges even have therapy dogs for students. Benefits of having pets include having healthier hearts, diminished stress, fewer illnesses, and gets more exercise, less depressed, and fewer doctor visits annually. Dogs sense the sadness of their owners and try to comfort them by initiating cuddling (Casciotti & Zucherman., 2016), improves heart health by lowering blood pressure and regulating heart beat during stressful situations (Jalongo et al., 2004).

1.3 Stress

Stress can mean different thing to different people. Because the term *stress* appears in people's everyday life, it is one of the leading topics of study in the field of psychology (Passer et al., 2009). But what exactly is stress? Stress is your body's way of responding to demands

which can be caused by good or bad events. When people are stressed, the body releases chemicals into the bloodstream (Kalat, 2011). These release of chemicals can be a good thing if person's stress is caused by physical danger (fight or flight) but it can also turn bad if the stress is caused by emotional problems and is prolonged. Because there is no outlet for this extra energy and strength, it begins to attack its own bodily organs and mechanisms, causing number of difficulties of cognitive, physiological, psychological and behavioural problems such as high blood pressure, heart failure to depression (Lazarus, 1991; 1998). The presence of a negative feeling is a common feature of stress response therefore links the study of stress with the field of emotion (Zautra, 2003).

Stress can range from micro stressors which are daily hassles and minor problems that may irritate people such as traffic jams, argument with a colleague, or missing the bus to major negative events such as the dying of a loved one, life threatening and non life threatening illnesses (Passer et al., 2009) and an academic stress. Academic stress is mainly a mental distress with some anticipated frustration associated with academic failure or even the awareness to the possibility of failure. Students have to face many academic demands such as assignments, examinations, class work, attendance, trying to understand lectures and even competing with other class mates (Lal, 2014). According to Bisht (1989), academic stress is an important factor that contributes to major mental and physical health diseases. Sudden and unexpected catastrophic events can also cause major stress and it typically affects large number of people (Resick, 2005). They include natural disasters such as tsunami, earthquake, and acts of war or terrorism. All these stressors can have significant negative effects on physical and psychological wellbeing (Van Praag, 2004; Zautra, 2003).

Stress can combine with other physical and psychological factors to cause an entire physical illness ranging from common cold to cancer, heart disease, diabetes, sudden deaths (Lovallo, 2005; Suls & Wallston, 2003) and overall weakened immune system (Passer et al., 2009). Within one month following death of their spouse, widows begin to show higher mortality rate than married couples (Kaprio et al., 1987). Kar and Bastia (2006) carried out a

study examining mental health sequences of adolescents following a natural disaster. The result showed that around one year after super-cycle, majority of adolescents exhibited post-traumatic psychiatric symptoms, prevalence of post-traumatic stress disorder, generalized anxiety, major depression, comorbidity and impairment of performance (Kar & Bastia., 2006).

Sometimes people who experience chronic stress can age much faster than those who don't experience chronic stress (Passer et al., 2009). Elissa Epel and co-workers (2004) studied 39 mothers who experienced constant stress caring for a child with serious chronic illness, 19 mothers who had healthy children and did not experience chronic stress. They found that the mothers who experience chronic stress had significantly lower telomeres and lower level of enzyme telomerase than the mothers who don't experience chronic stress (Passer et al., 2009).

A study from 2015 indicated that over 80% of employees in Ireland suffer from an increased stress, which has a knock-on effect on workplace morale, productivity and company staffing ("Irish examiner," n.d.). "Irish employees are clearly suffering from the burden of increased stress and worry that is damaging their ability to concentrate and deliver the best results for their employers," said Mr O'Callaghan (Percival, 2015). Similarly, a study by Waugh (2015) highlighted that 73% of Irish students say that the cost of tuition causes them a high level of stress and anxiety ([USI], Union of Students in Ireland., n.d.).

1.31 Stress and pet ownership

Without realizing it many stressed out people medicate themselves with pets. Researchers at the State University of New York at Buffalo conducted a simply yet ingenious study showing that pets can be more supportive than friends, family or spouses at times of stress (Allen et al., 2002). This study involved 240 married couples, half whom owned dog or cat. It showed that the couples who had no pets showed higher blood pressure and heart rates, which is a strong sign that they were more stressed than those who owned pets (Allen et al., 2002).

Allen, Shykoff, and Izzo (2001) examined the effect of pet ownership on blood pressure response to mental stress before and after ACE inhibitor therapy (pharmaceutical drug for

hypertension). 48 hypertensive individuals participated in an experiment at home and in the physician's office where half were randomly assigned to pet ownership in addition to lisinopril (20mg/d) and rest to a control group with only lisinopril (20 mg/d). On each study day, blood pressure, heart rate and plasma rennin activity were recorded after each mental stressor of serial subtraction and speech. The result showed that lisinopril therapy lowered blood pressure in both groups, but responses to mental stress were significantly lower among those who were assigned to pet ownership (Allen et al., 2001). Similarly Siegel (1990) and Anderson (1992) too found that the role of pet ownership had an enormous benefit to lower stress and stress related diseases.

Bjick (2012) conducted a study attempting to demonstrate whether spending time with animals will decrease college student's stress level. The study consisted of 32 females of four groups: control, a group that experienced explicit observation of a therapy rabbit, a group that experienced implicit observation of the therapy rabbit and a group that stroked a stuffed rabbit. All participants indicated their stress and arousal level using Stress and Arousal Checklist. As a result, two out of four groups demonstrated a statistically significant decrease in stress level after their experiences. Interestingly the control group's arousal level decreased, the stuffed rabbit group experienced no change and both groups who were explicitly and implicitly exposed to rabbits had an increase in their arousal level. Partly corresponding to this finding, a study by Straatman (2015) showed that there was no significant difference on decrease of stress level when comparing 17 male students who interacted with unfamiliar friendly dog to a 19 other men who were not exposed to any dogs during an stressor task (Straatman, 2015). Both studies show that temporary exposure to an animal does not significantly alter stress level. Thus the current study is examining whether long-term permanent pet ownership will have an effect on student's stress level.

In reviewing the literature, many of the studies have been carried out correlating self-esteem and stress. Studies have suggested that there is a negative correlation between self-esteem and stress meaning as one goes up, the other goes down vice versa. Individuals with low self-esteem tend to feel more distress in stressful situations than those individuals with high self-

esteem as high self-esteem protects the individual from distress by not letting them feel easily vulnerable and even when faced with distress, be able to bounce back from the stressful situations (Abel, 1996). An article by Kreger (1995) hypothesised after reviewing some studies that self-esteem may act like characteristic style in predicting the impact of stress and that one's perceived stress may be related to self-esteem than the actual stressful situation. After conducting number of tests, the hypothesis was supported by the data, showing stress negatively correlated with self-esteem. It was also found that people with low self-esteem tend to view their behaviour as being dependent on the situation whereas people with high self-esteem have the capacity to use range of coping behaviours (Smith et al, 1992).

1.4 Self-esteem

Self-esteem is a very important and popular construct in the world of social science as well as in everyday life. Most people around the world intuitively believe that 'poor' or 'low' self-esteem is undesirable, and in fact research shows low self-esteem is linked to loneliness (Blascovich & Tomaka, 1991, p.115).

The idea of self-esteem is relatively straightforward. In psychology, self-esteem refers to the individual's overall emotional evaluation and belief of his or her own ability and worth (Passer et al., 2009). For most people, the thoughts and feelings fluctuate depending on their daily experiences such as an exam result, how someone treats them and arguments with friends, family etc. But self-esteem is more than just normal ups and downs associated with temporary situations. Unfortunately, research carried out by the personal care brand Dove in 2010 found that only 4% of women from around the world considered themselves beautiful. Even my frightening, statistics showed that 6 out of 10 girls are so concerned with their looks that anxiety causes them to isolate from social situations as serious as failing to attend school (Spun Out [SO], 2017).

For people with good and healthy self-esteem, emotional fluctuations about how one may feel about themselves will last temporarily only to an extent ("Texas Division of Student

Affairs,' n.d.). Because individual's with high self-esteem are able to assess themselves accurately, acknowledge their strength and weaknesses and know that everyone has weaknesses and accepts themselves for who they are. They will always take charge of their lives and learn and grow to be better person without the fear of rejection. They are confident, has non-blaming behaviour, aware of their personal strength and skills, ability to make mistakes and learn from it instead of beating themselves down, optimistic, comfortable, good self-care, independent and cooperative (Blascovich and Tomaka, 1991).

Whereas for people with poor self-esteem these emotional ups and downs drastically impact how they feel about themselves, thus causing temporary negative self-perception. They often rely on how they are doing in the present to determine how they feel about themselves and depend on people's judgements as well as constantly counting on compliments and praises from other people to counteract the negative feelings and thoughts about themselves. Still those compliments tend to usually last temporary (Cialdini, 1984). For example Miyamoto and Dornbusch (1956) asked students to rate themselves on four personal attributes of intelligent, likeable, self-confidence and physically attractive. They also asked other students in the same group to rate him or her on these characteristics. The result showed that people who rated themselves high on these characteristics were also tend to by rated high by others than those who rated themselves low on the characteristics, thus showing consistency with the reflected appraisal principle, if others think well of you, you think well of yourself.

Self-esteem begins to develop during childhood. Being listened to, being spoken to respectfully and getting appropriate affection and attention as a child leads to positive self-esteem. Being constantly criticised, abused in any form of way, ignored and ridiculed will lead to poor self-esteem as an adult (University of Texas at Austin [UTA], 2017). Self-esteem evolves throughout people's lives based on image individuals create for themselves, experiences and interactions with other people (Passer et al., 2009). As people grow up, how people's successes and failures are treated by one's parents, teachers and friends, peers and society all contributes to the development on one's self-esteem.

Although negative self-esteem is usually built over life time and can be extremely difficult to get rid of, it can be diminished and turned into positive self-esteem through an extensive hard work, time, professional counselling and a positive thinking technique called affirmations which can be helpful to improve one's self-esteem (Passer et al, 2009) Affirmation is a technique used to encourage an individual with positive messages until it becomes part of the person's belief and feeling. Affirmation can be difficult to carry out while upset, thus it may need to counteract the negative feelings, messages with positive ones such as replacing the thought "I made a mistake, I am no good" with "yes I made a mistake, but I will learn from it and do better next time" (Germer, 2009).

1.41 Self-esteem and pet ownership

It is assumed that having a pet around can lower cortisol level and improve overall physical and mental health. Therefore having a pet could help reduce low self-esteem. A study in the Journal of Personality and Social Psychology found that owners who felt more close to their pets had higher self-esteem, happier and felt less stress (Hearst Communication [HC], 2017). McConnell, Brown, Shoda, Stayton and Martin (2011) investigated whether pet owners had better well-being than non pet owners and found that pet owners had higher self-esteem than non pet owners. To validate their research findings between the two groups, they employed the five factor model to examine personality and showed that pet owner's personalities tended to be healthier.

Having pet can offer an important source of social support which in itself will contribute greatly to overall self-esteem. McConnell et al (2011) looked at overall social support among pet owners using repeated measures ANOVA and found that support from pets were providing social support, many positive psychological and physical benefits for their owners as would from friends, siblings and parents. A research by Serpell (1991) looked at changed in health and behaviour of 71 adults over 10 month period following the acquisition of pet (dog or cat). 26 adults with no pet were used as the control group for comparison. The result showed that while

both groups showed significant reduction in minor health problems during the first month, the group with pets sustained this effect throughout the 10 months. This is likely to be due pet owners getting more exercise while walking the dogs. Thus if exercise predicts higher self-esteem, Serpell's (1991) result provide evidence that pet ownership is useful for obtaining higher self-esteem. Contrastingly, Grainne (2013) examined effect of pet ownership on people's self-esteem and found no significant difference between pet owners and non pet owners on self-esteem.

The previous research examples have examined the relationship between pet ownership and self-esteem. However this study aims to extend these researches by examining the relationship between pet ownership and student's self-esteem.

1.5 Self-efficacy

When people are faced with a challenge, do people feel like they can defeat it and accomplish their goals or do individuals give up and doubt their own abilities to overcome difficulties? According to the psychologist Albert Bandura, self-efficacy is the belief in one's own abilities to deal with certain situations and plays an important role in overall self-esteem and all aspects of life (Bandura, 1977). Bandura describes that these self-efficacy belief is the determinants of how people feel, think, motivate themselves and behave in a society and.

Bandura believes that one's self-efficacy plays an important role in how they approach their goals, certain challenges and situations. Those with strong self-efficacy will view challenges and problems as a task they want to master. They will be deeply interested in the activities they are involved in with a strong sense of commitment and recover quicker from mistakes and disappointments (Bandura, 1993). But people with low self-efficacy will not be able to recover quickly from their mistakes, thus losing self confidence in their abilities. Those people will avoid challenges at all times, if possible, and will believe that they don't have the capability to achieve difficult tasks and overcome certain situations (Bandura, 1994).

It is believed that self-efficacy is formed during early childhood while children are faced to deal with many different situations and challenges and continues to develop throughout life as individuals develop new skills, knowledge and experiences.

However learning to minimize stress and nervous behaviours when facing the situations you find difficult, can help people improve their self-efficacy. There are four major sources which contribute to the development one's self-efficacy beliefs according to Bandura (1977).

1. Mastery experiences: ‘‘the most effective way of developing a strong sense of efficacy is through mastery experiences’’ (Bandura, 1977) meaning if we perform a task successfully and effectively, it strengthens our self-efficacy, however if fails to efficiently deal with a challenge, task, situation, it will undermine and weaken self-efficacy.

2. Social Modelling: watching others successfully complete a task is important as seeing others who are similar to you achieves a task successfully will raise the observer's belief that they too has the ability to achieve a task.

3. Social persuasion: Bandura also emphasises the fact that a person could easily be persuaded to believe that have the capabilities, skills to achieve something. For example when someone says something positive and encouraging, it helps you to achieve a task.

4. Psychological Responses: emotions, moods, stress level and physical state can have a huge impact how one may feel about their abilities in certain situations thus affecting their self-efficacy. A person who has a stage fright will feel extremely nervous prior to getting up on the stage, and this will weaken their sense of self-efficacy in this type of situations (Bandura, 1977).

Self-efficacy is also related to stress and self-esteem and number of studies has been carried out in relation to this. For example, Vaeze & Fallah (2011) investigated the relationship between self-efficacy and stress among 108 EFL teachers in Iran. The participants were administered self-efficacy and stress questionnaires. The result indicated negative correlation between self-efficacy and stress, meaning as self-efficacy increased, stress level decreased vice

versa. A study carried out by Sim & Moon (2015) looked at relationship between stress, self-efficacy and depression and adjustment of college students. This study was a rather large study as the data were collected from 1,134 college students in city of Korea. The results were as followed. High self-efficacy was related to better college adjustment. Students with high levels of self-efficacy had less stress and depressive symptoms.

Often when self-efficacy is high, self-esteem tends to be high as well, and in like manner, when self-efficacy is low, self-esteem tend to be low too. It is rare for the two factors to have a negative correlation (WiseGeek [WG], 2017). During research review, only one study has been highlighted, looking at the clear relationship between self-efficacy and self-esteem. Lane et al (2004) investigated the relationship between self-efficacy and self-esteem, previous performance accomplishments and academic performance. The correlation result indicated that there was a significant positive relationship between self-efficacy and self-esteem.

Self-efficacy also plays an important role in academic performance. And most researchers investigating the relationship between the two factors have reported strong correspondence (Pajares & Miller, 1994). Mustafa et al. (2012) investigated relationship between self-efficacy and academic performance among sample of 82 college students who attended Marmara University Technical Education Faculty. Each student's final grade note was used for the performance measure. The result showed significant correlation between self-efficacy and student's academic performance and also affected their achievement positively. Similarly Honicke & Broadbent (2016) showed similar result where academic self-efficacy moderately correlated with academic performance when they carried out a study which integrated 12 years of research on the relationship between academic self-efficacy and college student's academic performance. In addition, another research conducted by Motlagh et al. (2011) investigated relationship between self-efficacy and academic achievement in 250 high school students. To measure their achievement score, average grade point was used. The analysis revealed that self-evaluation, self-regulation and self directing were correlated with academic achievement showing yet again another correlation between self-efficacy and academic performance.

1.51 Self-efficacy and pet ownership

Not many studies have been carried out relating to pet ownership and self-efficacy. Quan & Jin (2005) studied effect of pet ownership on people's self-esteem and self-efficacy. 200 pet owners and non pet owners were studied by completing self-reported questionnaires. While the result showed no significant differences between the two groups, it was noted that for pet owners showed generally higher self-esteem and self-efficacy as compared to non pet owners. Similar research conducted by Berget et al. (2007) examined the effect of 12 week intervention with farm animals on self-efficacy, quality of life and coping ability among adult psychiatric patients whom had variety of psychiatric diagnoses. The study was a randomized controlled trial and follow up. 90 patients (31 men and 59 women) with stress, anxiety, affective disorder, personality disorder and schizophrenia completed self-assessment questionnaires before and after the farm animal intervention and at six months follow-up. 60 patients were given the intervention and rest served as a control. The result was significant, showing increase in self-efficacy in the treatment group but not in the control group and significant decrease in stress in the treatment group.

Although many researchers investigated the relationships between self-efficacy, pet ownership, the literature shows that not many has looked into the effect of pets on student's self-efficacy and academic performance. Thus the current study aims to look more in depth into the effect of pet ownership on student's self-efficacy.

1.6 Academic performance

Studies suggest that pets affect people's mood, anxiety and stress level. Academic performance is often thought of as how one perceives their academic performance (McConnell et al., 2011) & (Bjick, 2012). Most of college students are able to rate their academic performance basing it on the time they began their academic course up until the current moment. There are number of factors that affect academic performance such as the support and availability of the

parents, standard of living, financial situation and many more (Gouvernement du Quebec [GQ], 2017).

Many studies have been carried out in relation to exploring factors that affect academic performance and it shows that the factors vary from country to country. Mushtaq & Khan (2012) investigated factors that may affect academic performance in the Pakintan. The study found positive relationship between communication, learning facilities, proper guidance and student performance. It showed negative relationship between family stress and student performance. Berhanu (2011) looked at factors affecting quality of academic performance in secondary school students. Once conducted using questionnaire regarding different factors relating to academic performance, the result revealed factors such as social-economic status, parent's education had significant effect on student's overall academic achievement. Similarly, Hijazi & Naqvi (2006) showed factors such as student's attitude towards attendance, parent's level of income, mother's age and education affected student's academic performance. Alos et al. (2015) in Phillipines showed factors like sleeping in class, only studying when there is an exam, living far from school said to be the main factors affecting academic performance.

The above studies interestingly show the contrasting difference between factors that affect academic performance in different countries. But no studies have been carried out looking at whether pet ownership affects academic performance, thus creating a big gap in the literature. This being another reason why the current study aims to find out if pet ownership has a significant effect on the student's academic performance.

1.7 Measuring my concept

The current study is looking at the variables stress, self-esteem, self-efficacy and academic performance of college students. The stress will be measured by using the The Perceived Stress Scale (PSS) (Cohen et al., 1983) was designed to measure and determine which situations in one's life are stressful; also has the added benefit of addressing daily problems and how one copes with it. The self-esteem will be measure by using Rosenberg's 10 items Self-Esteem Scale

(Rosenberg, 1965). The self-efficacy will be measured using the 10 item General Self-Efficacy Scale (Schwarzer and Jerusalem, 1995). And lastly the academic performance is being measured on a 5 point likert scale ranging from “very unsatisfied” to “very satisfied” regarding a question that states “How satisfied are you with your academic performance to date?”

1.8 Rationale, Conclusion and Hypothesis

In summary, the literature reviews shows that many studies has been carried out regarding the stress, self-esteem, self-efficacy and factors affecting academic performance and the overall effect of pet ownership on human including adults, patients, children but no adequate research concerning the effect of pet ownership on all the main variables mentioned above regarding college students. Therefore the rationale for this study is to further develop the literature review and fill in the gap in the research by examining if there is an effect of pet ownership on college student’s level of stress, self-esteem, self-efficacy and academic performance. Thus this study hypothesises that:

Hypothesis 1: There will be significant difference between pet owners and non pet owners on student’s stress, self-esteem and self-efficacy

Hypothesis 2: There will be significant difference between pet ownership statuses on student’s perceived academic performance.

Hypothesis 3: There will be a significant relationship between self-efficacy and perceived academic performance among college students.

Hypothesis 4: There will be a significant relationship between stress, self-esteem and self-efficacy among college students.

Chapter 2: Methodology

All of the methodological aspects of this study followed a research proposal and was granted ethical approval by the ethical board at Dublin Business School.

2.1 Research design

The current study is a between-groups correlational study, using Quantitative research method as it will be used to examine cause-and-effect relationship of pet ownership (criterion variable) and stress, self-esteem, self-efficacy and academic performance (predictor variables). Because this was a correlational design study, requirements such as experimental or control groups were not needed. The rationale for adopting Quantitative research method for this study lies in the requirement for closed-ended questions used to examine participants stress, self-esteem, self-efficacy and academic performance based on pet ownership.

2.2 Participants

The sample consisted of 125 participants (male=40, female=85) between the ages of 18 to 51 were obtained using convenient (Cook & Campbell, 1979) and random sampling as the participants were drawn from population of students who are attending Dublin Business School, other colleges, class friends, close friends and relatives who fitted the inclusion criteria which state that all participants must currently be enrolled in college education who is 18 years old and over. The nature of the study was explained to the participants prior to filling them out as well as having written explanation on the front page of the survey. Participation was completely voluntary where anyone could withdraw at any moment without an explanation.

2.3 Materials/apparatus

A paper form survey was used in order to measure the correlation between the predictor and criterion variables, which comprised of demographic questions regarding the student's sex,

age and if they own pets or not, one question regarding their perceived academic performance and three standardized self-report questionnaires.

The one question regarding the academic performance of the student's stated **"How satisfied are you with your academic performance to date?"** (Please circle answer), and the answer will be chosen from the choice of 5 likert scale "Very unsatisfied", "Unsatisfied", "Neutral", "Satisfied" and "Very satisfied".

The perceived stress scale (PSS) (Cohen et al., 1983) was designed to measure and determine which situations in one's life are stressful; also has the added benefit of addressing daily problems and how one copes with it. The consistency of the scale analysed by Cronbach's alpha was in the range of 0.85; additionally, short term reliability was at high 0.85 dropping to 0.55 after six weeks. The validity of the scale varied between low to moderate (0.17-0.49) in respect to life event and respondents impact, the PSS showed adequate reliability (Cohen et al., 1983). For the current study, this scale was used to measure student's stress. Each of the items were measure on 5-point likert scales ranging from "Never" to "very often" on questions such as "in the last month how often have you felt nervous and stressed?". The four positive items of 4, 5, 7 and 8 were reverse coded (Cohen, 1983).

Rosenberg's 10 items Self-Esteem Scale (Rosenberg, 1965) was used to measure student's self-esteem. Each of the items were measured on 4-point likert scales ranging from "Strongly Agree" to "Strongly Disagree" on questions such as "on the whole, I am satisfied with myself". Items 2, 5, 6, 8, 9 were reverse scored. After reversing of relevant scores, the scores are summed which ranges from 0-30. Individuals who score at 22 or over are considered to have high self-esteem whereas those who score 21 or less considered having low self-esteem. Cronbach's alpha for this scale reported high 0.89 which illustrates high reliability.

The 10 item General Self-Efficacy Scale was designed to assess people's perceived sense of self-efficacy, which aim to measure the beliefs of individuals as to whether they can reach a certain goals or tasks, their ability to cope with daily obstacles and stress. This scale was

designed for ages 12 and up (Schwarzer and Jerusalem, 1995). In this study it was used to measure student's self-efficacy. The 10 items were measured by using 4-point likert scales ranging from "Not at all true" to "exactly true" on questions like "if I am in trouble, I can usually think of a solution". Reverse coding was not needed. Regards to reliability, the scale is uni-dimensional. When sample was taken from 23 countries, Cronbach's alpha test scores ranged from 0.76 to 0.90 where majority of the participants scored around the upper 0.80 (Scholz et al, 2001).

A copy of all of the above questionnaires as enclosed in the Appendix section.

2.4 Procedure

The survey was handed out to students attending DBS, DIT as well as friends and family. The participants from DBS were obtained through classroom and random sampling. The distribution plan for the classroom students were informed and prearranged with the class lecturers for the researcher to come in during the first/last 15 minutes of the class to hand out the surveys to the students. The other participants from DBS were obtained randomly by distributing the survey to the students around the college who wished to take part. The students from other colleges were obtained by convenience. The rest of the participants who took part in the survey were friends and family who fitted the inclusion criteria of being student who are over the age 18. Prior to the actual handing out of the survey, the participants were informed about the survey being the researcher's final year project and the nature of the study which was investigating the relationship between pet ownership and student's level of stress, self-esteem, self-efficacy and perceived academic performance. Once the survey was handed out, it was made aware to the participants that this survey is completely anonymous and that they had the right to withdraw at any moment without giving an explanation as it was completely voluntary as well as being notified that once the survey is submitted to the researcher, it cannot be withdrawn due to anonymity. Also a statement was written in **"I understand that by completing and submitting the questionnaire I am consenting to participate in this study"**, making it clear

that if they decide to go further and fill out the questionnaire that they have consented to take part in the study. The researcher's e-mail was written on the first page in case anyone has a question about the survey. The participants took part in four demographic questions and three self-report questionnaires. The survey took approximately about 10 to 15 minutes to fill out. The final page included a 'Thank you' note and information regarding a support service and helpline were attached separately at the final page of the survey in case any of the questions caused someone to feel distressed.

Chapter 3: Results

The descriptive and inferential analysis of data was conducted electronically using the Statistical Package for Social Sciences (SPSS) in the 24th version. Due to broken assumptions, both parametric and non parametric tests were used.

3.1 Descriptive statistics

It can be seen in Table 1, the 125 participants consisted of 40 males (32%) and 85 females (68%), 65 with pets (52%) and 60 with no pets (48%).

	Number of participants	Percentage
Male	40	32%
Female	85	68%
Pets	65	52%
No pets	60	48%
Total	125	100%

Table 1: Descriptive Statistics of Sample Distribution

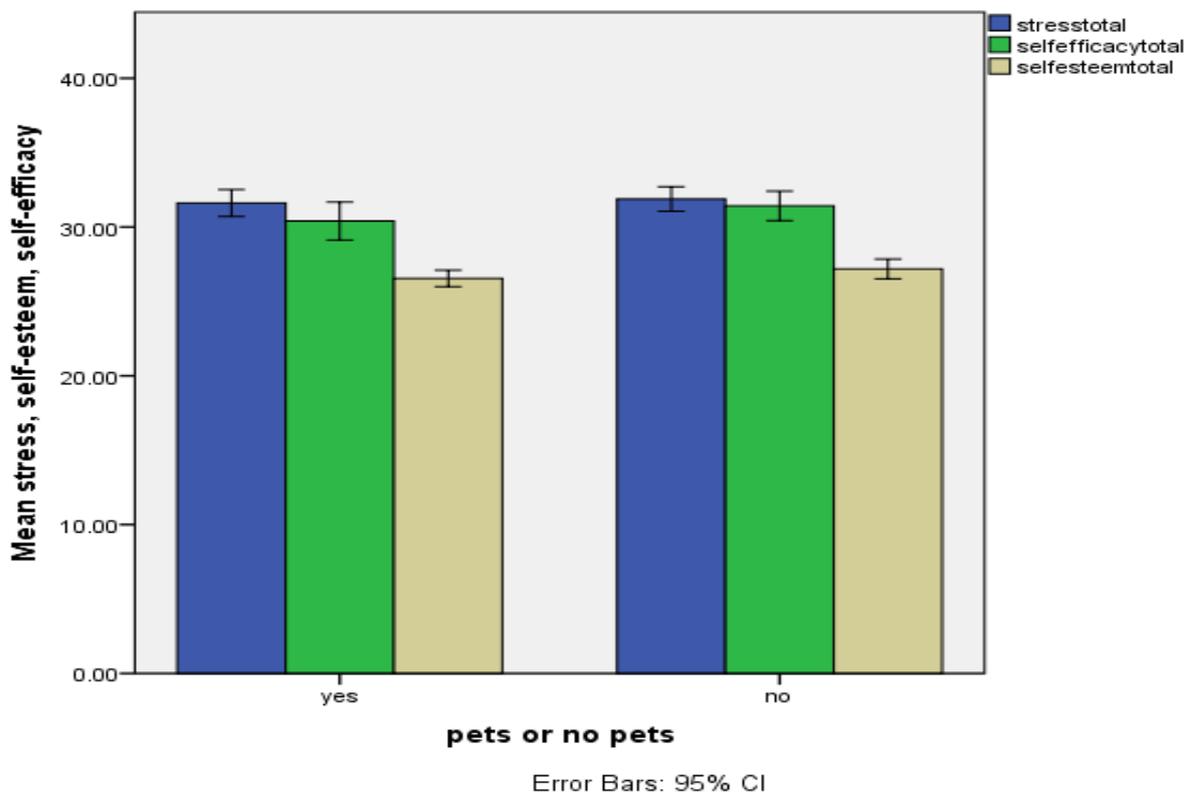
3.2 Inferential statistics

The data was analysed inferentially using independent sample t-test, Man-Whitney U, Spearman's Rho and Partial correlation.

Hypothesis 1: *There will be a significant difference between pet owners and non pet owners on the level of stress, self-esteem and self-efficacy.*

To test the first hypothesis that there will be a significant difference between pet owners and non pet owners on student's stress, self-esteem and self-efficacy, an independent sample t-test was run to check this hypothesis and found that

- There was no significant difference between pet owners (M=31.58, SD= 3.5) and non pet owners (M= 31.88, SD= 3.1) on the student's stress level ($t(124) = .49, p=.62, CI(95\%) -.89 > 1.48$). Therefore the null hypothesis can be accepted.
- There was no statistically significant difference between pet owners (M= 26.51, SD= 2.13) and non pet owners (M= 27.10, SD= 2.60) on the student's level of self-esteem ($t(124) = 1.36, p=.18, CI(95\%) -.27 > 1.43$). Therefore the null hypothesis can be accepted.
- There was no statistically significant difference between pet owners (M=30.44, SD= 5.01) and non pet owners (M=31.46, SD=3.8) on the student's level of self-efficacy ($t(123) = 1.27, p= .20, CI(95\%) -.57 > 2.61$). Thus the null hypothesis can be accepted.



Graph 1: Showing non significant differences between pets and no pets on stress, self-esteem, self-efficacy

Hypothesis 2: *There will be significant difference between pet ownership statuses on student's perceived academic performance.*

When testing for the hypothesis that there will be significant difference between pet ownership statuses on student's perceived academic performance, a Man-Whitney U test revealed that the pet owners (mean rank= 65.12) and the non pet owners (mean rank= 60.70) did not differ significantly ($z = -.76$, $p = .446$). Therefore the null hypothesis can be accepted.

Hypothesis 3: *There will be a significant relationship between self-efficacy and perceived academic performance among college students.*

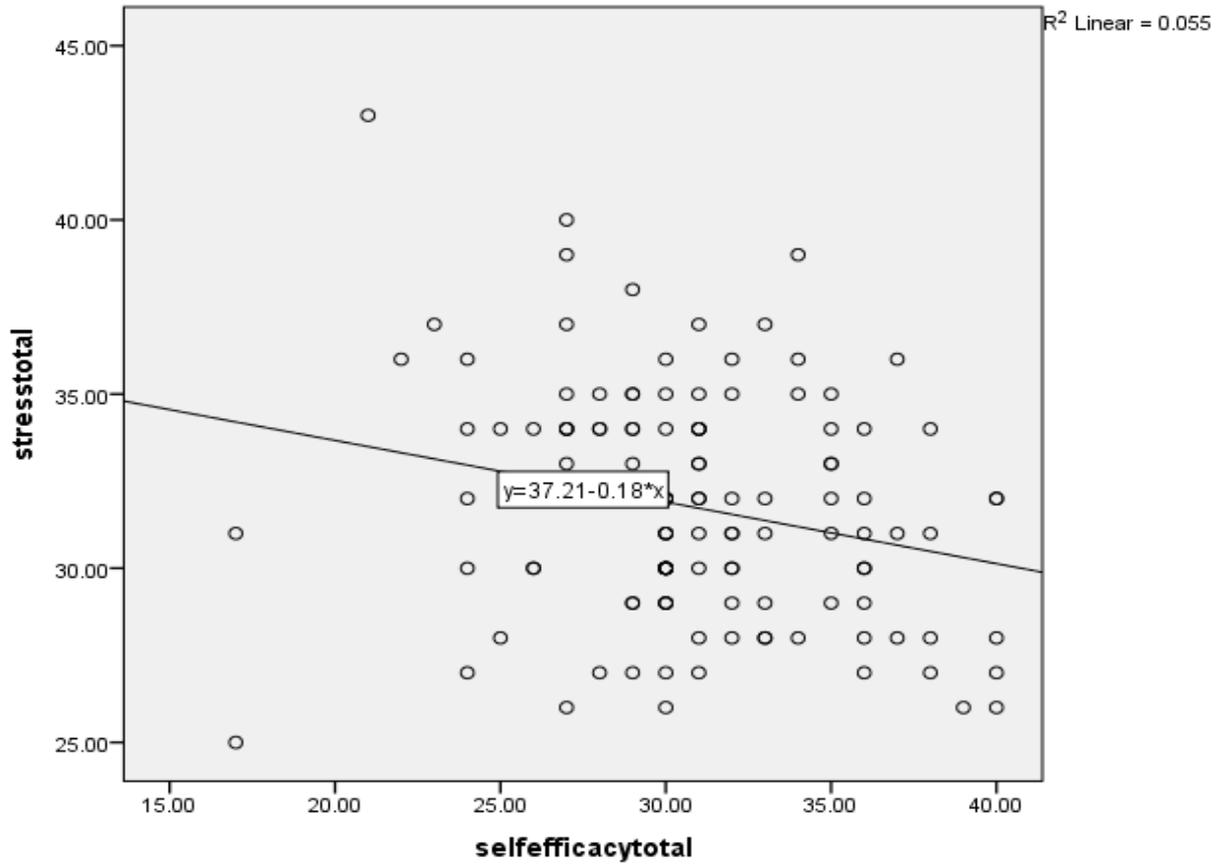
When testing for the hypothesis stating there will be a significant relationship between self- efficacy and perceived academic performance among college students, Spearman's Rho correlation found that there was a weak negative significant association between student's self-efficacy and perceived academic performance ($r_s(125) = -.245$, $p = .006$). Thus the null hypothesis can be rejected. Therefore as the self-efficacy went up, the perceived academic performance went down vice versa.

Hypothesis 4: *There will be a significant relationship between stress, self-esteem and self-efficacy among college students.*

When testing for a significant relationship between stress, self-esteem and self-efficacy, a Pearson correlation coefficient found that there was a non significant relationship between stress ($M=31.73$, $SD=3.35$) and self-esteem ($M=26.80$, $SD= 2.38$) ($r(121) = .15$, $p < .098$). Therefore the null hypothesis can be accepted.

There was a non significant relationship between self-efficacy ($M=30.94$, $SD= 4.47$) and self-esteem ($M=26.80$, $SD= 2.38$) ($r(121) = -.140$, $p < .125$). Therefore the null hypothesis can be accepted.

There was a weak negative significant relationship between stress ($M=31.73$, $SD=3.35$) and self-efficacy ($M=30.94$, $SD= 4.47$) ($r(121) = -.235$, $p<.009$). Thus the null hypothesis can be rejected.



Graph 2: A Scatterplot displaying the relationship between Stress and Self-efficacy.

Chapter 4: Discussion

Introduction

The purpose of this study was to look at the effect of pet ownership on student's level of stress, self-esteem, self-efficacy and if it has a significant impact on their grade. The questionnaires used to investigate the variables were three demographic questions regarding participants gender, age and if they own a pet or not, one self-rating question on academic performance and an additional three self-assessment questionnaires such as Perceived Stress Scale (PSS) (Cohen et al., 1983), Rosenberg's 10 items Self-Esteem Scale (Rosenberg, 1965) and The 10 item General Self-Efficacy Scale (Schwarzer and Jerusalem, 1995).

4.1 Interpretation of findings

The first hypothesis predicted that there will be a significant difference between pet owners and non pet owners on the level of student's stress, self-esteem and self-efficacy. An Independent sample t-test found no significant difference between pet owners and non pet owners on the level of stress ($t(124) = .49, p = .62, CI(95\%) = -.89 > 1.48$), self-esteem ($t(124) = 1.36, p = .18, CI(95\%) = -.27 > 1.43$) and self-efficacy ($t(123) = 1.27, p = .20, CI(95\%) = -.57 > 2.61$), thus the null hypotheses was accepted. These findings highly contrasted from the researches shown in the literature review, which found that pets significantly lower the level of stress. Siegel (1990) and Anderson (1992) found that role of pet ownership had an enormous benefit to lower stress and stress related diseases. Similarly, when Allen, Shykoff and Izzo (2001) examined the effect of pet ownership on blood pressure response to mental stress before and after and ACE inhibitor therapy, the result showed that mental stress were significantly lower among those who were assigned to pet ownership. Supporting these findings furthermore Allen et al (2002) found that pets can be more supportive than friends, family or even spouses at times of stress. Contrasting from these literatures, yet corresponding to the result of current study

Staatman (2015) found that there was no significant difference on decrease of stress level when comparing 17 male students who interacted with unfamiliar friendly dog to a 19 other men who did not interact with any dogs during the stressor task. This study showed that temporary exposure to animals does not have an effect on stress level. And although the current study examined the effect of long- term committed pet ownership effect on stress, it showed no significant difference between pet owners and non pet owners.

Conversely, from the non significant finding between pet owners and non pet owners on level of self-esteem, McConnell et al (2011) found that pet owners had higher self-esteem than non pet owners. McConnell (2011) also found that pets offered social support, positive psychological and physiological benefits for their owners as friends, family and spouses would. Serpell (2011) found that adults who acquired pets for over 10 months showed significant reduction in health problems and increased exercise, thus increasing self-esteem level. Showing similar result to the current study finding, Grainne (2013) showed no significant difference between pet owners and non pet owners on self-esteem level. Conflicting evidence suggests that this could be due to the fact that both studies have been conducted in Ireland.

A few studies have been carried out looking at the effect of pet ownership on self-efficacy. Correlating to the current study finding, Quan & Jin (2005) found no significant difference between the two groups. A study by Berger et al. (2007) showed a significant difference between pet intervention group and non pet intervention group, showing increase in self-efficacy in pet ownership group after introducing farm animal intervention.

The second hypothesis predicted that there will be significant difference between pet owners and non pet owner on student's perceived academic performance. The Man-Whitney U test found no significant difference between pet owners and non pet owners on student's academic performance ($z = -.76, p = .446$). The literature review showed that there are many different factors that affect student's academic performance such as communication, learning facilities, family stress and proper guidance (Mushtaq & Khan, 2012), social-economic status,

parent's education (Berhanu, 2011), student's attitude towards attendance, parent's income, mother's age and education (Hijazi & Naqvi, 2006) and sleeping in class, studying when exam in near and living from school (Alos et al, 2015). But no studies have looked at the effect of pet ownership on student's academic performance, thus giving me the reason to investigate the effect gap in the literature, which found no significant relationship between the two factors.

The third hypothesis predicted that there will be a significant relationship between self-efficacy and perceived academic performance among college students. Spearman's Rho test found statistically weak negative significant relationship between self-efficacy and perceived academic performance ($r_s(125) = -.245, p = .006$). It is assumed that this atypical result may have been due to social influence and conformity where many of the surveys were completed in the populated areas of the college such as canteen, common room and classrooms where many others were present.

Although this is unusual, it partly corresponded with the studies in the literature review where Mustafa et al (2012) found significant correlation between self-efficacy and student's academic performance. The finding was also partly supported by Honicke & Broadbent (2016) and Motlagh et al (2011) who found that self-efficacy moderately correlated with academic performance. But these literatures showed positive correlations between self-efficacy and academic performance, meaning as one factor went up, so did the other. The negative significant result from the current study is particularly interesting as self-efficacy and academic performance is expected to have positive correlation.

The fourth hypothesis predicted that there will be a significant relationship between stress, self-esteem and self-efficacy among college students. Pearson's R Correlation was run and found no statistically significant relationship between stress and self-esteem ($r(121) = .15, p < .098$). The result was not in line with most of the studies regarding self-esteem and stress. Many studies have shown that there is negative correlation between stress and self-esteem (Abel, 1996), Kreger (1995) & (Smith et al, 1992) as shown in the literature review.

No significant relationship between self-efficacy and self-esteem ($r(121) = -.140, p < .125$). This current result is particularly interesting, as it would be plausible that as self-efficacy goes up, so would self-esteem and contrariwise. Like the research carried out by Lane et al (2004) in the literature review showed significant positive relationship between self-efficacy and self-esteem.

But interestingly, the significant relationship was found between stress and self-efficacy where there was a weak negative significant relationship between stress and self-efficacy ($r(121) = -.235, p < .009$), meaning as stress went up, self-efficacy went down. This finding was as expected and in agreement with the literature review findings as Vaeze & Fallah (2011) found negative relationship between self-efficacy and stress among Iranian teachers. Study by Sim & Moon (2015) also found that students with high self-efficacy have less stress and depressive symptoms than students who had low self-efficacy.

4.2 Strength

The strengths of this study must be discussed as it greatly aided towards the final findings of the study. One of the strength of this study I believe is the sample size of 125 used in this study was substantial as it added to the weight of the results, being more reliable. The questionnaires used in this study were relatively short and simple, easy to understand which resulted in all of the participants completing the questionnaire as some people tend to complain that the questionnaires are too long to complete therefore leaving many answers blank. The even distribution of pet owners and non pet owners (Pets= 65, No Pets= 60) helped to show more valid and reliable results when analysing the data, as the first two hypothesis were based on looking at the difference between pet ownership and non pet ownership groups on stress, self-esteem, self-efficacy and academic performance. Also, a notable strength of the current study is the variable and the sample it used. Many studies have been done looking at the effect of pet ownership on human health and mind but only a few previous studies have been carried out looking at the difference between pet ownership on college student's stress, self-esteem, self-efficacy and especially the academic performance. But despite the absence of empirical evidence

in this research area, the results of this current finding showed that there was no significant difference between pet owners and non pet owners on the level of stress, self-esteem, self-efficacy and academic performance. Another strength would be the variation of the participants. Although most of participants consisted of undergraduate students, about 20-30 participants were mature postgraduate students as well as additional sources other than just students from DBS. Lastly, taking in the considerations and opinions of many of the participants, it was noted that this study was relatively “nice” as quoted by many, than compared to other studies which may seem more “harsh” and “sensitive” to the participants. Therefore I believe that the participants enjoyed completing the questionnaire for this study.

4.3 Limitation

It is however, important to note the limitations of this study. Firstly, the sample size consisted of 125 participants in which 40 were male and 85 were female, presenting an uneven distribution between the two genders. The original interest was to also look at the difference between genders on level of the criterion variables. This was not possible as the sample difference between them differed too much, female participants being two times more than the male participants. Although one of the strength of this study is said to be the relatively short and simple questionnaire, all the measurements used were self-reported measures, therefore the accuracy of the answers cannot fully be guaranteed to be 100 percent honest. Only two participants took the questionnaires home to complete. Lastly, the non specificity of the pets could have influenced the current non significant results. The level of stress, self-esteem, self-efficacy and academic performance could be getting influenced at different levels due to the different types of pets such as the effect of dog and cats could be far more effective than different types of pets like fish, insects or reptiles on lowering stress or boosting self-esteem, self-efficacy and academic performance.

4.4 Further research

To improve upon the current study in the future, further research should take on the evaluation and limitations of the current study mentioned above, to eliminate the all the problems and issues that arose during the study. The sample size could be even larger to make the statistics more significant. Also the location of the participants in the future research should be more varied, not just in Ireland but also in other countries to get a wider view on the effect of pet ownership from around the world. The questionnaires should be completed through an internet survey form, where it is completed in more private place in the comfort of one's own home. Although a great deal of studies has been done on the effect of pet ownership on human health, future research should look at the effect of pet ownership on college student's different aspects of life more in depth as it is one of the most crucial and impacted time of a person's life.

4.5 Conclusion

To conclude, the main findings of this study showed that there was no significant difference between pet owners and non pet owners on the level of student's stress, self-esteem, self-efficacy and academic performance regarding the first two hypotheses. However, a significant negative relationship was found between self-efficacy and perceived academic performance among college students. This result was not expected as self-efficacy and academic performance was expected to correlate positively. It was concluded that this unanticipated result could have been caused by filling out the questionnaire concerning self-efficacy dishonestly due to social influence. Lastly as regards to the 4th hypothesis, when testing if there is significant relationship between stress, self-esteem and self-efficacy, the results showed non significant relationship between stress and self-esteem, non significant relationship between self-efficacy and self-esteem, however there was a weak negative relationship between stress and self-efficacy among the college students. Although this study was relatively small research, I believe it contributes to the ever growing research investigating the relationship between pets and humans as well as its effect on human health.

References

- Allen, K., Blascovich, J., & Mendes, W. (2002). Cardiovascular reactivity and the presence of pets, Friends and Spouses: The truth about cats and dogs: *Psychometric Medicine*, 64(5), 727-739. DOI: 10.1097/01.PSY.0000024236.11538.41
- Allen, K., Shykoff, B., & Izzo J. (2001). Pet ownership, but not ace inhibitor therapy, blunts home blood pressure responses to mental stress. 38(4), 815-820.
- Alos, S., Caranto, L., & David, J. (2015). Factors affecting the academic performance of the student nurses of BSU: *International Journal of Nursing Science*. 5(2), 60-65.
doi:10.5923/j.nursing.20150502.04
- Anderson, W., Reid, C., & Jennings, G. (1992). Pet ownership and risk factors for cardiovascular disease: *The Medical Journal of Australia*. 157(5), 298-301.
- American Society for the Prevention of Cruelty to Animals [ASPCA] (2017). Pet statistics. Retrieved February 21, 2017, from ASPCA website: <http://www.asPCA.org/animal-homelessness/shelter-intake-and-surrender/pet-statistics>
- Arshad, M., Mahmood, K., & Zaidi, S. (2015). Self-esteem & Academic performance among University students: *Journal of Education and Practice*. 6(1).
- Arshad, M., Syed, M., Mahmood, K. (2015). Self-esteem & Academic Performance among University Students: *Journal of Education and Practice*. 6(1).
- Bandura, A. (1993). Perceived Self-efficacy in Cognitive Development and Functioning: *Educational Psychologist*, 2(2), 117-148.
- Berget, B., Ekeberg, O., & Braastad, B. (2008). Animal-assisted therapy with farm animals for persons with psychiatric disorders: effects on self-efficacy, coping ability and quality of life, a randomized controlled trial: *Clinical Practice and Epidemiology in Mental Health*. 4(9). DOI: 10.1186/1745-0179-4-9
- Berhanu, G. (2011). Factors affecting student's quality of academic performance: A case of secondary school level: *Journal of Quality and Technology Management*. 7(11).
- Bjick, M. (2013). The effects of a therapy animal on college student stress and arousal: *Master of Social Work Clinical Research Papers*.

- Blascovich, J., & Tomaka, J. (1991). *Measures of Personality and Social Psychological Attitudes* (2nd ed.). San Diego, California: Academic press, inc.
- Caruthers, N. (1998). Stress and Self-esteem: *National Undergraduate Research Clearinghouse*
- Cascotti, D., & Zuckerman, D. (2015). The benefits of pets for human health. Retrieved February 21, 2017, from National center for health research website:
<http://center4research.org/healthy-living-prevention/pets-and-health-the-impact-of-companion-animals/>
- Cherry, K. (2016). Self-efficacy: Why believing in yourself matters. Retrieved February 21, 2017, from Very Well website: <https://www.verywell.com/what-is-self-efficacy-2795954>
- Cialdini, R. (1984). *Influence: The Science and Practice*: Arizona state university.
- Express, Home of the daily and Sunday express [HDSE] (2017). Secret history of pets: Why humans have kept animals as pets since ancient times. Retrieved February 21, 2017, from Express website: <http://www.express.co.uk/news/weird/417324/A-secret-history-of-pets-Why-humans-have-kept-animals-as-pets-since-ancient-times>
- Germer, C. (2009). *The Mindful Path to Self-Compassion: Freeing yourself from destructive thoughts and emotions*. New York: Guilford Press
- Good Housekeeping [GH] (2017). A strong bond with your pet leads to greater self-esteem. Retrieved February 21, 2017, from
<http://www.goodhousekeeping.com/health/wellness/news/a39878/strong-pet-relationships-self-esteem/>
- Gouvernement du Quebec [GQ] (2017). Factors that may affect student's academic achievement. Retrieved February 21, 2017, from
<http://www.education.gouv.qc.ca/en/teachers/references/examens-et-epreuves/processing-of-results/factors-that-may-affect-students-academic-achievement/>
- Grainne, M. (2013). Influence of pet ownership on self-esteem, life-satisfaction and loneliness among over 65s in Ireland: *Dublin Business School*. <http://esource.dbs.ie/copyright>
- Grandin, T., & Deesing, M. (2014). *Genetics and the Behaviour of Domestic Animals* (2nd ed.). United Kingdom: Elsevier inc.
- Henry, E. (2013). Do Dogs Increase Learning? The effect of therapy dogs on academic stress and Spanish second language learning. Retrieved February 21, 2017, from:
http://trace.tennessee.edu/cgi/viewcontent.cgi?article=2615&context=utk_gradthes

- Hijazi, S., & Naqvi, R. (2006). Factors affecting student's performance: *Bangladesh e-Journal of Sociology*. 3(1)
- Honicke, T., & Broadbent, J. (2015). The influence of academic self-efficacy on academic performance: A systematic review: *Education Research Review*. 17, 63-64.
<http://dx.doi.org/10.1016/j.edurev.2015.11.002>
- Huang, S. (2011). Predicting student's academic performance in college using a new non-cognitive measure: an instrument design and a structural equation exploration of some non-cognitive attributes and academic performance. Retrieved February 21, 2017, from https://etd.ohiolink.edu/!etd.send_file?accession=osu1316097255&disposition=inline
- Hyde, K.R., Kurdek, L., Larson, P. (1983). Relationship between Pet Ownership and Self-esteem, Social Sensitivity, and Interpersonal Trust: *Psychological Reports*, 52(1), pp. 110.
- Independent. (n.d.). Retrieved February 21, 2017, from Independent Ireland website:
<http://www.independent.ie/life/family/irelands-largest-pet-ownership-study-heres-all-the-facts-you-need-to-know-34505427.html>
- Irish Therapy Dogs. (n.d.). Retrieved February 21, 2017, from Irish therapy dogs website:
<http://www.irishtherapydogs.ie>
- Johnson, S.B. (1991). Personality Characteristics and Self-esteem in Pet Owners and Non-owners: *International Journal of Psychology*, 26(2), pp. 241-252.
- Kalat, W.J. (2011). *Introduction to psychology*(9th ed). Wadsworth, Cengage Learning.
- Kar, N., & Bastia, B. (2006). Post-traumatic stress disorder, depression and generalised anxiety disorder in adolescents after a natural disaster: a study of comorbidity: *Clinical Practice and Epidemiology in Mental health*. 2(17). DOI: 10.1186/1745-0179-2-17
- Kingwell, B.A., Lomdahl, A., Anderson, W.P. (2001). Presence of a pet dog and human cardiovascular responses to mild mental stress: *Clinical Autonomic Research*, 11(5), pp. 313-317. DOI: 10.1007/BF02332977.
- Kuan, C. S., Hsien-Jin, T., Oon, N. L. (2005). The Effect of owning a Pet on Self-esteem and Self-efficacy of Malaysian Pet Owners: *Sunway Academic Journal* 2, 85-91.
- Lal, K. (2014). Academic stress among adolescent in relation to intelligence and demographic factors: *American International Journal of Research in Humanities, Arts and Social Sciences*.

- Lane, J., Lane, Andrew., & Kyprianou, A. (2004). Self-efficacy, self-esteem and their impact on academic performance: *Social Behaviour and Personality: an international journal*. 32(3), 247-256. <https://doi.org/10.2224/sbp.2004.32.3.247>
- McConnell, A.R., Brown, C.M. (2011). Friends With Benefits: On the Positive Consequences of Pet Ownership. *Journal of Personality and Social Psychology*, 101(6), pp.1239-1252.
- Measurement Instrument Database for the Social Sciences. (n.d.). Retrieved October 12, 2016, from MIDSS website: <http://www.midss.org>
- Meral, M., Colak, E., & Zereyak. E. (2012). The relationship between self-efficacy and academic performance: *Procedia-Social and Behaviour Sciences*, 46, 1143-1146. <http://dx.doi.org/10.1016/j.sbspro.2012.05.264>
- Mhaistir, G.N. (2013). Influence of Pet Ownership on Self-esteem, Life Satisfaction and Loneliness among over 65s in Ireland: *Dublin Business School* http://esource.dbs.ie/bitstream/handle/10788/1607/hdip_mhaistir_g_2013.pdf?sequence=1
- Motlagh, S., Amrai, K., Yazdani, M., Abderahim, H., & Souri, H. (2011). The relationship between self-efficacy and academic achievement in high school students: *Social and Behavioural Sciences*. 15, 765-768. <http://dx.doi.org/10.1016/j.sbspro.2011.03.180>
- Mushtaq, I., & Khan, S. (2012). Factors affecting student's academic performance: *Global Journal of Management and Business Research*. 12(9).
- O'Gorman, J. (2014). Investigating both the relationship between CSE and academic satisfaction/performance and the validity of CSE: *Department of Psychology, Dublin Business School*.
- Passer, M., Smith, R., Holt, N., Bremner, A., Sutherland, E., & Vliek, M. (2009). *Psychology: The Science of Mind and Behaviour*. Berkshire: McGraw-Hill Education.
- Passer, M., Smith, R., (2011). *Psychology: The science of mind and behaviour* (5th ED). McGraw-Hill
- Percival, G. (2015). 82% of Irish workers are stressed. Retrieved February 21, 2017, from Irish Examiner website: <http://www.irishexaminer.com/business/82-of-irish-workers-stressed-351525.html>
- Picard, M. (2015). Study of the Effect of Dogs on College Student's Mood and Anxiety. Retrieved February 21, 2017, from

<http://digitalcommons.library.umaine.edu/cgi/viewcontent.cgi?article=1227&context=honors>

- Pohnert, T. (2010). The effects of pet ownership on physical well-being in older adults. Retrieved February 21, 2017, from <http://scholarscompass.vcu.edu/cgi/viewcontent.cgi?article=3237&context=etd>
- Robinson, J. P., Shaver, P. R., Wrightsman, L. S. (1991). Measures on Personality and Social Psychological Attitudes: *Volume 1 in Measures of Social Psychological Attitudes Series* (2nd ed.). Academic Press, Inc.
- Sau Kuan, C., Hsien-Jin, T. (2005). The Effect of Owning a Pet on Self-Esteem and Self-Efficacy of Malaysian Pet Owners: *Sunway Academic Journal*, (2), pp. 85-91.
- Serpell, J. (1991). Beneficial effects of pet ownership on some aspects of human health: *Journal of the Royal Society of Medicine*. 84(12), 717-720
- Serpell, J. (1996). In the company of animals: A Study of Human-Animal Relationship. Cambridge University Press.
- Siegel, J. (1990). Stressful life events and use of physician services among the elderly: the moderating role of pet ownership: *Journal of Personality and Social Psychology*. 58(6), 1081-6.
- Sim, H., & Moon, W. (2015). Relationships between Self-efficacy, Stress, Depression and Adjustment of College Students: *Indian Journal of Science and Technology*. 8(35). DOI: 10.17485/ijst/2015/v8i35/86802
- Soc, W. (1995). Pets, Attachment, and Well-being across the life cycle: *Social work*. 40(3), 334-341. DOI:<https://doi.org/10.1093/sw/40.3.334>
- Spun Out [SO] (2017). Battling a low self-esteem. Retrieved February 21, 2017, from <http://spunout.ie/opinion/article/battling-low-self-esteem/>
- Straatman, I., Hanson, E., Endenburg, N., & Mol, J. (2015). The influence of a dog on male students during a stressor: *A Multidisciplinary journal of the interactions of people and animals*. 10(4), 191-1997.
- The Independent. (n.d.). Retrieved February 21, 2017, from Independent website: <http://www.independent.ie/life/family/irelands-largest-pet-ownership-study-heres-all-the-facts-you-need-to-know-34505427.html>

- Trotter, K. (2012). *Harnessing the power of equine assisted counselling: Adding Animal Assisted Therapy to Your Practice*. New York: Taylor and Francis group.
- Vaezi, S., & Fallah, N. (2011). The relationship between self-efficacy and stress among Iranian EFL teachers: *Journal of Language Teaching and Research*. 2(5), pp. 1168-1174.
doi:10.4304/jltr.2.5.1168-1174
- Waugh, D. (2015). 73% of students say the cost of college causes them anxiety or stress. Retrieved February 21, 2017, from Union of students in Ireland website:
<http://usi.ie/featured/73-of-students-say-the-cost-of-college-causes-them-anxiety-or-stress/>
- Wilson., Cindy, C. (1987). Physiological Responses of College Students to a Pet: *Journal of Nervous & Mental Disease*, 175(10).
- Zajacova, A., Lynch, S. M., Espenshade, T. J. (2005). Self-efficacy, Stress, and Academic Success in College: *Research in Higher Education*, 46(6). Doi: 10.1007/s11162-004-4139-z

Appendices

Letter of introduction

Dear participants,

My name is Tergel Khashbat and I am a final year student of BA psychology at Dublin Business School. I am investigating if there is an effect of pet ownership on student's level of stress, self-esteem, self-efficacy and if it has an impact on their academic performance...therefore collecting sample questionnaire data as part of the research that is being conducted as part of my thesis and will be submitted for examination.

You are invited to **take part in this study if you are 18 and over and currently a student.** Participation involves completing and returning this questionnaire which is completely anonymous, therefore once submitted cannot be withdrawn.

Although questionnaires may ask some questions that may cause some minor negative feelings, it has been widely used in research. If any of the questions raise difficult feelings, contact information for support services are included on the final page and you are welcome to detach the page and keep it with you.

Consent form

Participation is completely voluntary therefore you are not obliged to take part.

I understand that I am free to withdraw from this study at any given time without an explanation

I understand that by completing and submitting the questionnaire I am consenting to participate in this study.

If you have any questions please do not hesitate to ask.

Thank you for taking the time to complete this survey.

Many thanks

Tergel Khashbat

BA hons psychology

xxxxxxx@mydbs.ie

Demographic questions

Please circle or fill in the answer

1. What sex are you? Male Female Other
2. What age are you? _____years
3. Do you own any pets? yes no

How satisfied are you with your academic performance to date? (Please circle answer)

very unsatisfied unsatisfied neutral satisfied very satisfied

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you **strongly agree**, tick in that column. If you **agree** with the statement, tick in the agree column. If you **disagree**, tick disagree. If you **strongly disagree**, tick strongly disagree.

		Strongly disagree	disagree	agree	Strongly agree
1.	On the whole, I am satisfied with myself.				
2.*	At times, I think I am no good at all.				
3.	I feel that I have a number of good qualities.				
4.	I am able to do things as well as most other people.				
5.*	I feel I do not have much to be proud of.				
6.*	I certainly feel useless at times.				
7.	I feel that I'm a person of worth, at least on an equal plane with others.				
8.*	I wish I could have more respect for myself.				
9.*	All in all, I am inclined to feel that I am a failure.				
10.	I take a positive attitude toward myself.				

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

	Never	Almost never	Some- times	Fairly often	Very often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	<input type="checkbox"/>				
2. In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="checkbox"/>				
3. In the last month, how often have you felt nervous and "stressed"?	<input type="checkbox"/>				
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="checkbox"/>				
5. In the last month, how often have you felt that things were going your way?	<input type="checkbox"/>				
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	<input type="checkbox"/>				

	never	Almost never	sometimes	fairly often	very often
9. In the last month, how often have you been able to control irritations in your life?	<input type="checkbox"/>				
10. In the last month, how often have you felt that you were on top of things?	<input type="checkbox"/>				
11. In the last month how often have you been angered because of things that were outside of your control?	<input type="checkbox"/>				
12. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	<input type="checkbox"/>				

Please insert the number from 1-4 that describes you best and be open and honest in your responding.

1
Not at all true

2
Hardly true

3
Moderately true

4
Exactly true

1. I can always manage to solve difficult problems if I try hard enough. _____
2. If someone opposes me, I can find the means and ways to get what I want. _____
3. It is easy for me to stick to my aims and accomplish my goals. _____
4. I am confident that I could deal efficiently with unexpected events. _____
5. Thanks to my resourcefulness, I know how to handle unforeseen situations. _____
6. I can solve most problems if I invest the necessary effort. _____
7. I can remain calm when facing difficulties because I can rely on my coping abilities. _____
8. When I am confronted with a problem, I can usually find several solutions. _____
9. If I am in trouble, I can usually think of a solution. _____
10. I can usually handle whatever comes my way. _____

Thank you for your participation in this study.

Thank you for taking the time to participate in this study. If any issues emerged as a result of completing this questionnaire, below are contact details of support groups which can help.

AWARE: 01 661 7211

The Samaritans: 116123