

Impact Of Human-Animal-Interactions On High School Students' Learning Outcomes In Vietnam

Luong Tuan Anh^{1*}, Dao Le Minh Anh², Nguyen Khanh Tran³

^{1*}National Economics University, Email: anhlt@neu.edu.vn

²British Vietnamese International School

³Le Quy Don High School

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ABSTRACT

The objective of this paper is to evaluate the effect of Human-animal-interactions on learning performance of high school students in Vietnam through an intermediary mechanism. The study was conducted from December 2023 to April 2024. The data was collected through a questionnaire and analyzed using Smart PLS 4.1 software. The results show that Human-animal-interactions has a positive impact on the learning performance of high school students in Vietnam through direct and intermediate impact mechanisms.

Keywords: Human-animal-interactions, Learning Outcome

1. Introduction

Throughout history, animals have had many important impacts on human life, in which, the domestication of wild animals into pets and pets has made the relationship between humans and animals closer than ever. As of 2024, 66% of the world's population owns at least one household pet. In addition, this percentage has also been recorded to increase to 80% - during the time when the whole world is facing the Covid-19 epidemic - from 2020 to 2022. In Vietnam in particular, according to statistics as of 2021, there are about 25%, equivalent to 24 million people owning pets. Pets are believed to not only have a positive effect on psychology but can also improve the physical health of their owners. According to some studies, playing with pets triggers the production of oxytocin, a hormone that helps reduce stress (according to a study by Allen et al 2003). Plus, according to some surveys conducted in the United States, 80% of the population agrees that having a pet makes them more motivated to get out of the house. This helps improve physical health.

Although there are some evidence in the world today that confirm that owning a pet brings many benefits, these confirmations are not supported by concrete evidence. Most of the research conducted around this topic is based on correlation, i.e. only showing the relationship between the two variables (interest and pet ownership), but not showing specific information about whether one variable is the cause of the change of the other. Specifically, in the study of Brooke et al (2011), the results obtained show that mental health is directly proportional to pet ownership. More specifically, 90% of pet owners, in interviews and survey questionnaires, said that exposure to pets is directly proportional to mental well-being, but the above information is not reliable enough to conclude that pet ownership is the cause of improved mental health. In addition, the majority of these studies

Because previous studies have not been conducted in the context of life in Vietnam, the results obtained cannot accurately reflect the relationship between pets and owners for Vietnamese people. Therefore, this study was conducted in Vietnam, with the aim of finding out the effects of pets on the mental health of owners, more specifically students in middle and high school age.

2. Literature review

2.1. Human-animal-interactions and Bonding

Interactions between humans and animals, commonly referred to as HAI (human-animal interactions), have been shown to have a variety of beneficial impacts on pet owners, according to the findings of a number of studies that were conducted in the past (Hosey & Melfi, 2014; Kotrshcal and Ortbauer, 2003). The potential to inspire people who own pets is the first thing that needs to be mentioned. When a person has a pet in their

home, they will feel a sense of responsibility to ensure that the pet is well taken care of. Those individuals who have already gone to work will, as a result, have a greater desire to improve their performance at work (Herzog, 2007). To be able to take care of your pets, you need to earn enough money each month. On the other side, those who are students have a tendency to exert more effort in their academic pursuits in order to receive a pet as a reward from their parents. Additionally, interacting with pets helps the brain generate chemicals that promote pleasant feelings, which is another benefit of engaging with pets (Edwards-Callaway, 2018). This makes it possible for the owner's spirit to be constantly rejuvenated, which in turn leads to increased initiative and productivity in both the workplace and the classroom.

2.2. Human-animal-interactions and Engament

Having a pet can also help owners better regulate their emotions, according to Poresky and Hendrix (1990). This is another way that pets can have an emotional impact. It is impossible for us to escape situations in which we are confronted with challenges or pressure in our day-to-day lives. At situations like this, people have a tendency to be irritated and cold to those who are in their immediate vicinity. On the other hand, as was said before, the process of rearing and engaging with pets can result in the regular release of hormones that promote happy emotions, which in turn helps to soothe negative negative emotions. Consequently, persons who own pets are afforded the time to reflect on their actions and words, thereby preventing them from causing harm to those in their immediate vicinity. owning pets can also make owners more responsible, which is another benefit of owning pets. Pet owners will be aware that they are responsible for providing enough care for their animals, and as a result, they will be able to avoid feeling lazy and instead make an effort to organize their work schedules in such a way that they have time for their pets. From that point on, not only should the sense of duty in the process of rearing pets be improved, but also the sense of responsibility in the working environment should be improved.

2.3. Engament and Learning outcome

Not only can pets have a beneficial impact on people's personal lives, such as motivation, but they also have a significant favorable impact on people's social lives (Fine, 2015). Simply said, having a pet makes it easier for the owner to become more involved in the connections that are a part of their life. On a social level, these relationships might be as tight as those between family members or close friends, or they can be like those between coworkers or partners. This is because the profound link that develops between an owner and their pet over a prolonged length of time can enable the brain to become accustomed to releasing chemicals such as oxytocin and endorphin, which are hormones that alter feelings of happiness and compassion. This is the reason why pets are able to effect their owners in this manner. Consequently, when the owner interacts with the people around them, they are able to readily sympathize and comprehend them, which brings these interactions closer together and makes them more effective.

2.4. Human-animal-interactions and Learning outcome

Additionally, owning a pet not only makes people feel more emotionally connected to one another, but it also helps us feel more connected to one another through the daily social interactions that we have with one another (Mc Cune et al, 2014). As a result, people who keep pets have the opportunity to enhance their social interactions. One of the reasons for this is because when a pet is being raised, the owner is required to make time to do things like walk the pet. When you leave the house in this manner, you might run across people who share your passion for animals or who also own pets; in such cases, pets are likely to become the primary topic of discussion throughout your interactions with these individuals. The proprietor has the opportunity to make a new friend, broaden his social circle, and raise his social capital thanks to this location. In addition, people who own pets are more likely to participate in pet-related groups on social networking platforms like Facebook or Instagram. This is because pet owners are more inclined to spend time with their animals. Because of this, owners have the opportunity to gain additional knowledge from other people and to make friends with others who have hobbies that are similar to their own and that are related to pets (Zulkifli, 2013).

In a nutshell, the presence of pets has the ability to significantly enhance the lives of their owners. The majority of people who own pets are likely to be more content with their current life and worship, which means that they are more likely to put in more effort at work and in their studies. There is a high probability that the academic outcomes will be favorable for kids who possess dogs, as comparison to those who do not own pets.

3. Research methods

Research Sample

The investigation was carried out with high school students in Ho Chi Minh City, which is the most populous city in Vietnam. Following the filtering of the remaining 311 legitimate survey votes in order to carry out data analysis, the study was carried out between the months of December 2023 and April 2024, and the results obtained 384 overall survey votes. According to Hair et al. (2019), the data was analyzed by utilizing the Smat PLS 4.1 software. The analysis consisted of two phases: the evaluation of the measurement model and the evaluation of the structural model.

Research Model

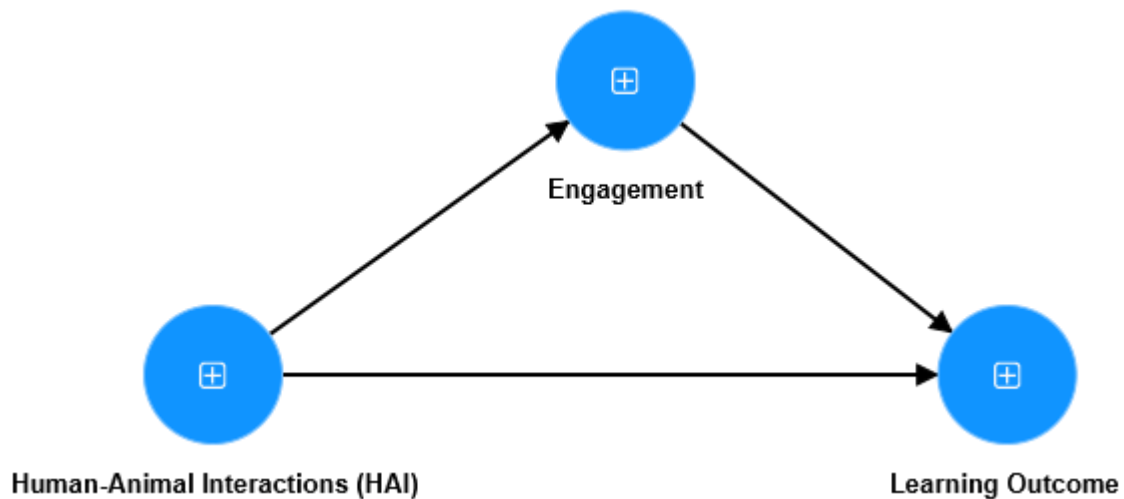


Fig. 1. Research Model

Measuring Research Variables

TWO stands for human-animal interaction – an all-encompassing term that describes any kind of interaction or behavior that takes place between people and animals. There is a wide range of possible outcomes for these interactions, which can be either favorable, negative, or neutral for either party. They can take place in the context of an individual, a community, or a social setting. There have been a number of studies that have investigated the topic of evaluating the influence of HAIs by looking at them via the idea of development. To be more explicit, it is dependent on the ability to self-regulate as well as the control of mental activities that are executive in nature. According to Griffin, Fruend, McCardle, DelCarmen-Wiggins, and Haydon (2016), there is a widespread consensus that the two skills have a significant impact on the quality of academic performance that students obtain. Additionally, in the research conducted by Diamond (2016), the team came to the conclusion that students can increase their ability to concentrate by engaging in regular interactions with animals. This conclusion was reached after assessing the amount of time that 25 students in a class were able to concentrate on an assignment that was made available by the instructor in the classroom.

In the context of society, the term "engagement" refers to the interaction and connection that exists between individuals, whether it be with the intention of bringing something to the forefront or promoting something that deserves better. Those who are interested in people and the media draw attention to the extraordinary capacity of the connection between humans and animals, which can give children with learning chances that are not available to other children. The research team consisting of Rajan, Gee, Golinkoff, and Hirsch-Pasek (2017) examined the advantages that animals can provide to children through their participation in activities. Specifically, children who are enrolled in kindergarten. The group carried out surveys and observed pupils from a number of kindergartens in the region while they were engaged in extracurricular activities (the total sample size was estimated to be approximately 4,000 students). According to the findings of the poll, students who had dogs at home were more engaged in their interpersonal relationships with their peers and more likely to communicate with them. In the event that they are involved in a dispute with their contemporaries, they are also able to control their feelings and propose appropriate solutions..

The process of initiating, directing, and maintaining deliberate behaviors in order to accomplish a predetermined plan is referred to as motivation. Motivation is a conceptual phrase that describes the process. Instinctive, emotional, physiological, and social needs are the components that make up something that motivates someone. In a general sense, motivation is the source of intrinsic strength in individuals, as well as the source of energy and enthusiasm to engage in a particular activity. It has been established beyond a reasonable doubt that animals play a significant role in the lives of children (Tompsonowski, Davis, Miller, & Naglieri, 2008), and teachers have successfully blended the two in order to pique the interest and attention of their students (Gee, 2011). In their article, Hummel and Randler (2012) reference the common opinion that the incorporation of live animals (as opposed to photographs or films of animals), particularly in the context of science education, boosts and encourages deeper learning. The evidence from the research that were discussed earlier demonstrates that engaging kids leads to significant advancements in academic ability. In the questionnaire, ninety percent of pupils attending a primary school indicated that they are interested in learning about animals.

Self-regulation is a method of self-management that is aware and involves the act of self-guiding one's own thoughts, behaviors, and emotions in order to accomplish one's objectives. Discipline and self-control are essential. Individuals are required to assume the position of individual contributors to their own motivation, behavior, and growth within the context of a network of influences that interact with one another during various stages. According to the research conducted by Kazdin (2017), HAI has an indirect impact on learning because it directly improves or enhances components of executive function (EF; attention, self-regulation, etc.) and social interaction through direct or indirect influence on child motivation and engagement. Through observations made at a school with approximately 500 pupils, it was discovered that children who had dogs at home demonstrated communication abilities that were both quicker and more animated than those of their peers. In addition to this, they engage in more activities and active interactions with the people around them than students who do not have dogs in their personal lives.

Social interactions, Social contacts, which are also known as exchanges between two or more individuals, are a fundamental component of society and are also known as social interactions. There are three different types of social groups that can be studied: groups of two (duo), groups of three (triple), and bigger social groupings. The norms, institutions, and systems that people desire to live in are designed by the people themselves via their interactions with one another. It has been suggested by Melson (2003) that companion animals can help young children develop their cognitive abilities by fostering their curiosity and facilitating their learning, in addition to giving them with emotional support. The interactions that children have with animals do not take place in a social vacuum but rather as a part of a wider network of social connections. Pets have the potential to act as catalysts for social cohesiveness and cohesion in larger social settings, such as classrooms, schools, and neighborhoods. The reason that pets can have a good impact on the social connections of young children is that they help catch the attention of other children when they are out with their owners. This helps to enhance the likelihood that the children will make more friends.

Social capital is The physical and mental work, organizational abilities, social regime, habits, and beliefs of human groups are all examples of a social resource, which is often referred to as a human resource. This type of resource is a special form of renewable resource. Because of the existence of social relationships, social resources can be accessed. According to research conducted by McCune et al. in 2014 and 2015, having a pet has a number of positive effects on a person's social and emotional development. This helps owners, particularly preschool-aged children (the period between three and five years old is a golden time for the development of emotional and social abilities in children), to build skills early on that are important for regulating the social relationships that are around them. An EQ test was administered to twenty children, comprised of both males and females, in one study. Ten of these twenty youngsters had pets at home, whereas the other ten did not have any pets at home. By use of the emotional intelligence exam, children that have a significant amount of social capital (friends, family, and academics) will frequently have a higher level of emotional intelligence than their respective peers.

Learning Outcome is an alteration in the learning component, such as skills, abilities, knowledge, or quantitative qualities, that occurs when people acquire interaction with animals (pets). According to the findings of research conducted by Hummel and Randler (2012), the incorporation of animals into classroom lectures increases the amount of learning and exploration that students engage in. When it comes to the teachings, many kids are more interested in them when they are related to animals (for example, animal stories or animal-related topics). Therefore, researchers observed and assessed more than 200 elementary schools across the United States and other European countries, and they came to the conclusion that pupils' academic achievement is directly proportionate to the amount of time they spend interacting with animals.

4. Research results

The results of the evaluation of the measurement model are as follows:

Table 1: Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Engagement	0.732	0.827	0.833	0.575
Human-Animal Interactions (HAI)	0.739	0.823	0.809	0.599
Learning Outcome	0.881	0.882	0.919	0.739

The results showed that all snghene margins were satisfied with the condition suggested by Hair et al (2019).

Table 2: Discriminant validity Heterotrait-monotrait ratio (HTMT)

Heterotrait-monotrait ratio (HTMT)

Human-Animal Interactions (HAI) <-> Engagement	0.348
Learning Outcome <-> Engagement	0.587
Learning Outcome <-> Human-Animal Interactions (HAI)	0.599

The results showed that all significance margins were satisfied with the condition suggested by Hair et al (2019, 2020, 2021, 2022), Memon et al. (2021).

Table 3: Model fit

	Saturated model	Estimated model
SRMR	0.078	0.078
d_ULS	0.638	0.638
d_G	0.196	0.196
Chi-square	714.829	714.829
NFI	0.807	0.807

The results showed that all significance margins were satisfied with the condition suggested by Hair et al (2019). The results of hypothesis testing are as follows:

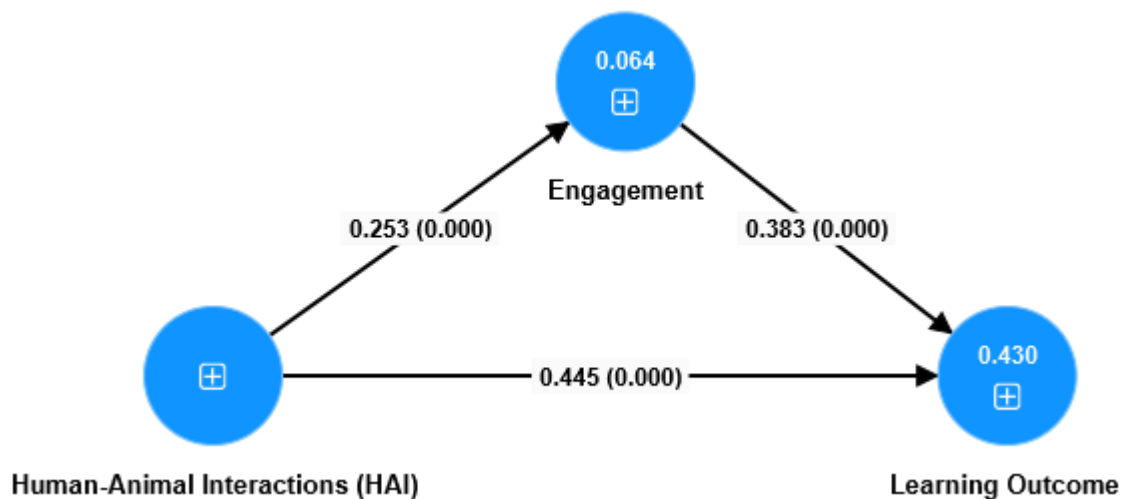


Fig. 2. Research Results

The results of the study show that HAI has a positive impact on the learning performance of high school students in Vietnam with a direct impact coefficient of 0.445 at a meaningful level of 1% ($P_{\text{value}} = 0.000$). At the same time, HAI also affects learning outcomes through the intermediate variable of Engagement at the impact level of 0.253 and 0.383 respectively and at the same meaningful level of 1% ($P_{\text{value}} = 0.000$). This means that HAI has a very positive impact on the engagement and commitment of high school students, which in turn will help improve the learning outcome of high school students in Vietnam.

Table 4: Path coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ($ O/STDEV $)	P values
Engagement -> Learning Outcome	0.383	0.382	0.034	11.127	0.000
Human-Animal Interactions (HAI) -> Engagement	0.253	0.257	0.037	6.771	0.000
Human-Animal Interactions (HAI) -> Learning Outcome	0.445	0.446	0.028	15.918	0.000

The results of the synthesis of research hypotheses are presented in Table 4.

5. Conclusion

A little over ten years ago, dogs and cats that were kept inside the house were still thought to be tools that were used to hunt rodents and take care of the house. In Vietnam, the introduction of Western culture has resulted in the trend of pet ownership among young people. This trend has been observed since the introduction of Western culture. From 2016 to 2021, the number of pets in Vietnam has climbed from 21 million to 27 million. This represents a significant growth. There is a consistent upward trend of 15-20% in the number of pets that are retained throughout the year, particularly in large cities, according to the statistics. Young people in today's

society have a tendency to delay getting married, and they sometimes choose to get pets (dogs or cats) so that they can have a companion and confide in them after long hours of work. The term "children" is even used by some people to refer to their pets. They refer to themselves as "daddy" and "mother," and they refer to their pets as "children." Young children can learn how to care for and cultivate affection for animals by taking care of pets, which is also a very wonderful approach for them to learn how to do so... Because of this, a lot of households also decide to include their dogs as members of the family. A survey that was conducted randomly among three thousand people from all around the country revealed that dogs continue to be the most popular pet in the modern day, with 76.9% of people choosing to keep dogs as home pets. In this environment, the development of contests and festivals in Vietnam that specialize in technology, pet care products and services has begun to grow. It is anticipated that these events will serve as a bridge to assist businesses in connecting with one another, finding partners, and developing the pet sector in Vietnam.

Additionally, as the economy continues to develop, the personal economic conditions of each individual are also increasing. Pet owners are now showing a greater interest in beauty products for their pets, such as jewelry, outfits, and other items. This is a fantastic potential for young people to engage in business in this sector. Many people who own pets nowadays are interested in a variety of aspects, including the requirements for food, beauty services, and medical care, in addition to the requirements for food. When searching for and selecting a veterinary clinic, two of the most essential factors that people frequently take into consideration are the reputation of the veterinarian and whether or not he is dedicated to his work. The location is convenient, and the fee is reasonable. There are many different kinds of pets that people in Vietnam want to keep as pets, including dogs, cats, turtles, birds, fish, hamsters, and so on. In Vietnam, there are around fifty different types that are cultivated. Dog breeds that are popular in the Western region include the Bulldog, Poodle, Corgi, Phoc, Alaska, and Husky. Furthermore, domestic dog breeds such as the Phu Quoc Whirlwind, the H'mong Tail, and the Bac Ha are not any less popular than other breeds. Individuals in this day and age frequently engage in the pastime of rearing their own cats as well as Western cats, including Persian cats, British long-haired cats, Russian cats, and so on. As a result of the fact that the majority of households now consider their pets to be members of their family, the trend of owning pets is growing. In addition, it is well known that having a pet would confer a multitude of advantages upon human beings, particularly on children who are still in the process of mature development. When society becomes more integrated on a global scale, Western societal tendencies will have an impact on other countries, including Vietnam.

Both children with normal development and children with disabilities can reap the benefits of human-pet interactions, which include the alleviation of stress and anxiety, the enhancement of social interaction, and the enhancement of motivation and participation in the learning process. There is a significant presence of animals in more than half of all families in the Western world, indicating that they are also an essential component of human existence. The concept that caring for a companion animal can have a positive impact on a person's health is referred to as the "pet effect." In addition to giving emotional support, companion animals have the ability to boost the cognitive development of young children through the stimulation of their curiosity and learning interests. The interactions that children have with animals do not take place in a social vacuum but rather as a part of a wider network of social connections. Pets have the potential to act as catalysts for social cohesiveness and cohesion in larger social settings, such as classrooms, schools, and neighborhoods. The presence of animals in educational settings has the potential to enhance the social interactions amongst students, particularly those with social skills deficiencies that are associated with developmental disabilities. Animals are a terrific way to stimulate cerebral enthusiasm and encourage a significant level of participation in life.

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