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Table of Content

The New Great Learning Oneness Epistemic Model:

A Philosophical Analysis of the Concept of Oneness and its Application in Veganism

Terence, Kuong U HUN

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Abstract

Being an essential idea in ancient thought, the concept of Oneness becomes increasingly crucial again following intense technological advancements and processes of globalization. Multiple planetary crises, such as environmental pollution, global warming, deforestation, destruction of marine ecology, and pandemics, are rooted in the lack of consciousness of Oneness. One main consequence is the large-scale reality of animal farming and overfishing. The present paper facilitates the concepts of the Great Chain of Being in the West and of the Unity of Heaven and Man in China in view of addressing these multiple crises to find solutions. Furthermore, the philosophy of Great Learning, one of the Confucian classics, focusing on personal development, is suitable for applying the Oneness concept in our era of hyper-individualism. Building on the New Great Learning philosophy of Oneness, the thesis integrates relevant Chinese and Western ideas to create a more peaceful and sustainable world. The practical application of veganism is suggested as an effective method to address and reduce the consumption of cruel, polluting, and unhealthy animal products. This is worked out as a model to help people reconnect better with Nature and each other with love in view of building a more sustainable and peaceful world.

Keywords: animal ethics, Chuang Tzu, climate change, Confucianism, COVID-19, Daxue, environmental ethics, epistemology, global warming, globalization, Great Chain of Being, Great Learning, Heraclitus, *I Ching*, Lao Tzu, micro-plastics, Oneness, pandemic, plague, Plotinus, Taoism, Unity, veganism, vegetarianism, Will Tuttle.

Introduction

In the era of the Anthropocene, human activities are pushing our planet toward unprecedented global warming with dire consequences. Blinded by short-term goals, people and governments exacerbate the waste of resources and energy and the creation of pollution, social inequality, and waste. On the personal level, many lose sight of their ability to discern truth, goodness, and beauty, letting themselves be trapped in a vicious cycle of materialism and emptiness. Some hold on to the false hope in technological progress alone, akin to expecting a mythical hero to solve the problems.

New knowledge and applications that reverse our planet's dire trajectory are crucial at this historical juncture. The World has to be seen as an interconnected whole, from the material level to the highest form of consciousness. A unified cognitive model reflecting our typical human and ecological existence could help pave the way to harmonious and sustainable solutions.

Although essential in many philosophies, the notion of Oneness has been overshadowed by reductionism, isolationism, and specializationism. Both Western and Chinese traditions engaged the concept of Oneness, but it suffered from a lack of attention since the rise of modern science and technology, also contributing to societal issues like isolation and loneliness. Losing sight of Oneness also lurks at the core of significant global problems such as climate change, pandemics, and resource scarcity.

This thesis aims to construct a new cognitive system centering on the concept of Oneness, capable of addressing the 21st-century global crises. The study will explore the historical concepts of Oneness/Unity in significant schools of thought in ancient Greece and China, focusing on the Western Great Chain of Being and the Chinese Unity of Heaven and Man. The goal is to construct a new Oneness epistemic system based on *The Great Learning*'s philosophy combining elements from Western and Chinese traditions. Furthermore, veganism is proposed as one practical translation and application of this oneness philosophy to effectively address the global intellectual, spiritual, ecological, and social crises, paving the way for sustainable development and the survival of ecosystems and human civilization.

Chapter One
Challenges and Opportunity of Globalization

The Age of Discovery witnessed Western powers' expansion and competition for colonies, leading to rapid industrialization and a massive industrial-consumerist society with a tremendous impact on our planet. In the past, human society was part of the Earth's closed-loop circular ecosystem. However, the modern industrial model of production and consumption is based on a linear non-recyclable end-of-pipe system, using the atmosphere, land, and water as emission tanks. This model results in tremendous overconsumption and waste of natural resources, carbon dioxide accumulation, and pollution of air, soil, and water with heavy metals and plastics. A linear mindset, short-term perspectives, anthropocentrism, blind faith in science and technology, and the absence of a holistic understanding of the ecosystem and society are the root causes of this unsustainable model, which undoubtedly leads to the collapse of the Earth's ecosystem and threatens humans and all living beings with extinction.

1.1 Meat, Eggs, Milk Production and Overfishing: The Road to Total Destruction

Global warming has received the most attention among multiple crises due to its complexity and factual consequences. Scientists are highly concerned about reaching irreversible tipping points, causing weather extremes with disastrous consequences. The U.N. flagship Report, *ClimateChange 2022: Mitigation of Climate Change*[1] by the Intergovernmental Panel on Climate Change (IPCC), indicates that the harmful carbon emissions from 2010-2019 reached the highest level in human history, urging to limit global warming to 1.5 degrees. Unless immediate action is taken, some major cities will soon be underwater. The U.N. Secretary-General Antonio Guterres warns of "unprecedented heatwaves, terrifying storms, widespread water shortages and the extinction of a million species of plants and animals."[2] According to the 2006 FAO report *Livestock's Long*

1 Intergovernmental Panel on Climate Change, *ClimateChange 2022: Mitigation of Climate Change, the Working Group III Contribution to the Sixth Assessment Report*, (Geneva: IPCC, 2022); https://www.ipcc.ch/report/sixth-assessment-report-working-group-3/.

2 UN News, "UN Climate Report: It's 'Now or Never' to Limit Global Warming to 1.5 Degrees," April 4th 2022,
https://news.un.org/en/story/2022/04/1115452#:~:text=A%20new%20flagship%20UN%20report,limit%20global%20warming%20to%201.5.

Shadow: Environmental Issues and Options,[3] the livestock sector generates more greenhouse gas emissions as measured in CO2 equivalent (18 %) than the entire global transport system (15 %). It also accounts for a significant source of land and water degradation. Global meat production is projected to double from 229 million tonnes in 1999/2001 to 465 million tonnes in 2050, while milk output is set to climb from 580 to 1043 million tonnes. "Livestock are one of the most significant contributors to today's most serious environmental problems. Urgent action is required to remedy the situation," explains Henning Steinfeld, Chief of FAO's Livestock Information and Policy Branch. "The environmental costs per unit of livestock production must be cut by one half, just to avoid the damage worsening beyond its present level," the FAO report warns sternly. Livestock generates 9% of CO2 emissions from human-related activities. However, it also produces a high percentage of harmful other greenhouse gases, such as 65% of nitrous oxide, 37% of methane, and 64% of ammonia, gases that have a much greater warming potential than CO2, e.g., Nitrous oxide, deriving mainly from manure, is 296 times more potent than CO2; methane 23 times; and ammonia is one of the significant contributors to acid rain.

According to the study, livestock currently occupies 30% of the planet's surface, generally as permanent pasture, with 33% of the World's arable land allocated to producing livestock feed. Deforestations occur primarily to make way for new fields, particularly in Latin America, where, for instance, almost 70% of the Amazon's former forests have been converted to grazing pastures. Herds likewise contribute to widespread land degradation; due to overgrazing, compaction, and erosion, roughly 20% of pastures are deemed to be degraded. About 20% of all biomass from terrestrial animals is now mainly composed of meat and dairy-producing animals. Livestock is associated with reducing 15 out of 24 essential ecosystem functions, with their presence on large land areas and demand for feed crops contributing to biodiversity loss. A study by GRAIN and the Institute for Agriculture and Trade Policy found that the World's five giant meat and dairy producers contribute more greenhouse gases than the top three oil producers together, ExxonMobil, Shell, and

3 United Nations/Food and Agriculture Organization *Livestock's Long Shadow: Environmental Issues and Options* (Rome: FAO, 2006), https://www.fao.org/3/a0701e/a0701e00.htm.

B.P. After studying the 35 biggest beef, pork, poultry, and dairy producers' greenhouse gas emissions, the researchers discovered that the companies' emissions are dangerously high due to unchecked expansion and government subsidies to guarantee low production costs and supplies, such as animal feed. According to the report, a large number of major meat and dairy businesses fail to register their emissions, and many are growing their production without attempting to lower their emissions. If the output is unchecked, meat and dairy farms will be responsible for 80% of anticipated greenhouse gas emissions by 2050.[4]

While the land has been overused and highly polluted, the condition of the oceans is even worse. According to the US-based Pew Commission, agricultural runoffs, which include livestock feces and fertilizers applied on crops used for producing animal feed, are the biggest threat to the global marine ecosystems, followed by overfishing.[5] There exist already more than 400 dead zones in the oceans caused by fertilizer runoffs, primarily from cattle, adding to the lack of required oxygen in the ocean.[6] According to scientists, almost 90% of large fish in oceans have vanished during the past 50 years due to the consequences of industrial fishing.[7] They stated that if fishing continues at the current rate, all fish species will be endangered worldwide by the year 2050 and that prompt recovery activities are required.[8]

There is an apparent connection between industrialized overfishing and global warming. When the ecosystems are damaged by fishing, the ocean's capacity to absorb

4 GRAIN and the Institute for Agriculture and Trade Policy (IATP), "Emissions Impossible: How Big Meat and Dairy Are Heating up the Planet," July 18, 2018, https://grain.org/article/entries/5976-emissions-impossible-how-big-meat-and-dairy-are-heating-up-the-planet.

5 Leon E. Panetta, "America's Living Oceans: Charting a Course for Sea Change" (PEW Oceans Commission, May 2003), https://www.pewtrusts.org/en/research-and-analysis/reports/2003/06/02/americas-living-oceans-charting-a-course-for-sea-change.

6 Robert J. Diaz and Rutger Rosenberg, "Spreading Dead Zones and Consequences for Marine Ecosystems," Science 321, no. 5891 (2008): 926–29.

7 "Big Fish Stocks Fall 90 Percent Since 1950," *National Geographic News*, May 15, 2003, https://news.nationalgeographic.com/news/2003/05/0515_030515_fishdecline.html.

8 "Oceans' Fish Could Disappear by 2050," Discovery News, May 17, 2010, http://news.discovery.com/earth/oceans-fish-fishing-industry.html.

greenhouse gases decreases rapidly. Ocean acidification[9] and rising ocean temperatures are drastically changing aquatic marine habitats. "Healthy diets and sustainable food systems,"[10] according to a 2019 study published in The Lancet, a shift in diet towards plant-based food and away from animal products, is essential for boosting a healthy planet. Future projections emphasize that "vegan and vegetarian diets were associated with the greatest reductions in greenhouse-gas emissions." By 2050, switching to a plant-based diet could reduce greenhouse gas emissions from food production by 70% and the mortality rate by 10%, respectively. Subsidizing foods intended for human consumption instead of those made from animals might aid in the battle against climate change and promote public health.

1.2 Pandemic: On the Tragic Relationship with Animals

Since the domestication of animals during the Neolithic period (circa 3900 BC), diseases like measles, plague, and smallpox have been on the rise. Global epidemics of zoonotic illnesses, including HIV, Ebola, SARS, MERS, H1N1 swine flu, COVID-19, monkeypox, etc., have often occurred in recent decades. Animals are the source of more than half of all human infections. Furthermore, zoonotic infections comprise between 60% and 76% of newly emerging infectious diseases.[11]

Being the most recent and impactful pandemic of modern times, COVID-19 has left the most extensive traumatic impact worldwide. However, the nature and the consequences of zoonotic diseases have not yet been considered sufficiently. From the World Health Organization and most governments to mainstream media, most discussions have been focused on pandemic policies, vaccinations, sovereign remedies, etc. Regarding this issue,

9 Ocean acidification is the ongoing decrease in the pH value of the Earth's oceans, caused by the uptake of carbon dioxide from the atmosphere which has been increased due to human actions since the industrial revolution began.

10 Rasmus Einarsson, Gavin McCrory, and U Martin Persson, "Healthy Diets and Sustainable Food Systems," The Lancet 394, no. 10194 (June 21, 2019): 215. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)31116-X/fulltext

11 K. E. Jones et al., "Global Trends in Emerging Infectious Diseases," Nature, no. 451 (2008): 990–993.

people were easily lured into believing that the development of technology would be the only solution against epidemics (scientism). Few people reflect on the source of the virus and the dangerous eat-and-be-eaten relationship that exists between humans and animals. The scholars Jan Dutkiewicz and Justin Bernstein offer three plausible solutions for countering the danger of zoonotic diseases by limiting or even ending intensive animal husbandry.[12] They recommend (1) the promotion of plant-based food alternatives by offering government subsidies, (2) discouraging intensive animal source food use by implementing a "zoonotic tax," and (3) in the long run, banning such food sources.[13] The enormous number of life-stock animals confined in filthy industrial farms make the Earth a breeding ground for viruses. People may be more motivated to reconsider their established dietary habits to prevent the danger of another pandemic.

1.3 Epistemic Schizophrenia: The Root of the Global Crises

Global crises are interconnected and complex. People fail to respond appropriately not due to intellectual or moral inferiority but because the cognitive system of the public and academia does not keep up with the rapidly changing challenges of high-speed globalization coming along with a high level of division of labor. Relying on fragmented knowledge from outdated textbooks and caught up in narrow frameworks, politicians often focus only on personal gains and losses, and scholars engage in blinkered microscopic thinking within subdivided disciplines. Positivist science shuns profound metaphysical questions and analyses, including questions related to rational cognition, real and true value evaluation, and practical ethical behavior.

The complex interconnectivity of the multiple global crises overwhelms the people who struggle to understand and respond appropriately, often blinded and discouraged by an outdated cognitive framework. The high-speed globalization and labor division result in

12 Justin Bernstein is an assistant professor at the Department of Philosophy at Vrije UniversityAmsterdam, and Jan Dutkiewicz is a political economist.

13 Justin Bernstein and Jan Dutkiewicz, “A Public Health Ethics Case for Mitigating Zoonotic Disease Risk in Food Production,” *Food Ethics* 6, no. 2 (October 2021): 1–25.

fragmented knowledge and lock-ins into narrow outlooks. Politicians all too often focus on short-term gains, while scholars in ivory towers limit their reflection to specialized microscopic areas. Positivist science "decapitated philosophy," ignoring deeper metaphysical questions of cognition, value evaluation, and practical reason and behavior. Edmond Husserl worried about this lack of philosophical engagement:

> Along with this falls the faith in “absolute” reason, through which the world has its meaning, the faith in the meaning of history, of humanity, the faith in man’s free dom, that is, his capacity to secure rational meaning for his individual and common human Existence. [14]

Husserl’s fear of the absence of holistic cognition was caused by the proliferation of empirical sciences, eventually contributing to the disaster of World War II due to the domination of technology and the law of the jungle. Such a cognitive deficit turns out to be even more apparent today than it was hundred years ago, with potential catastrophes on a scale more devastating than during World War I and II.

In his discussion of the globalization of the technocratic paradigm, Pope Francis wrote:

> It is the false notion that “an infinite quantity of energy and resources are available, that it is possible to renew them quickly, and that the negative effects of the exploitation of the natural order can be easily absorbed.”[15]

The belief in endless resources combined with the prevailing paradigm of linear thinking in science, economy, technology, and politics pushes our ecosystem to thelimits. There is an urgent need for a new cognitive and ethical system fostering on holistic and

14 Edmund Husserl, *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*, 6th pr, Studies in Phenomenology & Existential Philosophy, translated by David Carr (Evanston, Ill: Northwestern Univ. Press, 1984), 12.

15 Francis, *Laudato Si’*, 1st edition (Huntington, IN: Our Sunday Visitor Pub., 2015), no. 106, p. 86.

integrative awareness and sustainable development, which The Oneness Philosophy provides. Unifying knowledge and models of action from Easter and Wester cultures can bring about a new spiritual development, of which the philosophy and praxis of veganism are singled out for paving the way to sustainable lifestyles.

1.4 The Unitive Oneness of the Ecological System and Everything Else

Through concrete cases, one would understand more clearly how the ancient wisdom of "The Oneness of All Things" prevails in reality but has been ignored by modern people eager for quick success and profit. In the name of "science" and "development," people have been blinded by capitalism with grave and reckless indifference. Plastics can be taken as an example to explore how artificial chemical substances destroy the unity of the Earth's ecological circular system. Since their invention in the 1850s, plastics have been used in multiple ways. However, solid waste has been increasing because of its difficulty in terms of decomposition. Once entering Nature, it obstructs the cycle of the ecosystem, destroying the unity of the Earth's ecology and leading to serious environmental problems. From the perspective of people's daily lives, plastic brings many conveniences, and its price is so low that it is discarded anytime. The damage inflicted on the environment becomes is pushed aside. Severe forms of air pollution arise from its incineration. Under certain circumstances, some plastics, including polyvinyl chloride (PVC) and polycarbonates, may emit toxic compounds called endocrine disruptors, endangering the reproductive abilities of living beings. Plastic is often discarded, assuming its toxicity and destructiveness will be kept far away. The reality is that no matter how far the plastic is thrown away, it will not only pollute the land, rivers, and sea, poison living creatures, and explode the stomachs of animals that swallow it by accident, but will also eventually be broken down into micro-plastics, which finally enters the human body through the food chain, hindering human body's circulatory system with damaging health effects.

According to a 2021 study published in the *Proceedings of the National Academy of Sciences,* 1,100 tons of floating plastic particles above the western United States pollute even the most remote parts of North America and are showering down as "plastic rain."

Many assume plastic particles derive from major industrial Midwestern cities like Denver and Salt Lake City. However, data show that 84% of plastic particles in the western U.S. originate from roadways, and only 11% come from the ocean. Plastic particles can stay in the air for nearly a week, enough to cross continents and oceans.

It is proven that plastic particles exist ubiquitous on land, water, and air, entering the human body through the food chain, forming substances complicated to dissolve. People may think they can get rid of these harmful substances by discarding or littering plastics, which often end up in the oceans, where Nature keeps sending back toxic substances to humans – e.g., via the sea-food chain:

> This phenomenon of plastic being deliberately abandoned by people but being broken into pieces by Nature and then entering the human body in the form of microparticles has a more bizarre and subtle mechanism and process than harmful gases that humans themselves eventually absorb. This reality brings up a more philosophical question that deserves deeper contemplation and active consideration: there exists an ever more profound and tighter connection between people and Nature than we ever had imagined. This kind of subtle physical connection is a concrete and clear proof of the reality of physical and metaphysical interconnectivity of everything with everything.[16]

Suppose we extend the reflection on the phenomenon of plastic particles circulating within the ecosystem to more minute and universal particles, such as atoms, electrons, quanta, and even photons and quarks. We reach a similar level as ancient Greek philoso phers exploring the primordial nature - *arche*, and the ancient Chinese philosopher Lao Tzu (老子, also translated as Lao Tze and Lao Zi) elaborating on the Tao (道, also translated as Dao). At this stage, the principle of all things can be reduced to the unity of plurality. Just as Heraclitus and the I *Ching* (《易經》) affirm that everything is harmonized and unified

16 Interconnectivity and Interdependence are main topics in Pope Francis' *Laudatu Si*': nos. 5, 42, 61, 70, 86, 137, 138, 142.

in transformation and change and keeps returning permanently, in the same way as the plastic particles behave today.

The concept of Oneness has been explored profoundly in all major systems of human thought. In the last centuries, it has been widely neglected, following compartmentalized scientific thinking. The following chapter reviews and compares significant concepts of Oneness in both Western and Chinese philosophical systems to extract the theoretical and practical wisdom necessary to establish a new cognitive model and praxis that aligns better with today's complex, sophisticated reality in response to today's multiple crises.

Chapter Two

Concepts Of Oneness In Western And Chinese Philosophy

Philosophy is the science of everything connected with everything. Therefore, the concept of Oneness is philosophy's beginning and end. Looking deeply enough into one reality, one will find evidence and the metaphysical connection between everything with everything. E.g., if one views the whole World from a macrocosmic perspective, one will encounter similarities to the microcosmic structure. Viewed from religious, philosophical, historical, social, economic, political, and psychological perspectives, the human mind reveals a deep-rooted quest for the experience and understanding of "Oneness." This desire seems to be deeply rooted in the primordial human nature. We can reflect here on the original Oneness of a mother with her child. Humans find ultimate peace and satisfaction in the experience of Unity, both physically and metaphysically. The concept of Oneness can be categorized into three forms:

1. Oneness of all beings: A great web of the Existence in which all beings are interconnected and interwoven with each other;
2. Oneness of the extended self: The union and identification of the individual self with the extended self and even the whole Existence;
3. Oneness of the root: The search for a unified root of the Nature of Life and Existence, with which one can explain everything with one principle.

The Oneness of all beings is a metaphysical and physical worldview in which all people, creatures, and things are understood to be deeply connected and inextricably intertwined. The notion of Unity of Heaven and Man (天人合一) is one of the most widely known concepts of Oneness of the extended self, which is deeply rooted in all Chinese traditions. The concept of the Great Chain of Being (*scala naturae*) is the corresponding Western counterpart. The Confucian philosophy in *The Great Learning* (《大學》) is a well-developed example of the Oneness of the extended self, in which an individual is interconnected with his family, community, and the world. The family, society, and the world could be recognized as one's extended self, with his/her influence being based on his/her intellectual knowledge and spiritual accomplishment. While the "Oneness of all beings" and "Oneness of the extended self" share a similar conception of an interrelated

unity or a Universal Totality, the significant difference between the two is that the former emphasizes the interconnectedness and continuity of all things, while the latter emphasizes the ontological Unity between the individual and the whole.

Furthermore, "Oneness of the Root" is a universal concept deeply rooted in almost all traditions, the search for the ultimate singular Source of Existence. It takes the forms of Monotheist religions, concepts of arche, theory of atoms, God Particle, Big Bang Theory, Unified Field Theory, etc. It is self-evident in the philosophy of the I *Ching* and Lao Tzu in ancient China and of Parmenides, Heraclitus, and Plotinus in ancient Greece.

2.1 Oneness in Ancient Greek Philosophy

Parmenides is recognized as the founder of metaphysics. His argument for strict monism and the concept of Oneness influenced the whole history of Western philosophy.

In his single known work On Nature, Parmenides describes two different worlds respectively: 1) In "The Way of Truth," all reality is one, change is impossible, and Existence is timeless, uniform, and necessary; 2) In "The Way of Seeming," the world consists of appearances, in which one's sensory faculties lead to conceptions which are false and deceitful. [17] In other words, it goes both ways: the noumenal World is One and eternal, and the phenomenal World is Many and illusionary. According to Parmenides, Reality is one eternal totality that cannot be divided and bears the same properties. He asserted that none of the ideas held by humans are true. He believes that the concept of generation and destruction is a myth since nothing that already exists can ever cease to exist.[18] Parmenides' concept of unchangeable Oneness preluded and initiated the history of Western metaphysics.

17 Plato and Samuel Scolnicov, *Plato's Parmenides*, The Joan Palevsky Imprint in Classical Literature (Berkeley: University of California Press, 2003), 77.
18 Pamela Huby and C. C. W Taylor, *Simplicius on Aristotle Physics 1*, vol. 1.3-4 (London: Bloomsbury Academic, 2011), 55–56.

2.1.1 *Arche* and *Logos*

Western philosophy began with the search for the *arche*, the first principle or primary element in ancient Greece, which strongly implies the conception of Oneness. From Thales' *water*, Heraclitus's *fire*, Anaximander's *apeiron* (the endless or boundless), and Anaximenes' *air* to Democritus' *atomism*, there was a pronounced tendency to believe in material monism. Among these material monists, Heraclitus (c. 535 – c. 475 BC) can be recognized as the first philosopher of Oneness, who went far beyond the quest for a physical theory and search for metaphysical foundations and its moral applications. Apart from his famous doctrine of universal flux, Oneness is an essential aspect of his central theory: his direct affirmation of Unity: *hen panta einai* (Greek: "all things are one"). He stated straightforwardly: "It is wise, listening not to me but to the report (*logos*, Greek: "reason" or "word"), to agree that all things are one."[19] He complained that most people fail to comprehend *logos*, a universal principle (*arche*), through which all things and all beings are interrelated. According to Heraclitus, ordinary people live a miserable life of chaos because they do not realize the actual organism of the world, just like dreamers with a false view of the world. He is not only concerned with explanations of the nature of Existence, but also stresses the necessity for people to live together harmoniously as a community, in which logos is the common principle of consensus, communication, and public unity among the individuals of a society. In his doctrine, rationality (*logos*) makes communication and unification among people possible. In the same way, the principle (*arche*) makes the underlying Unity of all nature possible. It could be simply understood that *logos* means rationality as the foundation of speech, thought, and action. Without rationality, there would not be any communication and interaction among people. Heraclitus claimed that *logos* is the underlying connection between opposites, like good and evil, high and low, and hot and cold:

> For there would be no attunement without high and low notes nor any animals without male and female, both of which are opposites.[20]

19 Heraclitus, *The Art and Thought of Heraclitus: An Edition of the Fragments with Translation and Commentary*, translated by Charles Harry Kahn (Cambridge: Cambridge University Press, 1989), fr. XXXVI, p. 45.
20 Heraclitus, *The Art and Thought of Heraclitus*, fr. LXXXI, p. 67.

He claimed that the world existed as an auto-balanced system of Unity of Opposites in which a corresponding change will spontaneously be compensated. Everything is interconnected and possesses a hidden self-neutralizing force.

2.1.2 The Great Chain of Being

The Great Chain of Being, also referred to as the "Chain of Being," has a longstanding tradition, going back to Plato's division of reality into two different worlds: the intelligible world of forms and the physical world – separated by the Divided Line – both of which are full of beings and sensible objects, imitations of the eternal Forms.[21] Aristotle expanded on this idea to create a more systematic chain of categorized plants, animals, and humans, based on the degree of perfection of their souls, with strong or weak continuity, known as *scala naturae* (Latin: Ladder of Being).[22] In Aristotle's "Ladder of Being," lifeless "artifacts," such as rocks, occupy the lowest rung, and all living things with souls (*anima*), including human beings, occupy the higher rung. Furthermore, the hierarchy of souls has been ordered based on the specific inherent powers characteristic of each soul (plant, animal, man). The rational soul, which provides humans with the rational ability and functions to reason, defines the human soul and being. Above these, the celestial entities (sun, planets, stars, etc.) are regarded as eternal and divine. On top of everything, Aristotle added "the Unmoved Mover," the Prime Mover, the ultimate Source and Principle of all movement throughout the Universe, usually called "God."[23]

Neoplatonists, such as Plotinus (205-270 AD), turned Aristotle's hierarchy of beings into a mystical system of Oneness (*henosis*), building on the legacy of Plato. While the most significant "forms" were given to wholly spiritual creatures who were superior to material beings, the essential structure of the ladder remained the same as Aristotle's. Plato's

21 Nicholas Bunnin, *The Blackwell Dictionary of Western Philosophy* (Chichester: Wiley, 2007), 289.
22 Herbert Granger, "The Scala Naturae and the Continuity of Kinds (1985)," *Phronesis* 30, no. 2 (1985): 186.
23 Karl-und-Gertrud-Abel Stiftung and Christoph Horn, eds., *Aristotle's Metaphysics Lambda: New Essays: Proceedings of the 13th Conference of the Karl and Gertrud-Abel Foundation Bonn, November, 28th-December 1st, 2010*, Philosophie Der Antike : Veröffentlichungen Der Karl Und Gertrud Abel-Stiftung, Band 33 (Berlin : De Gruyter, 2016), p. 1.

conceptions of the unchanging Idea and *The Good (To Agathon)*, which is "beyond all being," has been evolved by Neoplatonists into the concept of the *One (Tὸ Ἕv)*. The Neoplatonist conception of the One incorporated Aristotle's definition of the continuum and graduated scales of Existence. Plotinus stated in his *Enneads:*

> The One is all things and is not one thing…[24]

In Neoplatonism, the Source of goodness is referred to as the *One*. Furthermore, the degree of goodness of a thing – how much a being participates in the One or the Good – depends on its level of Existence. Plotinus established a bridge between the One and All, the One and Many, and thus the Self and the Other, connecting seemingly opposing or contradictory aspects.[25]

Saint Augustine (354-430) adopted this basic Neoplatonic view of the Great Chain of Being and integrated it theologically into his Christian cosmological framework. In Christianity, the hierarchical Chain of Being connects God, angels, church, humans, animals, plants, and minerals from top to bottom, covering every aspect of Existence: from celestial beings to humans and below, from stars, planets, and moon to precious stones and metals; from kings, princes, nobles, and commoners; and animals to plants, living and nonliving in a whole picture, believed to have been designed and decreed by God. Nothing exists in isolation within this vast chain; everything has a distinct form and proper function within an interconnected holistic system.[26]

In the eighteenth century, zoologists attempted to identify "the missing links" within the Great Chain of Being, relying on plenitude and continuity as *a priori* logical rules of Nature. They attempted to locate all the missing species between beings, particularly by including apes on the Scale of Beings as the "nearest relations of the human race."[27]

24 Plotinus, *Plotinus*: *The Enneads*, Translated by Lloyd P. Gerson (New York: Cambridge University Press, 2018), Ennead 5.2.1., p. 549.
25 Plotinus, *Plotinus*, p. 381.
26 Arthur Oncken Lovejoy, *The Great Chain of Being: A Study of the History of an Idea*, The William James Lectures 1933 (Cambridge, Mass.: Harvard University Press, 1964), p. 60–66.
27 Lovejoy, *The Great Chain of Being*, p. 231–41.

Furthermore, Charles Darwin (1809–1882) developed his Theory of Evolution in *On the Origin of Species* in 1859, claiming that all species of organisms arise and develop through natural selection. These inherited variations enhance the species and individual's capacity for competition, survival, and reproduction.

2.2 Concept of Oneness in Chinese Philosophy

The notion of Oneness has been more carefully investigated, thoroughly defined, and articulated in-depth in the *I Ching*, and is profoundly ingrained in Chinese epistemology in practically all schools of thought, and being widely accepted for millennia.

2.2.1. The Concept of Unity in Taoism

The most well-known principle of Oneness in Chinese philosophy is the "Unity of Heaven and Man", the most common foundation of all schools of Chinese philosophy, including Confucianism, Taoism, Mohism, Chinese Buddhism, etc. According to Lao Tzu (l. c. 500 BCE), all things came into being from the formless and eternal Mother, the Dao, creating the world in a well-organized mathematical procedure:

> The Dao produced One; One produced Two; Two produced Three; Three produced All things.[28]

This is a typical example of the Oneness of the origin, attributing the root of all things to the metaphysical One. "One produced Two; Two produced Three; Three produced All things" summarizes the binary structure of the Eight Trigrams of the *I Ching*.[29]

28 Laozi, p. 78. “道生一，一生二，二生三，三生萬物。”

29 It is interesting to note, that also in Aristotle, the number Three is considered to be the basic unit of ‘all’ and of the “whole”, see: “’Whole’ (*holon*) means ‘that from which no part of that which is said to be by nature a whole is missing” (*Metaphysics 1023b26*); “That of which nothing is outside is complete (*teleion*) and whole. For we define a ‘whole’ thus: as that from which nothing is absent.” (*Physics* 207a9-11); “’All’ (*pan*) means ‘a quantitiy that has a beginning, middle and termination point (*eschaton*) but whose positions make no difference.’ If position does make a difference, then it is a whole.” (*Metaphysics* 1024a1-3).

2.2.2 The Concept of Oneness in the *I Ching*

One can understand more easily the philosophical meaning of the Unity of Heaven and Man with the basic idea of the *I Ching*, especially about the structure of Heaven, Human, and Earth, which is explained magnificently in *The Great Treatise I, Book of Changes:*

> Therefore, there is in the Changes the Great Primal Beginning. This generates the two primary forces. The two primary forces generate the four images. The four images generate the eight trigrams. The eight trigrams determine good fortune and misfortune.[30]

This actually describes the development of the Eight Trigrams. It starts with the Great Primal Beginning of nothingness, producing two primary forces –*yin and yang*, which can be represented with one-line *yao* (爻) binary symbols: ⚊ (*yang*) ⚋ (*yin*). Furthermore, these two primary forces generate the four images, which can be represented with two-line symbols: ⚎ (Young Yang), ⚌ (Old Yang), ⚍ (Young Yin), and ⚏ (Old Yin). On top of the four images, adding one more line to them, eight trigrams are produced: ☰ (Qian), ☱ (Dui), ☲ (Li), ☳ (Zhen), ☴ (Xun), ☵ (Kan), ☶ (Gen), and ☷ (Kun). During divination,[31] these trigrams are used to simulate all real things. The mysterious omens found in specific combinations of trigrams and given seasons could be recognized as good fortune or misfortune.

Archaic faith in the Three Spheres of Heaven, Man, and Earth(三才, *sai cai*, as "three primal powers" in Richard Wilhelm's translation) could be deduced from the structure of the trigrams. The three lines in every trigram simulate the concept of a tripartite unity, in which the upper line represents Heaven, the middle line Man, and the bottom line the Earth, exactly as what people see in reality with human beings being situated and living between

30 Richard Wilhelm, "Ta Chuan: The Great Treatise I," The *I Ching or Book of Changes*, rendered into English by Cary F. Baynes, (New Jersey: Princeton University Press, 1977), p. 359-360. "是故，易有太極，是生兩儀，兩儀生四象，四象生八卦，八卦定吉凶，吉凶生大業。"

31 *I Ching* divination is a form of cleromancy through reading the images of trigrams, hexagrams and the text of *I Ching*.

the upper sky (Heaven) and the lower realm or sphere of the Earth. Taking the trigram ☲ (離 Li, Fire) as an example, the bottom line (Heaven) and the top line (Earth) are *yang* (陽), and the middle line (Man) is *yin* (陰). One can see how the concept of Heaven, Man, and Earth is projected into the structure of the trigram.

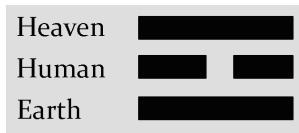

Figure 2.01: The Three Spheres structure of the trigram *Li* (離)

When two trigrams are piled up together, a hexagram results. In the book *The Great Treatise I of I Ching*, this process has been explicated in the following:

> The Tao of Heaven is in it, the Tao of the Earth is in it, and the Tao of Human is in it. It combines these three primal powers and doubles them; that is why there are six lines. The six lines are nothing other than the ways (Tao) of the three primal powers.[32]

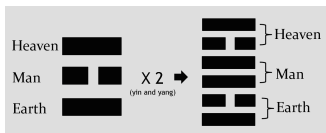

Figure 2.02: Three Spheres, Three Lines, and Six Lines

According to the *I Ching*, everything on the many levels of existence can be projected onto this six-line framework. For instance, if a kingdom were to be projected, Heaven would serve as the king and the capital, Humans would be the *junzi* (君子), officers, and academics, and the Earth would be the commoners, the animals, and the villages.

32 Richard Wilhelm, "Ta Chuan: The Great Treatise I," p. 387. "有天道焉，有人道焉，有地道焉。兼三才而兩之，故六。六者，非它也，三才之道也。"

Figure 2.03: A kingdom projected in a hexagram

If a hexagram is to be interpreted as the body of a standing person, Heaven would represent the head, mind, or reasoning; Man would represent the chest, heart, emotion, and stomach; and Earth would represent the hip, legs, feet, etc., taking from the bottom to the top, from the feet to the head accordingly. In this way, the ancient Chinese viewed the world and analyzed everything in a unified hierarchical structure. Every single matter, no matter how vast or tiny, is considered an integral complete totality, within which each part is interconnected, forming a unity, just like all parts of the human body are functionally linked to each other in a meaningful way. This accounts for the basic principle of the conception of Oneness in the *I Ching*.

2.3 A Comparison of the Chinese and the Western Concept of Oneness

Both the Western and Chinese concepts of Oneness have a mystical root in spiritual practice. For Plotinus, the Unity with the One or the Good is the destiny of Life. "Becoming simple and unified, the soul is one with the Good. Hence, the union with the supreme God is the end of the spiritual journey."[33] For Chuang Tzu, the Unity with Heaven and Earth, Oneness with All, is the common state of a True Man (真人), who has returned to the Natural state of Existence, where no difference exists. This state of complete equality is called *qiwu* (齊物), or "Working Everything Out Evenly."[34]

33 Plotinus, *Plotinus*, p. 194.
34 Chuang Tzu, *The book of Chuang Tzu*, translated by Martin J. Palmer, (London: Penguin, 2006), p. 60.

Differing conceptions of Oneness between the West and China are evident. While the Chinese notion of the Unity of Heaven and Man encompasses the Unity of Man with All Things in Heaven and Earth, the Western understanding of Unity refers to the individual's reunion with the One, God, or the Creator. In Western Oneness, an inherent and unbridgeable gap remains to exist between the individual and the supreme consciousness. Conversely, the Chinese concept of the Unity of Heaven and Man entails a state of complete equality and equanimity, where each thing operates in accordance with the laws of Nature. It involves the full integration of a human being with all things in Nature and the metaphysical Tao. Chinese Oneness embraces a monistic idealism that seeks identification with a universal principle in view of a harmonious outcome. In contrast, Western Oneness follows a theistic tradition seeking reunion with the ultimate One or the personal God, the transcendent Creator, without seeking identity with Him.

Chapter Three
New Great Learning Oneness Epistemology

The concept of Oneness permeates all significant civilizations at various levels over human history. The ancient theory of Oneness has remained relevant throughout the historical development of navigation, physics, chemistry, globalization, the Big Bang theory, quantum physics, string theory, unified field theory, and many other significant intellectual breakthroughs. Unfortunately, few scholars have considered revisiting and deepening the concept of Oneness beyond the mere notion of being used as a platitude.

"The Unity of Heaven and Man" is not a dead concept. As Yu Ying-shi wrote, the modern and even post-modern connotations of Chinese culture could be interpreted through this ancient concept. The Chinese intellect continues to be centered on the Unity of Heaven and Man, in contrast to the dominant modern Western civilization's goal of "conquering nature." If interpreted as "harmony between nature and man," in Yu Ying-shi's perspective, it could hold the key to one of the many doors into the depth of Chinese spiritualism.[35] Yu's perspective reveals a common bias among scholars when discussing cultural differences between China and the West. The exploitation of Nature and causing environmental damage are not inherent characteristics of Western thought, but rather, they are the results of gross development patterns that emerged during the historical process of modern imperialism and the Industrial Revolution. China, valuing as Empire historically the philosophy of Unity of Heaven and Man, has experienced periods of rapid development characterized by this same kind of grossness. Therefore, the emphasis should not be merely on the East or the West, but on finding the foundations of a common holistic understanding rooted in each culture, from which inspiration, strength, and new solutions may be derived.

The concept of Oneness is deeply ingrained in the thinking of most ancient civilizations and seems to be embedded in the subconscious and common sense of all human beings. In their quest for truth, people inevitably gravitate towards this idea of "The One." While the concept had a place in academic circles, few have attempted to update or systematize it according to modern contexts, let alone develop it into a consistent cognitive system of Oneness that is simple, realistic, and suitable for the present era. There is an

35 Yu Ying-shih余英時, Lun Tian Ren Zhi Ji - Zhongguo Gudaisixiang Qiyuan Shitan論天人之際──中國古代思想起源試探, First Version初版 (Taipei台北: Lianjing Chubanshe聯經出版社, 2014), p. 72–73.

urgent contemporary need for a new cognitive system centered on the philosophy of Oneness that provides the public with easy-to-understand and workable, practical ethical rules. In the face of numerous challenges, we must seek a universal system that aligns deeply with historically tested wisdom traditions and enables practical implementations for individuals and all societies. This cognitive rationale and mechanism must be comprehensive and integrate local and global appeals. Additionally, it should not be biased towards the secular or spiritual side, avoiding endless debates over materialism, idealism, etc. Taking all these factors into account, the following three principles and eight objectives of the Confucian *The Great Learning* system offer an excellent method:

1) First of all, it is not theological or anti-religious in any way.
2) It emphasizes reason while simultaneously focusing on the cultivation of individual virtues.
3) It has both the out-of-this-world insight of metaphysical penetration into the infinite inner consciousness and the in-this-world compassion of actively building world peace.

It is critical to emphasize that a new system must prioritize personal freedom, despite all individuals being deeply connected both locally and globally, physically and metaphysically. Everyone possesses a complete, independent spirit that should be respected and not subjugated, manipulated, or sacrificed for any self-proclaimed political unity. Collaboration between individuals should be based on a shared social culture and spiritual beliefs and formed actively in view of mutual benefit rather than coerced by the formation of the whole or the majority.[36]

A community as a social unity should not become a tool of deception and exploitation used by collectivism and dictatorship. In order to achieve actual and practical unity, it is essential to respect individuality and foster a true conceptual commonwealth through the centripetal and adhesive force of ensuring pluralism rather than through a violent and repressive regime. Otherwise, a Leviathan or a collectivist monster will instill fear in

36 This is called in the Western tradition the principle of subsidiarity.

modern individuals who cherish universal values such as freedom and democracy, becoming a substantial obstacle to the critical task of cultural and spiritual solidarity, subsidiarity, and unity in response to contemporary crises.

As Nietzsche advocated, people should acquire "the fundamental knowledge of the unity of all that exists, and achieve a restored unity in the ecstasy under the spirit of Dionysus, and in this way transcend fear and tragedy."[37] People should deepen their knowledge of the truth of Unity, draw the bliss and power of Life from Unity, crossing the gap between individuals, between humans and Nature, and break free from the shackles of the *principium individuationis*, transcend the phenomenon of division, and achieve greater harmony, unity, and peace.[38]

3.1 The Concept of Oneness in *The Great Learning*

The concept of Oneness is practically expressed in the *Daxue* or *The Great Learning*, an essential work that deals explicitly with Learning, the central topic of Confucianism.

The Great Learning was one of the "Four Books" of Confucianism. It explains what "Learning" means in Confucianism and how to achieve its goals. Firstly, one must know about the meaning of the ancient Chinese character Learning (*xue*,學), illustrating a scenario where a disciple (子, *zi*) practices divination with two hands, drawing or reading the lines (爻, *yao*) of trigrams or hexagrams. Thus, "Great Learning" refers to enquiring about Knowledge from Heaven through divination and self-illumination. *The Great Learning* begins with the Three Guidelines: making one's "bright virtue" brilliant, making the people new, and coming to rest in the highest Good:

> The Dao of Great Learning lies in making bright Virtue brilliant, in making the people new, in coming to rest at the limit of the good. Only after wisdom

37 Friedrich Wilhelm Nietzsche, *The birth of tragedy out of the spirit of music*, Translated by Michael Tanner, (London; New York: Penguin, 1993), p. 60
38 Nietzsche, p. 11.

> comes to rest does one possess certainty; only after one possesses certainty can one become tranquil; only after one becomes tranquil can one become secure; only after one becomes secure can one contemplate alternatives; only after one can contemplate alternatives can one comprehend. Affairs have their roots and branches, situations have their ends and beginnings. To know what comes first and what comes after is to be near the Dao.[39]

Moreover, it provides the Eight Stages of the Great Learning: Aligning affairs, Extending understanding, Making intentions genuine, Balancing the mind, Refining one's person, Aligning one's household, Ordering the state, Setting the world at peace.

> Only after affairs have been aligned may one's understanding be fully extended. Only after one's understanding is fully developed may one's intentions be perfectly genuine. Only after one's intentions are perfectly genuine may one's mind be balanced. Only after one's mind is balanced may one's person be refined. Only after one's person is refined may one's household be aligned. Only after one's household is aligned may one's state be ordered. Only after one's state is ordered may the world be set at peace. From the Son of Heaven to the common person, for all alike, refining the person is the root. That roots should be disordered, yet branches ordered is not possible. What should be thickened is thin, yet what is thin becomes thick has never yet been so.[40]

These Eight Stages represent the holographic principle of the *I Ching*, creating a metaphysical interconnection between personal deeds and the ideal of world peace, from the inner spiritual practice to house-holding[41] and setting the whole world at peace. The

39 Robert Eno, *THE GREAT LEARNING and the Doctrine of the Mean: An online teaching translation* (Version 1.0, 2016), p. 11 “大學之道，在明明德，在親民，在止於至善。知止而后有定，定而后能靜，靜而后能安，安而后能慮，慮而后能得。物有本末，事有終始，知所先後，則近道矣。”

40 Robert Eno, 11-1

41 In Greek “house-holding” means: *oiko-nomike* (“house-ruling”), of which the English word “economy” is derived. ‘’Householding” or “household management” (“economics”) is also differentiated and subordinated to “politics”, quite similar as in Aristotle’ s *Politics*.

concept of Unity holds a very important, if not supreme, position in Confucian epistemology, cosmology, and ethics, though little noticed by scholars.

3.2 Recapitulation of *The Great Learning*

The philosophy of *The Great Learning* is distinctive in that it promotes personal development alongside global peace, which is especially relevant in today's globalized era valuing humanism and liberalism. It addresses the heightened conflicts between individualism and collectivism. It provides a model for conceptualizing cognition and action as a unity well-suited for finding practical and sustainable solutions that benefit the whole community. In terms of philosophical implications, The Way of *The Great Learning* not only encompasses Chinese cultural values of internal and external harmony, the concept of the Unity of Heaven and Man, and the pursuit of "Resting at the highest good," but it also aligns with the Neoplatonist concept of approaching unceasingly the One. It contains the core knowledge of philosophical and spiritual traditions without imposing a specific religious identity, making it more applicable to people from various world view backgrounds and forms of spiritual growth.

The concept of Oneness – the interconnectedness between the individual and the whole and the interdependent relationship between personal spirituality and society – is evident in the Eight Stages. With the Self at the center, The Eight Stages account for a well-organized epistemological structure of Oneness, as illustrated in the following:

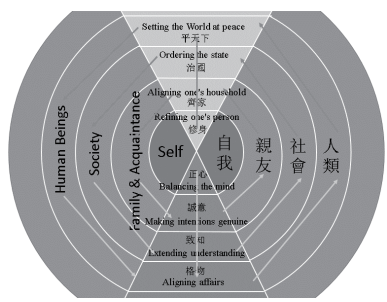

Figure 3.01: The Eight Stages of the Great Learning with intentionality analysis

This diagram clarifies that "The Great Learning" is about learning to achieve the "greater" Self through deepening wisdom by extending the individual self. By carefully studying the illustration of the Eight Stages, one could quite easily find its spontaneous two-way (inwardness and outwardness) structure. The first four stages, namely "Aligning affairs," "Extending understanding," "Making intentions genuine," and "Balancing the mind," guide to an ever-deepening inward journey and process of spiritual growth, with "Balancing the mind" as starting point. The other four stages set out from "Refining one's person," "Aligning one's household," and "Ordering the state" to the ideal of "Setting the World at peace," forming an outward journey of development in personality and social and civic career. This two-way development aligns with Chuang Tzu's ideal of the Inwardly Sage and the Outwardly King (內聖外王).[42]

Moreover, this Great Learning system can be placed into the structure of the Three Spheres. An individual is positioned in the middle of the world, the Man Sphere, where one should balance his mind and refine his personality. When facing his family, society, and the world, one needs to make his intentions genuine, extend his understanding and align all affairs if he wants to align his household, order the state, and set the world at peace. This is how a *junzi* (君子) in the Sphere of Man works on the root in the Sphere of Earth in order to achieve the goals in the Sphere of Heaven, i.e., having the Dao born. This is what the Unity of Dao means in Confucianism.[43]

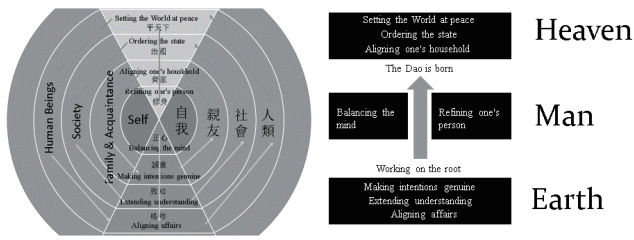

Figure 3.02: The Oneness concept in *The Great Learning* and in the *Analects*

42 Chuang Tzu, *Chuang Tzu*, Translated by James Legge (Chinese Text Project https://ctext.org/zhuangzi) Miscellaneous Chapters, Tian Xia, 1, "是故內聖外王之道，闇而不明，鬱而不發，天下之人各為其所欲焉以自為方。"

43 Disciples of Confucius, The Analects of Confucius: An Online Teaching Translation, translated by Robert Eno, 1.2. "有子曰：其為人也孝弟，而好犯上者，鮮矣；不好犯上，而好作亂者，未之有也。君子務本，本立而道生。孝弟也者，其為仁之本與！"

In Chinese philosophy, one must be a sage if one is eager for a crown.[44] Actually, being a sage and being crowned are supposed to happen at the same time. In Chinese mythology, all ancient Kings, the Three Sovereigns and Five Emperors (三皇五帝), are described as sages of perfection. Furthermore, the first Sovereign Fuxi (伏羲) was even ascribed as the first author of the *I Ching*.

Moreover, within this epistemological model, in which different levels of knowing and acting are always co-occurring, the philosophy of "Unity of Knowing and Doing" by Wang Yangming (1472–1529) can be understood more clearly. The stages from Balancing the mind to Aligning affairs could be defined as Knowing, and from Refining one's person to the ideal of Setting the World at peace, this stage could be defined as Doing. If one has the proper knowledge, one will adopt the right action. When one acts correctly, it means one has the proper knowledge.[45] The most significant difference between this reconstruction of the Way of *The Great Learning* and the prior linear understanding is the stronger emphasis on Oneness as an extended self and the interaction between spiritual growth and social influence or impact. According to this mechanism, when one tries to align his household, one needs not only to refine his personality, he should make his intentions genuine ("virtuous"), because "Aligning one's household" and "Making intentions genuine" are at the same level as "family and acquaintance." In the same way, in view of governing a state, one has to expand his knowledge to handle complex issues because "Ordering the state" and "Extending understanding" are on the same level. Finally, to create a peaceful world, one must attain to the level of "Aligning affairs." With the expansion of the range of involvement, a person's grasp of the truth of things should also be deepened in order to cope with the complex challenges ahead. This is the true meaning of the Way of *The Great Learning.*

44 This aligns with Plato's view in the *Republic*, Book VII, in his famous "Philosopher King".

45 This aligns with Socrates and Plato. We know that Aristotle in his critic of both goes beyond that in his *Nicomachean Ethics (NE)*. For Aristotle, knowledge is not sufficient for acting well and correctly. One can very well know what should be done, but in fact acts contrary to this knowledge (see *NE* Book VII). Knowledge must be accompanied by proper habituation and education in view of acquiring the proper character virtues which are necessary inner dispositions of the human soul to be able to act well or virtuously.

Based on what has been discussed in Chapter One, the current global crises stems from the fact that the collective cognition of human beings does not yet possess the awareness of Oneness of all things and does not correspond to the interconnectedness of everything with everything. For instance, an enormous number of industrialized farm livestock has already impacted the Earth's entire ecosystem. Regarding this issue, the classical Great Learning system of Three Guidelines and Eight Stages could be expanded to "Three Guidelines and Nine Stages."

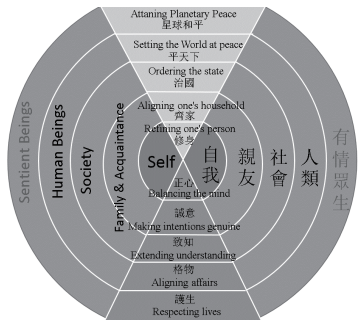

Figure 3.03: The Nine Stages of New Great Learning

If the notion of "respecting life" is positioned at the very bottom of the hierarchy, highlighting universal respect for all life, including humans and animals (and even other species and biodiversity in general). In that case, it will add a more practical and eco-friendly modern dimension to this ancient model of cognition. With this principle as a primary consideration, recognizing the interdependence of all life, an upgraded epistemological model will revitalize the old system, ushering in a more responsible and effective mechanism, as Pope Francis expressed in *Laudato Si* in 2015:

> When human beings fail to find their true place in this world, they misunderstand themselves and end up acting against themselves: "Not only has God given the earth to man, who must use it with respect for the original good purpose for which it was given, but, man too is God's gift to man. He must therefore respect the natural and moral structure with which he has been endowed." [46]

46 Francis, *Laudato Si*', nos. 94, 116.

In recent centuries, humans have adopted a ruthless attitude toward the environment and, specifically, animals, under the guise of "objectivity" and "progress." Consequently, there is an urgent need to increase respect and care for all sentient beings and Nature in general. Reconnecting to their nature, humans learn to appreciate the essence of their existence. This appreciation transcends familial, ethnic, racial, and species ties and centers on respect and love for Life itself. This love for Life must bring people closer to the Creator or the common Source of all existing beings according to their respective faith tradition, since the Creator or "The One" is the Source of all Life.

Deepening the understanding of the true meaning of their respective faiths, people will be enabled to practice universal love for Life inherited from various religious and philosophical traditions. Even those without religious beliefs can improve their cognitive systems through rational observation and personal growth experiences.

3.3 NGL Oneness: A Universal Cognitive Model for Modern Society

In the global context, the concept of Oneness is undoubtedly an antidote to fragmentation, reductionism, over-specialization, wastefulness, and over-narrowed nationalism, creating a more consistent universal framework of cognitive values that can be promoted in a multicultural world. The model of the New Great Learning (NGL), a modern cognitive system of Oneness, can help people cope with the massive amount of information, the complexity of all kinds of issues, and rapidly changing situations, especially in global and pluralistic societies, and establish an ethical foundation that better responds to the needs of the era and maintains the core values of Life.

According to NGL Oneness, with the expansion of the circle of compassion and the awakening of life-protecting awareness, there are environmental and animal ethical issues that humans are called to respond to with dramatic changes. However, any social change and societal transformation are enormously challenging, as evidenced by the United Nations Climate Change Conference, which has been working hard with little success. According to the NGL Oneness paradigm, general change begins with individuals. Any

significant transformation in human history has always begun with a small group of pioneers. When the underlying concept of "protecting life" is triggered, the manner of "Aligning affairs" and "Extending knowledge" must be thoroughly reconsidered. To redirect the industry from the bottomless abyss of confinement and exploitation of animals and ecosystem resources, overconsumption of earth resources, and pollution of the environment, one must re-examine the way animals are treated and start to reduce or even eliminate reliance on animal products and increase the consumption of vegan products through changes in diet and other habits of life. The NGL Oneness concept naturally encourages sustainable production and consumption patterns in view of long-term survival and well-being.

3.4 Veganism: An Application of NGL Oneness for Planetary Stability and Peace

Veganism represents a philosophy and way of life that aims to eliminate animal exploitation and suffering as much as possible. It promotes developing and implementing alternatives that do not rely on animals. The term "vegan" was coined by Donald Watson in 1945 to describe stricter vegetarianism, which involves abstaining from eggs, honey, milk, butter, and cheese derived from animals. By 1951, “vegan” encompassed the broader doctrine that humans should live without exploiting animals.

Ethical vegans consume plant-based foods and extend the philosophy to other life areas, aiming to reduce cruelty and exploitation of all creatures, including humans. “Environmental veganism" involves avoiding animal products due to the unsustainable and harmful nature of industrial animal farming, which causes an overall negative impact on the environment, on animals, and on human health.

Researches cited in Chapter One suggests that promoting veganism and reducing demand for animal products could help address global warming and climate change, water scarcity, deforestation, food scarcity, energy shortages, pandemics, etc. Veganism is a practical and effective way to address these contemporary issues. The author Will Tuttle believes that veganism is a practical application of the philosophy of Oneness, which

fosters spiritual growth and promotes a more peaceful development from an anthropological, sociological, and psychological perspective. He argues that modern academia has primarily ignored how people eat, leading to the normalization of a bloody, violent, and resource-intensive system and lifestyle that poses an existential threat to human civilization. According to Will Tuttle, today's typical diet reflects the domination of animal-herding civilizations, which begins with exploiting and controlling animals and culminates in manipulating humans and politics. This violence is only possible through a conceptual dissociation from everything, which forms the basis of a violent and manipulative consciousness. To achieve true world peace, he believes that human civilization must accept and re-engage with the reality of interdependence and recognize the physical link that connects all beings and things in the closest and most realistic way, namely, in the need and reality of eating. Thus, veganism represents a practical way to embody the philosophy of Oneness and to bring about positive cultural, societal, and environmental change. By rejecting an exploitative and violent mindset and system inherent in animal agriculture, individuals can promote compassion, empathy, and respect for all living beings, leading to a more peaceful, sustainable, and healthy world. Thus, eating is an act of reconnecting with Oneness:

> All the arts are conduits for the expression of this deep human longing for unity, but it is only in the art of food preparation and eating that this Oneness is actually physically achieved. This is part of what makes eating such a powerful experience and metaphor: food art is eaten and becomes us. It enters as object and becomes subject; what is "not-me" is transformed into "me."[47]

Through the act of eating, the food eaten is absorbed into the body and becomes one part of the eater. The apparent gap between the food and the eater is bridged and overcome. It is unquestionably a miraculous process for the Other to become part of Me. The possibility of integration or "becoming one" reveals a more mysterious truth: Man and all things

47 Will M. Tuttle, *The World Peace Diet: Eating for Spiritual Health and Social Harmony* (New York: Lantern Books, 2005), 3.

must have a substantial commonality and Oneness. Otherwise, how would it be possible for an object to become wholly integrated into another subject? Will Tuttle has described this reality more pictorially:

> When we eat an apple, we are not just eating an apple as a separate thing. The apple enters us, dissolves within us, contributes to us, and becomes us… We are eating of the rain and the clouds and of all the trees that have gone before to bring this tree into manifestation and of the tears, sweat, bodies, and breaths of countless generations of animals, plants, and people that have become the rain and soil and wind that feed the apple tree.[48]

He believes that an apple is not simply an apple but a collection of the elements of the entire Universe and the nutrients of the entire network or chain of Life.

> We humans, eating apples, are in a true sense, apples eating apples. The whole Universe is not only in every apple but in every one of us. In eating, we see that there are no fundamentally separate things at all, but only processes. All things partake of each other, ever-changing, and are eventually eaten by the process and, by time, the great devourer.[49]

Tuttle suggests that, although eating is often taken for granted in modern society, it has the potential to significantly impact people's cultural and spiritual identities. Therefore, individuals should examine their food systems and eating habits because what they eat determines who they are. He argues that practicing veganism and adhering to the Oneness doctrine complement each other. By living a non-violent vegan lifestyle, people can naturally awaken to the communal nature of the compassionate Creator, experiencing the immense peace and joy that comes from the Unity of Heaven and Man and the Oneness of all things. This experience transcends mere theory to become a magnificent living truth worth pursuing and experiencing in life. As Oneness consciousness grows and spreads,

48 Tuttle, *The World Peace Diet*, p. 4.
49 Tuttle, *The World Peace Diet*, p. 5.

people instinctively desire to live a vegan lifestyle, promoting peace. This constructive cycle of reciprocal cognition and action growth embodies the New Great Learning Oneness philosophy.

Conclusion

As technology advances and globalization increases, the impact of human activities on Nature has become prominent, and the limitation of Earth's resources is more apparent. Environmental pollution, global warming, extreme weather events, deforestation, destruction of marine ecology, declining biodiversity, lack of arable land and fertile soil, lack of clean water, and pandemics present a global planetary crisis. The root cause of these crises lies in the indifferent and unjust relationship between humans and Nature, inclusive animals. People rely on technological advancement instead of unraveling the root causes of these problems. The philosophy of Oneness, which focuses on the whole and the root of everything, can provide a new theoretical and practical framework in view of finding and living up to solutions. This philosophy has a long history in all significant intellectual traditions, as Western and Chinese philosophical sources make clear. The Chinese concept of the Unity of Heaven and Man and the Western concept of the Great Chain of Being are historical examples of this philosophical approach. The present paper proposes to deploy the philosophy of "The Great Learning," a Confucian classic that embodies the Unity of Heaven and Man, as the basis and add environmental and animal protection concepts to construct an innovative cognitive system called *New Great Learning (NGL) Oneness Philosophy*. The promotion of veganism is a practical implementation of the *NGL Oneness Philosophy*. Veganism reduces greenhouse gas emissions, deforestation, waste of land and water resources, and the destruction of the marine ecology caused by the meat industry.

Additionally, it reduces the likelihood of epi- or pandemics caused by over-intensive breeding of animals, minimizing the occurrence of a planetary catastrophe. On a spiritual level, veganism reduces the consumption of food obtained through blood and violence, enabling people to connect with others and all things, deepening the understanding of the Oneness of All Things, connecting with the Creator, realizing the intrinsic Oneness of other beings and themselves, and comprehending the doctrines of benevolence and altruism advocated by various religious and philosophical traditions. Promoting the new system of epistemological Oneness and veganism is urgent in view of an effective form of sustainable development and survival of our ecosystem and human civilization.

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探討澳門中學生學習困難、師生關係及學習動機之個案混合研究

陳思匯

摘要

本研究旨在探討澳門其中一所學校全校中學生的學習困難、師生關係與學習動機。為達成研究目的，本研究採用混合方法研究設計，以聚斂式平衡混合設計，同時蒐集量化和質性資料作出整理，並對研究問題加以分析和討論。量化研究部分採取問卷調查法，以全校125位中學生為研究樣本，採用描述統計、t檢定、單因子變異數分析及皮爾森相關係數進行資料分析，為了全面而深入地了解各量化研究變項之間的關係，研究將以半結構訪談的方式對6位教師和7位學生作深層次的探討，並以馬斯洛的需求層次理論、鮑比的依附理論和班杜拉的社會學習取向動機理論等多個關鍵理論進行分析和說明。

透過上述研究和資料分析，本研究歸納出下列五項結論：

一、學生在學習過程中遇到聽、說、讀、寫及理解等不同的學習困難。

二、高中學生的學習動機較佳。

三、師生關係與學習動機的未來願景分層面有顯著差異。

四、在訪談結果顯示不良的師生關係會提升學生的學習困難。

五、師生之間的情感關係與學生的讀寫表現具有相關性。

六、師生關係與學習動機具有正相關。

基於這些研究結果，該研究提出了一些建議，以考慮對教育機構政策和教育實踐的變化。本文還包括未來的研究方向，以支持在澳門學習有困難的學生。

關鍵詞：澳門、中學生、個案混合研究、學習困難、師生關係、學習動機

Abstract

This mixed-methods case study aimed to explore student learning difficulties, teacher-student interactions and learning motivations at a secondary school in Macau. The study employed a convergent parallel design approach y, gathering, organizing both quantitative and qualitative data simultaneously. A survey approach was adopted for the quantitative research phase of the study, which involved surveying 125 secondary school students as a representative sample. The returned data was subsequently analysed using descriptive statistics, t-test, one-way ANOVA and Pearson correlation coefficient methods. To better understand the relationship between each data variable, a series of semi-structured interviews with six teachers and 7 students were also used to explore deeper perspectives of both groups that was underpinned by several key theories, Maslow's hierarchy of needs, Bowlby's attachment theory and Bandura's social learning approaches to motivation, for analysis and interpretation.

The major findings of this study are as follows:

1、Students with learning difficulties faced various types of challenges such as listening, speaking, reading, writing and comprehension through the learning process;
2、The senior high school students had stronger learning motivations when compared to junior secondary students;
3、There was a significant correlation difference in respect of teacher-student relationships and learning motivations;
4、The interview data indicated that negative teacher-student relationships increased the risk of continuing student learning difficulties;
5、The interview data suggested a positive correlation between teacher-student relationships and student literacy performance; and
6、The study discovered a positive correlation between teacher-student relationships and learning motivations.

Based on these research findings, the study proposes several recommendations for the consideration of changes to the education institutional policy and educational practices. Furthermore, future research directions are also included in this thesis to support students with learning difficulties in Macau.

Keywords: Macau, Secondary students, Mixed-method case study, Learning difficulties, Teacher-student relationships, Learning motivations

第1章 緒論

第一節 研究背景

1、澳門背景與教育變化

澳門於1999年12月20日回歸中國以來，社會政治、教育及經濟方面都帶來重大之改變和深刻的影響。由於賭權開放，促進了澳門的經濟急速增長，對人力資源有著迫切需求，有澳門研究學者認為，賭場的高薪厚職，引致青年中途放棄學業，人們價值觀出現扭曲，社會道德水準亦面臨衝擊，這些轉變對澳門整體社會發展構成了重大的挑戰和考驗（黃素君，2008）。

回歸後，澳門特區政府再度調整教育制度，於2006年12月公佈的《非高等教育制度綱要法》（第9/2006號法律）推出了"融合教育資助計劃"為私立普通學校提供財政資源、培訓與技術支援，鼓勵有關學校收取有特殊教育需要的融合生《第9/2006號法律》。

透過以上澳門背景與教育變化，更深入了解澳門地區的社會變遷如何影響澳門年青人的教育發展。在這個社會的變化過程當中，對一些有辦學理念的學校因而產生開辦教育課程的念頭，並為一些弱勢的學生帶來學習機會。

2、澳門其中一所學校背景

本研究的對象是澳門第一所職業先修學校， 是在80年代中期，因一名社工遇見一些因年齡及學歷未適合到社會謀生的失學兒童而設立。當時學校只有14名學生，分別就讀於初一及升中預備班，後來學生人數迅速增長，學校得到政府及主教府支持擴充，並由天主教團體借出土地和政府部分經費協助興建為一間具規模之校舍，並於90年代初正式揭幕。

辦學理念源於機構的神父、修女、資深社工和澳門教育界資深人士，有鑑於80年代後期，澳門當時面對青少年失學問題，失學青少年流浪街頭，對個人、對家庭以至整個社會帶來極大的影響，為澳門最先引用社會工作學理念，實施輔導教學，以職業先修課程標準為本澳培養中等技術人材。

90年代後期引入全納式教育理念，在傳統班級內接納失明、肢體傷殘學生，

當年的校長及兩位主任參加世界視障學會，加強有關理念，增聘特別點字輔導教師，購置盲人專用電腦，點字機等來輔助失明和弱視學生學習普通中小學的文化課程。

於2006年實施"融合教育資助計劃"，並在2007/2008學年學校便正式開始參與融合教育事業等工作，收取智力範圍在臨界之內、學習困難、自閉症、情緒障礙、注意力不足過動症等類別之學生，承辦「明揚愛德、樂助貧苦、締造機會」的辦學宗旨，施「有教無類」的教育理念，為弱勢社群和學童提供服務。

綜合上述研究學校的背景，有一些教會機構的神職人員、社會工作者和教育人士，他們依著「有教無類」的教育理念，為一些失學和有學習障礙的學生提供適切教育服務，為學習困難的學生帶來機會和希望。因此，本次研究透過澳門這所學校的教育背景，從學生的學習困難、師生關係和學習動機作出深入的分析和討論，從研究的結果當中，增加認知學生的真正需要，為未來的教學人員提供意見，並希望為學習困難學生提供適切的服務。

第二節 研究動機

研究者以自身經驗出發，發現中學生在求學過程中，不少學生都遇到不同的學習困難，他們的智力都符合正常的發展階段，但往往因不同的原因，例如社會的轉變和經濟的急促增長，對學習失去興趣和動力；　隨著學生的學習過程遭遇不同形式的挫敗（留班、行為和個人價值觀偏差等問題），促使學生在學習的過程中帶著不同程度的負面影響。自從澳門特區政府實施義務教育之後，校園生活是每一個青少年必經階段，亦是學習知識的地方和未來要踏入的社會的一個縮影。學校只是一個場所，而教師、同學和學生輔導員是一種角色，這種角色都牽涉到不同的關係（師生關係或同儕關係），即是一種相處的模式。這種關係和相處模式更可能影響學生在學習上一種的追求。

本研究的對象學校是一所位於澳門並以「有教無類」和主要扶助弱勢社群為宗旨的學校。該校取錄的學生只有很小部分是適齡學童，絕大部份學生都是留班

生或轉校而來，學生的成績相對不理想，學業基礎能力相對比其他澳門同級的學生為低，所以他們大多數都是存在個人行為和學業等問題，對參與學校活動積極性並不理想。另一方面，學生在不同學校學習的過程中會遇上不同的科任教師和班主任。對大部分學生來說，他們剛好正處於青春期的階段，自我意識較強，情緒起伏較大，容易與人發生衝突，尤其當發生師生衝突，學生更隨之對學校及教師失去信心和信任（張鈿富、　林松柏、周文菁，2012），因此建立和諧的師生關係是重要的（白桂香，2000）。或許當中有部分需要接受融合教育服務的融合生，一般在澳門適齡中學生分成兩個階段：（一）初中：年級為初一至初三，年齡為11-14歲；（二）高中：年級為高一至高三，年齡為14-17歲。本研究資料當中，學生的年齡最高到達22歲，很多班級的學生與其他學校相比都有著"超齡"的情況。由此可見，他們都是帶著不同的困難和背景入讀這所學校。研究者認為，該校的學生在學習過程中遇上不同的困難與其他學校的學生有所不同，具備前述的特殊性，因此特顯其學習困難之特點，此為本研究動機之二，希望從此研究有助教師更加了解一群不可忽視的弱勢學生。

此外，馬斯洛（Maslow）提出的需求層次理論（Need- hierarchy Theory），其中生理和安全為低層次需求，社會和自尊為中層次需求，最後自我實現需求為最高層次，依其需要高低層次分類，層次愈低，強度愈大，所以最基本需求得到最低限度的滿足後，才會提昇至較高層次的需求。如果學生在學習的過程中經常遇上挫折，未能得到真正的安全感和精神上的支持（謝紫媚，2014），低層次需求無法得到滿足，如何讓他們往上追求較高的層次。因此本研究動機三旨在探討有學習困難的中學生在師生關係與學習動機的相關性。

第三節 研究目的

本研究藉著澳門這所研究學校的中學生，探討他們在學習困難、師生關係與學習動機不同變項中之現況、背景資料與變項間的差異和相關性。擬以聚斂性平衡混合設計方式進行研究，並同時蒐集量化和質性的資料加以分析，然後合併討論。綜合研究結果作深入討論。

第2章 文獻探討

第一節 學習困難和學習障礙的定義

學生在學習過程中，往往都會遇上不同的困難，儘管鄰近相同學制的地區（例如：香港、台灣和中國大陸）都建立了不同的機制和法律去照顧有特殊學習需要的學生，履行義務教育的責任。但除了被評為有特殊教育需要之學生以外，一般學生還是會在學習過程中遇上不同的困難，因此教師要怎樣理解和協助這些在學習過程中遇到困難的學生是重要的。以下將分二部分加以探討：學習困難和學習障礙的定義、學習困難的成因。

一、學習困難和學習障礙的定義

本文研究學習困難時，由於中西方國家文化不同，對學習困難有不同的定義，例如一些歐美國家（參考Journal of Learning Disabilities，1992，25卷第六期專刊），直接把學習困難聯想為學習障礙或生理障礙並加以作出診斷、分析和分類。但在學習過程當中，每個人都會有機會遇上其困難的地方，不單是身體或心理上有障礙才會發生（陳栩、郭斯評，2010）。因此在界定上，一般會有學習障礙（Learning disabilities）和學習困難（Learning difficulties）兩種說法。

在20世纪60年代柯克（Kirk）首次提出學習障礙的概念。後期醫學家、心理學家和教育學家都把學習障礙的概念作出分析和研究並作出一些定義和延伸性的發展（Kirk, 1962）。

Kirk和Gallagher（1979）提出學習困難是語文或知覺、認知或動作行為方面所存在的心理或神經上的異常狀況包括：

（1）某些行為（一些潛在能力）與成就（學業成積）之間有明顯差距
（2）學生的差異程度促使教師在教學方法與教材有所不同
（3）其困難並非因智能不足、感官障礙、情緒問題及欠缺學習動機為主因。

而學習障礙全國聯合委員會（National Joint Committee on Learning Disability, 簡稱NJCLD，1988）把學習障礙擬定為一個綜合的定義：學習障礙是指人們在吸收與運用所接收的信息、說話、閱讀、書寫、推理或數學能力時所出現的困難。

這種現象被認為是由於中樞神經系統功能失常而引致的。學習障礙有可能與其他障礙，如智能不足、情緒困擾等問題同時存在，但學習障礙並不是由於這些障礙所造成（曾瓊禛、洪儷瑜，2015）。

澳門與其鄰近地區常將學習困難歸納在學習障礙之中，當中澳門以融合教育服務安置於普通班內實施。其中融合生可能存在下列一項或多項的情況，其中包括身體機能障礙（如：聽障、視障、語障及肢障等）、智力範圍屬於臨界智能（Borderline intellectual function）並出現顯著的學習困難、自閉症類群障礙、注意力缺失／過動疾患、特殊學習困難（如：聽、說、讀、寫、數學運算方面有顯著困難），並在普通班接受教育（澳門教育心理輔導暨特教中心，2019）。

但根據Westwood（2007）指出，學習困難跟一般特定的智力、生理或感官障礙是沒有直接相關性，而所有學習遲緩、低成就或者難以教導的學生，都可以歸納為學習困難，由此可見學習困難與上述學習障礙的內容有不一樣的差異之處。

二、學習困難的成因

Kirk（1962）提出四種學習困難的成因：第一種是因先天神經系統缺陷所導致，學童在視和聽的感覺信息加工時出現問題；第二種是有關信息加工過程問題，如錯誤的信息編碼、儲存和提取所引致（牛衛華、張梅玲，2000）；第三種是專注力不足所導致，學童不能集中專注力在學習上，導致學習成績不理想；第四種是學習困難與學習動機相互關係，例如學生對學習過程失去興趣，未能作出主動學習，動機積弱，因而產生學習困難。

在學習過程中，有效的學習與教學策略亦是影響學習成效的主要因素，若能了解學習過程中的各種影響因素，就能設計有效的教學策略來幫助學生學習過程中的不足，提升其學習效能。所以學習困難不只是學生的問題，教師與學校也是形成學習困難的其中一個重要因素（王麗卿，2002）。林進材（2004）的有效教學理論與策略研究中，將學習困難的成因分為學生和教師兩部分並作出深入探討：

學生遇上學習困難的原因包含生理、心理、環境和內在因素：生理因素是身體上障礙、信息加工傳遞錯誤、理解能力欠佳或是表達能力不良所引致。心理因素是指因心理問題影響學習過程例如沉迷手機遊戲、談戀愛、兼職或對學習失去興趣、學習過於被動和學習壓力與情緒困擾等情況（鍾萍，2013）。環境因素主要都是外在因素，例如班級學習氣氛、師生關係不佳；內在因素則是學生的性格引致內在學習問題，例如個性內向少說話、專注力不足、智力因素、學習方法有誤和欠缺功課練習等等（陳菊，2015）。以上因素都與學生的學習困難有著相連的關係。

第二節 師生關係的定義、相關理論及研究

一、師生關係的定義

師生關係是學生和教師在學校生活中最基本的人際關係，屬於雙向動態的關係，不僅針對在教學的過程中有所影響，對學生和教師的心理健康也有重大的影響，這種影響會透過語言、非語言、情感、互相傳遞的想法和價值動態歷程，並有其特點和變化規律（朱文雄，1992；白桂香，2000；古碧蓮，2008）。而過去也有很多不同學者對師生關係有所定義，如教師和學生在教學或教育過程中結成相互關係，包括彼此所處的地位、作用和相互對待的態度（王逢賢，2004）。同時亦有研究者指出師生關係有一種連續性、互動和情感交流的特殊關係，具有學習和教育的作用，並存在於知識傳遞、價值塑造、生活關懷和人格陶冶等層面中（徐雅雄，2011），這種關係奠基於傳統理念精神，結合互動的理論，期望達成師生更親密、更連接的關係與教師更具影響力的成效，同時亦屬於動態、連續、與溝通的過程，預期建立師生間良性的回饋循環系統（潘正德，1993）。

二、師生關係之相關理論

（一）、依附理論觀點

Bowlby於1950年提出依附理論（Attachment theory），透過精神分析學派、學習理論、動物行為學及認知理論等來解釋照顧者與被照顧者（嬰兒、小孩或學童）之間的情感連結現象。根據依附理論的說法，被照顧者依附著主要照顧者之間所形成的情感牽引關係。Bowlby認為這種情感依附早於在生命發展初期已所形成，被照顧者在不同階段有不同的發展，並與不同人士建立不同的依附關係，如親情、友情和師生之情感依附。情感是依附的主要要素之一，當年青人與父母、朋友和教師建立親密關係時或尊敬和崇拜他們時，通常都會接納他們的意見和回應，這還代表他們害怕失去摯愛或親人對他們的關注，Hirschi（1969）指出這種害怕是表示年青人很在乎被依附者（父母、朋友和教師）對他們的看法。

Bowlby於1969年亦提出，早期的親子關係對未來年輕人的人際關係會有更深遠的影響，這種人際關係會伴隨著年輕人在成長的過程當中而有所改變，例如早期嬰兒和幼年時期對於父母都是在生理和物質上的依附，但由於學童不斷成長，除了物質以外心理情感亦有所追求，因而依附的型態會有所改變。而對象因應學童在環境的變化（如學校與課外活動），接觸的對象（如教師和同儕）亦有所不同，這些對象的關係正正影響著青少年的自我概念的發展（Wu, 2009）。自我概念並非與生俱來（Chen, 1983），隨著年齡的增長，在生活過程中父母、同儕和師長在言語和非言語的互動的過程中，促使自我概念逐漸形成（Freeman, 2003）。這種自我概念是一種複雜的心理歷程，他們受著這些身邊重要的人的情感連結所影響，從而透過自己的內省來建立的主觀自我概念的發展（Doyle, Markiewicz, Brendgen, Lieberman, & Voss, 2000；Bartle-haring, Brucker, & Hock, 2002）。

此外，學校是個人開始接觸的第一個正式組織，他們與學校的依附關係是一種心理和情感層面的經驗（Johnson, Crosnoe, & Elder, 2001；Marcus & Sanders-Reio 2001；Cheng, 2007）。若青少年與學校建立起較強連結關係，能夠依附於學校，有紀律地接受學校內設定的行為規範和守則，將使學生有效遵守社會規則及提升學業表現（Coleman & Hoffer, 1987；Bryk, Lee, & Holland, 1993）。

（二）、教學互動（Instructional Interaction）

互動是指兩人或以上相處的一段時間，他們利用語言或肢體語言等不同方式

作溝通和活動的交流（黃政傑，1997），所以教師與學生能透過不同表達的溝通方式，影響雙方之間的互動歷程（孫敏芝，1985）。這點與Kyriacou（1986）提出的論點相同，如果教師與學生在學習過程中有良好的互動歷程，就會形成良好的師生關係，促使在教學的過程中有更佳的教學效能。邱美文（2010）表示這種教學互動是雙向的，即是教師會呈現自己的教學態度去影響學生，而學生當接受了教師的訊息之後再經過思考便會作出相應的回饋。該種雙向的互動模式，讓我們更加了解師生關係所造成的影響。

在Wubbels, Creton和Hooymayers（1985）研究中亦提到互動理論是分析教學的過程中教師與學生之間的互動關係，只有良好的互動關係，才會增強學生的主動學習和自我的求知欲，讓整個教學過程發展達到最理想的效果（歐申談，1993）。要獲得成功的師生互動，教師必需了解學生的背景和行為，再透過不同的表達方式，成為積極主動的溝通角色。如課堂上尋找合適的機會去讚賞和鼓勵學生，利用同理心的方式去理解學生的感受，這樣有助師生有良好的溝通和互動，建立良好的師生關係，有助學生提升其學習興趣和養成良好的學習態度。

師生關係是校園生活中教師與學生的一種互動和情感的關係，以上不同的相關理論當中解釋這種積極的互動關係會直接影響學生學習態度和教師的教學效能，從而影響學生的學習動機和課業上的追求，讓他們在學業上取得更佳的成積。另外，師生關係影響著學生的自我價值包括價值塑造、生活關懷和人格陶冶等。這種思想的演變更影響青少年的自我概念的發展（Wu, 2009）。最後整理學者的定義和相關理論，把師生關係分為情感、生活、課業和思想等四個層面。

第三節 學習動機的定義和相關理論

一、學習動機的定義

學習動機是指維持和引起學生學習活動的心理需求和目標（張春興，2000），因此學習動機促使學生學習產生動力和目標，並主動透過自己的努力積極完成其

學習工作和達到成果，讓學生獲得滿足感和成效。許多不同學者對學習動機有不同的解釋和看法。Stipek（1995）指出學習動機是學生追求滿足與成功的心理需求，亦是影響學習的主要成因。這與朱敬先（2000）所指出的學習動機是嘗試驅促自己追求成長之傾向相同。如鄭采玉（2008）所提出學習動機是一種自我投入的心理歷程。當學生具有高度動機趨向和正向期待時，這種投入意向有助於提升學生的學習效能，因而令學生的學習成果得以有所提升（McCombs, 2000）。除此之外，自治、能力、歸屬感、自尊和快樂都是學生重要的需求條件，這正是誘發學生的內在學習動機（Raffini, 1996）。

綜合以上學者之見，學習動機的定義是學生在學習過程中，引發學生在生理及心理的內在思考歷程，並且在學習過程當中，促使學生自發投入和維持或增強學生之原動力。

二、學習動機的相關理論

（一）、社會學習取向動機理論

而另一位著名的美國心理學家Albert Bandura在社會學習取向的動機論中，整合了行為取向與認知取向學派的理論，既重視行為結果的影響，亦重視個體認知信念的影響，關注個人認知、行為和周圍環境之間的互動。Bandura（1977）所提出的自我效能理論（Self-efficacy theory）當中，對自我完成工作目標的信心如何，如果信心增強，必定影響個人繼續堅持的動機，這也是影響個人學習動機的主要因素。所以這能提高學生的自信心和積極主動的態度，有助於他們堅持完成學習目標。另外，Paul Pintrich（1989）亦把學習動機分成三部分：價值動機、期望動機和情感動機，這三種動機則影響學生的學習成效。價值和期望是一份預期的信念，這種信念會給予學生足夠誘因去追求學習和完成目標。而情感動機則是學生在學習時的情感反應，如學生感到焦慮和不被認同時，將會影響學生的學習動機。以上學習動機理論有一個共通點，是提出教師要增強學生的自信，並且學生要對個人目標有所努力，之後教師再依據學生不同的學習能力，設計合適的教學方法，才能有效增強學生的學習動機。

（二）、需求層次理論

馬斯洛（Maslow）於1943年人類動機的理論提出了講述人類需求層次理論（Need- hierarchy Theory），他以人本理論重視人的發展、自我實現和正面價值，並強調個人的自由意志和自我實現的哲學思想。在內在原動力中，人們的學習並不是單靠外在動機，反而是著重人類的內在潛能歷程，故人本主義特別重視內在動機的重要性。人本主義認為教育是人類發展潛力的過程，促使自己更為成長。

另外需求層次理論中，Maslow(1943)將人類需求分為二大類五個層次的需求，並認為前三項是屬於低層次需求，後二項屬於高層次需求，分別是由下而上，依序為生理需求（physiological needs）、安全需求（safety needs）、社會需求（love needs）、自尊需求（esteem needs）和自我實現需求（self-actualization needs）。教學活動必須與學生的需求配合，以提升其動機層次，先滿足低層次需求，高層次需求才能被激勵。所以學習動機自然成為人性成長的關鍵動力。

第3章 研究設計

第一節 研究問題

本研究以探討澳門中學生的學習困難、師生關係與學習動機的現況、差異情形和相關情形，而主要研究問題包括：

一、澳門中學生的學習困難、師生關係與學習動機之現況如何？
二、澳門不同學習困難中學生的師生關係與學習動機的差異情形如何？
三、澳門學習困難中學生的師生關係與學習動機的相關情形如何？

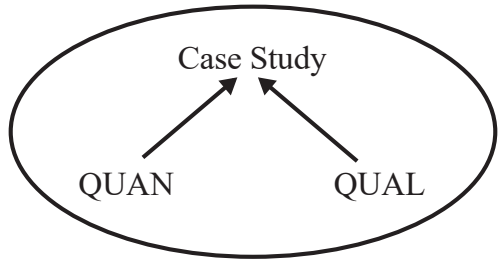
第二節 研究方法

本次研究方法應用混合研究方式，主要目的是同步和有依據地採用質性和量化的方法，作出多重檢核與互補。混合研究必須要在質和量的取向中各有一個完整的問題方式形成研究問題、蒐集資料、分析資料和詮釋結果，所以研究者在制訂研究問題時也採用了質性研究問題來探討學生與教師在學習困難、師生關係與學習動機的情況，而量化研究問題二、三來分析差異及相關性。

在混合研究設計分類架構當中，本研究使用了聚斂式平衡混合設計（Convergent parallel mixed methods），是一種同時蒐集量化和質性資料，並加以整理，藉以提供對研究問題整體性的分析。在設計中，研究者通常會同時蒐集兩種資料，然後整合全部結果並解讀其中的訊息。在此設計中，透過矛盾或不一致的發現作出解釋或再作進一步的探究。

在圖1的混合研究設計中，有些標記和符號用來說明研究程序。然後又經由Tashakkori和Teddlie（1998）和Plano Clark（2005）加以擴充，如QUAL/Qual 和QUAN/Quan 的大寫表示強調某一個研究取向，小寫則是代表優先性比較低，或是研究中比較不重要。而「 」代表資料蒐集形式的順序，由一種形式的資料（例如，量化資料或質性資料）建立或連結到另一種形式的資料（例如，個案研究）。「 」代表活動的流程可以雙向進行。

圖1 MMCSR（本研究者所設計）



第三節 研究工具

一、量化研究的工具

量化研究首先以問卷調查方式，蒐集澳門這所研究學校中學生的背景資料與過去在學習困難、師生關係與學習動機之經驗。從每個變項不同層面進行探討與分析可能影響之因素。

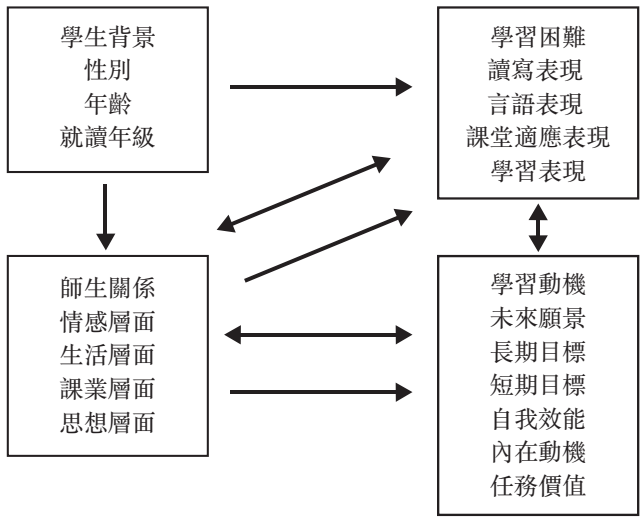
問卷調查方式雖然能快速取得學生對以上變項的相關資料，但考量澳門這所研究學校的中學生大部分為曾留班的學生（學習能力偏弱或行為問題）及全校學生數量有限，或許未能全面深入解釋學生學習狀況與困難之處，所以加入學生和教師個別訪談方式，分析學生的師生關係和學習動機之現實情況，以及遇到的學習困難有哪些方面。

（一）、研究假設

依據假設本研究之架構以圖2研究架構圖呈現，主要以中學生的性別、年齡和年級為背景變項，師生關係和學習困難為自變項，中學生的學習動機為依變項。學習困難分為讀寫表現、言語表現、課堂適應表現、學習表現，由此四個層面來探討中學生在學習困難的現況； 師生關係由情感層面、生活層面、課業層面與思想層面等四層面來探討中學生在師生關係之現況； 學習動機分為未來願景、長期目標、短期目標、自我效能、內在動機與任務價值層面，由此六個層面探討中學

生的學習動機，進而分別探討背景變項、自變項與依變項的相關情形和影響力。

圖2 研究架構圖



（二）、問卷編制及內容

1. 學習困難量表

本研究所採用的學習困難量表乃參考學童整體表現問卷（澳門教育暨青年局教育心理輔導暨特殊教育中心）與香港初中學生讀寫困難行為量表（香港教育局特殊教育資源中心，2011）初步編擬題目。由於研究對象的不同與研究主題之差異，本研究參考此兩份量表之四個層面，而部分題目內容與研究方向無關則將予以刪除，僅保留相關的四個層面，包括（一）讀寫表現：「讀寫」是一種最常見的學習困難，學生雖然有正常的智力和學習經驗，卻未能準確而流暢地認讀和默寫字詞；（二）言語表現：有理解困難的學生，在接收較長或結構較複雜的句子時，只能夠掌握句子的部份意思，往往因未能理解全部訊息而誤解對方，以致答非所問；（三）課堂適應表現：一些注意力短暫，容易分心，有關學習興趣和課

堂狀況表現；（四）學習表現：思維比較具體，抽象及邏輯思考力較弱和記憶力弱。並將題目修改至更容易認讀和更易掌握題意的表述方式，以便學生能夠順利完成作答。在學習困難的四個分層量表中，總得分愈高者表示受試者的學習困難愈多；總得分愈低者表示受試者的學習困難愈少。

2. 師生關係量表.

本研究所採用的師生關係量表乃參考張家綺（2016）的「師生關係問卷」初步編擬題目，考慮本研究的對象之學校生活經驗與其對文字的理解能力，本研究參考該量表之四個層面。由於題目數量較多，把適量的題目予以刪除，並將題目修改至更容易認讀和更易掌握題意的表述方式，以便學生能夠順利完成作答。師生關係量表包括四個層面：

（一）情感層面是指老師與學生在互動中產生的情感，如感受關愛、喜歡親近、親密信任、承諾、情感交流等等的現象，在此統稱為情感層面。

（二）生活層面是指老師與學生在日常生活情境中互動所產生的關係，如生活關懷、日常行為規範等互動，在此歸納為師生關係中的生活層面。

（三）課業層面是指老師與學生在學習上有關的各種活動，如教學輔導、學習要求、課業指導、課堂表現、知識傳遞等等的互動，在此統稱為課業層面。

（四）思想層面是指老師與學生在思想溝通、心靈交流、輔導關係、人格陶冶與價值塑造等方面所感所受，在此統稱為思想層面。在師生關係的四個分層量表中，總得分愈高者表示受試者的師生關係愈好； 總得分愈低者表示受試者的師生關係愈差。

3. 學習動機量表

本研究所採用的學習動機量表乃參考李建邦（2012）的「自我調整學習歷程」內目標設定所提及動機的6個基礎層面，而量表問題則參考張家綺（2016）學習動機量表作初步編擬題目，並把題目歸納在相關的層面中，針對本研究對象過往校園生活經歷與其對文字的理解能力，由於題目數量較多，把適量的題目予以刪

除，並將題目修改至更容易認讀和更易掌握題意的表述方式，以便學生能夠順利完成作答。學習動機量表包括六個層面如下：

（一）未來願景：有較崇高的理念，學習讓日後的人生觀更有意義，追求自己的夢想。
（二）長期目標：對未來的學習成就和表現作出目標設定。
（三）短期目標：對短期的學習評量作出目標設定。
（四）自我效能：相信自己能做得到，解決自我問題和克服困難，對自己現有的學習有期望，對學習出於主動。
（五）內在動機：覺得對未來有用，並設法增加興趣，擴增其實用性，提高自己學習的自我價值。
（六）任務價值：學習改變未來日後的生活，刺激對學習的追求而完成任務。

在學習動機的六個分層量表中，總得分愈高者表示受試者的學習動機愈高；總得分愈低者表示受試者的學習動機愈低。

（三）、填答與計分

問卷採用李克特量表（Likert-type scale），並以五點量表法方式填答，由受試學生根據本身經驗和感受，在各題項的「十分同意」、「同意」、「沒有意見」、「不同意」、「十分不同意」等五個強度作答，研究者依學生的圈選情形，分別給予5、4、3、2、1計分，經由受試的學生在量表上的作答情形，分別可以了解其學習困難、師生關係與學習動機的現況。

（四）、預試問卷實施

本研究問卷初稿由研究者在澳門這所研究學校的初一至高三中，每班各派發出9份問卷作為預試，總計發出54份，完整回收54份，佔發出問卷100%。就其針對問卷編排、用字遣詞及題意等層面給予回饋，以確認問卷之表面效度，成為本研究之預試問卷。隨即將每份問卷的答案予以編碼，利用統計分析軟件SPSS23中文版進行項目分析、因素分析和信度分析。

第四節 研究參與者及抽樣

一、量化統計

本量化研究向澳門這所研究學校初一到高三全校中學生各班發放問卷，經學校簽署同意書後，向每班級發放問卷，總共發出125份問卷，回收125份問卷，問卷回收率達100%，接著檢視回收的問卷差且加以分類，分為有效問卷及無效問卷，作答不完整、答題標示不清楚、重覆作答等因素皆歸類為無效問卷，屬於此類問卷共三份，剩餘122份則屬於有效問卷，然後將問卷之每一道題項的答題內容加以編碼、建檔，進而利用統計軟體進行資料分析。

二、質性訪談

質性訪談學生和教師則採用自願性抽樣（voluntary sampling），以自願參與方式抽取樣本。透過學生問卷下方，所設有的自願性訪談參與回條，而其中同意接受訪談的共有7名學生包括初一3位、初二2位、高一1位和高三1位學生，而教師方面則向每科的教師以便利抽樣（convenience sampling）的方式進行查詢，詢問後有6名教師自願參與包括中文科、英文科、數學科、歷史科、地理科和音樂科各1位教師，而每科教師都具有初中及高中的教學經驗。本研究的受訪者都以化名尊稱。有關受訪者的背景資料請閱覽表1和表2，詳細說明參與者的背景資料如下：

表1 受訪學生基本資料

編碼		年級	性別	歲數	曾/否留班
S01		初一	男	16	否
S02		初一	男	16	是
S03		初一	女	16	是
S04		初二	男	16	是
S05		初二	女	16	是
S06		高一	男	16	否
S07		高三	女	21	是

表2受訪教師基本資料

編碼	性別	教學年資	任教科目	任教級別	科任/班主任	最高學歷	專業資格
T01	男	10	中文	初中、高中	班主任	學士學位	小學、中學
T02	女	20	英文、品德	初中、高中	科任	學士學位	中學
T03	男	25	數學	初中、高中	科任	學士學位	中學
T04	男	10	歷史	初中、高中	班主任	學士學位	中學
T05	男	14	地理	初中、高中	班主任	學士學位	中學
T06	女	2	音樂	初中、高中	科任	學士學位	中學

第五節 研究階段及程序

本研究依據研究目的，並探討相關理論與文獻，綜合文獻和前人研究所得出之分層面來編制問卷，以便進行問卷之操作、收集自願受訪者，並編製訪談大綱作出訪談。本研究之操作程序如下（見圖3）：

圖3 研究之操作程序

第4章 量化研究結果與分析

第一節 背景變項、學習困難、師生關係與學習動機之概況

一、澳門這所研究學校中學生的背景變項之概況分析

本研究之有效樣本共122人，其中男生比女生的人數要多，男生有87人，女生有33人，無效樣本有2人，性別比例男生與女生分別為71.3 %及33 %，無效樣本為1.6%。在年齡方面11-14歲有25人、15-18歲有39人、19歲或以上有19人，所佔比例分別為 11-14歲有25 %、15-18歲有64%及19歲或以上有15.5%。在年級方面初中有85人、高中有37人，所佔比例分別為初中有69.7%、高中有30.3%。

二、中學生學習困難、師生關係與學習動機之概況分析

由表3發現澳門這所研究學校中學生現階段整體學習困難題平均得分3.02高於中位數3分，表示他們在學習過程中都有遇上學習困難；就題平均標準差而言，數值介於.85~.98之間，其中「課堂適應表現」和「學習表現」層面的資料分佈情形較為集中。在師生關係方面，澳門這所研究學校中學生現階段整體師生關係3.40，高於中位數3分，顯示大部分中學生所認定的師生關係不錯，師生之間保持一定的良好關係；就題平均標準差而言，數值介於.70~.72之間，其中「情感層面」、「課業層面」和「思想層面」資料分佈情形較為集中；在學習動機方面，由分析結果可以瞭解中學生現階段整體學習動機的題平均數為3.69高於中位數3分，顯示大部分中學生有良好的學習動機；就題平均標準差而言，數值介於 .72~1.00之間，可發現「內在動機」之資料分佈情形較為集中。

表3 中學生學習困難、師生關係與學習動機概況分析摘表

	題數	平均分	平均標準差
學習困難	13	3.02	0.72
讀寫表現	3	2.81	0.98
言語表現	3	2.96	0.86
課堂適應表現	3	3.14	0.85
學習表現	4	3.24	0.85

	題數	平均分	平均標準差
師生關係	16	3.40	0.59
情感層面	4	3.54	0.70
生活層面	4	3.31	0.72
課業層面	4	3.38	0.70
思想層面	4	3.35	0.70
學習動機	18	3.69	0.61
未來願景	3	3.86	0.76
長期目標	3	3.66	0.80
短期目標	3	3.80	0.74
自我效能	3	3.63	0.78
內在動機	3	3.72	0.72
任務價值	3	3.50	1.00

（N=122）

三、中學生學習困難之概況分析

學習困難以受試者在「學習困難量表」之反應為依據，茲採用平均數及標準差對受試者之學習困難總體情況做分析。問卷題數共13題，每題最高分是5分，最低分是1分，中位數為3分。

表4顯示，就層面平均數而言，在四個層面中，「學習表現」的層面平均分數3.24分最高。其中「學習成績不理想」、「解題有困難」、「在計算和推理時感覺有困難」單題平均得分高於中位數，作答偏向「同意」；其餘層面向度依得分高低依序為「課堂適應表現」層面得分為3.14分，其中「學習時感到疲倦或精神難以集中」、「較難專心做事」單題平均得分高於中位數，作答偏向「同意」；「言語表現」層面得分為2.96分，雖然層面分數低於中位數，但其中題「作文有困難」單題平均分高於中位數，作答偏向「同意」；「讀寫表現」層面得分為2.81分，而各題平均分低於中位數，作答偏向「不同意」，可見學生在「讀寫表現」層面中

表現尚可。綜合上述所言，在澳門這所研究學校的中學生都有遇上不同情況的學習困難，其中「學習表現」得分最高，而且資料分佈情形較為集中。

表4 中學生學習困難各題平均得分

層面	題號	題目	單題 平均得分	層面 平均分
讀寫 表現	01 02 06	在閱讀時感覺有困難。 在書寫時感覺有困難。 不能流暢地朗讀一篇文章	2.99 2.77 2.69	2.81
言語 表現	08 09 11	學習新詞有困難。 作文有困難。 口語表達時感到困難，未能準確表達自己的需要、想法和感受。	2.90 3.07 2.90	2.96
課堂 適應 表現	04 12 13	學習時感到疲倦或精神難以集中。 較難專心做事。 小組討論時較難表達自己的想法及感受。	3.53 3.03 2.86	3.14
學習 表現	03 05 07 10	學習成績不理想。 背誦時感到吃力。 解題有困難。 在計算和推理時感覺有困難。	3.62 3.00 3.18 3.18	3.24

（N=122）

四、中學生師生關係之概況分析

師生關係以受試者在「師生關係量表」之反應為依據，茲採用平均數及標準差對受試者之師生關係總體情況做分析。問卷題數共16題，每題最高分是5分，最

低分是1分，中位數為3分。

表5顯示，就層面平均數而言，在四個層面中，「情感層面」的層面平均分數3.54分最高，其中全部單題平均得分高於中位數，作答偏向「同意」；其餘層面向度依得分高低依序為「課業層面」的層面平均分為3.38分，其中全部單題平均得分高於中位數，作答偏向「同意」；「思想層面」的層面平均分為3.35分，其中全部單題平均得分高於中位數，作答偏向「同意」；「生活層面」的層面平均分為3.31分，其中全部單題平均得分高於中位數，作答偏向「同意」。綜合上述所言，澳門這所研究學校的中學生師生關係良好，其中「情感層面」得分最高，而且資料分佈情形較為集中。

表5 中學生師生關係各題平均得分

層面	題號	題目	單題 平均得分	層面 平均分
情感層面	01	我可以輕鬆地對教師說出我想說的話。	3.48	3.54
	02	畢業或分班後我還會想與教師保持聯絡。	3.56	
	03	我覺得教師很親切，我很喜歡教師。	3.63	
	04	我相信教師都是為了學生好。	3.50	
生活層面	05	我跟教師相處就像親人朋友一樣。	3.37	3.31
	06	我認同教師對我的要求。	3.47	
	07	我會主動幫助教師處理一些班上瑣碎的雜事。	3.31	
	08	當我需要協助時，我會先想到教師。	3.10	
課業層面	09	教師可以引起我的學習興趣。	3.18	3.38
	10	對於我不會的問題，教師會盡力教導我。	3.64	
	11	當我在課業上遇到困難時，我會主動找教師幫忙。	3.36	
	12	當我進步時，教師會發現並給予我讚美。	3.35	

思想層面	13	我很在乎教師對我的看法。	3.23	3.35
	14	教師能尊重我的想法。	3.53	
	15	我把教師當作學習的榜樣。	3.22	
	16	我發表意見時能得到教師正面的回應。	3.40	

（N=122）

五、中學生學習動機之概況分析

學習動機以受試者在「學習動機量表」之反應為依據，茲採用平均數及標準差對受試者之學習動機總體情況做分析。問卷題數共18題，每題最高分是5分，最低分是1分，中位數為3分。

表6顯示，就層面平均數而言，在六個層面中，「未來願景」的層面平均分數3.86分最高，其中全部單題平均得分高於中位數，作答偏向「同意」；其餘層面向度依得分高低依序為「短期目標」的層面平均分為3.80分，其中全部單題平均得分高於中位數，作答偏向「同意」；「內在動機」的層面平均分為3.72分，其中全部單題平均得分高於中位數，作答偏向「同意」；「長期目標」的層面平均分為3.66分，其中全部單題平均得分高於中位數，作答偏向「同意」；「自我效能」的層面平均分為3.63分，其中全部單題平均得分高於中位數，作答偏向「同意」；「任務價值」的自我效能平均分為3.50分，其中全部單題平均得分高於中位數，作答偏向「同意」。綜合上述所言，澳門這所研究學校的中學生在學習動機偏向滿意，其中「未來願景」得分最高，而「內在動機」層面資料分佈情形較為集中。

表6 中學生學習動機各題平均得分

層面	題號	題目	單題 平均得分	層面 平均分
未來願景	01	我會努力追求更有意義的人生。	3.95	3.86
	02	我會成為一個對社會有貢獻的人。	3.73	
	03	我期望我的努力最終會有收穫。	3.90	
長期目標	04	我會為了實現自己的理想而努力讀書。	3.66	3.66
	05	我對自己能中學畢業極為樂觀。	3.67	
	06	即便這次成績不如預期，我也不氣餒，我相信下次可以表現得更好。	3.67	
短期目標	07	我會為了升班而認真溫習。	3.95	3.80
	08	我今年能升班。	3.89	
	09	我有信心在考試中獲得好成績。	3.58	
自我效能	10	如果在學習上遇上不明白的地方，	3.74	3.63
	11	我能夠完成教師給我的功課。	3.67	
	12	我有把握能學會課程內容。	3.47	
內在動機	13	我喜歡校園的生活。	3.74	3.72
	14	我很享受獲得好成績的感覺。	3.79	
	15	我相信只要我努力，就可以解決學習上的問題。	3.63	
任務價值	16	我認為讀書可以改變我的未來。	3.49	3.50
	17	我認為現在的學習內容對我日後的工作有幫助。	3.46	
	18	我認為課程中學到的知識可以運用在生活中。	3.54	

（N=122）

第二節 不同背景中學生在學習困難、師生關係與學習動機之差異分析

一、不同年齡的中學生學習困難關係之差異比較

不同年齡的中學生在學習困難各分層面及整體學習困難是否有顯著差異，經單因子變異數分析受試者在「學習困難量表」之反應，整理相關結果與表7。由表7可知，不同年齡的中學生之學習困難達到顯著差異（各層面之p值<.05），而就整體學習困難差異達到顯著水準（F=3.455，p=.035），顯示研究假設獲得支持。在整體學習困難中，11-14歲平均分46.20高於15-18歲平均分42.83與19歲或以上平均分38.05，顯示11-14歲學生遇到學習困難相比15-18歲與19歲或以上學生要多。但進一步分析「學習困難」的四個層面中發現，「讀寫表現」層面（F=5.13，p=.007），而11-14歲平均分9.72為最高，顯示11-14歲學生在「讀寫表現」層面出現更多的困難；「言語表現」層面（F=3.47，p=.034），而15-18歲平均分9.17為最高，顯示15-18歲學生在「言語表現」層面出現更多的困難；　在「課堂適應表現」層面（F=1.612，p=.204）與「學習表現」層面（F=1.255，p=.289），不同年齡層的中學生並無顯著差異。

表7 不同年齡的中學生學習困難關係單因子變異數分析摘要表

	年齡	人數	平均分	標準差	F	p值
學習困難	11-14歲	25	46.2000	9.09670	3.455*	.035
	15-18歲	78	42.8333	10.80574		
	19歲或以上	19	38.0526	8.73991		
	總計		42.7787	10.39271		
讀寫表現	11-14歲	25	9.7200	3.03480	5.123*	.007
	15-18歲	78	8.4231	2.88083		
	19歲或以上	19	6.9474	2.43752		
	總計		8.4590	2.94621		

言語表現	11-14歲 15-18歲 19歲或以上 總計	25 78 19	9.0400 9.1795 7.4737 8.8852	2.24499 2.70038 2.26981 2.60386	3.470*	.034
課堂適應表現	11-14歲 15-18歲 19歲或以上 總計	25 78 19	10.0800 9.4103 8.6842 9.4344	2.08006 2.71330 2.47325 2.57447	1.612	.204
學習表現	11-14歲 15-18歲 19歲或以上 總計	25 78 19	13.8800 12.8718 12.3158 12.9918	3.43171 3.42777 3.43273 3.43655	1.255	.289

二、不同年齡的中學生學習動機之差異比較

不同年齡的中學生在學習動機各分層面及整體學習動機是否有顯著差異，經單因子變異數分析受試者在「學習動機量表」之反應，整理相關結果與表8。由表8可知，不同年齡的中學生之整體學習動機未達顯著差異（各層面之p值>.05），而就整體學習動機而言，亦不因年齡而有所差異（F=1.545，p=.218），但進一步分析「學習動機」的六個層面中發現，「任務價值」層面（F=3.34*，p=.039）出現顯著差異，而19歲或以上平均分12.1053為最高，顯示19歲或以上學生在「任務價值」層面較為理想。在「未來願景」層面（F=.813，p=.446）、「長期目標」層面（F=1.027，p=.361）、「短期目標」層面（F=.101，p=.904）、「自我效能」層面（F=.804，p=.450）與「內在動機」層面（F=1.834，p=.164），各層面之p值>.05，所以上述層面不同年齡層的中學生並無顯著差異。

表8 不同年齡的中學生學習動機關係單因子變異數分析摘要表

	年齡	人數	平均分	標準差	F	p值
學習動機	11-14歲 15-18歲 19歲或以上 總計	25 78 19	67.1600 65.5000 70.3684	8.77344 10.72653 14.18611	1.545	.218
未來願景	11-14歲 15-18歲 19歲或以上 總計	25 78 19	11.4400 11.4872 12.2105 11.5902	2.69382 2.06859 2.71986 2.30971	.813	.446
長期目標	11-14歲 15-18歲 19歲或以上 總計	25 78 19	11.2800 10.7821 11.5789 11.0082	1.74452 2.29990 3.46916 2.42063	1.027	.361
短期目標	11-14歲 15-18歲 19歲或以上 總計	25 78 19	11.5200 11.3590 11.5789 11.4262	2.20076 2.15005 2.63135 2.22279	.101	.904
自我效能	11-14歲 15-18歲 19歲或以上 總計	25 78 19	11.0800 10.7051 11.4211 10.8934	2.27156 2.29686 2.69394 2.35245	.804	.450
內在動機	11-14歲 15-18歲 19歲或以上 總計	25 78 19	11.8000 10.9103 11.4737 11.1803	1.95789 2.09629 2.56836 2.16286	1.834	.164
任務價值	11-14歲 15-18歲 19歲或以上 總計	25 78 19	10.0400 10.2564 12.1053 10.5000	3.43366 2.88496 2.62244 3.02401	3.344*	.039

三、不同年級中學生學習困難之差異比較

不同年級的中學生在學習困難各分層面及整體學習困難是否有顯著差異，經t檢定分析受試者在「學習困難量表」之反應，整理相關結果於表9。由表9可知，不同年級的中學生之學習困難各層面均達到顯著差異（各層面之p值<.05），而就整體學習困難差異達到顯著水準（t=3.41，p=.001），顯示研究獲得支持，亦即初中與高中學生在學習困難有顯著差異。在整體學習困難中，初中平均分44.81高於高中平均分38.10，顯示初中學生遇到學習困難相比高中學生要多。但進一步分析「學習困難」的四個層面中發現，「讀寫表現」層面（t=3.41，p=.001）、「言語表現」層面（t=2.45，p=.001）、「課堂適應表現」層面（t=3.26，p=.001）與「學習表現」層面（t=2.25，p=.026），初中與高中學生皆有顯著差異，從此四個層面的平均分看來，初中的平均分皆比高中學生的平均分高，顯示初中比高中學生出現更多的困難。

表9 不同年級的中學生學習困難關係t檢定摘要表

	年級	人數	平均分	標準差	t值	p值
學習困難	初中	85	44.8118	10.10009	3.41**	.001
	高中	37	38.1081	9.63438		
讀寫表現	初中	85	9.0353	2.83871	3.41**	.001
	高中	37	7.1351	2.79048		
言語表現	初中	85	9.2588	2.61020	2.45*	.016
	高中	37	8.0270	2.40932		
課堂適應表現	初中	85	9.9176	2.54115	3.26**	.001
	高中	37	8.3243	2.32204		
學習表現	初中	85	13.4471	3.23855	2.25*	.026
	高中	37	11.9459	3.68892		

第三節 中學生的師生關係與學習困難和學習動機之差異分析
中學生的師生關係與學習動機之差異分析

澳門這所研究學校中學生的師生關係與學習動機各分層面及整體學習動機是否有顯著差異，經多變異數分析受試者在「師生關係量表」與「學習動機量表」之反應，整理相關結果與表10。由表10可知，中學生之師生關係與學習動機各層面均達到顯著差異（各層面之p值<.05），而就整體學習動機與師生關係差異達到顯著水準（F=2.497，p=.000），顯示師生關係與學習動機有顯著差異。但進一步分析師生關係與「學習動機」的六個層面中發現，「未來願景」層面（F=2.49，p=.000）、「長期目標」層面（F=2.268，p=.001）、「短期目標」層面（F=1.748，p=.019）、「自我效能」層面（F=2.069，p=.003）、「內在動機」層面（F=1.76，p=.018）與「任務價值」層面（t=1.81，p=.013），師生關係與學習動機各層面皆有顯著差異，由於「未來願景」的F值最高，顯示良好的師生關係對學生的「未來願景」有顯著之差異，並認為師生關係有助影響學生對未來有正面的發展。

表10 中學生的師生關係與學習動機之差異

	師生關係	
	F	顯著性
學習動機	2.497	.000
未來願景	2.490	.000
長期目標	2.268	.001
短期目標	1.748	.019
自我效能	2.069	.003
內在動機	1.761	.018
任務價值	1.812	.013

第四節 中學生的學習困難、師生關係與學習動機之相關情形

一、師生關係與學習困難的相關情形

由表11可知澳門這所研究學校中學生的師生關係與學習困難各向度之相關情形。其中師生關係的情感層面與學習困難和讀寫表現都有顯著相關（p<.05），顯示師生關係的情感層面不佳會影響學習困難中的讀寫表現，而其他變項和層面皆無顯著相關（p>.001）。

表11 師生關係與學習困難變項及各層面的相關情形

	師生關係									
	師生關係		情感層面		生活層面		課業層面		思想層面	
	相關係數	顯著性	相關係數	顯著性	相關係數	顯著性	相關係數	顯著性	相關係數	顯著性
學習困難	-.074	.416	-.190*	.036	-.064	.485	.026	.773	-.024	.795
讀寫表現	-.061	.502	-.214*	.018	-.046	.616	.023	.799	.029	.751
言語表現	.050	.582	-.083	.366	.072	.432	.156	.086	.025	.788
課堂適應表現	-.101	.270	-.131	.150	-.059	.517	-.055	.547	-.096	.294
學習表現	-.054	.558	-.125	.169	-.076	.407	.027	.767	-.006	.951

二、師生關係與學習動機的相關情形

由表12可知澳門這所研究學校中學生的師生關係與學習動機各向度之相關情形。其中師生關係與學習動機的整體變項與各分層面皆有顯著相關（p<.001），且在學習動機的六個層面當中，以「長期目標」與師生關係之相關程度最高度（r=.537），其餘五個層面與師生關係之相關程度由高至低分別為「自我效能」（r=.517）、「未來願景」（r=.463）、「內在動機」（r=.453）、「短期目標」（r=.399）、「任務價值」（r=.292），而師生關係與整體學習動機的相關數

r=.575，表示中學生的師生關係愈好，其學習動機就越高。

表12 師生關係與學習動機變項及各層面的相關情形

	師生關係									
	師生關係		情感層面		生活層面		課業層面		思想層面	
	相關係數	顯著性	相關係數	顯著性	相關係數	顯著性	相關係數	顯著性	相關係數	顯著性
學習動機	.575**	.000	.543**	.000	.461**	.000	.471**	.000	.471**	.000
未來願景	.463**	.000	.319**	.000	.364**	.000	.450**	.000	.437**	.000
長期目標	.537**	.000	.449**	.000	.444**	.000	.496**	.000	.428**	.000
短期目標	.399**	.000	.364**	.000	.349**	.000	.322**	.000	.314**	.000
自我效能	.517**	.000	.491**	.000	.394**	.000	.428**	.000	.439**	.000
內在動機	.453**	.000	.495**	.000	.357**	.000	.311**	.000	.373**	.000
任務價值	.292**	.001	.372**	.000	.231*	.011	.184*	.043	.202*	.026

綜合以上量化研究的結果顯示，中學生都有遇上不同情況的學習困難，而學生的師生關係良好，學習動機亦偏向滿意的水平；在不同的背景差異當中，11-14歲的學生在讀寫和言語的學習困難都有顯著差異；19歲以上的學生對學習動機的任務價值層面與其他歲數相比較為有顯著差異；在不同年級的學生，初中的學習困難都有顯著差異；師生關係與學習動機的層面差異當中，師生關係對學生的「未來願景」層面有顯著差異；師生關係與學習困難的相關情形中的結果顯示，師生關係的情感層面與學習困難的讀寫表現有相關；而師生關係與學習動機的相關情形中的結果顯示，學生的師生關係與學習動機都有正常關性。

第5章 質性研究結果分享與分析

第一節 學習困難之資料分析

一、讀寫困難

大部份受訪學生和教師都反映學生在學習過程中遇到困難，尤其是語言表達、讀寫和組織能力，而這些困難或會影響他們的表達能力和在學習上造成重大困擾，以致學習表現欠佳。學生S02、S05及教師T03在訪談中有提及語言組織和文字表達過程當中的情況：

“英文科……對單詞同埋讀法都覺得有困難。”（S02）
“有陣時係語言組織上會有唔啱，令到人哋聽唔明。”（S05）
“文字表達呢就難啦，書寫比較困難。”（T03）

其中，學生S02和教師T02認為個人性格內向和信心不足都會導致學生減少發表個人意見，影響他們自我表達機會。這些表達的機會在學習上是非常重要，很有可能造成他們在學習上出現讀寫困難。而另外，教師T01認為學生感到讀寫困難是因為他們無法把所學知識和生活例子作出有效連結。原因或許與閱讀數量不足有關，這些也會影響了語言組織和文字表達能力，導致他們讀寫出現困難，描述如下：

“較少發表個人嘅意見……可能怕醜或可能有陣時係因為頭痛或者唔舒服。”（S02）
“佢哋睇書個量都唔夠，變相呢佢啲理論同生活例子就連結唔到。”（T01）
“例如今年有好多同學呢都係靜態嘅，佢講啲嘢呢隔離都聽唔到嘅……嗷我就叫佢從單字開始讀，就畀咗佢有多啲信心。”（T02）

二、學習興趣

整體受訪學生和教師認為對學習失去興趣的主因是有兩點：（一）睡眠質量不好引致精神欠佳；（二）課堂的專注力低。而有一些沒有興趣的科目，受訪者都覺得會影響到他們上課的專心程度。學生S07和教師T06提及學習不專心及學科興趣引致學習困難。

“如果瞓得唔夠或者精神唔好嘅話，就一定係唔想聽書…數學因為冇興趣，如果我冇興趣，就會比較唔係咁專心。”（S07）
“上學時候嘅精神、專注力、集中都唔係好夠……第一可能佢會覺得係閑科，就可以隨便一啲。另外一方面呢就係，佢哋完全唔感興趣，即係覺得冇用。”（T06）

除了沒有興趣的科目會影響學生專心程度以外，受訪學生亦提到教師在課堂的班級經營也是影響他們在學習過程中的重要因素。其中，課堂秩序失控或過於處理班上學生學習行為問題，都會影響全班學生的學習進度。學生S02、S04和S05都認為課堂過於嘈吵和學習環境的不理想，都會導致學生不專心情況，影響他們的學習表現和學習興趣。

“唔專心嘅情況下一定係十分嘈，係環境嘅問題。”（S02）
“通常呢都係班房裏面，上堂太嘈，嘈到我專心唔到。”（S04）
“如果唔擅長嗰啲科目，已經有人影響你聽，同埋啊sir周時間顧住鬧人嘅時候呢，嗷樣就會有影響囉。”（S05）

所以學生S03和S04都認為他們在學習的過程中會自我調適，當疲累或學習程度較困難的時候，他們會利用不同的方法如休息和專注地找出合適的方法等來提升自我效能，讓他們在學習時達到理想的效果。

“我狀態都係好精神嘅，但係有陣時，真係好累會瞓一陣跟住我就起身會繼續聽。”（S03）
“遇到難嘅時候，我就會專心學習嘅，咁如果係簡單嘅話呢咁，我就會再研究深入啲，例如好似數學咁樣，咁簡單嗰啲，我一睇就明嗰啲呢，我就會返去後面難嗰啲，去研究嗰啲更加難嘅題目。”（S04）

三、理解能力

在訪談中，受訪學生和教師認為數學能力，思維能力、語言和組織能力都較常見的學習困難，而他們認為這是與學生的邏輯思維和推理能力有關。學生S05和

教師T03都認為在數學的理解能力上有明顯的落差:

> “數學對我嚟講好困難…理解上面我都唔係好明。”(S05)
> “分數加減、通分佢哋都唔識，同埋好似先乘除後加減佢哋都唔係好識…
> …唔理想既係因為學生佢哋嘅思路太爛、佢哋嘅語言同埋組織能力就比較差。”(T03)

學生S04覺得語言和組織能力比較弱是可能因為教師教學方法不理想或學生學習方法不適合引致，因而未能解決現有之學習問題。而教師T03則認為數學能力欠佳和思維能力較弱跟學生的基礎能力有關，這樣便影響了他們的學習進度，從而對未來學習的發展有著深遠的影響。

> “英文方面真係冇辦法請教……我就唔知係因為我個人嘅問題呀定係呢啲方法呢唔適合我囉，所以呢對我嚟講呢而家呢個問題都係未解決。”(S04)
> “佢哋最大問題係基礎差。因為佢哋跟唔上，佢哋嘅程度係小三、小四咁上下。”(T03)

透過以上的訪談內容，得悉學生的學習困難以語言、數理和課堂的學習和適應能力為主。原因是他們對學科不感興趣、課堂不專心和思維能力問題有關，而這些學習問題學生有嘗試利用不同的方式去解決，但終歸他們學習基礎能力太弱而未能解決現有之學習問題。

第二節　師生關係之資料分析

一、情感關係

在正面的師生關係下，情感是很重要。學生S06認為他們的師生關係良好，原因是學生覺得他們能與教師的關係成為亦師亦友，這樣他們覺得這種關係好讓他們在交談的過程中避免不必要的壓力，讓他們在學科上更尊重教師，而這種恆常

的交談方式讓教師覺得更是一種良好師生關係的表現。其中學生S06描述：

> “我覺得師生關係，可以再進一步進化，例如可以進化到朋友關係，即係將老師作為一個朋友去對待囉，佢令到我哋舒服啲，會令到同老師傾計冇壓力。就會令到校園生活會開心啲，冇咁大壓力。學科上會令我更尊重老師，當然啦喺課堂嘅時候就唔會當老師係朋友，會都係當返佢係老師。當然會令到我上堂舒服咗，專心，同埋最主要壓力少咗囉。”（S06）

教師T02及T05亦提到在交談的過程當中，師生關係被受肯定的原因是大家彼此都存在信任才會發生，所以教師T03認為當學生感受到被關愛的時候，師生關係自然會有所提升。

> “如果佢有啲個人私人嘅問題，都肯咁樣同你傾，嗰個關係應該都係會好。”（T02）
>
> “佢都肯嚟搵我叫我幫佢既話，嗰我諗佢都係信任我嘅，跟住然後呢我又幫到佢，咁佢當然會記得老師。”（T03）
>
> “我覺得我同學生喺師生關係裏面呢都好嘅。我同學生都多傾計嘅……當然啦同佢傾得多啲呢啲話題，嗰個關係會好咗，因為關係唔好嘅話，佢點會同你傾呢。”（T05）

另外，教師T04和T06都同樣認為在交談中若能幫助學生解決私人問題時，這時候師生關係就會有所提高，讓他們學習態度變得更積極，情況如下：

> “幫到嘅時候呢當然有可能，係會拉到我哋兩者關係。”（T04）
>
> “解答左佢一啲既疑團或者傾開相關既事既時候呢，我哋既關係系有拉近咗。”（T06）

但是也有學生S07認為他們與個別教師都會有關係不好的時候，例如學生覺得老師針對他們。學生S07表示：

> “個別有啲老師既關係又唔係咁好嘅，嗰我覺得有啲老師係針對人個囉，咁因為真係感受到，但係呢啲係個別個囉……因為呢個我都係經歷過嘅。”（S07）

學生S03認為當教師態度轉差時，會影響學習的心情，從而影響彼此間的溝通和互動，破壞學習氣氛。而教師T03指出他們和學生也有情緒的時候，很容易產生磨擦，影響學生的學習動機。

> “老師惡嘅時候會影響到我學習心情，就會覺得點解個老師好似好唔傾得呀嗽樣，都覺得好似問吾到佢一啲學習上面嘅嘢，就即係溝通唔到，之後你就會覺得有困擾。”（S03）
>
> “老師都有情緒，學生又有情緒，所以如果個平衡點去到把握唔到嘅時候哩，就出問題。”（T03）

二、幫助和解決疑難

在建立師生關係時，了課堂內的互動，學生的生活層面亦很重要。學生們認為，如果教師能解答及協助他們面對生活上的疑問，這種幫助會促使學生建立正面的人際關係。至於學業方面，受訪的學生普遍認為教師能幫助他們學習知識，並且願意專心聆聽他們的學習所需，解決他們在學習所遇到的困難。教師之所以相信他們有能力幫助學生是因為的專業知識和教學經驗能夠解決他們的學習困難。以下是教師T04的表述：

> “我哋都有能力應付得到和解決到他們的基本能力需要，從而幫他們解決困難。”（T04）

而學生S03、S04、S05覺得教師能仔細聆聽學生的需要，並透過分析和提供有效的方法來幫助他們解決問題。因此，教師和學生之間的互動都帶有正面的作用，當學生遇到困難時，他們會依附教師的幫助。

> “我覺得老師幫我學習到知識。唔明嘅時候呢，老師會好專心聽我講嘢……解釋到明為止囉，所以我就覺得佢幫到我。”（S03）
>
> “因為老師都解決到我一啲……學習上面嘅問題。”（S04）
>
> “生活上的疑問都會解答到我，例如可能通常係班上面同啲同學有訕撬，……會同老師講返件事，老師就會同我講返叫我唔好擺喺心度，未必一定要理會

人哋感受，嗷呢方面就會幫助到呢我日後同人建立關係嗰方面。”（S05）

另外，僅僅在學業層面上關心學生是無法讓學生適切體會到教師對他們的關顧。教師T02認為，要關心學生，不僅要著重學習方面，還需要同樣關心學生對學習以外的事情。在訪談中，受訪的學生及教師提到，除了學業以外，應按學生的實際生活層面出發，即時讓學生感受教師對他們的關愛。因此，要增強師生關係，需要從多方面解決來他們遇到的困難。

“我覺得如果要增加師生關係呢，要關心佢個人，吾係整係學業，因為學業上面有啲嘢呢唔係佢即時做到。”（T02）

但也有受訪學生和教師S02認為教師未能幫助他們解答生活上的疑問，原因是他們從不向教師主動提出相關提問及尋求協助，“這可能與與學生對個人私隱的保護程度有關。另外，受訪教師T04則認為可能與大家的角色有關，同學和教師之間存在一定的距離感，以下是相關情況描述：

“老師冇解決到我生活上面嘅疑問。因爲我好少同老師講有關我生活上面嘅嘢。所以就冇呢啲嗷嘅感覺。”（S02）
“係我哋身為一個老師嘅角色，啲學生都知道老師同學生始終都係有一個距離……所以佢哋始終喺個內心裏面有啲私隱佢哋都就住個距離，好少會講出嚟。”（T04）

三、批評和讚賞

整體受訪學生認為教師的正面讚賞和評價是非常重要的，亦是提升師生關係重要的一環。受訪者認為被讚賞是開心的事，而受到正面的批評也是可以接受的。除此之外，受訪教師也一致認為讚賞學生會使他們有開心的感覺，並且促使師生關係變得更好。學生S03、S04、S05、S06及教師T02、T03也同樣認為被讚賞的時侯感到開心。情況如下：

“如果老師讚我個話呢，嗷當然開心。”（S03）

“如果老師讚我嘅話呢咁當然啦我會謙虛啲咁接受囉，同埋都係開心嘅。”（S04）

“如果老師讚嘅話……當然啦會有少少開心嘅。”（S05）

“老師讚我就好開心。”（S06）

“讚嗰啲就好開心既。”（T02）

“讚賞同學都係又要睇佢年紀同埋年級，如果佢係幼稚少少嗰啲，佢哋係會好開心。”（T03）

其中學生S03和教師T05、T06認為，當學生被讚賞的時候，師生關係就必然會好，受訪者解釋因為學生在被讚的過程中會感覺開心和獲得滿足感。

“如果老師讚我嘅時候，嗷對學業上面可能真係會有啲幫助同埋對老師嗰種關係可能都會好咗。”（S03）

“你讚佢的話，梗係佢開心啦，關係就一定好啲架。”（T05）

“讚佢嘅話呢佢哋會覺得好有滿足感，咁可能有啲同學都覺得會增進到我哋嘅關係。”（T06）

而學生S07和教師T03認為這種良好的師生關係會增強了學生的學習動機和學習興趣，讓他們認真學習和爭取更好的成績。

“當然啦如果佢讚我時候就會得到動力囉，更會想喺佢個科裏面攞好成績喇。”（S07）

“可能佢畀老師讚呢，佢學習上面就會認真少少。”（T03）

相反地受訪學生S07認為教師的一些負面批評，會讓學生情緒不穩和自信心下降，從而產生不喜歡教師的感覺。同樣，受訪教師T02、T05都認為責備學生的時候，會為學生帶來負面感受，並且破壞了學生和教師之間的關係。

“如果老師當住全班人面前批評我當然覺得冇面喇，嗷會覺得令到我自信會下降……同埋會有唔鍾意呢個老師嘅情緒。”（S07）

“如果係堂上責備嘅時候哩，就有啲問題，會吾服氣呀或者撐到行……堂上面責備都唔係友善……有時真係會破壞關係。”（T02）

“批評嘅話，當然就算關係點好都好，佢哋都係有脾氣……係一定會唔好。”（T05）

教師T03認為對學生的批評越多，與他們的關係就會變得越差，進而影響了他們的學習動機。

“總之，越批評多呢，佢就會越唔鍾意上堂。”（T03）

第三節 學習動機之資料分析

一、學習目標與期望

受訪學生普遍認為他們的學習目標很簡單，就是要學科合格、升班和畢業，但也有學生覺得理想和目標會增加他們對讀書的重視和對學習的要求，為了實現理想，他們在學習的過程中會有所追求。同樣，受訪的教師也認為有些學生帶著個人目標和期望，他們會為了實現個人理想和考進優秀的大學作出努力。學生S02、S05和教師T06都覺得學生為了完成學習目標的主因是為了滿足他日後升學所需的學歷要求。以下是相關描述：

“希望各學科都可以合格，同埋順利畢業和升班。”（S02）
“我諗住將來我理想既工作係做室內設計，呢個都係我個人既目標嚟，咁呢個目標都會影響到我重視讀書嘅。”（S03）
“有期望嗰啲同學佢就會努力多一啲，因為佢想做一啲理想嘅專業或者讀一啲比較優秀嘅大學。例如佢地想出去外國讀音樂嗽樣。”（T06）

當中也有學生S02、S04和教師T03認為讀書主要的目標就是為了金錢和日後生活所需作準備。

“目標都係搵工作同埋一啲嘅願望。最想嘅願望就係養得起自己有足夠的能力

讓自己可以養老。”（S02）

“目標讀書好簡單，真係為咗想賺錢，喺社會裏面生存落去囉。”（S04）

“年紀比較大嘅同學，當然係會有目標……目標就係向錢嗰方面出發。”（T03）

但也有受訪學生S01和教師T01、T04、T05都認為學生並沒有任何的目標和期望，他們的出發點並不是因為想尋求知識作為學習目標，而是為了向家人交代才去做。所以受訪教師T03則覺得這些學生只想到初中畢業等短期目標，都是見步行步的心態，對將來並沒有任何長遠的目標和計劃。

“我對於目標呢樣嘢，我係冇諗嘅。我對學習都冇乜期望，亦都冇乜諗法。（S01）

“我暫時又未睇到佢哋有啲乜嘢目標同計畫係學生裏面。”（T01）

“但係長遠嘅佢哋就冇咁快諗，而最差嗰啲同學呢就諗至少要初中畢業，就到時先再諗啦啵嘅心態。”（T03）

“有學生處於一個迷茫嘅狀態，佢唔知讀書攞嚟做咩好。”（T04）

“佢哋大部分期望都係想得到好成績，返屋企交差，唔係因為想去學野……但係整體就唔會有咩期望。”（T05）

在訪談中，教師T01、T02、T04、T05、T06提到，他們觀察到一些學生缺乏明確的目標和計劃，這可能與社會氛圍有關。因為在澳門社會就業要求相對簡單，對讀書的要求並不高。所以學生對讀書方面或許沒有太大的期望和動力。

“社會氛圍都有關係，如果按年紀大小去分嘅話，初中學生都係比較冇目標嘅，高中學生有個目標就係要畢業囉，咁如果你話純粹讀書用嚟求知識嚟講呢，都係冇用既，佢哋唔會放在眼內。”（T01）

“社會上面嘅物慾越離越高既時候……都吾覺得讀書係有用或者有咩益處。”（T02）

“澳門呢個環境裏面，讀書唔係唯一嘅出路。”（T04）

“因為澳門嚟講，搵到錢嘅行業同讀書都好似冇乜關係……佢哋都係應付式嘅啫。”（T05）

“求學同未來嘅關係係唔明顯嘅。因爲我覺得佢哋都係可能受到社會嘅影響，即係就業呢相對係比較容易嘅，所以喺讀書嚟講對佢就業都係冇乜太大關係，吾會有直接影響嘅因素。”（T06）

二、主動學習

少部分的受訪學生相信自己能做得到主動學習，對自己也有要求，令到自己的分數提高，增加上課時候的專注力。有些受訪學生在課堂結束後仍會繼續思考，並且做到在課堂吟多發問。教師T02認為心智成熟的學生也會對他們的方動學習產生影響，使得他們在學習過程中更有動力。描述如下：

“我就係要讀得好，讀得叻要比較勤力，呢啲同學真係乜都唔使睇，乜都唔使講佢就自動波……同埋佢地心智上面比較成熟嘅，佢哋開始識得重視自己。”（T02）

同樣，也有受訪教師認為學生能做到主動學習，原因是學生的心智比較成熟，認為他們勤力才能讀好書；大部份心智成熟的學生會開始懂得重視自己。學生S02、S06認為當遇到學習困難時，更加渴望在學科上取得突破，彌補自己學習的缺點。

“因為其他科我都覺得應付得到，但係唯有讀寫英文部分更有興趣，因為英文比較有困難我就更加想突破佢。”（S02）
“我會多方面去學習，又其是唔係特別勁嘅方面，彌補我的缺點。例如英文物理化學，還有禮儀。”（S06）

受訪學生S04、S05和教師T06認為學生的努力學習和自我要求，能有效提高學習效能，對他們未來的學業成效有著正面的作用。而學生S07提到若成功考取理想大學，他願意放棄所有的娛樂時間，為實現目標而努力，這將有助於提升個人的任務價值。以下是相關描述：

“學習上面咁我會覺得，我會努力讀書啦，一步一步咁嚟啦，跟住然後攀上

去。”（S04）

“對我要求高啲啦，令到自己嘅分數都高啲啦，同埋平時上堂專注少少，就唔係背阿SIR要我哋死抄嘅嘢囉，可以跟住返屋企慢慢研究嗷，做到上堂問多少少。”（S05）

“我嘅目標呢係想做醫生……如果我真係考得入嘅話，我一定會好努力好努力嗷讀上去之 後我會放棄曬我所有玩嘅時間去讀。”（S07）

“有啲學生係著重學業嘅……有啲同學講完課書，佢就好緊張，佢地吾明白落左課小息嘅時候呢都會去問嘅。”（T06）

有部分的受訪教師表達了對學生能否實現主動學習的懷疑。他們認為大部分學生很短視及很容易受到外在因素的影響，例如兼職和談戀愛，所影響，導致未能專心學習。此外，教師T03認為學生的個人學習態度與他們主動學習有關，一些學生的個人習慣（如經常打電動）都會影響學生的學習動機。所以受訪教師認為學生需改變個人的生活習慣或接受學校其他相關人員（如父母或教師）的勸導，學習態度才能有機會改善。

“未必既。因為同學係短視既，可能比呢一刻既引誘或者一啲外在因素拉扯，未必去到專心學習，不如去賺錢或者拍拖囉又或者係同齊嘅影響。”（T01）

“如果你話會唔會改變到個學習態度就要睇佢個學習習慣，要睇返個學生肯唔肯改變先……佢就要放棄佢好鍾意打機嗰啲嘢，佢先會兼顧到佢而家嘅學習。當然，要多方面睇下有冇辦法做到啲嘢，或許要多啲老師或者多啲相關嘅人員例如父母等等，改變佢囉。”（T03）

三、自我需求

訪談中受訪學生S03、S06、S07都認為讀書與未來就業和入讀知名大學存在很密切的關係。他們認為這些因素會影響到他們對學科的喜愛和學習態度的熱誠。而教師也認為學生在日後需要面對就業，而學歷始終是其中必要條件。因此，學生在勃誌未來方向時，會對自己設定相應的要求。

“同我未來可能都會有關係……都會影響到我對嗰科嘅熱情，同埋對學習態度既熱誠。”（S03）

“係澳門搵工，你英文差呢都基本上好似搵吾到啲乜工。”（S06）

“讀書對我嚟講梗係緊要啦……因為係呢個社會讀書成績比較好或者高嘅學歷什致考到出名既大學自然會搵到理想既工作，對我日後將來有好大影響。”（S07）

學生S05、S07和教師T01提到，這種對自我需求的關係妁對學生日後在職場和人際闆係的發展產生影響，使得他們更懂得讀書的重要。

“如果你係一個冇讀過書既人……係自己唔知嘅情況下，就好難同佢哋溝通，同埋好難交流。”（S05）

“我覺得呢讀大學同埋成績好呢個都係出社會嘅必要條件。因爲我覺得呢個係一個入場券囉，所以一定要讀書。”（S07）

“有關係……始終呢佢日後都要工作，起碼都要高中畢業……對佢日後來講都係有必要性。”（T01）

除此之外，受訪學生S01認為讀書的原因是聽從父母的說話，學生本身無固定主意。其次學生S02和教師T06覺得現今學到的知識與未來沒有太大的關連性，描述如下：

“不過阿媽話緊要咪緊要囉。所以我最主要都係聽屋企人講嘅。”（S01）

“所學到的知識，對未來要用嘅部分相對比較少可能未必有咁大關係。”（S02）

“部分同學佢哋覺得求學同未來嘅關係係唔明顯嘅。因爲我覺得佢哋都係可能受到社會嘅影響，即係就業呢相對係比較容易嘅，所以喺讀書嚟講對佢就業都係冇乜太大關係，吾會有直接影響嘅因素。”（T06）

所以在受訪教師T04、T05的訪談的過程中認為學生對未來沒有方向，原因可能是社會的因素所影響，因為澳門就業相對容易，所以讀書跟就業沒有太大的關係，所以讓他們對讀書的觀念失去實際意義。

“十個唔讀書嘅通常九個都係冇方向嘅，人係為咗目標而行嘅嘛，完全冇目標咁點行呀。”（T04）

“絕大部分學生佢哋都唔會諗，因為剛才都有講，佢地對自己既未來都係無方都向，點會覺得有關係。”（T05）

“因為澳門嚟講，搵到錢嘅行業同讀書都好似冇乜關係，所以導致佢哋覺得讀書係冇乜用，影響唔大。”（T05）

第6章 討論

第一節 探討澳門中學生的學習困難、師生關係與學習動機之現況

一、學習困難之現況

根據統計數據和訪談研究，發現本研究學校大部分中學生都面臨不同的學習困難。其中包括讀寫能力、言語能力、課堂適應能力、學習理解能力等方面的差異異。根據前人學者提到學業成就低的情況下，學生在學習時面對較大的壓力，無法有效達到理想的學習效果。牛衛華、張梅玲（2000）提出，讀寫和言語困難的原因與學生基礎表達能力和組織能力有關。這些能力不足可能由於腦部的信息加工過程出現問題，如錯誤的信息編碼、儲存和提取所引致。除此之外，林進材（2004）認為後天的個人的心理質素如性格內向、缺乏信心和閱讀數量不足，都會影響學生的表達能力。因此，研究者認為在學習的過程中，學生在每個科目都要接觸大量的課本資料和書寫表達，這牽涉到大量的文字。當他們無法有效辨識文字的意思和讀音時，便會影響他們的語言組織和文字表達能力，進而影響他們的學習動機，或者產生負面的情緒困擾。

訪談研究發現，因理解能力而遇到的學習困難，其中包括數學、邏輯思維和組織能力。林進材（2004）指出，這些困難與學生的智力因素、學習方法錯誤和教師不瞭解學生的學習情況和引導能力缺乏所引起。王麗卿（2002）更提到理解能力引起的學習困難不只是學生個人問題，教師與學校也是造成學習困難的其中一個重要因素。因此，如果在低年班階段沒有進行適當的補救教學，對於這些學生而言，基礎能力維持較低的水平，從而難以跟上中學的教學進度，造成理解能力不佳的狀況。

另外，本研究結果顯示，課堂學習態度也是影響學生學習的重要原因。在訪談中，一些教師表示表示學生上課缺乏軔注、學習態度傲慢，且受外界的誘惑，例如沉迷手遊、談戀愛和兼職等。由於外界的事物吸引力遠大於學習需要，使他們對學習失去興趣，並導致學生精神欠佳和專注力較低等情況。學習環境也是影響學生學習的其中一個重要因素。如果課堂過於嘈吵和學習環境不理想，這些問題往往與教師管理課堂秩序不當有關。正如林進材（2004）所指出的，當課堂出現問題的並無法有效營造良好或正面的學習氣氛，學生容易失去學習興趣。因此，

要改善學生學習困難的情況，除了學生要調整自己的學習態度，教師也要關注課堂管理，確保學生能在一個良好的氛圍下投入學習。

二、師生關係之現況

本研究的受訪者表示，其師生關係是理想的，他們對教師在情感、課業、生活和思想等都予正面的評價。根據Bowlby（1969）的依附理論，這種情感依附早於生命發展初期已形成，被照顧者在不同階段有不同的發展，並與不同人士建立不同的依附關係，在學生的學習階段和日常生活中，教師對他們的幫助和心理上的正面支持，有助於建立良好的師生關係。

受訪學生認為一些無形的壓力如師生關係，會影響他們對學科的尊重和專心上課等情況。他們希望能進一步提升師生關係，發展成朋友關係。例如，同學S06反映希望能夠與教師建立朋友關係，讓校園生活過得開心，減少上課和教師對話的壓力。潘正德（1993）指出，師生關係奠基於傳統理念精神，結合互動的理論，期望達成師生更親密、更連接的關係，並期待良性的互動，讓學校的生活開心和舒服。然而，在訪談中也發現了一些不良的師生教學。例如，有學生提到教師存有偏見，而一些教師則認為當他們批評學生時，會破壞了師生之間的關係。林進材（2004）指出，教師的嚴謹和情緒不佳會造成師生距離，進而影響學生的學習。這種正面或負面關係都會影響學生的學習動機。

受訪學生多數表現學習困難，而受訪教師都希望多藉著讚賞的形式來增強學生的信心，這有利於他們日後以正向的心態發展。然而，在教學的過程中教師難免會對學生進行批評，這可能引起學生的負面情緒，進而對學科產生負面情緒，甚至對學習失去興趣。

除此之外，學生的家庭背景亦是影響他們的主要因素。在這個研究中的學校裡，多數學生來自經濟條件較差、單親家庭或是雙職家長等背景。受訪教師認為，學生在家庭成長期間沒有得到有效的教育和關顧，與同儕和教師相處的時間較多。所以，根據Wu（2009）的觀點，良好的師生關係有助他們彌補生活和心理

上的發展，讓他們在日常生活的過程中有宣洩壓力的途徑，從而增加彼此信任的機會，影響了他們的自我概念發展。

綜合而言，學生與教師有著一定程度的依附關係，當學生和教師能建立起良好的師生關係，學生的壓力因而減少，這樣有助課當的學習氣氛，達致更理想的學習效果。

三、學習動機之現況

張春興（2000）指出學習動機是指維持和引起學生學習活動的心理歷程和目標，所以目標是學生學習的方向。在受訪結果中發現，學生的學習目標僅限於合格、升班和畢業，而未來的期望也主要集中在為金錢和生活方面，只有少部分同學是為了理想和興趣而努力學習。這或許跟澳門的社會因素有關，相對而言澳門的職業選擇有限，學歷要求也不高，再加上工作職位有供過於求的情況，所以學生對讀書並沒有太大的理想。另一方面，學生正處於青春期，開始有自己的想法，尋求自我肯定，對校內的秩序和規範比較抗拒，這容易產生負面的學習情緒，影響學習動機。

但仍有受訪學生還是有主動學習的心態，他們對自己的未來有要求，為了達到目標，他們努力學習。Stipek（1995）指到這種意念正是學生追求滿足與成功的心理需求，亦是影響學習成因的主要因素。在這項研究的學校中，大部份都是留班生和轉校生，心理質素相對較弱，但研究者認為當學生在學習獲得正面的支持，例如得到教師的鼓勵和幫助時，他們讀書的動機便會增加，進而有機會向提升。

綜上所述，學生的學習動機與他們的人生目標有關。但本研究受訪學生對讀書的期望只屬短期目標，同時亦受到社會的整體氛圍所影響，因而未有明顯的學習動機，也未見對自己在學習上有更高的要求。

第二節 探討澳門不同學習困難中學生的師生關係與學習動機的差異情形

在量化和質性研究結果中同時發現，初中學生遇到學習困難相對比較普遍。首先，重讀生的存在和年齡差異在心理層面上面臨學習態度和學業基礎方面的挑戰。這可能使學生產生負面情緒和放棄學業等心態。另外，有受訪教師表示本研究學校高中生的基礎能力和學業成績比其他學校較弱，但由於他們沒有放棄學業，因而順利升學，這情況可以Bandura（1977）所提出的自我效能理論解釋，學生藉著自己完成初中畢業的信念，促使他們繼續努力，爭取高中畢業，甚至升讀大學，這種自我效能的信念促使他們對日後的發展有莫大的幫助。與此同時，有受訪教師提到有些學生的思想相對成熟和理性。葉炳煙（2013）認為學生在生活的過程當中，觀察到教師或朋輩的成功經驗，這些替代經驗（vicarious experience）使他們對學習有穩定的的要求和有期望，並不斷追求進步。另外，在量化研究中表現出整體師生關係與學習動機的分層面有顯著差異，尤其是未來願景的部分，研究結果顯示良好的教師與學生關係會影響學生爭取更好的學業成績，以實現自己將來的理想，並有助於日後的發展。從心理學家馬斯洛（Maslow）的需求層次理論（Need- hierarchy Theory）來解釋，當社會需求和尊重需求得到滿足的時候，學生會追求更高層次的自我實現需求。當學生與教師建立了良好的師生關係，他們可以減低學習壓力，爭取更佳的學習表現。但整體受訪學生提到，他們與教師都有著正面和良好的師生關係，這種關係對他們的學習態度和未來的追求有著正面的影響。歐申談（1993）的研究同樣認為師生有良好的溝通和互動和建立良好的師生關係，對於提高學生的學習興趣和培養良好的學習態度至關重要。綜合上述，初中學生遇到學習困難的情況較為顯著，而師生關係對學生的未來願景有很大的影響。因此，教師可對學生多作鼓勵，提升學生與教師彼此之間的關係，製造良好的學習氣氛，讓學生有更佳的學習表現。

第三節 探討澳門學習困難中學生的師生關係與學習動機的相關情形如何

雖然學習困難與師生關係在量化研究當中沒有明顯相關性，但在訪談中，受訪學生表示當在學習過程中感到困難教師的關懷和幫助能讓師生關係變得更加密切。此外，訪談發現當學生與教師的關係轉差會為學生帶來負面情緒，導致他們對學習失去興趣，產生學習困難。Kyriacou（1986）認為師生關係是有效教學的基礎，這種關係影響著教師和學生的互動方式，而學習困難與師生關係除了為學生在學習上帶來正面的幫助以外，也會為教師在教學品質中帶來正面的作用。

在量化研究發現，學生對師生之間的情感關係與學習困難的讀寫表現有顯著相關，這表明不理想的師生情感互動會影響學生的讀寫表現。而訪談中發現，學生普遍內向和少說話，而英文亦非學生母語，在很多不利的條件情況下，由於學生信心不足，他們在語言學習方面處於逃避的狀態，這對於讀寫能力的發展並不有利。因此，教師宜以多鼓勵多讚美的方式，營造有利學習的條件和氣氛，促使學生在讀寫能力取得進步。陳弘昌（1999）指出，若能同時關注態度、理想、情感和興趣，語文學習的成果將更佳。在訪談的過程中，受訪學生表示教師未能解決英語學習上的困難，總是無法讓他們明白，這種學習困難並沒有明確指出因生理因素為製造困難的原因，而洪儷瑜（1997）則提到一般原因包含個人因素、環境因素、教學或學習經驗不當造成。

另外，研究顯示學生在師生關係與學習動機及其各層面都有顯著相關，學生的師生關係愈好，其學習動機就越強。在訪談的過程中，學生提到他們的學習態度大部分取決於教師的性格及教學態度，當教師出現高姿態及處事不公的情況，學生會出現情緒不安，影響學習的心情。尤其是師生關係的情感層面與學習動機的相關最為明顯，這表示教師的關愛和情感交流會正面影響學生的學習動機。有研究學者提出，若青少年與學校建立起較強的連結關係，能促使學生有較佳的學業表現。但在訪談過程當中發現，教師會使用不同的教學方法去幫助學生以促進教師與學生之互動，而教學方法對學生的學習動機也有顯著作用（Coleman & Hoffer, 1987；Bryk, Lee, & Holland, 1993）。

綜上所述，雖然在量化研究中沒有發現學習困難與師生關係具有正相

關，但在受訪的過程當中，學生仍是覺得教師的關懷和幫助，有助於他們校園的生活變得更正面。這與文獻中Kyriacou（1986）所提到良好的師生關係有助學生的學習表現和提升教學品質相符，良好的教學品質有助提升學生的學習興趣和課堂的投入程度，可見學習困難與師生關係有著負相關。此外，在量化研究中發現師生的情感關係會影響學生的讀寫表現。

第7章 結論與建議

第一節、結論

本研究主要對澳門中學生進行研究，旨在探討不同學習困難、師生關係和學習動機之現況，以及這些變項之間的差異和相關性。研究採取聚斂性平衡混合設計方式進行，並將量化和質性的資料一起分析，最後進行合併討論。

綜合上述學習困難、師生關係和學習動機的研究發現，營造良好的師生關係有助學生在學習過程得到理想的表現。相反，不良的師生關係能對學生構成壓力，影響學業，漸漸形成學習困難等問題。儘管本研究發現師生關係有助提升學生的學習動機，但由於學生的基礎能力太弱，因此尚未能有效解決他們在學習上的困難。

第二節、建議

一、建立新的教育體制

澳門的主流學校都以文化學校為主，但研究者認為一般的教育系統根本無法有效滿足學習困難學生的真正需要。研究中發現，大部分學習困難學生都是跟學習興趣和語言問題有關，課本知識和一些基礎理論已經與他們的思想和實際能力有很大的差距。儘管有職業中學和勞工局舉辦之課程，但實質的幫助有限，未能完全滿足學生真正的需要。因此，在教育體制改革中，應大力推動職業學校的功能和證書的實體認證制度，使學生能夠以實踐學習模式貼近現實需求。這不僅能讓他們學習一技之長應付日後的生活所需，還有助舒緩澳門職場人力求過於供等問題，為整體社會發展作準備，可以說是相得益彰。

二、建議學校相關教師

（一）加強對學生的關懷與鼓勵

研究發現對學生學習適應影響因素之一是教師的關心與鼓勵。大多數學生不

喜歡教師給予嚴厲的批評和指責，特別是學習困難的學生在學習適應方面遇到問題時，更需要教師提供正向的回饋。因此，建議教師透過與學習困難學生建立亦師亦友的關係，從增加對他們在學習上的鼓勵與生活上的關懷著手，幫助他們走出學習的困境。

（二）滿足學生學習需求的個別差異

本研究發現學生的學習態度、學習習慣及學習策略仍有進步的空間；且學生學習動機低，缺乏運用有效的學習策略。從訪談中得知，學生無法應對學習上遇到的困難，主要原因是他們不知道是教學方法出了問題還是自我學習方式出現問題，最終導致學習困難。因此，建議學校的科任教師、班主任和社工，當發現學生遇到困難時，應適時作出關注和提供學習輔導措施，給予必要的支援，幫助他們建立學習的自信心。

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Teachers' Perceptions Of Performance Appraisal In A Secondary School In South-East Asia:

A Case Study

By Matthew Potger

Abstract

This research investigated the perceptions of teachers working at a secondary school in South-east Asia with regard to the performance appraisal system in place at their schools. The main purposes of the study were (a) to report an investigation into the teachers' views of appraisal in detail, (b) to identify the key features of their perspectives, and (c) to develop a "theory" of effective appraisal that considers the numerous variables involved in its operation. This research employed a qualitative case study, wherein teachers were interviewed with a focus on their perceptions of the purposes, processes and impacts of the appraisal system. The findings of the study suggest that an open school culture, combined with a transparent appraisal process that encourages communication and collegial sharing of best practice, is very likely to result in performance appraisal systems that yields positive outcomes for teachers, students and schools.

Introduction

Teacher Performance Appraisal is recognized as an important multipurpose management tool for school leaders. It allows for the evaluation of the effectiveness of teachers' skills, the identification of their strengths and weaknesses, the development of training strategies, the assistance in making staffing decisions, and ultimately the improvement of learning outcomes for students. Hence, school policy makers and academic researchers continue to be interested in finding the best ways to structure and implement appraisal systems to achieve optimal outcomes for students, teachers and school communities. This is because effective teachers are widely acknowledged as critical for achieving high-quality educational outcomes for students, and thus implementing teacher evaluation is seen as a priority for school management (Elliot, 2015; Hallinger et al., 2014). Performance appraisal is a systematic process that involves"identifying, measuring and developing" the performance standards of individuals within an organisation (Aguinis, 2009, as cited in Elliot, 2015, p. 102). It can be used for management purposes such as allocating bonuses and salary increments, justifying promotion decisions or for implementing punitive measures, or as a quality control instrument for ensuring accountability and overall improvement of the school, management, teaching and learning (Danielson & McGreal, 2000; Hallinger et al., 2014; Tutyens & Devos, 2012).

Previous research has shown, understanding the factors that impact the success of appraisal systems and developing methods to accurately measure teachers' performance is an extremely challenging task. This is because schools must decide whether the appraisal system's purposes are intended to be summative or formative. They also need to establish a common understanding of the qualities and characteristics of an effective teacher and how best to accurately measure and appraise these qualities. Not only that, but school management should also consider the school culture and the background of the teachers and their characteristics involved to ensure that the overall impact of the appraisal process on staff and students is positive and developmental rather than negative and punitive. Therefore, issues regarding fairness and transparency, clarity and communication, classroom observations and feedback, teacher involvement, and general fitness for purpose (e.g., validity and reliability) should all be taken into account. Finally, the feelings of participants and the stakeholders involved in a performance appraisal system can also have a significant impact on the ultimate success of the system in achieving its desired goals

(Reddy et al., 2018).

This research study focuses on teachers who are employed in the secondary section of a school located in South-east Asia. The school had been operating an annual performance appraisal system for around four years, and in recent years had moved to a facilitated teacher self-appraisal approach. Through a qualitative case study approach, it was intended to gain an in-depth understanding of how teachers perceived the performance appraisal system in terms of its intended purposes, fairness and impact. Through identifying how teachers felt about various aspects of the appraisal process, the school could pinpoint specific areas to modify and improve. Ultimately, this research aimed to understand how teachers perceived different aspects of the appraisal processand to identify critical factors for designing and implementing effective Teacher Performance Appraisal systems.

To address the objectives of this study, the following research questions were developed:

1. What are the teachers' perceptions of the purpose(s), uses, benefits and limitations of the Teacher Performance Appraisal in the school?
2. How do the teachers perceive and respond to the content and processes of Teacher Performance Appraisal?
3. Is the Teacher Performance Appraisal beneficial or not?
4. What recommendations can be made for improving the Teacher Performance Appraisal system and its operation in the school, and why?

Given the central role that teachers play in providing high quality education and the continued interest in developing the best structure for the appraisal system, research into this field is of great importance. Furthermore, stakeholders' perceptions can shape behaviour and affect the appraisal system's success in achieving its desired outcomes. Therefore, understanding how stakeholders perceive Teacher Performance Appraisal is critical to the system's success.

There is very limited research in schools located in South-east Asia on this topic,

particularly in schools with a diverse cultural and international mix of teaching staff. Hence, investigating perceptions of Teacher Performance Appraisal within a specific cultural context can provide valuable insights into how these systems are viewed by key stakeholders in a specific region. This, in turn, could serve as the basis for further research in other countries and regions, providing an opportunity for a comparative analysis of the results and findings.

Literature Review

In recent decades, evaluating and appraising teacher effectiveness has become a growing focus of researchers, school administrators, and policy makers. As the education sector has become more competitive, stakeholders, particularly parents and policy makers, have demanded more accountability and transparency from schools. Consequently, the notion of what constitutes an effective teacher and how to determine and measure teacher effectiveness, has become increasingly topical. Simultaneously, the importance of effective teachers in improving student outcomes has become better understood and accepted, resulting in increased focus on evaluating teacher performance. A review of the research into the area of Teacher Performance Appraisal to date, provides a foundation for a subsequent qualitative case study into how teachers perceive the appraisal system in place.

Firstly, there has been an increasing recognition of the importance of effective teachers in producing high-quality educational outcomes. Hallinger et al. (2014) noted that "A growing body of international research confirms a direct relationship between teacher quality/effectiveness and student learning". Weisberg et al., (2009) further emphasised that student achievement depends significantly on the quality of teachers. The Organisation for Economic Co-operation and Development (OECD, 2013) has identified the quality of teachers as "the single most important school variable influencing student achievement" (p. 26). Furthermore, Barber and Moushed (2007, as cited in Elliott, 2015) contend that "the main driver of the variation in student learning at school is the quality of the teachers" (p. 106). The importance of improving teacher performance through performance evaluation is highlighted by another report from the OECD (2009), which notes that "the institution of teacher evaluation is a vital step in the drive to improve the effectiveness of teaching and learning and raise educational standards" (p. 3). Moreover, well-implemented "appraisal, coaching and feedback, leading to targeted development can improve teacher performance" (Australian Institute for Teaching and School Leadership [AITSL], 2012, p. 3). Given the central role that teachers play in determining educational outcomes for students, as well as the demand for accountability and transparency, it is not surprising that there is an increasing interest in how best to appraise teacher effectiveness.

Performance appraisal is broadly defined as "the ongoing process used for

identifying, measuring, and developing an individual's performance in accordance with an organisation's strategic goals" (Aguinis, 2009, as cited in Elliott, 2015, p. 102). In the context of teacher performance appraisal, Beach and Reinhartz (1984) note that the process "seeks to collect information about the teaching act and codify that information in a systematic way so that decisions can be made about a teacher's level of instructional performance" (p. 31). Danielson and McGreal (2000) view teacher performance appraisal as a mechanism for quality assurance, emphasising both accountability and classroom performance improvement. Appraisal can serve as an important "communication link" between school management and teachers, helping teachers understand their role and improve their skills while providing the school with a system for managing and rewarding staff (Wise et al., 1985, p. 61). Furthermore, Isore (2009) highlights two major purposes of appraisal: monitoring teacher performance to improve student outcomes and identifying strengths and weaknesses to improve teacher practice. According to Hallinger et al. (2014), teacher evaluations and subsequent appraisal can be viewed as an overall strategy for school improvement, serving bothformative and summative functions. Summative appraisal can be utilised as an administrative or personnel management tool to primarily measure teaching performance to make staffing decisions, while formative appraisal can be a part of the human resource strategy to develop teachers' skills and abilities to ensure that they are working to their optimal levels.

One of the main challenges for evaluating teacher effectiveness is initially identifying and defining the characteristics of a "good teacher" in order to establish standards for teacher assessment. Schools need to determine what skills and qualities they value most in their teachers in order to establish clear standards upon which teachers are to be evaluated. In making this determination, it is also appropriate to take into consideration the complexity of teaching as a profession and the numerous factors that can impact student educational outcomes that may not be within the control or influence of individual teachers (Mockler, 2015). Teachers often have to address a wide variety of learning needs of children in different classrooms, schools and social environments, as well as effectively managing interpersonal relationships with their students, parents, colleagues and school administrators. Therefore, Campbell et al. (2003) argue for a "multi-dimensional concept of teacher effectiveness" (p. 354), given the complex nature of the profession.They note that

in a modern context, teachers are expected to fulfil a wide range of duties and responsibilities that include elements of "social, pastoral and welfare" (p. 354), beyond their traditional instructional roles. They suggest that any model of effectiveness may need to consider these roles, rather than just being limited to a teacher's in-classroom skills and formal qualifications.

Several studies have identified key elements that are important for a Teacher Performance Appraisal System to deliver positive outcomes. As both the practice of teaching and assessing teaching are highly complex tasks, it is always essential to consider both the content of the appraisal system and the context in which it occurs, in order for it to successfully achieve its goals (Flores, 2010). According to the literature, some of the key characteristics for a successful Teacher Performance Appraisal system include: having clearly defined purposes and standards; effective communication between key stakeholders; using a standards-based assessment; well-trained appraisers/assessors; conducting effective classroom observations; using multiple measures of teacher performance; providing useful feedback to the teachers; offering professional development opportunities; encouraging teacher participation; self-appraisal and an inquiry-based culture; and ensuring procedural justice (Cardno et al., 2017; Danielson & McGreal, 2000; Darling-Hammond et al., 2012; de Lima & Silva, 2018; Elliott, 2015; Flores, 2010; Hallinger et al., 2014; Isore, 2009; Liu et al., 2018; Mockler, 2015; Reddy et al., 2018; Skedsmo & Huber, 2018; Stronge & Tucker, 2003; Tuytens & Devos, 2012; Weisberg et al., 2009).

While acknowledging the complexities and challenges of designing and implementing Teacher Performance Appraisal systems, there is broad agreement within the literature that such systems can be beneficial to students, teachers, and schools. When implemented well, the use of the appraisal process allows school administrators to identify weaker teachers and poor teaching methods, and then proceed to guide, support, and instruct those teachers on how to improve (Avidov-Ungar, 2018). These systems can serve the dual function of providing developmental support to teachers andcreating a framework for accountability when a wide range of criteria are met Cardno et al., 2017). Providing frequent, actionable feedback to teachers, together with ongoing support and professional

development opportunities, that can ultimately lead to more effective pedagogical practices and learning outcomes (AITSL, 2012; Hallinger et al., 2014). Moreover, when teachers perceive the evaluation process to be fair, efforts by the principal to support and develop teachers can lead to a greater trust in the relationship and an enhanced feeling of self-efficacy for teachers (Donaldson & Mavrogordato, 2018). When appraisal systems encourage the active participation and involvement of the teachers, this can create a positive culture of critical self-reflection and inquiry, trust, and a shared commitment to improving teaching methods and learning for students (Cardno et al., 2017). Such a school environment can help to create "professional communities in which teachers share goals, work, and responsibility for better student outcomes" (Vescio et al., 2008, as cited in Hallinger et al., 2014, p. 22).

Well-designed appraisal systems help to establish a common understanding of what it means to be a "good" teacher, set clear standards to which teachers should adhere, and provide expectations for what educational outcomes need to be achieved (Huber & Skedsmo, 2016). Appraisal systems can also be a useful management tool for school administrators and principals in terms of ensuring accountability to stakeholders and providing objective, quantifiable information for decision-making (Cardno et al., 2017). They can assist in differentiating between poorly performing teachers, effective teachers and excellent teachers for high-stakes outcomes such as determining which teachers receive contract renewal, tenure, advancement, or increased salary compensation. They can also provide a basis for punitive measures and ultimately, dismissal (Weisberg et al., 2009). Thus, it is important for schools to consider all of the characteristics of best practice in terms of performance appraisal to obtain as many of the above-mentioned benefits as possible.

When discussing Teacher Performance Appraisal, it is crucialto consider how the actual stakeholders perceive the appraisal process. Reddy et al. (2018) note that understanding "teachers' needs, experiences and perceptions" (p. 49) of the evaluation systems is important for more effective implementation of these systems. They further add that how teachers "interpret, interact with and are affected by" (p. 49) policies related to appraisal will be decisive in terms of whether appraisal systems succeed or fail. Teachers'

perceptions of the appraisal process are informed by key areas such as whether the appraisal is focused on formative or summative outcome; it is based on a clear, well-defined assessment criteria; that is transparent; reliable and valid; and encourages teachers' self-reflection on their teaching skills and methods; thus promotes and results in professional development and improved quality of teaching; and leads to better collegial relationships (Avidov-Ungar, 2018; Flores, 2012; Kelly et al., 2008; Smith & Kubacka, 2017).

Ultimately, the characteristics of the appraisal systems and how they are perceived by teachers can affect feelings about job satisfaction and determine whether or not teachers are motivated to make positive changes to their teaching methods (Deneire et al., 2014; Skedsmo & Huber, 2018). Smith and Kubacka (2017) found that the more student test results were emphasised in the Teacher Performance Appraisal, the less useful teachers found the feedback for improving their pedagogical practices, and the more the process was considered to be just an administrative exercise with few or no consequences.

Clearly, how performance appraisal systems are designed and implemented can significantly affect outcomes. The perceptions of stakeholders with regard to Teacher Performance Appraisal can be mixed and, in many cases, negative. Previous research on this topic lends weight to the argument that, in order to generate positive outcomes for teachers, students, and schools, it is critical to consider how the process is perceived by those involved, andto design and develop appraisal systems in such a way that it avoids creating negative perceptions. These findings further add weight to the importance of this present research on teachers' perceptions.

Beyond the issue of negative perceptions of performance appraisal, research on the topic of teacher evaluations over the years has resulted in critical findings regarding certain aspects of appraisal processes. For example, if classroom observations occur too infrequently, are only cursory, or are conducted by untrained assessors, teachers are likely to question the validity and usefulness of the results produced (de Lima & Silva, 2018; Skedsmo & Huber, 2018). Lei et al. (2018) argue that classroom evaluations may not provide an accurate measure of a teacher's ability if only a single classroom performance

is observed. There is also the risk of subjectivity and bias on the part of assessors, especially if classroom observations take place without clearly defined teaching standards and measurement criteria determined in advance of the observation exercise (Hallinger et al., 2014). Moreover, an overemphasis on using appraisal for summative purposes, particularly when linked to career advancement, salary increases, and other high-stakes managerial decisions, is likely to lead to lower levels of staff morale, weaker job satisfaction and poor motivation, and can have a detrimental impact on teaching practices and student outcomes (Cardno & Robson, 2016; Grootenboer, 2000). Furthermore, a bureaucratic, management-focused approach to appraisal can create anxiety and stress for teachers and principals alike, and can be viewed as a threatening process that creates emotions of fear and suspicion, and can cause teachers to question their self-efficacy (Grootenboer, 2000).

Overall, research on Teacher Performance Appraisal reveals a complex field of study that raises many questions with regard to what constitutes effective teaching, how to best quantify and measure it, what factors impact student learning, how to establish well-designed appraisal systems, the significance of student outcomes in this process, and the importance of stakeholder involvement. It also shows that this is an area of research that is of great relevance to teachers and school principals and deserves ongoing focus and attention.

Research Design

The purpose of this empirical case study was to understand how secondary-level teachers at one school in South-east Asia perceived the Teacher Performance Appraisal system as it operated in the school. The research focused on a secondary high school in a major city, primarily due to convenience (e.g., ease of access); however, the school's multicultural environment and staffing offered an interesting opportunity to investigate diverse views and opinions on Teacher Performance Appraisal. The school served both local and international students in the city and employed teachers from both the local area and other countries. The school was also selected as it had been running a Teacher Performance Appraisal system for several years. Finally, it was also identified as an appropriate case study because the teaching medium was English, and the teachers were all able to communicate in English, facilitating face-to-face interviews with the researcher.

The Teacher Performance Appraisal system at the school generally operated in the following manner:

1. Teachers were provided with the performance self-appraisal instrument and asked to assign themselves a score between 1 and 5 against three categories and nine sub-categories of assessment criteria.
2. Over an announced time period, the head of the secondary school and the relevant subject head conducted at least one classroom observation each, usually lasting between 10-20 minutes.
3. The head of the secondary school and the subject head then met with each teacher to provide feedback and comments based on the classroom observations. During this time, the teachers presented their self-appraisal scores and had an opportunity to discuss their self-assigned scores. Once agreement was reached, the performance appraisal scores were finalised and an official performance appraisal document was generated.
4. The discussion/feedback sessions were designed to be followed up by training and development sessions based on any areas of weakness identified for further development and improvement.

A case study approach was chosen for the purposes of conducting this research, as it

was deemed to be the most appropriate design for answering in-depth "how" and "why" questions (Hamel et al., 1993; Yin, 2009). The intention of the research was to explore and report the detailed, context-rich experiences of secondary school staff involved in appraisal, particularly as the literature indicated that the effectiveness of teacher appraisal is contingent on the school-level context and circumstances in which it takes place, and on the sensitivity of teacher appraisal to its participants.

As a single-case design, the school can be considered a "unique case" rather than a "typical case" (Cohen et al., 2018, p. 384). Nonetheless, the findings and conclusions could still help lead to similar research in other school settings, and the development of wider theories on the implementation of effective Teacher Performance Appraisal. To embrace the complexity of the issues operating in this case study required "thick descriptions" (Geertz, 1973, p. 10) – details and in-depth data of the context and views of the participants, relying on their authentic, credible, sincere, legitimate, trustworthy, plausible, honest, accounts of the situation and their reactions to it (Cohen et al., 2018). Thus, open-ended, semi-structured interviews were determined to be the most appropriate method for data collection.

Permission was obtained from the school to conduct the research, and the research was approved by the researcher's university. Informed consent was obtained from interviewees by having them sign a formal consent form prior to the interview. They were assured of the non-disclosure of their personal details and the non-traceable nature of the written findings. Several steps were taken to ensure anonymity, confidentiality, non-traceability, and protections of the participants' identities. The non-traceability of the school and the research subjects, as well as the protection of their identity, were of the utmost concern during the research process.

A combination of convenience sampling and snowball sampling was used to embrace a wide range of teachers from different backgrounds, biographies, and cultures to be faithful to the composition of the case study teachers more widely. Based on the research design, 10 respondents participated in this research. The respondents were all teachers employed at the school at the time of the research and came from a range of subject

backgrounds and cultural backgrounds, with teachers of various nationalities being represented. Further details are not disclosed to protect identities.

In order to gather data on the research questions, semi-structured interviews with open-ended questions were conducted with these 10 teachers, which enabled the respondents to answer in their own terms and to raise issues at their own will. The interview questions covered a range of areas relating to the perceived purposes, process, usefulness, fairness, advantages and disadvantages of the appraisal system, as well as particular aspects of the system, including appraisal criteria, classroom observations, self-appraisal, feedback sessions, and related training opportunities. Interviewees were asked 16 interview questions, with follow-up questions asked when necessary or appropriate. Finally, the interviewees were asked questions related to perceived job satisfaction, motivation to improve pedagogy, impact on student learning outcomes, other benefits and outcomes of the appraisal process, and their recommendations for areas of improvement (See Appendix 1).

Ultimately, the researcher conducted 10 in-depth face-to-face interviews lasting approximately one hour each, at which point data saturation was reached. Each interview transcription was carefully reviewed to identify key responses relating specifically to each of the interview questions. Coding was conducted in order to facilitate the organisation of responses received. A general pattern-matching and coding technique was employed to categorise the data into a total of 14 themes. Codes were assigned to the data in an iterative, recursive process. The codes were derived from the researcher's prior concern to include data that would answer the research questions (pre-ordinate coding) and in response to the issues that were reported in the transcribed interviews (responsive coding). Following the initial coding, axial coding was conducted to organise codes into groups of related issues. Key themes emerged from these groups. Some of these themes had been anticipated, relying on theoretical propositions arising from in-depth research into existing academic literature on the topic of Teacher Performance Appraisal (e.g., concepts of fairness and transparency). Other themes emerged from the data as the transcriptions of the interviews were revised and reviewed. Pattern matching and coding were undertaken to arrive at a final 10 categories of information. These themed responses were then matched to one of the four

relevant research questions, which ultimately formed the basis of the organising principle for the data analysis and reporting (see Appendix 2).

Data Analysis And Findings

During in-depth interviews, participants described their perceptions of and experiences with the Teacher Performance Appraisal system implemented in the school. The discussions revolved around the system's relationship with their professional development, job satisfaction, motivation to improve their teaching skills, and communication and collegial relations between colleagues and school leadership. They also provided recommendations for enhancing the system. Appendix 2 visually showcases the process of data analysis and categorisation, from pre-ordinate categories established on the basis of key areas identified in the literature, to emergent themes that were identified in the responses of the interviewees, to the final four categories utilised to present the findings of this research.

Research Question 1. What do teachers in the school regard as the purpose(s), uses, benefits and limitations of Teacher Performance Appraisal in the school?

Respondents identified many purposes, uses, benefits and limitations of teacher appraisal. Teacher appraisal was generally recognised as a useful management tool for a range of applications, empowering leaders and senior managers to monitor teacher performance, identify staff development, improvement and performance needs, provide evidence for promotion or releasing underperforming staff, check that teachers were working in accordance with what the school wanted, ensure that school policies and action plans were being put into practice, and to meet external education department requirements. Some teachers mentioned that the appraisal system had previously been linked to salary increments, but most felt that this was not desirable and were pleased that this was no longer the case. Overall, there was a general consensus among the teachers that performance appraisal had practical school management applications, and that the school leadership was moving in the right direction in this regard.

The respondents also noted formative purposes for the appraisal system relating to teacher improvement and development, including: to self-reflect and identify strengths and weaknesses; to provide and receive feedback, constructive criticism, and guidance; to provide encouragement, recognition, and affirmation of teachers; and to develop self-reflective practices. The teachers expressed positive views on how the appraisal

.process provided them with a sense of affirmation and recognition of their efforts and skills. They felt that this was a strength of the appraisal system, which could motivate them to work harder and improve their professional skills. However, some respondents expressed the view that sometimes the focus on providing affirming, positive feedback detracted from opportunities to provide more constructive criticism and advice that would be more likely to help them genuinely improve their teaching skills and methods.

One prominent theme that emerged throughout the interviews was regarding how the appraisal related to providing opportunities for training and professional development. The respondents generally indicated that the school did try to provide opportunities for training and development; however, not all of them saw a strong link between these opportunities and the appraisal process.While informal, collegial-based training was perceived positively, and some respondents saw a link between the initiation of these sessions and the conducting of appraisal, it was clear that the appraisal process did not always facilitate or encourage these sessions.

The teachers interviewed also expressed the belief that the appraisal system should ultimately lead to improved student learning outcomes; however, there were mixed responses as to whether this was actually the case under the current system.

Research Question 2: How do the teachers regard and react to the content and processes of Teacher Performance Appraisal?

The appraisal process involved self-appraisal, classroom observations, and discussion/feedback sessions to arrive at a final determination. To address this research question, the data here are set out under these three main headings.

Self-appraisal and reflective practice

The appraisal system at the school required teachers to self-appraise their performance, rating themselves on a scale from 1 to 5 against a set of criteria relating to their professional duties. Throughout the interviews, respondents expressed the view that

they were generally comfortable with this process and willing to be reflective and self-evaluative practitioners of their profession. They commented that they valued the opportunity to express, evaluate, and judge themselves as part of the appraisal process.

However, they expressed an awareness that their self-appraisal judgements should be honest, yet admitted that at times they were either too harsh or self-critical, and at other times too generous in the marks they graded themselves. Several reasons were cited for this, including self-protection, modesty, and humility, as well as a lack of clarity in the criteria used for self-evaluation.

Regarding the self-appraisal criteria that accompanied the awarding of marks, some teachers noted the need for more concrete criteria and more guidance on how to award/self-award a mark in the five levels of marks (1-5) and what factors to consider when awarding the mark. There appeared to be some confusion about exactly what constituted a mark of 5 or 4, etc., on the grading scale, which led to some hesitancy about what mark to assign during the self-appraisal process.

Classroom observations

A key aspect of the appraisal system involved classroom observations of teachers by the appraisers. Typically, these observations were - conducted by the head of subject or department and the head of the secondary school, and were a key contributor to providing feedback to the teachers during the appraisal feedback sessions. Teachers were notified that the classroom observations would be taking place during a certain period of time in the semester; however, they generally did not know the exact date and time of the observation. According to the teachers interviewed, the appraisers spent around 15 to 20 minutes observing the class, though they might stay longer if they had any concerns. Given the critical role of classroom observations in assessing teacher performance and providing feedback, it was important to ask the respondents how they perceived these observations.

Many staff recognised the benefit of classroom observations when accompanied by constructive feedback, and they appreciated the positive, non-threatening approach used

during class observations. However, some did note that classroom observations caused them some level of stress, due to having a senior/middle manager in the classroom observing them, and disrupting the natural/normal class dynamics.

Some teachers felt that the number, duration, and frequency of classroom observations were too few and too short, and gave an unrepresentative, unreliable picture of their teaching skills. In particular, some teachers commented that observing just one or two lessons was not always sufficient in terms of providing a comprehensive understanding of a teachers' abilities. Furthermore, given that the scheduling of the classroom observations was not a complete surprise, some teachers noted that the observed lessons could be atypical of everyday practice and would be rehearsed or "safe" lessons (e.g., "show and tell" lessons) that fail to demonstrate or reflect their true abilities. They believed the lessons would be unrepresentative of their real skills. Some teachers suggested that regular, unannounced, informal visits and more observations would be a more appropriate means of accurately assessing teachers' skills and work, but they also acknowledged that this might be more stressful for the teachers involved. Overall, it seemed that the respondents were generally in favour of more frequent, less formal, unannounced classroom observations, in order to obtain a more authentic picture of teachers' strengths and areas for improvement.

Discussion / feedback sessions

A significant component of the appraisal process were the discussion / feedback sessions between the teacher (the appraisee) and the appraiser. Respondents indicated several key points about these discussions, frequently noting that the sessions were conducted with considerable professionalism, fairness, transparency, and honesty. During the sessions, the appraisers provided positive and constructive comments and feedback, and recognised teachers' achievements. This, in turn, boosted teachers' confidence and provided them with an improved sense of job satisfaction. The feedback sessions allowed for the teachers' voices to be heard and listened to, making a difference to the outcome of the appraisal. Ultimately, the feedback sessions promoted open communication and discussion, reinforcing collegiality and leading to better communication between colleagues and a sharing of best practice. There was also a general perception that during

the appraisals, teachers were encouraged to speak freely and openly, and had an opportunity to communicate their thoughts and ideas. The topics of open communication, politeness, and respect, and listening to the teacher's voice were frequently addressed when teachers reflected on the appraisal feedback sessions, thereby strengthening the feeling of being in a collegial community.

Research Question 3. How impactful is Teacher Performance Appraisal?

Respondents were asked for their views on the outcomes, impacts and consequences of the appraisal. Many teachers agreed that it was beneficial to have an appraisal system, and that the current system was overall fair in nature and had beneficial impacts. On the other hand, some respondents expressed negative views when discussing whether they perceived the system to be consequential and impactful. For example, some respondents commented on the "tick the box" nature of the process, and others noted the lack of follow up or consequences.

Responses regarding the impact of appraisal on training and development opportunities for individual teachers at the school were also mixed. Based on the responses, it is evident that some teachers perceived the link between appraisal and training and development to be somewhat lacking, although there was agreement that the appraisals had encouraged a sense of collegiality and sharing of best practice.

Responses on whether the appraisal system had an impact on job satisfaction and motivation varied widely, from a lot to a little. The positive affirmation and praise provided during the feedback sessions resulted in a sense of job satisfaction for some, but others noted that the appraisal system needed to have more consequences. Some teachers noted that the appraisal system had limited impact on their motivation to improve because it did not offer any rewards or incentives. They argued that the system could be more impactful if linked to rewards, promotions, or remuneration. However, overall, linking the appraisal results to salary increments or bonuses in order to make it more consequential was not a widely supported idea amongst the respondents. For some teachers, the self-reflective nature of the system and the positive praise led to higher levels of motivation to change and

improve their teaching methods; however, for others, a lack of follow up and consequences resulted in negative views about the system's impact on motivation.

Respondents were also asked whether they felt the appraisal process had led to any improvements in student learning outcomes. Here, again, a range of responses indicated that whilst this was important and there was potential to help improve student outcomes, it was largely not occurring or was uncertain.

Overall, views on the impact of appraisal were mixed, with most positive perceptions related to an improved sense of job satisfaction, but perceptions were more negative in terms of the impact on improvements in pedagogy or student outcomes. While appraisal intentions were benevolent, the practical consequences varied.

Research Question 4. What recommendations can be made for improving the Teacher Performance Appraisal system and its operation in the school, and why?

At the end of each interview, the respondents were asked to suggest ways the appraisal process could be improved in the future. Respondents provided a range of suggestions summarised in this section.

Classroom observations

Overall, the responses indicated several areas for improvement in regard to classroom observations. Some teachers recommended more frequent and longer observations. Opinions differed on whether classroom observations should be announced in advance or conducted in a "surprise" manner. The idea of peer observations was also brought up by some teachers. While teachers viewed classroom observations as an important aspect of performance appraisal, many indicated that the number of observations should be increased along with a more standardised approach.

Feedback and follow up

Key recommendations from the respondents were for improved feedback from the

appraisers, and greater follow up, action, and consequential impact. Some teachers suggested that the appraisal should provide more constructive feedback for improvement beyond an overall judgement, praise or affirmation. It was recommended that the appraisal be more consequential, with more regular follow-up sessions with teachers, both after and in between the formal appraisal process. Targeted professional development and training opportunities tailored to teachers' needs were important for the uptake of new skills and ongoing growth. One teacher suggested appointing specific staff to be responsible for following up on professional development plans and implementation. Coupling constructive feedback with a clear action plan for development goals that were followed up on was the main recommendation in this area.

The appraisal pro-forma instrument

Several recommendations were received for revising the appraisal pro-forma instrument including making the appraisal criteria clearer and more detailed, and broadening the range of factors assessed on the appraisal form. Teachers also expressed the need for more direction on assigning self-appraisal grades or marks, by providing clearer descriptors. Feedback recommended expanding the input into the appraisal process, such as incorporating peer evaluations. Several teachers also recommended adding student evaluations, in order to account for the learners' perspective.

Key Findings

A striking feature of the appraisal system in the school was its multipurpose and complex nature. The respondents raised important issues related to fairness, validity, reliability, transparency and benefits, as well as questions regarding its impact, outcomes, follow up action and consequences. Though the respondents acknowledged the appraisal system's significant potential to influence many spheres of the school's operations, they also commented that the actual impact on intended improvements was limited across several areas.

Respondents consistently recognized the dual nature of a variety of issues relating to

performance appraisal – benefits and problems, strengths and weaknesses. This underlines the point made in the literature review, that the effectiveness of teacher appraisal depends on a wide range of factors. In the present case, there was quite widespread agreement that whilst appraisal had brought benefits in areas like recognition, having a voice, feeling valued, discussion, collegiality, motivation, job satisfaction and openness, namely the "soft" areas of teaching, its impact on the "hard" areas of teaching- like student outcomes, improved pedagogy, and professional practice and development- was not so strongly felt. There was a perceived need to follow up on the processes and outcomes of the appraisal in greater detail and more concrete terms.

Overall, the findings for this research confirm and underline the importance of appraisal:

> (a) being for formative purposes, for improvement; (b) being "consequential", and that the consequences should include targeted development provisions; (c) being conducted in an open, collegial manner, as part of an open and collegial culture in the school. The interviewees were supportive of, and saw clearly the pros and cons of appraisal, and the context of the school was seen as important here. It is also noticeable that there was general consensus around many of these issues.

Discussion

In reviewing the findings of this research, a number of themes and issues can be identified. Firstly, the responses of the interviewees clearly indicated that they believed that the purpose of the Teacher Performance Appraisal system at the school should be, and in general was, formative in nature, rather than summative. The interviewees commonly noted that the appraisal system aimed to help them develop and improve their teaching skills, by encouraging self-reflection and receiving constructive feedback from the appraisers, as well as providing opportunities for training and professional development. Overall, the teachers viewed this formative approach to appraisal in a positive manner and expressed a preference for formative uses of the system over summative. These findings are aligned closely with those of Flores (2012), Kelly et al. (2008), and the Australian Institute for Teaching and School Leadership (AITSL) (2012). Mockler (2015) notes that formative appraisal systems are more common in schools with less hierarchical organisational structures, which appears to be the situation in this case study school, where a generally open culture was reportedly present.

There was also general agreement among the respondents that appraisal was handled in a professional manner by the school management, and the process was clearly explained, transparent and fair. The teachers understood how the appraisal process operated and what was expected of them.They felt that the appraisers carried out their duties in a professional manner. Previous research on appraisal has found that appraisal systems are most effective when the stakeholders have a clear understanding of the process, a common view of the goals, and trust in the procedural fairness and the professionalism of the appraisers (AITSL, 2012; Cardno & Robson, 2016; Danielson & McGreal, 2000; Isore, 2009; Tutyens & Devos, 2012; Weisberg et al., 2009).

The respondents highlighted a number of perceived benefits of the Teacher Performance Appraisal system at the school. Many of the teachers commented on the beneficial nature and outcomes of self-reflecting on their teaching practices and classroom performance, noting that this was very helpful in identifying their own strengths and weaknesses. The overall perception of self-appraisal was a positive one, with many of the respondents expressing the view that they preferred self-assessment to a more "top-down" approach. The findings of this case study confirm the research on self-appraisal, which

suggests that the use of self-reflection in Teacher Performance Appraisal can encourage teachers to have an attitude of self-enquiry that drives improvement, and when combined with a robust focus on professional development opportunities, schools are more likely to see positive outcomes from appraisal processes (Beach & Reinhartz, 1984; Cardno et al., 2017; Deneire et al., 2014; Elliott, 2015; Flores, 2012; Huber & Skedsmo, 2016; Isore, 2009; Mockler, 2015). Furthermore, schools that have a formative approach to appraisal and encourage a culture of openness, continuous self-enquiry, and collegial collaboration are more likely to generate a positive perception of appraisal amongst the teachers (Beach & Reinhartz, 1984; Cardno et al., 2017; Deneire et al., 2014; Elliott, 2015; Flores, 2012; Isore, 2009; Mockler, 2015).

Despite the overall positive perception of self-appraisal, some respondents expressed concerns with regard to the tendency to either underrate or overrate themselves against the criteria. Some teachers said they found it challenging to assign a performance grade accurately because they felt that the marking criteria were too vague and the scoring system of 1 to 5 was not adequately defined, further suggesting that more detailed descriptors, and instructions on how to use them, might be required. The importance of standards-based assessment in appraisal systems in order to minimise potential bias, and the need for these standards to be well-defined and clearly communicated is evident in the literature on this topic (AITSL, 2012; Darling-Hammond et al., 2012; Elliot, 2015; Tuytens & Devos, 2012).

Another benefit perceived by the respondents was a more collegial and cooperative environment within the school fostered with the help of the appraisal system . They also highlighted the best practice sharing sessions, which had been implemented in response to the appraisal system. The positive and professional manner in which the appraisal was conducted, reflective of a more open style of organisational culture at the school, fostered a greater sense of community and collegiality. Some respondents recommended creating a system that would facilitate peer-to-peer classroom observations and encourage a culture in which teachers and school management felt comfortable moving around the school and visiting classrooms for regular informal visits. This recommendation also aligns with previous research that suggests it is highly desirable for schools to develop appraisal systems that encourage teachers to engage in continuous self-inquiry and reflection on their

pedagogical practices, as well as to collaborate with their colleagues to improve their pedagogy and student learning outcomes (Cardno et al., 2017; Kelly et al., 2008; Mockler, 2015).

The positive collegial impact of the appraisal system was further enhanced by the feedback sessions. Participants reported that these sessions were conducted in a friendly and positive manner, with feedback that was constructive and helpful. The sessions also fostered open and honest discussions and expression of ideas, providing teachers with adequate opportunities to justify the results of their self-appraisal. The teachers also noted that the feedback was overwhelmingly positive, providing them with a sense that their work and efforts were valued, leading to enhanced job satisfaction and motivation to improve. The provision of meaningful and useful feedback is a critical part of an effective appraisal system (AITSL, 2012; Darling-Hammond et al., 2012; Hallinger et al., 2014).

Furthermore, well-designed and implemented appraisal systems have also been shown to have positive impacts on levels of job satisfaction and motivation among teachers (Deneire et al., 2014; Kelly et al., 2008; Liu et al., 2018). While acknowledging the positive impact of praise given in the feedback sessions, some teachers expressed the view that constructive criticism and advice for improvement was lacking. Smith and Kubacka (2017) indicated that when teachers feel that feedback is not useful, they will be less motivated to improve their pedagogical practices and will have a lower sense of job satisfaction. Reddy et al. (2018) also note that a lack of specific or useful feedback is a common concern for teachers. A number of teachers suggested the possibility of including student feedback in the appraisal, with some teachers indicating that they had already informally sought such feedback from their students, and had found it to be very useful in helping them to identify areas of improvement. Scholars agree that comprehensive appraisal should include multiple measures of teacher performance, and multiple sources of evidence, in order for appraisal systems to be perceived as credible and reliable in accurately and fairly determining teacher competency (Darling-Hammond et al., 2012; Elliott, 2015; Mockler, 2015; Stronge & Tucker, 2003; Tuytens & Devos, 2012).

Regarding classroom observations, most teachers agreed that the current practice of

conducting just one or two observations, once or twice a year, was not sufficient for obtaining a realistic view of their classroom performance. They felt that having their annual appraisal based solely on this limited number of observations was unfair. A number of teachers, therefore, suggested that classroom observations should be conducted informally on a more regular basis throughout the year, in order for the appraisers to develop a more complete, comprehensive, and fair picture of teachers' abilities. Most teachers also acknowledged that forewarning of the observation sessions could lead to highly prepared "show" lessons that did not genuinely represent an accurate depiction of a teacher's pedagogy or classroom management. On the other hand, some teachers felt great pressure and stress when classroom observations were conducted in an unscheduled "surprise" manner. Research on this issue suggests that conducting classroom observations on multiple occasions over an extended period of time is the most effective and fair approach for appraisers to provide useful and actionable feedback (Beach & Reinhartz, 2016; Darling-Hammond et al., 2012; de Lima & Silva, 2018; Mockler, 2015; Skedsmo & Huber, 2018; Tuytens & Devos, 2012).

In terms of the impact that the system has on actual pedagogy and student outcomes, the opinions from the respondents showed more variation. A number of teachers questioned the value of the feedback in relation to improving their teaching skills or motivating them to engage in professional development and training. The responses were more diverse with regard to whether the appraisal system led to relevant training and development opportunities. While some teachers saw a direct link between the appraisal process and subsequent training, others expressed the view that the training provided was more general and failed to address their individual needs. In contrast, some teachers felt that the appraisal did not lead to any training and development, and expressed the concern that there was a lack of goal setting, planning and follow up on behalf of the appraisers. Some even expressed the view that it was more of a "tick the box" exercise, rather than a system for genuinely helping teachers to improve their pedagogy. When teacher appraisal systems lack a clear and definite link to professional development opportunities, their effectiveness on improving pedagogy will be significantly limited (OECD, 2013, as cited in Elliott, 2015). Appraisal must lead to the provision of concrete development opportunities, and that greater attention should be given to its impact on students' learning and student

outcomes (Cardno et al., 2017; Darling-Hammond et al., 2012). Moreover, it is important for appraisal systems to provide actionable individualised feedback combined with ongoing support and professional development opportunities (Deneire et al., 2014; Flores, 2012; Hallinger et al., 2014; Weisberg et al., 2009).

Regarding links between the appraisal system and student learning outcomes, some teachers expressed the view that since the appraisal system was focused on teacher improvement and development, and the self-appraisal criteria had a strong emphasis on classroom instruction, the system would naturally have a beneficial impact on students and their learning. Indeed, Hallinger et al. (2014) argue that appraisal systems which provide useful feedback and opportunities for professional development can ultimately lead to better pedagogical practices and student learning outcomes. However, others commented that they did not perceive a significant impact on student outcomes as a result of the performance appraisal system at the school. It is challenging to assess this claim because establishing a clear relationship between teacher appraisal and student outcomes can be highly complex and problematic (Aldeman, 2017; Darling-Hammond et al., 2012; Hallinger et al., 2014).

Overall, analysis of the answers provided to the research questions both confirm and extend the existing literature on this topic. The richness of the teachers' responses demonstrate that many variables affect each other in contributing to the effectiveness of teacher appraisal, and the impact and success of a system may be dependent upon the existence and operations of an open and collegial culture in the school (Hoy et al., 1991). Indeed, teachers' awareness of the pros and cons of each issue, singly and in combination, is a testament to the open and collegial culture of the school.

Conclusions And Recommendations

Teacher Performance Appraisal is a complex and challenging initiative for school management, leadership, and teachers to undertake, yet potentially useful if schools aim to provide transparent staffing decisions, evaluate teachers' skills, and develop training programmes to enhance the pedagogy of their teachers. How teachers perceive appraisal systems in terms of purpose, fairness, and impact is a critical factor in determining whether such a system can achieve its desired goals and outcomes; therefore, seeking to better understand these perceptions is an important and significant area of research. Perceptions are important; they both influence, and are influenced by, behaviour and attitude.

The results of this research reveal a range of opinions and ideas, and mixed views on how the system currently operates and how it could be improved in the future. Overall, the teachers interviewed for this research held and expressed generally positive perceptions of Teacher Performance Appraisal in principle, with all acknowledging its importance and potential to drive improvements in teachers' pedagogy and student learning outcomes. They all expressed a strong preference for the focus of appraisal to be formative rather than summative, while noting that it could also serve a useful school management function. The teachers commented that this approach enabled them to self-reflect genuinely on their strengths and weaknesses and to consider ways to improve their performance. They appreciated the professional and open conversations facilitated by the appraisal system with school managers during the feedback sessions, and the positive affirmation and recognition that they received during these sessions. And they also appreciated the way in which the appraisal system fostered, and built on, a greater sense of collegiality between teachers, and encouraged communication and sharing of ideas on best practice. There was a general sense that the fair, professional, and transparent manner in which the appraisal system was conducted led to higher levels of job satisfaction and motivation to improve.

On the other hand, the teachers interviewed also commented on several issues that concerned them, and areas where they felt improvement could be made. These included the limitation of the "tick the box" approach, the need for more constructive and formative feedback, the need for greater consequential staff development coming out of the appraisal, greater attention to the number, frequency, weight and announcement of classroom observations, greater clarity in appraisal criteria and their interpretation, increased attention

being given to ensuring that appraisal would benefit student outcomes, and attention to purpose, fairness, transparency and impact.

Effective appraisal is linked closely to a culture of openness and collegiality within the school community which is characterised by cooperation, support, open discussion, professionalism, trust, autonomy, self-reflection and academic excellence, together with teacher self-reflection and self-critique, encouraging teacher voice and contribution in an atmosphere of recognition, respect and positivity rather than threat, and respecting individual differences.

Effective teacher appraisal, then, suggests that detailed attention must be paid to the contextual variables of the school and to securing an open culture within the school, together with sensitivity to the professional interactions, biographies, personalities, views, and behaviours of the participants, as appraisal is complex, multifactorial and hinges on people. A key finding here was the necessary attention to detail at all stages of the appraisal, and this was reflected in the high level detail of the responses from the participants.

Limitations

The case study, while only investigating a small sample, obtained a representation of teachers from different backgrounds working in a multicultural school environment. Nonetheless, the sample size of only 10 teachers, while sufficient for the purposes of this case study, was small. However, all but one of the teachers interviewed were expatriates / non-local employees. Thus, there was a limited sampling of data from local teachers, which might have resulted in a lack of diverse viewpoints as their perspectives may differ from those of the expatriate teachers.

The research focused on the perceptions of teachers employed in the secondary section of the school, and not the whole school. It did not specifically or deliberately seek to investigate the views of the appraisers or of the school leadership. This research also did not specifically focus on the efficacy of the various stages and processes involved in the appraisal system, nor did it attempt to determine whether the appraisal system was actually

achieving its stated goals, or to substantiate the impact that the system had on teacher's pedagogy or student learning outcomes. These aspects were beyond the scope of the research, which was an initial exploration only. Another limitation of this research relates to how much can be taken from perceptions and opinions.

Recommendations

Based on the findings and conclusions of this case study, and given the generally positive perceptions of the teachers towards self-appraisal, it was recommended that the particular school at the centre of this research, should continue to implement this approach to performance appraisal. The open nature of the school culture, the professional approach to implementing appraisal, and the emphasis on formative rather than summative outcomes, were all factors that were likely to lead to successful outcomes in the future. The school leadership was also advised to take note of the concerns highlighted by the teachers in this study, and to consider ongoing amendments to the appraisal system to optimise its effectiveness.

Evaluating the efficacy of performance appraisal systems, investigating what factors contribute to their success, and understanding how they are perceived by stakeholders are all important areas of study for researchers, educators and school management. There is room for more research to be done in this area, using not only different and larger samples, but also different methods. Future research could investigate further the relationship between context and school culture and effectiveness of performance appraisal systems, this could include how to develop and implement effective performance appraisal systems, including the value and usefulness of self-appraisal, within the context of schools in South-east Asia. These are interesting fields of investigation for researchers in this area.

Understanding how to develop and implement effective performance appraisal systems, and appreciating how they are perceived by stakeholders, can assist schools in their efforts to improve the professionalism of management, pedagogy of teachers and learning outcomes of students. Establishing and fostering an open school culture, implementing professional and transparent processes, and encouraging communication and

collegial sharing of best practice, can result in Teacher Performance Appraisal systems that achieve positive outcomes for teachers, students and schools.

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APPENDIX 1 - Case Study Interview Questions

1.What does your school use teacher appraisal for? How do you feel about this?

2.What do you think teacher appraisal should and should not be used for? Why is this?

3.How does the performance appraisal process operate in your school? What happens in t he teacher appraisal? How do you feel about this?

4.What are the outcomes of teacher appraisal in the school? How do you feel about this?

5.What kinds of discussions between the appraiser and the appraise take place as part of the appraisal process? How do you feel about this?

6.What benefits, if any, has the teacher appraisal brought to you?

7.Do you feel there are any downsides of teacher appraisal in the school? Why is this?

8.What are your views on the criteria against which you are rated during the TPA process?
a)Are they fair?
b)Are they well communicated and explained?
c)Are they appropriate and sufficient to evaluate your performance?

9.What are your views on the appraisal process in terms of fairness and transparency?
a)Is the purpose and process clearly explained?
b)Are teachers involved in the design and implementation?
c)Do you have an opportunity to discuss the results?

10.How do you view the role and performance of the appraiser?

11.What are your views on the amount and quality of the feedback provided during the appraisal process?
a)Is it helpful in terms of improving your teaching practices?
b)Is sufficient time given to discussing the feedback?
c)Is it provided in a professional and constructive manner?

12.To what extent does the appraisal process motivate you to change or improve your teaching methods? Why is this?

13.Does the TPA process lead to training and development opportunities? Are they adequate?

14.What impact does the TPA process have on your level of job satisfaction?

15.To what extent and in what areas do you think the appraisal process leads to better student outcomes?

16.What aspects of the TPA process do you feel could be improved in future?

APPENDIX 2 - Categorisation of Data

Pre-Ordinate Categories	Emergent Themes	Final Categories
Purpose of TPA	• Improvement of Teachers • Multipurpose Management Tool	**Purpose:** • Improving Teaching and Teachers • Identifying professional development needs
Fairness and Transparency of the process	Reflective Practitioners: Self-reflection and self-appraisal	• School management • Benefit to students
Classroom observations	Sufficiency and Frequency of classroom observations	
Appraisal Criteria	• Clarity of appraisal criteria • Tendency to overate or underrate	**Process:** • Self-appraisal and reflective practice • Classroom observations • Discussion / Feedback Sessions
Feedback sessions	Openness and Professionalism	
Role of the appraiser	Professionalism	**Impact:** • Outcomes, follow up actions and consequences • Training and Development • Job Satisfaction • Motivation • Student Outcomes
Impact on Job Satisfaction	Affirmation and recognition	
Impact on Motivation	Consequential	
Impact on student learning outcomes	Student Feedback	**Recommendations:** • Classroom Observations • Feedback, Follow-up and Impact • Professional Development • Appraisal Pro-forma instruments • Inputs into appraisal
Training and Development Opportunities	Appropriateness of T&D / ongoing follow-up	
Benefits	Communication and collegiality	
Suggestions for improvement	Drawbacks and Limitations	

The Financial Valuation Of Walmart Inc.

by Gonçalo Nuno das
Neves Arrojado Lestro

Abstract

Walmart Inc. (Walmart hereafter) is the world's largest retailer and the largest companyin terms of revenue. It is also the biggest employer globally. Marketline (2021) states that Walmart has been the market leader for several years in 25 countries, including the US. The company operates several types of stores, as well as warehouse stores, such as Sam`s Clubs, and eCommerce websites globally. Despite Its global leadership and being sustained by its competitive advantages, Walmart faces challenges from its worldwide competitors, industry factors and the economic environment.

Understanding how the company is organized, how it positions itself in the industry, and how internal and external factors may affect its operations and financial performance are key to assessing its intrinsic value. Then comparing the intrinsic value of the Company to its stock price as of 31 January 2021 may provide valuable information to investors.

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This work is dedicated to my wife, Marta, and my three kids, Matilde, Carolina and António and it is. my wish is that throughout their lives, they will always remember that anything is possible if they put their minds to it.

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Discussion

In reviewing the findings of this research, a number of themes and issues can be identified. Firstly, the responses of the interviewees clearly indicated that they believed that the purpose of the Teacher Performance Appraisal system at the school should be, and in general was, formative in nature, rather than summative. The interviewees commonly noted that the appraisal system aimed to help them develop and improve their teaching skills, by encouraging self-reflection and receiving constructive feedback from the appraisers, as well as providing opportunities for training and professional development. Overall, the teachers viewed this formative approach to appraisal in a positive manner and expressed a preference for formative uses of the system over summative. These findings are aligned closely with those of Flores (2012), Kelly et al. (2008), and the Australian Institute for Teaching and School Leadership (AITSL) (2012). Mockler (2015) notes that formative appraisal systems are more common in schools with less hierarchical organisational structures, which appears to be the situation in this case study school, where a generally open culture was reportedly present.

There was also general agreement among the respondents that appraisal was handled in a professional manner by the school management, and the process was clearly explained, transparent and fair. The teachers understood how the appraisal process operated and what was expected of them.They felt that the appraisers carried out their duties in a professional manner. Previous research on appraisal has found that appraisal systems are most effective when the stakeholders have a clear understanding of the process, a common view of the goals, and trust in the procedural fairness and the professionalism of the appraisers (AITSL, 2012; Cardno & Robson, 2016; Danielson & McGreal, 2000; Isore, 2009; Tutyens & Devos, 2012; Weisberg et al., 2009).

The respondents highlighted a number of perceived benefits of the Teacher Performance Appraisal system at the school. Many of the teachers commented on the beneficial nature and outcomes of self-reflecting on their teaching practices and classroom performance, noting that this was very helpful in identifying their own strengths and weaknesses. The overall perception of self-appraisal was a positive one, with many of the respondents expressing the view that they preferred self-assessment to a more “top-down” approach. The findings of this case study confirm the research on self-appraisal, which

Chapter One
Introduction

Walmart Inc. (hereafter referred to as Walmart) is the biggest retailer in the world, the top-ranking company in the world in terms of revenue, and also the biggest employer in the world. Marketline (2021) indicates that in 25 countries, the company operates several types of stores, including warehouse stores such as Sam`s Clubs, and global eCommerce websitesincluding in the U.S. where Walmart has been the market leader for several years. This thesis aims to provide an overview of the Company, its industry and the economic factors that influence its operations, as well as to calculate the company's valuation as of 31 January 2021 and forecast its future value over the next few years. In this chapter, we explain the purpose of studying this topic, the methodology to be followed as well as the applicable limitations.

1.1 Purpose of Study

The objective of the present dissertation topic is two-fold. The first objective is to measure the intrinsic value of Walmart as of 31 January 2021 and to compare it with the stock's market price on that same date. This will help us determine if the company's stock was underpriced or overpriced. The second objective is to analyze the company's internal and external factors, including opportunities and threats, its positioning and strategies, and to factor these in when conducting a sensitivity analysis of the stock price. This analysis is of paramount importance to understand how the company may react to changes in the underlying factors that influence its valuation. Furthermore, we propose to identify possible future strategies for the management to consider as the company prepares for the next ten years, with the aim of continuing to create value for its stakeholders.

1.2 Methodology

In preparing this work, we utilized both quantitative and qualitative research. Chapters two to four will apply qualitative methods for collecting and analyzing data relevant to the analysis of Walmart, the industry, and the economy. Chapters five to eight will apply both qualitative and quantitative data collection and analysis methods. Data will be collected

from Walmart's annual reports for the fiscal year spanning January 2017 to January 2021 to conduct three valuation models which will allow us to conclude the intrinsic value of the company as of 31 January 2021. Finally we will perform a sensitivity analysis to understand how the Company's value reacts to changes in the underlying factors that influence its valuation.

1.3 Limitations

In preparing the present work, namely in forecasting the company's operations and results for the next ten years in order to apply the valuation models, we had to make certain assumptions with regards to the financial and operational future of the Company. However, these assumptions may pose a limitation to this analysis since they may prove to be incorrect or inaccurate. We have assumed that some of the key factors applied in the company's valuation, such as risk-free rate, cost of debt, market risk premium, and the weighted average cost of capital, would remain constant during the forecast period as it is very difficult to predict changes in these indicators. The sensitivity analysis conducted at the end of this work is also designed to accommodate certain changes to these or other factors in order to provide a broader perspective on how the company may perform in the future.

Chapter Two
Company Overview

2.1. Company Profile

Walmart is the largest retailer in the world and the largest company in the world in terms of revenue. It is also the biggest employer in the world (with approximately 2.2 million associates) (Marketline, 2021). The company's business operations are classified into three segments: Walmart US, Walmart International, and Sam`s Club. It operates several types of stores, including grocery stores, department and discount stores, neighbourhood markets, supermarkets, and hypermarkets. Additionally, it operates warehouse stores such as Sam`s Clubs and global eCommerce websites.. As of 31 January 2021, Walmart was present in 25 countries, including Canada, China, Mexico, India, Chile, several countries in Africa, Japan and the United Kingdom. In Fiscal year 2021, Walmart reported revenue of USD 559,151 billion and profits (net income) of USD 13,706 billion.

2.2. Walmart`s Major Business Segments

2.2.1. Walmart US

Walmart US is the largest segment of the company, operates under the brands “Walmart” and “Walmart Neighborhood Market” in all of the states in the USA, as well as through its website Walmart.com and other eCommerce brands. In fiscal year 2021, Walmart US posted net sales of USD 370 billion which represents 67% of the company’s consolidated net sales. (Net sales in fiscal years 2020 and 2019 were USD 341 billion and USD 331.7 billion respectively). The Walmart US region generates the highest gross profit for the company and contributes the most to its net sales and operating income.

Walmart US competes against a broad spectrum of small, medium, and large stores, from drug and dollar stores to supermarkets, hypermarkets, and supercenter-type stores, as well as other Omni-channel retailers operating discount stores, wholesale grocers and department or retail stores. It also competes against eCommerce retailers. Walmart currently has 156 distribution centers, from which the majority of Walmart US`s store merchandise purchases are shipped. Strategically located throughout the U.S., these distribution

centers work closely with a private fleet of 6,100 tractors and 61,000 trailers (and more than 7,800 drivers) to ensure the distribution of mainly general merchandise and dry grocery items.

2.2.2. Walmart International

Walmart International, the second-largest segment of the company, posted net sales of USD 121.4 billion in fiscal year 2021, which represents 22% of the company's net sales for the year. (Net sales in fiscal years 2020 and 2019 were USD 120.1 billion and USD 120.8 billion respectively). As of 31 January 2021, Walmart International was present in 25 countries, operating through wholly-owned subsidiaries (Canada, Chile and China) and majority-owned subsidiaries in Africa (Botswana, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, South Africa, Swaziland, Tanzania, Uganda and Namibia), Central America (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua), India and Mexico.

In fiscal year 2021, the company also contributed to the "held for sale" business in Japan and in the United Kingdom. This category was also present in Argentina until this operation was sold in 2021 and had been present in Brazil until its sale in 2019. In India, the company capitalized on its recent acquisition of Flipkart, as well as with PhonePe, a digital platform anchored in payments. In China, the company has partnered with a major online player, JD.com and JD Daojia, enabling a "one-hour" delivery to customers strategy by using Walmart stores as fulfillment centers for online customers. Walmart International's retail units' average areas, vary and range between 1,400 square feet and 186,000 square feet. as of January 2021, the company had around 3,000 pickup locations and around 2,200 delivery locations. Walmart International utilizes 221 distribution facilities located in several countries where it is present.

2.2.3. Sam`s Club

Sam`s Club is a membership-only warehouse club which operates in 44 States in the U.S.A. and in Puerto Rico. It also operates the website samsclub.com. In fiscal year 2021

this segment had net sales of USD 63.9 billion which represented 11% of the company's consolidated net sales for the period. In fiscal years 2020 and 2019, the company had posted net sales of USD 58.8 billion and USD 57.8 billion, respectively. Sam`s Club also operates an Omni-channel strategy where retail stores and online eCommerce services and platforms are integrated, and customers may access products not found in other clubs. Sam's Club`s warehouse facility sizes may vary and range between 32,000 square feet and 168,000 square feet.

2.3. Operating Strategies

2.3.1. Mission Statement and Vision.

Walmart's mission statement is to "help people around the world save money and live better – anytime and anywhere" (Walmart, 2021). The focus on low prices and price leadership in the marketplace has been the cornerstone of Walmart's business. This is also embedded in the company's vision of making "every day easier for busy families". This vision encompasses not only the price leadership approach but also the aim to increase convenience to save their customers' time.

2.3.2. Strategy and positioning

The Company adopts the philosophy of "Every Day Low Prices" as a way to earn customers` trust everyday by applying this philosophy to a broad assortment of quality merchandise and services offered. Considering the pressure of competition on price strategies, Walmart has adopted certain programs to cope with such pressure and to strive to be the market leader. These programs are: Every Day Low Prices (EDLP) – the company prices the items to be sold at the lowest daily prices possible to gain customers' trust; Every Day Low Cost (EDLC) – a commitment to controlling expenses and passing cost savings to customers; and enhancing customers' convenience through Omni-Channels offerings.

2.4. SWOT Analysis

2.4.1. Strengths

Walmart is very efficient in managing its supply chain and distribution process. This is due to the investment in adopting technology to streamline internal and external processes. Walmart is also known to have a privately-owned cost-efficient truck fleet, allowing the company to directly control the distribution process while reducing costs. This enables the company to pass on such low costs to customers, ensuring that the company can implement its strategy of "Every Day Low Prices", which ensures its price leadership (Ofori-Nyarko, Wang, & Annoh, 2020).

2.4.2. Weaknesses

One of Walmart's weaknesses is its human resources policies. The company has been under greater scrutiny regarding how it treats its employees/associates, both in terms of remuneration and minimum standard salaries, but also in terms of fair and equal treatment among associates. Another weakness of the company is that it operates in an industry and with a strategy that is easily replicated. This explains the company's – and industry's average – profit margins, which for 2021 was only 2.42%.

2.4.3. Opportunities

There are two major opportunities which Walmart can explore. The first is to continue its internationalization. The second is to invest in the online market. Despite its size and already strong global presence, the company is present in only 25 countries. The company has the opportunity to potentially study new countries to enter while further developing its operations in countries such as China and India, where there is massive potential for scale due to the demographics and where the sector is growing at a faster rate.

2.4.4. Threats

In the US market, Walmart is being threatened by Amazon in e Commerce and online

retail, and competitors like Target which operate in a similar manner to Walmart. Internationally, and especially during the Covid-19 era, the company faces different restriction policies imposed by local governments, such as in China. Also, China accounts for a large portion of the products bought by Walmart. This exposure is a risk since the Chinese Government may impose restrictions or higher tariffs on exports due to the global economic and trade war. Inflation, products, and shipping prices are also a concern.

2.5. Core Competencies

Walmart's core competencies are related to the efficiency of its supply chain and what makes it possible. The company's supply chain management is backed by a very strong investment in information technology and state-of-the-art management programs, which allow the company to not only operate at the lowest possible price (a cornerstone strategy of the company since its inception) but also to gain a strong buying power over suppliers, ensuring that it keeps its costs at lower levels. The efficiency in how Walmart can manage all these key factors makes the company quite unique and creates a competitive advantage that others are yet to be able to reproduce or copy (Rothaermel & King, 2017).

Chapter Three
Industry Analysis

3.1 Industry Definition and Structure

Retailing may be defined as a set of (final) activities and steps, needed to place a product in a market or offer a service at the marketplace to end consumers. It may be considered as the last step in a long and complex supply chain(Dunne, Lusch, & Carver, 2014). This last step has traditionally been achieved through various channels such as supermarkets and hypermarkets, department stores, convenience stores, dollar and discount stores, etc., as shown in figure 3-1 below. Lately, eCommerce has been playing a major role in the growth of the retailing industry, as the retailing paradigm is changing throughout the world regarding how consumers purchase their goods. This is set to be one of the significant channels, if not the most, significant channel for the retailing industry.

3.2. Major Competitors

Walmart is the biggest player by revenue in the global retailing industry, followed by Amazon, which is growing at a very fast pace. Other international players are: Costco, Schwarz Group, Kroger, Walgreens, Home Depot, Target, Aldi Einkauf GmbH & Co., JD, Alibaba, Tesco, etc. (Statista, 2021). For eCommerce retailing, Amazon has taken the lead as the biggest player, followed by Walmart, JD, Alibaba, etc.

3.3. Industry Growth and Profitability

Globally, the total retail sales for the top 250 global retailers rose to USD 4.85 trillion in fiscal year 2019, up from the previous year's USD 4.74 trillion (Deloitte, 2021). The composite net profit margin for this group was 3.1%, an increase of 0.1 percentage point from the previous year. Emphasis in this study has been given to retailers with foreign operations, which accounted for 64.8% of the total retailers in this group, with a 22.2% share of retail revenue from foreign operations. Emphasis has also been given to the growth provided by the eCommerce segments and online sales. Amazon was the clear leader of this growth tendency, with projected online sales growth of 50% for the 2020 fiscal year and

online sales comprising 92% of their overall sales and also having a retail sales YoY growthof 34.8%.

In the US, the total retail sales were around USD 4.06 trillion in fiscal year 2020, which represented an increase from the previous year (USD 3.81 trillion) (Statista, 2022). There are around 4 million retail establishments in the United States, which account for 11.6% of all US business establishments. Furthermore, the retail industry in the US provides 32 million direct jobs, which represents 16% of the national total. Retailing is, therefore, the largest private employer in the country. Furthermore, the impact of the industry's total GDP was USD 3.9 trillion in 2018, representing 18.7% of the country's total GDP (PricewaterhouseCoopers LLP., 2020).

3.4. PESTEL Analysis of External Factors Affecting the Industry

3.4.1. Political Factors

For the fiscal year 2021, (which in actuality covers most of the calendar year of 2020), Walmart and the industry continued to experience the results of the then ongoing trade war and tariffs with China, as well as the immediate impact of the widespread Covid-19 pandemic, not only in the USA but all over the world. The manner which each government, each country, and each state dealt with the needs imposed by the pandemic, including imposed lockdowns that limited in-person shopping significantly impacted the industry's performance. These factors have led to necessary adjustments in the companies' operations and affected the balance of the supply chain and the distribution segments.

3.4.2. Economic Factors

The economic factors affecting the outlook for the fiscal year 2021 was of great importance as the global economy was severely hit by the impact of the Covid-19 pandemic. According to IMF's World Economic Outlook issued in October 2020, it became increasingly clear how difficult it would be for economic activity to recover to pre-pandemic levels. While the retail industry's revenue growth was not as severely affected by the

pandemic as other industries – rather being one of the few resilient industries due to the decline of in-store shopping being offset partially by a sharp rise in online shopping – the economic impacts of the global pandemic may continue to affect the prices throughout the supply chain and ultimately affect Walmart`s cornerstone principles of everyday low prices (Deloitte, 2021).

3.4.3. Social Factors

Social factors are very much related to consumer behavior and how retailers take advantage of knowledge about consumer behavior in targeted groups. In fiscal year 2021, there was a big shift towards online consumption, confirming a growing tendency registered in the last few years, that was catalyzed by the beginning of the Covid-19 pandemic.

3.4.4. Technological Factors

Technological factors play, and are expected to play, an increasingly important role in the retailing industry. Retailers have invested heavily in state-of-the-art management systems, including data warehousing, supply chain coordination systems, barcodes and related management options, automation and robotics, and on the eCommerce side, management of big data and consumer behavior analytics (Banerjee, 2015). Walmart has become one of the leading retailers in technological advancements, which allows the company not only to be cost-efficient in its operations but also to be prepared for the opportunities brought by the eCommerce channels, which were enhanced by the Covid-19 pandemic limitations to in-store buying.

3.4.5. Environmental Factors

Environmental consciousness is part of the retailers' corporate responsibility, and many have engaged in sustainability programs aiming to be more efficient in using resources to reduce waste and pollution. This is a tendency that is being recognised across the world and across industries, and retailing is gearing up to play a leading role in this arena.

Walmart has become one of the pioneers in this field in creating sustainability goals with its Project Gigaton, which aims to engage suppliers in climate action, namely to remove one gigaton of greenhouse gases from the global value chain by 2030.

3.4.6. Legal Factors

Retailers must be aware of the complex legal factors influencing the industry. Legal factors can become tricky when retailers expand their positions to other jurisdictions where new legislation needs to be complied with. Legislation such as food and safety/health regulations, data protection laws, labor laws, tax laws, etc. are of paramount importance for retailers to be aware of. Walmart, due to its size and structure, is well equipped to face such challenges, although it must rely on local operators and counsels when entering and operating in new markets.

3.5. Porter's Five Forces' Analysis of Industry Competition

Michael Porter, in his article of 1979, identified five competitive forces that shape the industries and influence player's strategies in the marketplace. These forces help to analyze the industry structure, competitiveness, and its strengths and weaknesses (Porter, 1979). Porter defines the following five forces: Threats of new entrants; Threat of substitutes; Bargaining power of suppliers; Bargaining power of customers; Rivalry among the competition.

3.5.1. Threats of New Entrants

Global players such as Walmart, Tesco, or Carrefour are large enough to accommodate the differences in markets and operate efficiently based on economies of scale, resulting in very competitive pricing strategies. The large-scale operators is due to the enormous capital expenditure needed to reach global levels, making it less likely for new players to enter the global retail market. However, there are areas where new niche operators may appear to capitalize on certain opportunities left open by the big retailers. eCommerce however, offers a lower cost structure and enables firms such as Amazon to go head–to–head with more traditional retailers such as Walmart. All in all though, the scale at

which a handful of global retailers operate is very hard to match and would take significant effort to equal. Hence, it is fair to assess that the threat of new entries in the global retailing sector may be considered moderate.

3.5.2. Threat of substitutes

Considering the global retailing industry as a whole and the variety of products that it comprises, it may be difficult to find direct or sustained substitutes for areas such as food and groceries, household products, and others such as tobacco or pharmacy products. Also, global retailers are aware of the trend shifts and have made efforts to adapt by providing equal-level products at lower prices and greater convenience. Hence, it is reasonable to assess that the threat of substitutes in the global retailing sector as weak.

3.5.3. Bargaining Power of Suppliers

Suppliers for the global retailing industry are numerous and vary, depending on the variety of products available in the market. Global retailers face several forces and pressure when dealing with suppliers, though the size of the retailer is of paramount importance when assessing its bargaining power. However, one must bear in mind that on the supply side, there are also big and strong companies making themselves differentiated and essential to some of the retailers. The balance between these forces allows us to assess the bargaining power of suppliers in the global retailing sector as moderate.

3.5.4. Bargaining Power of Customers

In the retailing business, most buyers are end-consumers, which weakens their position. Furthermore, the concentration of the retail sector's market share among a few major players further weakens the customer bargaining powers. However, while individual consumers may not significantly impact a retailer's revenues, consumer behavior trends can. Retailers will need to adapt and adjust to put products that their consumers look for on their shelves. In this case, the buyer bargaining power increases significantly. In this balance of forces, we assess the bargain power of customers in the global retailing sector as moderate to weak.

3.5.5. Rivalry Among the Competition

In the global retailing sector, bigger players operate businesses that benefit from economies of scale and can employ aggressive pricing strategies they also enjoy a significant advantage over small to medium players that cannot compete on size, location or prices. Despite being hard to match, global retailers such as Walmart still face competitors that challenges their hegemony and making them compete formarket share. For example, in recent years, we have seen the rapid growth of Amazon, which positions itself as a major player competing fiercely and succeeding in gaining more market share. Considering all factors, it is fair to assess that the rivalry amongst competitors in the global retailing sector is strong.

3.6. Industry Attractiveness

Overall, the industry may still be attractive to companies who can present state-of-the-art technology solutions, which allows them to compete in price and efficiency, as well as those who can create strong and reliable supply chains. In addition although the profitability of the industry may have narrow margins, the volume the industry moves is the key to its attractiveness.

3.7. Industry Outlook and Trends

According to Deloitte`s 2022 Retail Industry Outlook, retailers ought to reexamine their strategies to accommodate new ways of operating in this industry. The recent pandemic brought both challenges and opportunities, and how retailers deal with them will set the stage for companies that are better prepared for the future (Deloitte, 2022). These opportunities lie in the restructuring of the workforce, supply chain, inventory and pricing management, and the changing role of the physical stores combined with the development of digital and eCommerce strategies. In addition, new consumer behaviors may favor the retailers' businesses with the gradual return to in-person shopping, while eCommerce will remain a certainty for the future. Modern consumers expect easy access to products through digital and eCommerce platforms while also expecting timely delivery. Accommodating

these factors will be one of the cornerstones shaping the future of the retailing industry.

3.8. Summary

In summary, for the PESTEL analysis (external factors affecting the industry), we highlight the following factors which may be the predominant influences on the company's operations: Political Factors, Economic Factors, and Technological Factors. Regarding the analysis of Porter's 5 forces, we can conclude that the current forces shaping the retailing industry are somewhat contained due to the company's overall strong power within the industry. However, fierce competition will force the company to act and keep its focus on the efficiency of its operations, both domestically and internationally.

Chapter Four
Economic Outlook

4.1. Global Economy

The global economy contracted by 3.4% in 2020 due to the impact of the global pandemic. After this contraction, the economy rebounded at a 5.5% pace in 2021, which was the strongest post-recession pace in 80 years and the highest rate of growth in more than four decades. The world's GDP was 1.9% higher in 2021 than it was in 2019. However, it was still 3.3% short of the projected GDP for pre-pandemic times. The global economy is projected to grow by 4% in 2022 and by 3.5% in 2023 (United Nations, 2022).

Commodities prices have surged, putting pressure on inflation and resulting in higher prices for essential goods and energy. Both developed and developing economies have experienced increases in core inflation, and central banks are currently discussing increasing interest rates to smooth inflation. Government bond yields are also on the rise (World Bank, 2022).

4.2. United States Economy

The U.S. economy expanded by 5.7% in 2021, having grown by 4,9% in 2020. The U.S. economy is expected to grow by 3.7% in 2022 and 2.4/% in 2023 (Trading Economics, 2022). The consumption is bound to grow as the disruptions affecting the distribution and supply chain will lessen, and businesses will gradually recover from the initial pandemic years. Inflation had a steep rise, from 1.4% in early 2021 to 7% at end of 2021, and is projected to remain at high levels, although it is expected to flatten towards the end of 2022 (Statista, 2022). The Inflation rate is expected to be at 4.3% at the end of 2022 and 1.9% in 2023. Consumer prices are, therefore, expected to increase as well, supported by higher shipping prices as well as an increase in wages.

4.3. India

India`s economy was projected to grow at 9.4% in fiscal Year 2021-2022. The growth

rate is expected to fall to 8.1% in fiscal year 2022-2023 and thereafter to circa 5% in fiscal year 2023-2024. Inflation is following a global trend and is growing; in 2021, inflation was at 5.66% in an uptrend. However, global disruptions in the supply chain are expected to ease, and inflation is expected to grow at a slower pace at 4.6% in 2023.

4.4. China

China's GDP growth rate was set at 8.1% in 2021, showing a swift recovery from the initial pandemic year, which was supported by the economy's very strong exports. GDP is expected to grow at a slower pace in 2022 and 2023, still with an expected growth rate of 5.1% (Trading Economics, 2022). Consumption growth is steady, and inflation, although in an uptrend, is not as severe (around 1% in 2021 and expected to be of around 2% in 2022 and 2023) as in other countries, as the economy`s exposure to upstream activities is limited.

4.5. Canada

Canada's GDP had grown by around 5% in the second half of 2021. It is expected to slow down to a growth rate of 3.9% in 2022 and 2.8% in 2023. Canada was affected by global supply chain constraints and disruptions, but the economy is expected to run smoother by 2022, with inflation projected to slow down from around 5% in 2021 to 4% by the end of 2022 and around 3.5% in 2023. Unemployment is expected to fall slightly from 6.5% at the end of 2021 to around 6% in 2022 and 2023 (Trading Economics, 2022).

4.6. Mexico

Mexico's GDP has grown by 5.9% in 2021 and is expected to grow by 3.3% in 2022 and 2.5% in 2023. Growth will be supported by stronger exports, which continue to benefit from the recovery in the United States. Consumption is supported by the gradual improvement in the labor market (wages are expected to increase 2% by the end of 2022 and 3% in 2023), and the increasing share of the population who are vaccinated, but it is still 3% below the pre-pandemic level. The labor market is gradually recovering, with the unem

ployment rate being around 4% by the end of 2021 and expected to be around 3% by the end 2022 and 2023 (Trading Economics, 2022).

4.7. Summary

After analyzing the trends of both the global economy and the economies of the US and other regions where the company operates, we highlight the following conclusions in areas which could positively or negatively affect the company's operations:

-After a contraction year in 2020, the global economy is on a recovering path, with optimistic growth rates.
-However, there are risks related to the supply chain, which is not yet fully regularized and may pressure prices in the short to mid-term.
-Global trade is, nevertheless, expected to become smoother, which should support the global growth.
-Consumption and investment have been key factors in the global economy revamp.
-However, inflation poses a serious threat to a full-speed recovery. Prices have generally increased, and governments are set to change monetary policies to combat high levels of inflation. Inflation is, expected to slow down towards the end of 2022 and 2023.
-The US economy, as well as the other countries` economies where the company operates, have positive outlooks coming from the pandemic years. However, they too face inflation and are affected by the disruptions in the supply chain.
-Consumption is expected to grow in the US and other jurisdictions, which may positively influence the company's operations.
-Inflation and higher wages may cause some pressure on the company's operations due to the company's price strategies and low pricing position.

Chapter Five
Historical Financial Statements

5.1. Common Size Financial Statements

We use the common size method to analyze financial statements, as it provides us with a basic overview of all items on the income statement and balance sheet as a percentage of the company's revenue. The common size method is used by dividing each item of the financial statements by the company's revenue to determine the percentage and the weight of each item in the company's performance. This method is very useful for a quick glance at the financial statements, as it enables us to identify certain changes and abnormal results, which in turn alerts us to investigate further to understand what happened in any given financial year. This also allows us to understand the company's capital structure and profit margins.

5.1.1. Common Size Income Statement

Table 5-1 below shows the common size Income Statement of Walmart for the years from 2017 to 2021.

Table 5-1– Walmart`s Common Size Income Statement 2017-2021

FISCAL YEAR ENDS IN JANUARY. USD IN MILLIONS EXCEPT PER SHARE DATA.	2017	2018	2019	2020
REVENUE	100,00%	100,00%	100,00%	100,00%
COST OF REVENUE	74,35%	74,63%	74,90%	75,31%
GROSS PROFIT	25,65%	25,37%	25,10%	24,69%
OPERATING EXPENSES	0,00%	0,00%	0,00%	0,00%
SALES, GENERAL AND ADMINISTRATIVE	20,96%	21,19%	20,83%	20,59%
TOTAL OPERATING EXPENSES	20,96%	21,19%	20,83%	20,59%
OPERATING INCOME (EBIT)	4,69%	4,18%	4,27%	4,10%
INTEREST EXPENSE	0,49%	0,47%	0,46%	0,50%
OTHER INCOME (EXPENSE)	0,02%	0,03%	0,04%	0,04%
INCOME BEFORE TAXES	4,22%	3,75%	3,85%	3,64%
PROVISION FOR INCOME TAXES	1,28%	0,92%	0,83%	0,94%
NET INCOME FROM CONTINUING OPERATIONS	2,94%	2,83%	3,02%	2,70%
DISCONTINUING OPERATIONS	-0,13%	-0,86%	-1,73%	0,14%
NET INCOME	2,81%	1,97%	1,30%	2,84%

The first conclusion we can draw from looking at Walmart's financials is that it is a fairly stable company with no major changes in the financial items over the last 5 years. However, we can still identify certain minor changes which help us understand the company's performance. Starting with the company's gross profit, we note that the company's gross profit margin has been declining since 2017, reaching its lower point in 2020. This general decline can be attributed to the very strong competition the company faces. This also explains the relatively low gross profit margin of the company, with an average of 25.13% which is not very favourable with other industries (Walmart, 2021)[1].

The special decline in the gross profit margin in 2020 can be attributed to the Covid-19 pandemic. In 2021, the company has bounced back to a higher percentage of gross profit margin (from 24,69% in 2020 to 24,83% 2021) due to stronger net sales combined with strategic sourcing initiatives and strong sales in higher-margin categories (Walmart, 2021)[2]. Furthermore, the company has been steadily reducing its operating expenses from 21.19% in 2018 to 20.01% in 2021, which may be attributed to the company's focus on expense management (Walmart, 2021)[3]. Thus, the company was able to post its best year in terms of both operating income (rising from 4.10% in 2020 to 4.82% in 2021) and income before taxes, which explains the jump from 3.64% in 2020 to 4.43% in 2021. Again, we attribute this good performance to strong revenue growth combined with efficiency in the operating costs.

However, the net income, compared to the company's revenue for the year 2021 (2.42%) was lower than that for the previous year (2.84% in 2020). This may be explained by the gains/losses in discontinuing operations. 2020 posted a slight gain, whereas 2021 posted a considerable loss, which impacted the net income of the company. Nevertheless, in overall terms, Walmart runs a pretty efficient company but with very low gross and net profit margins due to strong competition in the same market categories.

1 Walmart 2021 Form 10 K, page 34
2 Walmart 2021 Form 10 K, page 38
3 Walmart 2021 Form 10 K, page 39

5.1.2. Common Size Balance Sheet

The common size Balance Sheet is important to analyze the company's capital structure. We will once again analyze the last 5 fiscal years (2017-2021) and how the capital structure has evolved. Table 5-2 below shows Walmart`s Common Size Balance Sheet from 2017 to 2021.

Table 5-2 - Walmart`s Common Size Balance Sheet 2017-2021

FISCAL YEAR ENDS IN JANUARY. USD IN MILLIONS EXCEPT PER SHARE DATA.	2017	2018	2019	2020	2021
ASSETS					
TOTAL CURRENT ASSETS	11,87%	11,92%	12,03%	11,80%	16,11%
TOTAL NON-CURRENT ASSETS	29,05%	28,95%	30,60%	33,34%	29,05%
TOTAL ASSETS	**40,92%**	**40,88%**	**42,63%**	**45,14%**	**45,16%**
LIABILITIES AND STOCKHOLDERS' EQUITY					
LIABILITIES					
TOTAL CURRENT LIABILITIES	13,77%	15,69%	15,06%	14,85%	16,57%
TOTAL NON-CURRENT LIABILITIES	10,57%	9,03%	12,09%	14,72%	12,93%
TOTAL LIABILITIES	**24,35%**	**24,72%**	**27,15%**	**29,57%**	**29,50%**
STOCKHOLDERS' EQUITY	0,00%	0,00%	0,00%	0,00%	0,00%
ACCUMULATED OTHER COMPREHENSIVE INCOME	-2,93%	-2,03%	-2,24%	-2,44%	-2,10%
TOTAL STOCKHOLDERS' EQUITY	**16,58%**	**16,15%**	**15,48%**	**15,56%**	**15,65%**
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	**40,92%**	**40,88%**	**42,63%**	**45,14%**	**45,16%**

Analyzing the company's current assets, we note that the cash and cash equivalent item has been performing well over the last 5 years, with a significant increase in the last year (from 1.81% in 2020 to 3.17% in 2021). This can be explained by the strong sales/revenue posted by the company following the pandemic situation which accelerated the inventory sale (which was reduced from 8.48% in 2020 to 8.04% in 2021) and also reduced the percentage of receivables (which was lowered from 1.20% in 2020 to 1.17% in 2021) (Walmart, 2021)[4]. Furthermore, there was a huge surge in other current assets, which can be explained by the company's assets "held for sale", as described in Walmart's 2021 Form 10-K, page 60, namely the company's operations in the UK and Japan (Walmart, 2021)[5]. Combined, the abovementioned numbers explain the jump in current assets from 11.80% in 2020 to 16.11% in 2021.

4 Walmart 2021 Form 10 K, page 37
5 Walmart 2021 Form 10 K, page 60

In terms of non-current assets, Net Property Plant and Equipment (i.e., after depreciation) significantly decreased from 24.25% in 2020 to 19.25% in 2021. According to Walmart's 2021 Form 10 K, page 60, the reduction was due to a decrease in both Land and Buildings and Improvements (Walmart, 2021)[67]. Goodwill also presented a reduction from 5.93% in 2020 to 5.18% in 2021 due to the requalification of accounts related to the operations held for sale (in UK and Japan), which were recorded as current assets, as explained above (Walmart, 2021)[89]. Due to these changes, the total non-current assets saw a reduction from 33.34% in 2020 to 29.05% in 2021. However, the total assets remain fairly stable in the last 2 years, with a slight adjustment from 45.15% in 2020 to 45.16% in 2021.

Upon analyzing the current liabilities, we can conclude that certain items, such as short-term debt and accounts payable, have registered lower numbers compared to the previous years. Short-term debt decreased from 1.05% in 2018 to 0.04% in 2021, which is an outstanding result. Accounts payable also decreased from 9.21% in 2018 to 8.79% in 2021. Additionally, the current portion of long-term debt and leases also recorded a reduction in percentage. The exception to this trend was the increase in other current liabilities from 0/00% in 2017, 2018 and 2019 to 3.57% in 2021. This increase was related to 2 items[10]. liabilities held for sale, related to the sale of operations in the UK and Japan, and other accrued liabilities such as interest, maintenance, utilities, legal proceedings, etc. (Walmart, 2021)[11]. With regard to non-current liabilities, we note that both long term debt and long-term leases have increased in the latest years. Long-term debt increased in 2019 to 8.54% from 6.04% in 2018 as a result of the purchase of Flipkart by the Company (Walmart, 2019)[12]. In 2021, the company reduced this item to 7.45%from 8.45% in 2020 due to the fact that the company did not issue any long-term debt in the 2021 fiscal year

6 Walmart 2021 Form 10 K, page 60
7 The Company`s 2021 Form 10 K notes to financial statements do not provide further information on this reduction.
8 Walmart 2021 Form 10 K, page 61
9 It is worth notice that in 2019 the company`s goodwill had a major increase due to the acquisition of Flipkart, an India e-commerce business, according to the company`s 2019 Form 10 K pages 3, 7 and 57. (Walmart, 2019)
10 Please note that in the company`s Form 10K, in the company`s balance sheet, all these items are represented under "Accrued Liabilities". Page 67 of the Form 10K breaks down this item and divide it in the same manner we present in our table above.
11 Walmart 2021 Form 10 K, page 67
12 Walmart 2019 Form 10 K, page 40

(Walmart, 2021)[13].

The company registered a significant increase in the long-term leases item in 2020 (3.91% from 1.30% in 2019), which slightly decreased in 2021 to 3.00%. This is due to the company's adoption, in 2020, of the ASU 2016-02, Leases (Topic 842) (FASB - Accounting Standards Update, 2018). This means that the company had to include in the balance sheet leases with "reasonably assured renewals". The remaining non-current liabilities are less important items and have no major fluctuations.[14]

Overall, the company's total liabilities have increased from 24.35% in 2017 to 29.50% in 2021. The first major increase was in 2019 with the acquisition of Flipkart and the issuance of long-term debt. The remaining increase was also related to the updated accounting principles and the recognition of long-term leases. Finally, with regard to stockholders' equity, there are no major changes to report. Total stockholders' equity has been quite steady throughout the years although a slight decrease from 2017 and 2018 was due to the decrease in retained earnings.

In conclusion, we can understand that one of the major investment decisions from the company in the recent years – the acquisition of Flipkart – was done by means of issuing new debt rather than by shareholders' equity. Today, the company has a capital structure whereby debt represents 65.33% of the capital structure, whereas shareholders' equity represents 34.66%.

5.2. Reorganizing Historical Financial Statements

5.2.1. Invested Capital

Invested capital is calculated by rearranging the Balance Sheet to separate operating items from financing items. We can calculate invested capital by subtracting operating

13 Walmart 2021 Form 10 K, page 69

14 Issued by the Financial Accounting Standards Board, this Accounting Standards Update No. 2016- 02, Leases (Topic 842), aims to "increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing transactions". (FASB - Accounting Standards Update, 2018)

current liabilities from operating assets. Invested capital is also calculated by summing the company's debt and equity. Table 5-3 and Table 5-4 below, present Walmart's Invested Capital for the past 5 years (2017-2021).

Table 5-3 - Walmart`s Invested Capital 2017-2021 (Operating Assets – Operating Current Liabilities)

	2017	2018	2019	2020	2021
OPERATING CURRENT ASSETS	57689	59664	61897	61806	9006
OPERATING CURRENT LIABILITIES	63008	68859	69647	69549	8734
OPERATING WORKING CAPITAL	-5319	-9195	-7750	-7743	2718
OPERATING INVESTED CAPITAL	133773	126170	143857	159042	14835
TOTAL FUNDS INVESTED	**134 252**	**133 784**	**147 852**	**165 032**	**163 3**

From analyzing the invested capital in Table 5-3 above, we can quickly conclude that the company has normally carried a negative working capital, i.e., its current liabilities are greater than its current assets. Nevertheless, this trend has been reducing, and in 2021, the working capital was actually positive. The company's management seemed to be comfortable with this situation and they made a note in its 2021 annual report (Walmart, 2021)[15], saying that *"we generally operate with a working capital deficit due to our efficient use of cash in funding operations, consistent access to the capital markets and returns provided to our shareholders in the form of payments of cash dividends and share repurchases."*

Net property, plant and equipment has been fairly stable, with a slight increase in 2020 and a decrease in 2021, whereas other long-term assets have been in a steep decrease from USD 7.1 billion to USD 1.9 billion. As discussed above, Goodwill has increased significantly, as well as intangible assets, mainly since 2019 with the acquisition of Flipkart. Operating invested capital grew from USD 126.170 billion in USD 159.042 billion in 2020. However, it decreased in the last fiscal year, with operating invested capital ending at USD 148.35 billion.

We can also look at rearranging the balance sheet by adding debt and equity together to find the total funds invested. This is presented in Table 5-4 below. This will also allow us to verify that the numbers in Table 5-3 are correct.

15 Walmart 2021 Form 10 K, page 45

Table 5-4 - Walmart`s Invested Capital 2017-2021 (Debt + Equity)

	2017	2018	2019	2020	2
DEBT & DEBT EQUIVALENTS (INTEREST-BEARING DEBTS)	50949	51010	63718	79190	69
EQUITY & EQUITY EQUIVALENTS	83 303	82 774	84 134	85 842	94
TOTAL FUNDS INVESTED	**134 252**	**133 784**	**147 852**	**165 032**	**16**

From analyzing this table, we can identify where the financing of the company's operations is coming from. We can conclude that the company has been investing, using more debt than equity capital. As identified earlier, the company had issued long-term debt to finance its acquisition of Flipkart, and that is shown in the increase of long-term debt in 2019. Additionally, the reevaluation of long-term leases pursuant to new accounting principles could explain the surge in debt and debt equivalents in 2020.

5.2.2. NOPLAT – Net Operating Profit Less Adjusted Taxes

As Koller, Goedhart, & Wessels explain, NOPLAT is the profit available for all investors and is thus very important (Koller, Goedhart, & Wessels, 2020)[16]. Also, NOPLAT is the basis for the calculation of the Free Cash Flow which, in turn, is the basis for a company's valuation models. Table 5-5 below describes the calculations to find Walmart`s NOPLAT for the last 4 fiscal years (2018 – 2021).

Table 5-5 - Walmart`s NOPLAT 2018-2021

	2018	2019	2020	2021
EBIT	20937	21957	21468	26948
-OPERATING CASH TAXES	-5950	-2193	-5747	-5147
NOPLAT	**14987**	**19764**	**15721**	**21801**
OPERATING TAXES ON EBITA				
REPORTED TAXES (PROVISION FOR INCOME TAX)	4600	4281	4915	6858
TAX SHIELD ON INTEREST PAID	571	507	670	641
^(-) TAXES ON INTEREST RECEIVED	-37	-47	-49	-34
TAXES ON EBITA	5134	4741	5537	7466
DECREASE/(INCREASE) IN DEFERRED TAXES	816	-2548	210	-2319
OPERATING CASH TAXES	5950	2193	5747	5147

16 page 135

The Company`s NOPLAT registered a steep growth from 2018 to 2019, followed by a steep decline in 2020 and then again, a growth in 2021. We understand that the decline registered in 2020 is due to the Covid-19 pandemic before the company adjusted its operations to meet the customers' needs. Once it did, it went back to a growth position in its operations. This means that the company is strong and reliable for its stakeholders.

5.2.3. Reconciliation to Net Income

To ensure the NOPLAT calculations are done correctly, we will use the Reconciliation to Net Income technique which will validate the above-mentioned assumptions. Table 5-6 below shows how to calculate the NOPLAT by using the Reconciliation to Net Income of the company for the last 4 fiscal years (2018 – 2021).

Table 5-6 - Walmart`s NOPLAT Using the Reconciliation to Net Income 2018-2021

RECONCILIATION TO NET INCOME	**2018**	**2019**	**2020**	**2021**
NET INCOME	9862	6670	14881	13510
INCREASE/(DECREASE) IN DEFERRED TAXES	-816	2548	-210	2319
ADJUSTED NET INCOME	9046	9218	14671	15829
AFTER-TAX INTEREST PAID	1759	1839	1929	1674
LOSS (GAIN) FROM DISCONTINUED OPERATIONS	4297	8877	-738	4386
TOTAL INCOME AVAILABLE TO ALL INVESTORS	15102	19934	15862	21889
AFTER-TAX INTEREST RECEIVED	-115	-170	-140	-87
NOPLAT	**14987**	**19764**	**15721**	**21801**

The Reconciliation to Net Income adjusts net income for taxes in order to find the operating profit of the company. It is a second method to calculate NOPLAT, and it also shows the available profit for investors.

15 Walmart 2021 Form 10 K, page 45

5.2.4. Free Cash Flow

The Free Cash Flow (FCF) allows us to identify the actual cash flow of the company from operating, financing and investment activities. This is an important measure for the company's performance, as well as an important information for predicting future cash flows and firm valuation. Free Cash Flow shows us the cash flows available to investors after investments in fixed assets are made, as well as after the necessary working capital is covered. Table 5-7 below shows the calculations for Walmart`s Free Cash Flow for the last 4 fiscal years (2018 – 2021).

Table 5-7 - Walmart`s Free Cash Flows 2018-2021

	2018	2019	2020	2021
NOPLAT	14987	19764	15721	21801
DEPRECIATION	10529	10678	10987	11152
GROSS CASH FLOW	25516	30442	26708	32953
(INCREASE)/DECREASE IN OPERATING WORKING CAPITAL	3876	-1445	-7	-10461
CAPITAL EXPENDITURES	-11169	-7255	-26641	6049
(INCREASE)/DECREASE IN OTHER LONG-TERM ASSETS	5572	-926	-232	1562
(INCREASE)/DECREASE IN GOODWILL	-1205	-12939	108	2090
(INCREASE)/DECREASE IN INTANGIBLES	0	-5800	600	300
INCREASE (DECREASE) IN ACCUMULATED COMPREHENSIVE INCOME	4051	-1361	-1263	1039
GROSS INVESTMENT	1125	-29726	-27435	579
FREE CASH FLOW	26641	716	-727	33532
AFTER-TAX INTEREST RECEIVED	115	170	140	87
(INCREASE) /DECREASE IN SHORT-TERM INVESTMENTS	0	0	0	0
(INCREASE) /DECREASE IN EQUITY INVESTMENTS	-7135	3619	-1995	-8971
DISCONTINUED OPERATIONS	-4297	-8877	738	-4386
CASH FLOWS TO INVESTORS	15324	-4372	-1843	20263
	2018	**2019**	**2020**	**2021**
FINANCING FLOWS				
AFTER-TAX INTEREST EXPENSE	1759	1839	1929	1674
DECREASE/(INCREASE) IN DEBT	-61	-12708	-15472	10019
FLOWS TO DEBT HOLDERS	1698	-10869	-13543	11693
DECREASE (INCREASE) IN MINORITY INTEREST	-216	-4185	255	277
DIVIDENDS (OR ADJUSTMENTS TO RETAINED EARNINGS)	14109	10992	11723	8690
NET SHARES REPURCHASED (ISSUED)	-267	-310	-278	-397
FLOWS TO EQUITY HOLDERS	13626	6497	11700	8570
CASH FLOWS AVAILABLE TO INVESTORS	15 324	-4 372	-1 843	20 263

To find Free Cash Flow, we add noncash operating expenses to NOPLAT and subtract any investments made in invested capital. By looking at Walmart`s Free Cash Flow, we conclude that the FCF has been positive during 2018-2021 except in 2020. The FCF was USD 33,532 million in 2021. The reason for a negative FCF in 2020 was due to significant capital expenditures in 2020. However, 2021 was a very positive year compared to the last 4 years, giving some positive outlook for the future of the company.

5.2.5. ROIC – Return on Invested Capital

The Return on invested capital is a good measure to get the return on the company's invested capital, i.e., what is the return on the invested capital generated by the company's operating profit. This is measured by dividing NOPLAT by the company's (last year) invested capital. This means that ROIC focuses on the company's operating results, which gives us a better understanding of the company's core business returns.

Table 5-8 below shows the calculations for Walmart`s Return on Invested Capital for the last 4 fiscal years (2018 – 2021).

Table 5-8 - Walmart`s Return on Invested Capital (2018-2021)

ROIC	2018	2019	2020	2021
	11,20%	15,66%	10,93%	13,71%

We conclude that from 2018 to 2019, the company grew its return from 11.20% to 15.66%, which is very positive. Due to the impact of the current pandemic, the company had reduced its return on invested capital in 2020 with only 10.93%. However, 2021 was another growth year, with its return increasing to 13.71%, which is again very positive.

Chapter Six
Ten-Year Pro Forma Financial Statement Forecast

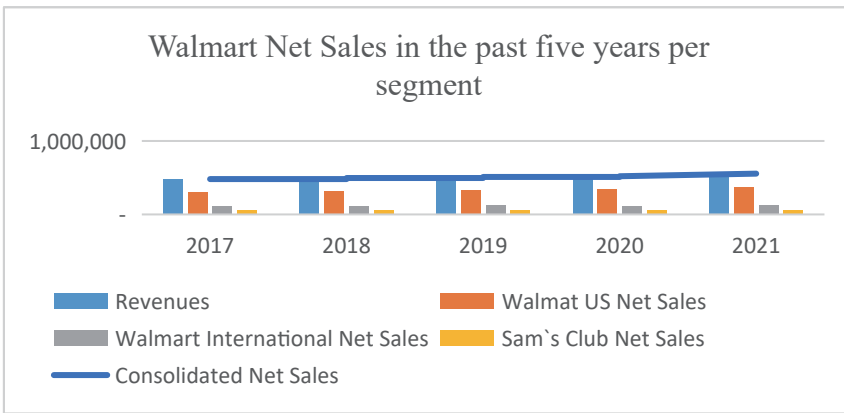
6.1. Underlying Assumptions

In order to prepare the financial statements` forecast, we have firstly analyzed the Company`s sales growth by segment over the last 5 years. Keeping this analysis in mind, we factored in the Company's business model and strategies, as well as its SWOT analysis, the industry analysis, the economic outlook described in Chapter 4 and the Company`s financial statements to project the sales/revenue growth for the next ten years.

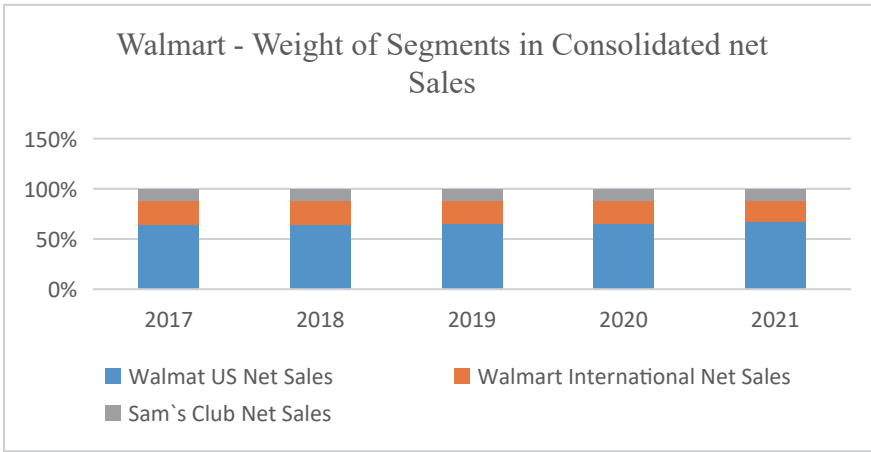
As analyzed in Chapter 2, the Company operates in three segments: Walmart U.S., Walmart International and Sam`s Club. While Walmart U.S. and Sam`s Club are solely exposed to the U.S. market, Walmart International is exposed to 25 countries. Among these, UK holds a major weight in the international operations (around 25%), while Mexico, Canada, India and China appear to be the most important and strategic locations for the Company.

In Graph 6-1 below, we demonstrate the behavior of the Company's Net Sales (in USD) in the past five years per segment and in Graph 6-2 the weight of each of the three segments in the total Net Sales of the Company.

Graph 6-1 – Walmart Sales Analysis from 2017 to 2021

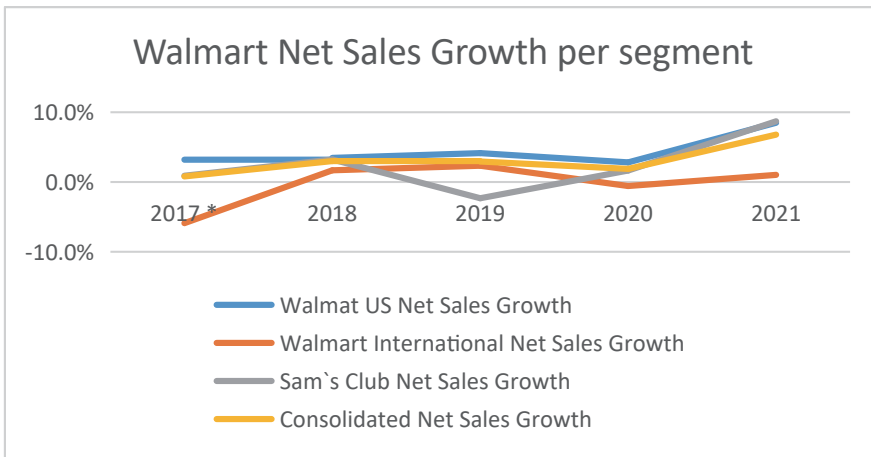


Graph 6-2 –Weight of each of Walmart`s segments in total Net Sales 2017-2021



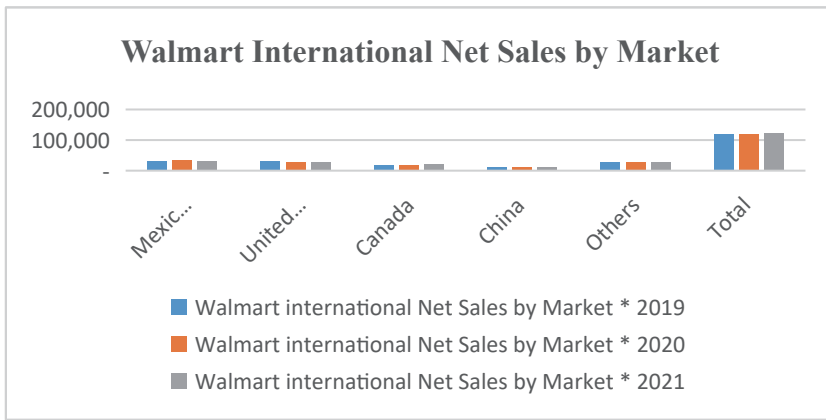
Graph 6-3 below demonstrates the net sales growth per segment in percentage for the last five years.

Graph 6-3 – Walmart Net Sales Growth per segment 2017 - 2021

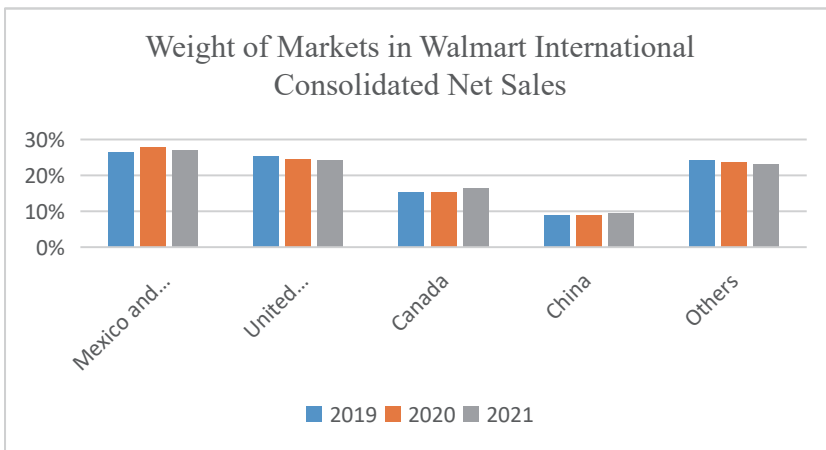


In Graph 6-4 below, we see the growth of Walmart International Net Sales per (most relevant) country and in Graph 6-5, we see the weight of each country/market for the Company`s international segment net sales.

Graph 6-4 – Walmart International Net Sales by Market 2019-2021



Graph 6-5 – Weight of Markets in Walmart International Consolidated Net Sales 2019-2021



By analyzing these historical results, we note that the most important and influential segment of the Company to its net revenue is Walmart U.S., which represents around 65% of the Company`s revenues. For the past five years, Walmart U.S. has been growing consistently and solidly, except in 2020 where adjustments had to be made due to the pandemic situation, as discussed prior. We also note that in 2021 the U.S. segment grew at an impressive 8.5% rate which is remarkable and gives us clues about what may happen in the future, especially considering the growing weight of the Company`s online/eCommerce business in this recovery. We also note that Sam`s Club segment (representing around 12% of the Company`s revenues), which is also exposed to the U.S. market, has posted interesting growth numbers throughout the years, (except in 2019). Sam's club also jumped 8,7% in 2021, which is remarkable as well.

Finally, the second most important segment of the Company, Walmart International (representing a declining 22%), has posted overall positive growth, except in 2017, due to divestures executed in China and Mexico and currency fluctuations, and 2020, due to Covid-19 pandemic. Nevertheless, 2021 presented a sales growth of 1% which, considering the international economic environment, is still positive. A deeper analysis to the countries where Walmart International operates shows that, except for Mexico, which grew 4.9%, in 2020 all the other locations presented negative results, which, for the reasons already mentioned, is understandable. The 2021 fiscal year was one of rebound for most of the segments of which we highlight the China operations, which grew 7.1%, and the Canada operations, which grew 8.5%. India is not yet a major location, but, as we explain below, we understand it will become a major factor in the Company`s international operations.

Taking into account the analysis made above, and factoring in what was analyzed previously in Chapters 2 to 4, we highlight below our assumptions in forecasting the expected revenues for the company in the next ten years:

a) When forecasting the sales growth rate for the next ten years, we took note of the existing weight of each of the Company`s segments in the Company`s revenues and how that may play out in the future.

b) We have factored in the resilience of the Walmart US segment considering its efficiency in operations and its massive implementation in the U.S. which helps to understand how the Company has shown very steady growth rates between 3,2% and 4,2% in 2017, 2018 and 2019. In 2020, with the beginning of the Pandemic, the Company still posted growth rates which allows us to conclude that, despite major disruptions the Company is resilient enough to continue to grow.
c) Considering the effects of the pandemic and the new trend in consumer behavior discussed in Chapter 3.4.4, we assumed that 2022 will be still one of great growth for Walmart US at around 7% growth rate. This rate is slightly lower than in 2021, which was a rebound year, but we believe it reflects the trend in eCommerce sales growth as well as how consumers will likely wish to stock more goods at home for unexpected crises. Walmart is a very recognized brand and due to its proximity to the costumers we believe that consumers` loyalty will remain high.
d) We have made the same assumptions for Sam`s Club which is exposed to the same U.S. environment. Hence, we have predicted a 7% growth in sales for this segment in 2022
e) This growth in the U.S. segments is in line with the forecasted growth for the US economy which is due to grow around 3,7% in 2022. (See Chapter 4.2 above).For
f) years 2023 and 2024 we have assumed a downward trend in the growth rates for the U.S. segments however we still believe that due to the trends in the U.S. economy GDP growth, the Company will be able to sustain a 4% growth rate for these two years, in line with the trend in past years 2018 and 2019 as seen above.
g) For period between 2025 and 2030, we have assumed a slightly lower growth rate at 3% for the U.S. segments as this seems a comfortable growth rate for the Company considering its past trend as well as how efficiently the Company runs and how it is adapting – and growing – in its Omni-Channel and eCommerce operations.
h) For the last two years, including 2031, for the purposes of the infinite growth calculations, we have assumed a 2% growth.
i) For Walmart International, we have assumed a significant loss in net sales due to the sale of the UK operations (and Japan operation). UK alone accounted for around 25% of the net sales for Walmart International and was divested from, in

early 2021 (calendar year). We estimated a loss of 20% in the growth of this segment for 2022 due to this factor.

j) However, we foresee that, in 2023 and 2024, the international operations will see a revamp in sales growth to 5% due to the exposure to fast growing economies such as China and India as well as the resilience of Mexico`s and Canada`s economies.

k) Looking at these countries` GDP projections (Chapter 4), we are very positive on the impact these economies will have on Walmart International, especially in China and India, which are both bound to grow around 5% per year.

l) In India, specifically, the Company operates a nationwide, very strong and fast growing, eCommerce business (Flipkart).

m) We have, therefore, assumed that the eCommerce will be a key positive factor for this international segment.

n) From 2025 onwards, we have assumed a deceleration of the global economies` GDP due to pressure of inflation and the related increase in products costs. (See Chapter 4). This will impact the operations of the Company due to the Company`s policy of low prices everyday (Chapter 2.4). We have therefore projected a growth rate of 4% from 2025 until 2030, with a slight decline to 3% in 2031 and an infinite growth rate of 2% for the purposes of using the valuation models below.

o) The assumptions made for the growth rate of the 3 segments do not factor in any out of ordinary events such as war, financial crisis, natural catastrophes or acts of terrorism.

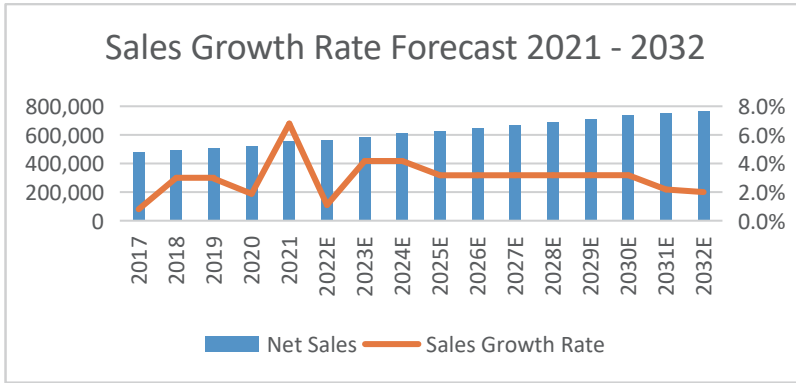
p) We have also assumed a strong resilience of the Company against a decreased growth of the economies in general due to its exposure to products of 1st and 2nd need with stiffer demand curves.

q) We have assumed that the Company will continue to rapidly grow its presence in the eCommerce sector in the US which will allow it to keep up with competitors such as Amazon while still boosting sales and compensate for less than optimal store results.

r) We have assumed that Walmart International will remain operating in the current countries as there is no evidence of the Company wishing to divest from more projects after the sale in Brazil, Argentina, Japan and UK.

As a result of the above assumptions, we have prepared the Company`s revenue growth rate forecast for the next ten years as per Graph 6-6.

Graph 6-6 – Walmart Sales Growth Rate Forecast – 2021 to 2032



In preparing this forecast, we have used the following method:

a) We have started by estimating the growth rate of each of the segments as per assumptions above.
b) We have factored in the GDP growth rate for the world, US and other countries where the Company has important operations into the projected growth rates.
c) We have calculated the consolidated growth rate of the segments combined considering the weight of each segment in the overall revenue.
d) We have applied the forecasted growth rate for the estimated net sales on top of the last financial year`s revenue (2021) to find the annual growth rate for the next ten years.

Table 6.1 below details the underlying assumptions for Walmart`s forecast from 2021 until 2032. We have estimated the cost of revenues and the Sales, General and Administrative to be a percentage of revenues, according to the previous year's behavior. However, for years 2022 and 2023, we slightly increased the forecasted numbers due to inflation and cost of labor (see Chapters 3 and 4). For depreciation, we used last fiscal year`s number. For

interest rate on debt, we used the Cost of Debt as calculated in Chapter 7.1.1 below. For the tax rate, we used the Valueline report`s estimation (25%) (ValueLine, 2021).

Table 6-1 - Assumptions Underlying Walmart`s Forecast for 2021 to 2032

ASSUMPTIONS UNDERLYING WALMART FORECAST (2021-2032)												
	t=0	t=1	t=2	t=3	t=4	t=5	t=6	t=7	t=8	t=9	t=10	t=11
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
SALES GROWTH RATE												
SALES GROWTH RATE	6,8%	1,1%	4,2%	4,2%	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	2,2%	2,0%
OPERATING EXPENSE RATIOS												
COST OF REVENUE (% OF NET REVENUE)	75,17%	76,00%	76,00%	75,00%	75,00%	75,00%	75,00%	75,00%	75,00%	75,00%	75,00%	75,00%
SALES, GENERAL AND ADMINISTRATIVE (% OF NET REVENUE)	18,02%	19,00%	19,00%	19,00%	19,00%	19,00%	19,00%	19,00%	19,00%	19,00%	19,00%	19,00%
DEPRECIATION & AMORTIZATION EXPENSES (% OF NET REVENUE)	1,99%	1,99%	1,99%	1,99%	1,99%	1,99%	1,99%	1,99%	1,99%	1,99%	1,99%	1,99%
INTEREST EXPENSE AND INCOME												
INTEREST RATE ON DEBT	5,17%	2,42%	2,42%	2,42%	2,42%	2,42%	2,42%	2,42%	2,42%	2,42%	2,42%	2,42%
OTHER INCOME (% OF NET REVENUE)	0,02%	0,02%	0,02%	0,02%	0,02%	0,02%	0,02%	0,02%	0,02%	0,02%	0,02%	0,02%
TAXES (%)												
STATUARY TAX RATE	27,70%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%
WALMART CONSOLIDATED BALANCE SHEET - FORECAST ASSUMPTION (2021-2032)												
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
WORKING CAPITAL												
CASH	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%
ACCOUNTS RECEIVABLE	1,17%	1,17%	1,17%	1,17%	1,17%	1,17%	1,17%	1,17%	1,17%	1,17%	1,17%	1,17%
INVENTORY	8,04%	10,00%	10,00%	8,00%	8,00%	8,00%	8,00%	8,00%	8,00%	8,00%	8,00%	8,00%
PREPAID EXPENSE	0,30%	0,30%	0,30%	0,30%	0,30%	0,30%	0,30%	0,30%	0,30%	0,30%	0,30%	0,30%
OTHER CURRENT ASSETS (% OF NET REVENUE)	3,43%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
SHORT-TERM DEBT	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%
ACCOUNTS PAYABLE	8,79%	10,00%	10,00%	8,50%	8,50%	8,50%	8,50%	8,50%	8,50%	8,50%	8,50%	8,50%
ACCRUED LIABILITIES	2,80%	2,80%	2,80%	2,80%	2,80%	2,80%	2,80%	2,80%	2,80%	2,80%	2,80%	2,80%
CURRENT PORTION OF LONG-TERM DEBT	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%
CURRENT PORTION OF LEASES	0,35%	0,35%	0,35%	0,35%	0,35%	0,35%	0,35%	0,35%	0,35%	0,35%	0,35%	0,35%
TAX PAYABLE	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%
UNEARNED REVENUE	0,41%	0,41%	0,41%	0,41%	0,41%	0,41%	0,41%	0,41%	0,41%	0,41%	0,41%	0,41%
OTHER CURRENT LIABILITIES	3,57%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
OTHER ASSETS												
INTANGIBLE ASSETS	0,88%	0,88%	0,88%	0,88%	0,88%	0,88%	0,88%	0,88%	0,88%	0,88%	0,88%	0,88%
GROSS PPE%	35,45%	35,45%	35,45%	35,45%	35,45%	35,45%	35,45%	35,45%	35,45%	35,45%	35,45%	35,45%

NET PPE%	19,65%	19,65%	19,65%	19,65%	19,65%	19,65%	19,65%	19,65%	19,65%	19,65%	19,65%	19,65%
DEFERRED TAX ASSETS (% OF SALES)	0,33%	0,33%	0,33%	0,33%	0,33%	0,33%	0,33%	0,33%	0,33%	0,33%	0,33%	0,33%
GOODWILL	5,18%	5,18%	5,18%	5,18%	5,18%	5,18%	5,18%	5,18%	5,18%	5,18%	5,18%	5,18%
EQUITY INVESTMENTS	2,68%	2,68%	2,68%	2,68%	2,68%	2,68%	2,68%	2,68%	2,68%	2,68%	2,68%	2,68%
OTHER LONG-TERM ASSETS (% OF NET SALES)	0,34%	0,34%	0,34%	0,34%	0,34%	0,34%	0,34%	0,34%	0,34%	0,34%	0,34%	0,34%
OTHER LIABILITIES												
SHORT-TERM DEBT (% OF SALES)	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%
DEFERRED TAXES LIABILITY (% OF NET SALES)	1,51%	1,51%	1,51%	1,51%	1,51%	1,51%	1,51%	1,51%	1,51%	1,51%	1,51%	1,51%
LONG-TERM OBLIGATIONS: CAPITAL LEASES (% OF NET SALES)	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%
MINORITY INTEREST (% OF NET SALES)	1,18%	1,18%	1,18%	1,18%	1,18%	1,18%	1,18%	1,18%	1,18%	1,18%	1,18%	1,18%
LONG-TERM DEBT (% OF SALES)	7,45%	7,45%	7,45%	7,45%	7,45%	7,45%	7,45%	7,45%	7,45%	7,45%	7,45%	7,45%
PENSIONS AND OTHER BENEFITS (% OF SALES)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
ACCUMULATED OTHER COMPREHENSIVE INCOME	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%	-2,10%
OTHER LONG TERM LIABILITIES	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%

6.2. Income Statement Forecast

In this section, we forecast the Company's income statement from 2021 until 2032. As shown in Table 6-2 below, in this period revenues are forecasted to grow from $559,151 million in 2021 to $771,486 million in 2032 and net income is forecasted to grow from $13,510 million in 2021 to $21,870 million in 2032. We also note that it will take around two fiscal years for the Company to swing back from the loss in discontinuing operations. Finally, we expect retention ration to be maintained at 55% ratio.

Table 6-2 - Walmart's Income Statement Forecast for 2021 to 2032

WALMART YEARS ENDED JANUARY 31 (DOLLARS IN MILLIONS, EXCEPT PER SHARE DATA)												
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
REVENUE	559.151	565.293	588.883	613.465	632.946	653.056	673.813	695.240	717.359	740.191	756.359	771.486
COST OF REVENUE	420.315	429.623	447.551	460.098	474.710	489.792	505.360	521.430	538.019	555.143	567.269	578.614
GROSS PROFIT	138.836	135.670	141.332	153.366	158.237	163.264	168.453	173.810	179.340	185.048	189.090	192.871

SELLING, OCCUPANCY AND ADMINISTRATION	100.736	107.406	111.888	116.558	120.260	124.081	128.025	132.096	136.298	140.636	143.708	146.582
DEPRECIATION & AMORTIZATION EXPENSES	11.152	11.275	11.745	12.235	12.624	13.025	13.439	13.866	14.307	14.763	15.085	15.387
TOTAL OPERATING EXPENSES	111.888	118.680	123.633	128.794	132.884	137.106	141.463	145.962	150.606	155.399	158.793	161.969
EBIT= OPERATING INCOME	26.948	16.990	17.699	24.573	25.353	26.158	26.990	27.848	28.734	29.649	30.296	30.902
INTEREST EXPENSE	2.315	1.421	1.437	1.497	1.559	1.609	1.660	1.712	1.767	1.823	1.881	1.922
OTHER INCOME (EXPENSE)	121	122	127	133	137	141	146	150	155	160	164	167
EARNINGS BEFORE INCOME TAX PROVISION	24.754	15.691	16.390	23.209	23.931	24.691	25.476	26.286	27.122	27.986	28.579	29.147
INCOME TAX PROVISION	6.858	3.923	4.097	5.802	5.983	6.173	6.369	6.572	6.781	6.996	7.145	7.287
NET INCOME FROM CONTINUING OPERATIONS	17.896	11.769	12.292	17.407	17.948	18.518	19.107	19.715	20.342	20.989	21.434	21.860
DISCONTINUING OPERATIONS	(4.386)	–	–	–	–	–	–	–	–	–	–	–
NET INCOME	13.510	11.769	12.292	17.407	17.948	18.518	19.107	19.715	20.342	20.989	21.434	21.860
RETENTION RATIO	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%

6.3. Balance Sheet Forecast

Table 6-3 below shows the Company's forecasted balance sheets from 2021 until 2032. It is noted that the Company would have a growth in current assets due to the assumption that no major investments are expected, and that liquidity will be held as short investments. Overall, the Company is fairly stable and will continue to be so in the next decade.

Table 6-3- Walmart`s Balance Sheets for 2021 to 2032

CONSOLIDATED BALANCE SHEETS FORECAST (2021-2032)												
WALMART FOR THE YEARS ENDED JANUARY 31 (DOLLARS IN MILLIONS)												
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
ASSETS												
TOTAL CURRENT ASSETS	90067	83158	89244	88911	97929	107234	116834	126739	136958	147502	158580	169936
GROSS PROPERTY AND EQUIPMENT	198218	200395	208758	217472	224378	231507	238866	246461	254302	262396	268128	273490
LESS ACCUMULATED DEPRECIATION AND AMORTIZATION	(88370)	(89341)	(93069)	(96954)	(100033)	(103211)	(106492)	(109878)	(113374)	(116982)	(119537)	(121928)
NET PROPERTY AND EQUIPMENT	109848	111055	115689	120518	124345	128296	132374	136583	140929	145414	148590	151562
INTANGIBLE ASSETS	4900	4954	5161	5376	5547	5723	5905	6093	6286	6487	6628	6761
GOODWILL	28983	29301	30524	31798	32808	33850	34926	36037	37184	38367	39205	39989
DEFERRED TAX ASSETS	1836	1856	1934	2014	2078	2144	2212	2283	2355	2430	2484	2533
EQUITY AND OTHER INVESTMENTS	14961	15125	15757	16414	16936	17474	18029	18602	19194	19805	20238	20642
OTHER LONG-TERM ASSETS	1901	1922	2002	2086	2152	2220	2291	2364	2439	2516	2571	2623
TOTAL ASSETS	**252496**	**247371**	**260310**	**267118**	**281795**	**296942**	**312571**	**328700**	**345345**	**362522**	**378296**	**394047**

LIABILITIES AND SHAREHOLDERS' EQUITY												
TOTAL CURRENT LIABILITIES	92645	80316	83667	77958	80434	82989	85627	88350	91161	94062	96117	98039
TOTAL NON-CURRENT LIABILITIES	72320	73114	76165	79345	81865	84466	87150	89922	92782	95736	97827	99783
TOTAL SHAREHOLDERS' EQUITY	87531	93941	100477	109815	119497	129487	139794	150429	161402	172724	184353	196225
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	**252496**	**247371**	**260310**	**267118**	**281795**	**296942**	**312571**	**328700**	**345345**	**362522**	**378296**	**394047**

6.4. Invested Capital Forecast

Table 6-3 below shows the Company's forecasted balance sheets from 2021 until 2032. It is noted that the Company would have a growth in current assets due to the assumption that no major investments are expected, and that liquidity will be held as short investments. Overall, the Company is fairly stable and will continue to be so in the next decade.

Table 6-4 - Walmart's Forecasted Invested Capital for 2021 to 2032 (in million USD)

FORECASTED INVESTED CAPITAL (2021-2032)												
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
CASH	17741	18089	18844	19631	20254	20898	21562	22248	22955	23686	24203	24688
ACCOUNTS RECEIVABLE, NET	6516	6588	6862	7149	7376	7610	7852	8102	8360	8626	8814	8990
INVENTORIES	44949	56529	58888	49077	50636	52244	53905	55619	57389	59215	60509	61719
PREPAID EXPENSES	1661	1679	1749	1822	1880	1940	2002	2065	2131	2199	2247	2292
OTHER CURRENT ASSETS	19200	–	–	–	–	–	–	–	–	–	–	–
OPERATING CURRENT ASSETS	90067	82886	86344	77679	80146	82693	85321	88034	90835	93726	95773	97689
SHORT-TERM BORROWINGS												
ACCOUNTS PAYABLE	49141	56529	58888	52144	53800	55510	57274	59095	60975	62916	64290	65576
ACCRUED LIABILITIES	15680	15852	16514	17203	17749	18313	18895	19496	20117	20757	21210	21634
TAX PAYABLE	242	245	255	266	274	283	292	301	310	320	327	334
UNEARNED REVENUE	2310	2335	2433	2534	2615	2698	2784	2872	2964	3058	3125	3187
OTHER CURRENT LIABILITIES	19976	–	–	–	–	–	–	–	–	–	–	–
OPERATING CURRENT LIABILITIES	87349	74962	78090	72147	74439	76804	79245	81765	84366	87051	88953	90732
OPERATING WORKING CAPITAL	2718	7924	8255	5532	5708	5889	6076	6269	6469	6675	6820	6957
NET PROPERTY AND EQUIPMENT	109848	111055	115689	120518	124345	128296	132374	136583	140929	145414	148590	151562
OTHER LONG-TERM ASSETS	1901	1922	2002	2086	2152	2220	2291	2364	2439	2516	2571	2623
OPERATING INVESTED CAPITAL (EXCL. GOODWILL)	114467	120900	125946	128136	132205	136405	140741	145216	149836	154605	157982	161142
GOODWILL	28983	29301	30524	31798	32808	33850	34926	36037	37184	38367	39205	39989
INTANGIBLE ASSTETS	4900	4954	5161	5376	5547	5723	5905	6093	6286	6487	6628	6761
OPERATING INVESTED CAPITAL (INCL. GOODWILL)	148350	155156	161630	165310	170560	175979	181572	187346	193306	199459	203816	207892
SHORT TERM INVESTMENT OR EXCESS CASH	–	272	2900	11232	17783	24541	31513	38704	46123	53776	62806	72248
EQUITY INVESTMENTS	14961	15125	15757	16414	16936	17474	18029	18602	19194	19805	20238	20642
TOTAL FUNDS INVESTED	163311	170553	180287	192956	205278	217994	231114	244653	258624	273040	286860	300782

Table 6-5 - Walmart's Forecasted Invested Capital for 2021 to 2032 – by Debt & Equity (in million USD)

FORECASTED INVESTED CAPITAL (2021-2032) BY DEBT & EQUITY												
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SHORT-TERM DEBT	224	226	236	246	254	262	270	279	287	297	303	309
CURRENT PORTION OF LONG-TERM DEBT	3115	3149	3281	3418	3526	3638	3754	3873	3996	4124	4214	4298
CURRENT PORTION OF LEASES	1957	1978	2061	2147	2215	2286	2358	2433	2511	2591	2647	2700
LONG-TERM DEBT	41650	42108	43865	45696	47147	48645	50191	51787	53435	55135	56340	57466
PENSIONS AND OTHER BENEFITS	–	–	–	–	–	–	–	–	–	–	–	–
LONG-TERM LEASES	16756	16940	17647	18384	18967	19570	20192	20834	21497	22181	22666	23119
OTHER LONG TERM LIABILITIES	5469	5529	5760	6000	6191	6387	6591	6800	7016	7240	7398	7546
DEBT & DEBT EQUIVALENTS	69171	69931	72849	75890	78300	80788	83356	86006	88742	91567	93567	95438
DEFERRED INCOME TAXES	6609	6682	6960	7251	7481	7719	7964	8218	8479	8749	8940	9119
NET COMMON STOCK AND PAID-IN-CAPITAL	3928	3928	3928	3928	3928	3928	3928	3928	3928	3928	3928	3928
RETAINED EARNINGS	88763	95229	101984	111548	121410	131586	142084	152917	164094	175627	187405	199416
TREASURY STOCK	–	–	–	–	–	–	–	–	–	–	–	–
ACCUMULATED COMPREHENSIVE INCOME	(11766)	(11895)	(12392)	(12909)	(13319)	(13742)	(14179)	(14630)	(15095)	(15576)	(15916)	(16234)
MINORITY INTEREST	6606	6679	6957	7248	7478	7715	7961	8214	8475	8745	8936	9115
EQUITY & EQUITY EQUIVALENTS	94140	100622	107438	117066	126978	137206	147758	158647	169881	181473	193293	205343
TOTAL FUNDS INVESTED	163311	170553	180287	192956	205278	217994	231114	244653	258624	273040	286860	300782

6.5. Noplat Forecast

Net operating profit less adjusted taxes, or operating profit after taxes, provides a clear position of the company`s core operations and the profits generated by it, after deducting the income taxes related to those core operations. (Koller, Goedhart, & Wessels, 2020) NOPLAT is essential to prepare the valuation models below, hence we have prepared a forecast for the period 2021 to 2032. Table 6-6 below shows the forecasted NOPLAT for the period, as well as the reconciliation to net income. We note that the Company`s NOPLAT will reduce significantly in the first forecasted year due to the divestures operated at the international operations. From then on NOPLAT is forecasted to growth accompanying the tendency of the revenue`s growth.

Table 6-6 - Walmart's Forecasted NOPLAT for 2021 to 2032 (in Millions USD)

FORECASTED NOPLAT (2021-2032)												
	t=0	t=1	t=2	t=3	t=4	t=5	t=6	t=7	t=8	t=9	t=10	t=11
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
EBIT	26.948	16.990	17.699	24.573	25.353	26.158	26.990	27.848	28.734	29.649	30.296	30.902
OPERATING CASH TAXES	(5.147)	(4.175)	(4.146)	(5.853)	(6.108)	(6.302)	(6.502)	(6.709)	(6.922)	(7.142)	(7.383)	(7.547)
NOPLAT	21.801	12.815	13.553	18.720	19.245	19.857	20.488	21.139	21.812	22.506	22.913	23.355
OPERATING TAXES ON EBITA												
REPORTED TAXES	6.858	3.923	4.097	5.802	5.983	6.173	6.369	6.572	6.781	6.996	7.145	7.287
TAX SHIELD ON INTEREST PAID (EXCLUDING LEASE INTEREST)	641	355	359	374	390	402	415	428	442	456	470	481
TAXES ON INTEREST INCOME	(34)	(31)	(32)	(33)	(34)	(35)	(36)	(38)	(39)	(40)	(41)	(42)
TAXES ON EBITA	7.466	4.248	4.425	6.143	6.338	6.540	6.747	6.962	7.184	7.412	7.574	7.726
DECREASE/(INCREASE) IN DEFERRED TAXES	(2.319)	(73)	(279)	(291)	(230)	(238)	(245)	(253)	(261)	(270)	(191)	(179)
OPERATING CASH TAXES	5.147	4.175	4.146	5.853	6.108	6.302	6.502	6.709	6.922	7.142	7.383	7.547
RECONCILIATION TO NET INCOME	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NET INCOME	13.510	11.769	12.292	17.407	17.948	18.518	19.107	19.715	20.342	20.989	21.434	21.860
INCREASE/(DECREASE) IN DEFERRED TAXES	2.319	73	279	291	230	238	245	253	261	270	191	179
ADJUSTED NET INCOME	15.829	11.841	12.571	17.697	18.178	18.756	19.352	19.968	20.603	21.259	21.625	22.039
AFTER-TAX INTEREST PAID (EXCLUDING LEASE INTEREST)	1.674	1.066	1.077	1.122	1.169	1.206	1.245	1.284	1.325	1.367	1.411	1.442
LOSS (GAIN) FROM DISCONTINUED OPERATIONS	4.386	–	–	–	–	–	–	–	–	–	–	–
TOTAL INCOME AVAILABLE TO ALL INVESTORS	21.889	12.907	13.649	18.820	19.348	19.963	20.597	21.252	21.928	22.627	23.036	23.481
AFTER-TAX INTEREST INCOME RECEIVED	(87)	(92)	(96)	(100)	(103)	(106)	(109)	(113)	(116)	(120)	(123)	(125)
NOPLAT	**21.801**	**12.815**	**13.553**	**18.720**	**19.245**	**19.857**	**20.488**	**21.139**	**21.812**	**22.506**	**22.913**	**23.355**

6.6. Free Cash Flow Forecast

As seen in Chapter 5.2.4, free cash flow is the after-tax cash flow generated by the core operations of the Company that is available to all investors after deducting investments in new capital (Koller, Goedhart, & Wessels, 2020). According to Koller, Goedhart, and Wessels, free cash flow is the key factor for value creation. Table 6-7 below represents Walmart's free cash flow forecast for 2021 to 2032.

Table 6-7 - Walmart's Forecasted Free Cash Flow for 2021 to 2032 (in million USD)

FORECASTED FREE CASH FLOWS (2021-2032)												
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NOPLAT	21.801	12.815	13.553	18.720	19.245	19.857	20.488	21.139	21.812	22.506	22.913	23.355
DEPRECIATION	11.152	971	3.728	3.885	3.079	3.178	3.281	3.386	3.496	3.608	2.555	2.391
GROSS CASH FLOW	32.953	13.786	17.281	22.605	22.324	23.035	23.768	24.526	25.308	26.115	25.469	25.746
(INCREASE)/DECREASE IN OPERATING WORKING CAPITAL	(10.461)	(5.206)	(331)	2.723	(176)	(181)	(187)	(193)	(199)	(206)	(146)	(136)
CAPITAL EXPENDITURES	6.049	(2.177)	(8.362)	(8.714)	(6.906)	(7.129)	(7.359)	(7.596)	(7.841)	(8.094)	(5.731)	(5.363)
(INCREASE)/DECREASE IN OTHER ASSETS	1.562	(21)	(80)	(84)	(66)	(68)	(71)	(73)	(75)	(78)	(55)	(51)
(INCREASE)/DECREASE INVESTMENT IN GOODWILL	2.090	(318)	(1.223)	(1.274)	(1.010)	(1.042)	(1.076)	(1.111)	(1.146)	(1.183)	(838)	(784)
(INCREASE)/DECREASE. INVESTMENT IN INTANGIBLES	300	(54)	(207)	(215)	(171)	(176)	(182)	(188)	(194)	(200)	(142)	(133)
(DECREASE)/INCREASE IN ACCUMULATED COMPREHENSIVE INCOME	1.039	(129)	(496)	(517)	(410)	(423)	(437)	(451)	(465)	(480)	(340)	(318)
GROSS INVESTMENT	579	(7.906)	(10.699)	(8.082)	(8.739)	(9.020)	(9.311)	(9.611)	(9.921)	(10.242)	(7.252)	(6.785)
FREE CASH FLOW	**33.532**	**5.880**	**6.582**	**14.523**	**13.585**	**14.014**	**14.457**	**14.915**	**15.386**	**15.873**	**18.216**	**18.961**
AFTER-TAX OTHER INCOME RECEIVED	87	92	96	100	103	106	109	113	116	120	123	125
DECREASE/(INCREASE) IN EXCESS CASH	–	(272)	(2.628)	(8.332)	(6.551)	(6.758)	(6.971)	(7.192)	(7.419)	(7.653)	(9.030)	(9.441)
(INCREASE) /DECREASE IN EQUITY AND OTHER INVESTMENTS	(8.971)	(164)	(631)	(658)	(521)	(538)	(555)	(573)	(592)	(611)	(433)	(405)
DISCONTINUED OPERATIONS	(4.386)	-	1	2	3	4	5	6	7	8	9	10
CASH FLOWS TO INVESTORS	20.263	5.535	3.419	5.633	6.615	6.824	7.040	7.263	7.492	7.729	8.876	9.240
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
FINANCING FLOWS												
AFTER-TAX INTEREST EXPENSE	1.674	1.066	1.077	1.122	1.169	1.206	1.245	1.284	1.325	1.367	1.411	1.442
DECREASE/(INCREASE) IN DEBT	10.019	(760)	(2.918)	(3.041)	(2.410)	(2.488)	(2.568)	(2.651)	(2.736)	(2.825)	(2.000)	(1.871)
FLOWS TO DEBT HOLDERS	11.693	306	(1.841)	(1.918)	(1.241)	(1.281)	(1.323)	(1.366)	(1.411)	(1.457)	(589)	(430)
DECREASE (INCREASE) IN MINORITY INTEREST	277	(73)	(279)	(290)	(230)	(238)	(245)	(253)	(261)	(270)	(191)	(179)
DIVIDENDS	8.690	5.302	5.538	7.842	8.086	8.343	8.608	8.882	9.165	9.456	9.657	9.849
NET SHARES REPURCHASED (ISSUED)	(397)	–	–	–	–	–	–	–	–	–	–	–
FLOWS TO EQUITY HOLDERS	8.570	5.230	5.259	7.552	7.856	8.105	8.363	8.629	8.903	9.187	9.466	9.670
CASH FLOWS AVAILABLE TO INVESTORS	**20.263**	**5.535**	**3.419**	**5.633**	**6.615**	**6.824**	**7.040**	**7.263**	**7.492**	**7.729**	**8.876**	**9.240**

6.7. Return on Invested Capital (ROIC)

As seen in Chapter 5.2.5, the return on invested capital gives us the return the

Company earns on each dollar invested in the business (Koller, Goedhart, & Wessels, 2020. To calculate the forecasted ROIC for 2021 to 2032, we used the following equation:

Equation 6-1 - Return on Invested Capital (ROICt)

$$ROIC_t = \frac{NOPLAT_t}{Invested\ Capital_{t-1}}$$

Table 6-8 below shows Walmart`s ROIC for the forecast period. We note that in the first two years of forecast (2022 and 2023) the ROIC is expected to be reduced significantly due to the divestures of the Company`s international segment. Thereafter ROIC is expected to return to two figures values and remain constant at 11,46% with a slight reduction in the last two years of the forecast period.

Table 6-8 - Forecasted ROIC for 2021 to 2032 (in million USD)

RETURN OF INVESTED CAPITAL FORECAST (2021-2032)												
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ROIC (EXCLUDING GOODWILL)	17,76%	11,20%	11,21%	14,86%	15,02%	15,02%	15,02%	15,02%	15,02%	15,02%	14,82%	14,78%
ROIC (INCLUDING GOODWILL)	13,71%	8,64%	8,74%	11,58%	11,64%	11,64%	11,64%	11,64%	11,64%	11,64%	11,49%	11,46%

Chapter Seven
Valuation Procedures

7.1. Estimation of Input Variables

7.1.1. Cost of Debt

To estimate Cost of Debt, we gathered information on all available bonds issued by the Company and calculated the weighted average yield to maturity of each of those bonds.

We conclude that the Company`s Cost of Debt is 2,424%. It is important to reference that for the purposes of determining this Cost of Debt, we used the Survey on the Market Risk Premium and Risk-Free Rates performed by Pablo Fernandez, Sofia Bañuls and Pablo F. Acin (Fernandez, Bañuls, & Acin, 2021) in order to adjust the Cost of Debt to average rates. This is because the current Risk-Free Rates for U.S. Treasury Bonds are very low and it would not be prudent to assume those rates will remain as low as they are.

According to the Treasury Department of USA (U.S. Department of the Treasury, 2021), the Risk-Free Rate on 2 February 2021 (the next business day after the 31 January 2021) was 1,09%, whereas, according to the mentioned survey, the average Risk-Free Rate is 1,8% for 2021. Hence, we used the spread between these rates (1,8% - 1,09% = 0,71%) to adjust Walmart`s Cost of Debt from its original Average YTM 1.714% to 2.424%.

7.1.2. Beta Coefficient

Walmart`s Beta

Beta measures the stock's volatility compared to the market. It also gives us the contribution of a given stock to a portfolio risk. To find a company`s raw Beta, we can use the following market model regression (Koller, Goedhart, & Wessels, 2020)

Equation 7-1 - Stock's Return or the Dependent Variable of the Regression

$$Ri = \alpha + \beta Rm + \varepsilon$$

By executing this regression in Excel, we find that Walmart`s raw Beta is 0,4614, which means that Walmart is 53.86% less risky than the market (assuming that the market beta is 1). This also means that, for example, if the market is expected to rise 10%,

Walmart`s stock would rise only 4,614% (0,4614 x 10%). It is of interest to compare these findings with the Beta shown in Yahoo, Market Watch or ValueLine.

- In Yahoo, the Company`s Beta is 0,47 which is very similar to the Beta calculated above. This validates our conclusion. (Yahoo Finance, 2021)
- In Market Watch, the Company`s Beta is 0,53. (MarketWatch, 2021)
- In ValueLine, the Company`s Beta is 0,55. (ValueLine, 2021)

The last two sources present a beta slightly higher than the one calculated by us, which may be explained by the timing of the calculation being made.

In order to confirm the regression model as being good and acceptable, we should run certain tests, namely the "F" test (goodness of fit) and the "t" and "p" tests. Results are shown in the regression posted in Table 7-2 above. The significance F has a value of 0,0014 which is lower than 0,025. This means the regression is valid and reliable. The "t" stat is 3,35 which is higher than 1,96, meaning that Beta is not equal to 0. Similarly, the "p" value is 0,0014 which, being lower than 0,025, attests to the validity of the beta. The Beta coefficient is, therefore, significant and reliable.

Walmart`s R^2

The Company`s R2 is 0,162. This means that 16,2% of the Walmart stock`s total risk is caused by the market, i.e., systematic risk. Thus, 83,8% of the stock`s risk is the company related risk, i.e., unsystematic and, thus, diversifiable risk.

Walmart`s Competitor`s Beta and R^2

.The competitor chosen for the purpose of comparing Walmart`s Beta and related values was Costco (COST). (Yahoo Finance, 2021) Costco's Beta is 0,62, which means that Costco is 38% less risky than the market (but 18% more risky than Walmart). This also means that, for example, if the market is expected to rise 10%, Costco`s stock would rise only 6,2% (0,62 x 10%). The significance F for Costco has a value of 2,82562E-05 which is lower than 0,025. This means the regression is valid and reliable. The "t" stat is 4,55 which is higher than 1,96, meaning that Beta is not equal to 0. In the same fashion, the "p"

value is 2,82562E-05 which, being lower than 0,025, attests to the validity of the beta. The Beta coefficient is also significant and reliable.

Industry Beta

To estimate the industry Beta, we will use the data from both Walmart and Costco. We have found that the raw Beta of both companies are 0.4614 and 0,62, respectively. In order to find the Industry Beta, we must unlever both Betas- that is, remove the impact of financial risk from each company`s beta. Further, we should find the mean of both unlevered Betas and re-lever the industry's unlevered beta to find the Industry Beta. Finally, to more accurately predict the future applicable Beta, we should smooth the Industry Beta.

For the purpose of unlevering the Beta, we must choose one of two models. The models depend on the stability (or instability) of the company's capital structure. To assess if Walmart`s capital structure is stable or not, we have calculated the interest-bearing debt to total assets ratio over the past years. See below our calculations reported in Table 7-4.

Table 7-4 – Walmart`s Interest Bearing Debt Ratio, 2017-2021

	2017	2018	2019	2020	2021
INTEREST BEARING DEBT RATIO	26%	25%	29%	33%	27%
TAX RATE					27.70%

Also, see below the companies` capital structure in the latest year as shown in Table 7-5.

Table 7-5 – Walmart`s Capital Structure in 2021

	CAPITAL STRUCTURE (WMT)		CAPITAL STRUCTURE (COST)	
	Book Value	% of total Capitalization	Book Value	% of total Capitalization
SHORT-TERM DEBT	224		0	
CURRENT PORTION OF DEBT	3115		95	

CURRENT PORTION OF LEASES	1957		0	
LONG-TERM DEBT	41650		7514	
LONG-TERM LEASES	16756		2558	
PENSION & OTHER POST-RETIRE. BENEFITS	0		0	
OTHER LONG-TERM LIABILITIES	5469		1935	
INTEREST BEARING DEBT (D)	69171	**14,82%**	12102	**7,25%**
SHARES OUTSTANDING	2831		440	
STOCK PRICE (JAN 31, 2021)	140		352	
MARKET CAP OF EQUITY (E)	397727	**85,18%**	154937	**92,75%**
ENTERPRISE VALUE (V)	**466898**	100,00%	**167039**	100,00%

We have found from Table 7-5 that Walmart`s capital structure has been fairly stable, and we have assumed, for the purpose of the present exercise, that Costco`s capital structure for the past years is also stable. Thus, we have used the following equation to find the unlevered Betas of both companies (Koller, Goedhart, & Wessels, 2020):

Equation 7-2 - Unlevered Beta (βu)

$$ßμ = ße/[1+(D/E)]$$

Bu = Unlevered beta
ße = company beta
D = interest-bearing debt
E = market capitalization of equity

We then found the industry's unlevered Beta by adding both unlevered betas and dividing by two to find the mean. We have assumed the debt-to-equity ratio of Walmart (17,39%) as the target debt to equity ratio to be used in the future and we have calculated the re-levered Beta for the industry by the following formula (Koller, Goedhart, & Wessels, 2020):

Equation 7-3 - Re-levered Beta (βu)

$$ße = ßμ\ [1+(D/E)]$$

The following Table 7-6 shows our results for the Industry Beta.

Table 7-6 – Industry Beta

	Raw Betas	Market Debt To Equity Ratio	Unlevered Beta SSM = SSE/[1+(D/E)]	Industry Average Unlevered Beta	Target Debt To Equity Ratio	Relevered Beta SSE = SSM [1+(D/E)]	Smoothing Beta
WMT	0,46136	17,39%	0,42794	0,500716907	17,39%	0,58780	0,7238
COMPETITOR	0,61829	7,81%	0,57350				

Adjusted Beta (Smoothing Beta)

We finally used the Bloomberg formula to adjust the Industry Beta. The formula is the following:

Equation 7-4 - Adjusted Beta (β_{Adj})

$$\beta_{Adj} = 0.33 + 0.67 \text{ X Industry } \beta$$

The results are: $\beta_{Adj} = 0,33 + 0,67 \text{ x } 0,5878 = 0,7238$

As shown in the table above, the beta used to calculate Walmart's Cost of Equity is 0,7238.

7.1.3. Cost of Equity

The cost of equity represents the rate at which the investors/equity holders wish to be remunerated to invest in the company. It is the expected rate of return on the company`s shares/stocks. To calculate the Cost of Equity, we used the CAPM (Capital Asset Pricing Model) which is based on the principle that the expected rate of return on a security equals the risk-free rate plus the security's beta times the market risk premium. See Equation 7-5 below (Koller, Goedhart, & Wessels, 2020):

Equation 7-5 - Expected Return of Security i [E(Ri)]

$$E(R_i) = r_f + \beta_i [E(R_m) - r_f]$$

$E(R_i)$ = expected return of security

r_f = risk-free rate

β_i = stock's sensitivity to the market

$E(R_m)$ = expected return of the market

Although we found the stock`s Beta above, for the purpose of calculating the WACC below, we shall use the Adjusted Beta (Smoothing Beta) to have a more reliable Beta for the calculation of WACC, i.e., a Beta of 0,7238. We now need to find both the Risk-Free Rate and the Market Risk Premium in order to calculate the cost of equity.

Risk Free Rate

As explained above, the Risk-Free Rate can be found in the USA Treasury Department`s website by getting the current (or at date) 10 years Treasury Bonds yield(U.S. Department of the Treasury, 2021). We found that, at the end of January 2021, the 10-year Treasury Bonds yield was 1,09%. However, due to historical factors and the current abnormal situation caused by the pandemic and the expansionary monetary policies around the world, it would not be reliable to use such a low rate for our calculation. Therefore, we decided to use the average Risk-Free Rate calculated by Pablo Fernandez, Sofia Bañuls and Pablo F. Acin in their survey on the Market Risk Premium and Risk-Free Rates, which is 1,8%. (Fernandez, Bañuls, & Acin, 2021) The Risk-Free Rate is, therefore, for the purpose of the present work, assumed to be 1,8%.

Market Risk Premium

To find the Market Risk Premium, we rely, once again, on the work of Pablo Fernandez, Sofia Bañuls and Pablo F. Acin in their survey on the Market Risk Premium and Risk-Free Rates. (Fernandez, Bañuls, & Acin, 2021) According to this survey, the average Market Risk Premium in the USA is 5,5%. By inputting these variables in the CAPM, we calculated the Cost of Capital which, for Walmart, is given by Table 7-7 below.

Table 7-7 – Walmart's Cost of Equity

CAPM	
$K_e = E(R_i) = r_f + ß_i [E(R_m) - r_f]$	
$K_e =$	5,78%
$r_f =$	1,80%
$ß_i =$	0,7238
$E(R_m) - r_f =$	5,50%

The Cost of Equity for Walmart is, therefore, 5,78%

7.1.4. WACC – Weighted Average Cost of Capital

The WACC - Weighted Average Cost of Capital is defined as the opportunity cost of a Company. This rate is used to assess and evaluate if any given project is worth pursuing by a company. The WACC is used in some of the most important evaluation models as the discount factor for discounting future cash flows. To calculate WACC, we used the following formula (Koller, Goedhart, & Wessels, 2020):

Equation 7-6 - Weighted Average Cost of Capital (WACC)

$$WACC = [D/(D+E)] \times K_d \times (1 - T_m) + [E/(D+E)] \times K_e$$

WACC = Weighted average cost of capital
D / (D+E) = Weight of debt of the enterprise value
K_d = Cost of debt
E / (D+E) = Weight of equity of the enterprise value
K_e = Cost of equity
T_m = Tax rate of the company

This formula sums the after-tax cost of debt (Kd x (1- Tm)) considering the weight of debt in the company`s capital structure (D/(D+E)) and the cost of equity (Ke) considering the weight of equity in the company`s capital structure (E/(D+E)). Table 7-8 below shows our calculations for Walmart`s WACC.

Table 7-8 – Walmart`s WACC

SOURCE OF CAPITAL	Proportion of total capital	Cost of capital	Average tax rate	After-tax opportunity cost	Contribution to weighted average
DEBT	14,82%	2,42%	25,00%	1,82%	0,27%
EQUITY	85,18%	5,78%			4,92%
WACC					**5,19%**

We have computed a WACC for Walmart of 5,19%.

7.1.5. Cost of Unlevered Equity

The Cost of Unlevered Equity is the cost for the company to pursue a project, which is not leveraged, i.e., does not use debt, only equity. To calculate this Cost of Unlevered Equity, we used the following formula (Koller, Goedhart, & Wessels, 2020):

Equation 7-7 - Cost of Unlevered Equity (K_u)

$$K_u = [D/(D+E)] \times K_d + [E/(D+E)] \times K_e$$

K_u = Cost of unlevered equity
D/(D+E) = Weight of debt of the company's value
K_d = Cost of debt
E/(D+E) = Weight of equity of the company's value
K_e = Cost of equity

Using the already described values for each of these variables, we get the Unlevered Cost of Equity as per Table 7-9 below:

Table 7-9 – Walmart`s Unlevered Cost of Equity

$K_u = [D/(D+E)] \times K_d + [E/(D+E)] \times K_e$	
$K_u =$	**5,28%**

The company`s Unlevered Cost of Equity is 5,28% which is slightly higher than the WACC due to the effect of the taxes in the latter which is not accounted for in the former.

7.1.6. Expected Rate of Return on New Invested Capital (RONIC)

As seen in Chapter 5.2.5, the Return on Invested Capital derives from the Company`s core business returns. This measure is a function of the company`s strategy, competitive advantages and the industry it operates in. As we have seen in Chapter 3 the retail industry is very competitive. We also analyzed in Chapter 2 the Company`s core competencies and advantages, which are related to its efficiency and economies of scale. The combination of both industry dynamics and Walmart`s advantages explains how the Company sustains a fairly stable ROIC. In order to calculate the expected rate of return on new invested capital

(RONIC), we have assumed RONIC to be equal to the average of the last ten years of forecasted return on invested capital (ROIC). Table 7-10 shows the forecasted ROIC and the RONIC for Walmart.

Table 7-10 - Forecasted Return on Invested Capital of Walmart from 2022 to 2031

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
ROIC	8,64%	8,74%	11,58%	11,64%	11,64%	11,64%	11,64%	11,64%	11,64%	11,49%
RONIC	11,03%	Average of the last 10 years of forecast								

According to the calculation, Walmart`s RONIC is 11,03%. However, as it is shown in Table 7-10 above, and as explained above in Chapter 6.7, the expected ROIC for the first two years of the forecast period (2022 and 2023) is significantly lower than the remaining years of the forecast period, as well as lower than the previous years. These two years have a negative influence on the average of the last ten years` ROIC calculation. Hence, considering that the ROIC throughout the forecast period is very stable, we have adopted the last year's (2032) forecasted ROIC as the Company`s RONIC for the purposes of using the valuation models described below. We will assume, therefore, a RONIC of 11,46% for the purposes of calculating the Continuing Value of the Company in the models below. Despite the RONIC calculation method, we note that the Company`s RONIC is always greater than its WACC. This means that the Company is able to create value by new invested capital.

7.1.7. Expected NOPLAT Growth Rate in Perpetuity

In order to use the valuation models below, we need to forecast the Company`s NOPLAT for the year following the end of the forecast period, which is why we have been projecting the forecast period until 2032. This, along with the long-run growth rate, will allow us to determine the continuing value of the Company, which is a necessary step to use the valuation models below. (Koller, Goedhart, & Wessels, 2020) We have assumed a slightly lower growth rate as the long-run growth rate for the Company`s revenues and NOPLAT at 2%.

7.2. Discounted Cash Flow Model Applications

In this section, we will use three different discounted cash flow (DCF) models to calculate the intrinsic value of Walmart as of 31 January 2021. This will allow us to confirm our analysis of the Company`s intrinsic value and to ultimately compare it to how the Company was priced by the market as of the same date. In theory, all the models should provide the same – or very similar – results. Table 7-11 below presents the framework to be used for the three DCF models.

Table 7-11 - Framework for Discounted Cash Flow Valuation

Model	Measure	Discounted Factor
Enterprise Discounted Cash Flow	Free Cash Flow	Weighted Average Cost of Capital
Adjusted Present Value	Free Cash Flow	Unlevered Cost of Equity
Discounted Economic Profit	Economic Profit	Weighted Average Cost of Capital

It is noted that the Enterprise Discounted Cash Flow model used WACC as the discounted factor. So does the Discounted Economic Profit model. As Koller, Goedhart and Wessels explain, the WACC-based models work better when a company maintain a stable debt-to-value ratio. (Koller, Goedhart, & Wessels, 2020) Where that does not happen, the authors recommend the use of the Adjusted Present Value model which uses as discounted factor the Unlevered Cost of Equity followed by adding the amount of tax benefits associated with debt to find the enterprise value.

7.2.1. Enterprise Discounted Cash Flow (EDCF) Model

This model discounts the free cash flow available to all investors in the forecast period at the weighted average cost of capital and deducts the claims on cash flow of debt holders and other non-equity investors from enterprise value to determine equity holders' value. (Koller, Goedhart, & Wessels, 2020) The EDCF model follows four steps:

1. Find the value of the Company`s operations by discounting the future cash flows using WACC as discounting factor. In this point we need to calculate the continuing value (CV) of the Company, as described below.
2. Identify the value of non-operating assets and add it to the value of

operations to find the entreprise value.

3. Identify the value of all deb and other non-equity claims against the enterprise value.
4. Deduct the value of debt from the enterprise value to find the equity value of the Company, i.e., its intrinsic value.

In calculating the continuing value (CV) of the Company, as described in step 1 above, we used the following Equation 7-8. Table 7-12 shows our calculation of the continuing value of the Company, in a total of $604,043.04 million. The CV needs also to be discounted at WACC to find its present value which is to be summed to the other discounted cash flows for the forecast period. After being discounted the CV of Walmart is $364,051.42 million

Equation 7-8 - Continuing Value at the Last year of the Forecasted Period (CV)

$$CV = \frac{NOPLAT_{2032}\,[1-(g/RONIC)]}{(WACC-g)}$$

CV = Continuing value at the last year of the forecasted period
$NOPLAT_{2032}$ = Net operating profit less adjusted taxes after the forecasted period
WACC = Weighted average cost of capital
RONIC = Long run forecast for return on new invested capital
g = Growth

Table 7-12 - Continuing Value for the Enterprise DCF Model (Millions USD)

CONTINUING VALUE FOR ENTERPRISE DCF VALUATION	
$NOPLAT_{2032}$ =	23.371,60
G =	2,00%
RONIC =	11,46%
WACC =	5,19%
CV =	$NOPLAT_{2032}\,[1-(g/RONIC)]$
	(WACC-g)
CV =	604.043,04

To obtain Walmart's value of operations, according to the EDCF we used Equation 7-9 below. Table 7-13 shows the results of the calculations of the Company`s intrinsic value using the EDCF model. As of 31 January 2021, the intrinsic value of Walmart shares according to the EDCF model was $144.21 per share.

Equation 7-9 - Value of Operations (VO)

$$VO = \sum_{t=1}^{10} \frac{FCF_t}{(1 + WACC)^t} + \frac{CV_{10}}{(1 + WACC)^{10}}$$

VO = Value of operations

FCF_t = Free cash flow in year t of the forecast period

CV_{10} = Continuing value at the last year of the forecast period

WACC = Weighted average cost of capital

Table 7-13 - Valuation of the Enterprise DCF Model on 31 January, 2021

ENTERPRISE DCF VALUATION OF WALMART

	Year	FCF (mil)	Discount Factor (WACC)	PV of FCF (mil)
1	2022	5.880,30	0,95	5.589,97
2	2023	6.582,21	0,90	5.948,27
3	2024	14.523,08	0,86	12.476,34
4	2025	13.585,28	0,82	11.094,47
5	2026	14.014,50	0,78	10.879,90
6	2027	14.457,46	0,74	10.669,62
7	2028	14.914,61	0,70	10.463,53
8	2029	15.386,42	0,67	10.261,56
9	2030	15.873,35	0,63	10.063,62
10	2031	18.216,40	0,60	10.978,86
10	CV	604.043,04	0,60	364.051,42
VALUE OF OPERATIONS				462.477,56
+NONOPERATING ASSETS				14.961,00
ENTERPRISE VALUE				477.438,56
-VALUE OF DEBT				69.171,00
EQUITY VALUE				408.267,56
NUMBER OF SHARES (AT FISCAL YEAR ENDED 2021)				2.831,0
ESTIMATED SHARE VALUE ($)				**144,21**

7.2.2. Discounted Economic Profit (DEP) Model

The DEP model measures the value created by the Company in a single period and highlights, contrary to the EDCF model, how and when the company creates value. (Koller,

Goedhart, & Wessels, 2020) To find the economic profit, we used the following Equation 7-10:

Equation 7-10 - Economic Profit in Year t (EP_t EP_t)

$$EP_t = IC_{t-1} \times (ROIC_t - WACC_t)$$

EP_tEP_t = Economic Profit in year t

IC_{t-1}= Invested Capital in year t-1

$ROIC_t$= Return on Invested Capital in year t

$WACC_t$= Weighted average cost of capital in year t

To apply this model, we also need to calculate the continuing value (CV) of the Company which we do by way of Equation 7-11 below.

Equation 7-11 - Continuing Value at the Last Year of the Forecasted Period (CV)

$$CV = \frac{EP_{2032}}{WACC} + \frac{NOPLAT_{2032}\,(g/RONIC)\,(RONIC - WACC)}{WACC\,(WACC - g)}$$

CV = Continuing value at the last year of the forecasted period

$NOPLAT_{2032}$ = Net operating profit less adjusted taxes after forecasted period

WACC = Weighted average cost of capital

g = Growth

EP_{2032} = Economic Profit in the year 2032

We calculate in Table 7-14 below the CV of the Company as per this model and found it to be $400,595.077 million.

Table 7-14 - Continuing Value for the Economic Profit Model (Millions USD)

CONTINUING VALUE FOR ECONOMIC PROFIT VALUATION (IN MILLIONS)

	Economic Profit $_{2032}$ =	12.804,73	
	NOPLAT $_{2032}$ =	23.371,60	
	g =	2,00%	
	RONIC	11,46%	
	WACC =	5,19%	
CV =	Economic Profit $_{2032}$	+	$NOPLAT_{2032}$ (g/RONIC) (RONIC - WACC)
	WACC		WACC (WACC - g)
CV=	**400.595,077**		-

Table 7-15 below calculates the present value of economic profit of the Company. After this calculation, we add invested capital to find the value of operations, to which we add the non-operating assets to find the enterprise value. We then deduct the value of the debt to find the equity value, i.e., the intrinsic value of the Company, which by this model is $411,626.90 million. By dividing the equity value by the number of shares, we get a share value as of 31st January 2021 of $145.40 per share.

Table 7-15 - Valuation of the Economic Profit Model on 31 January, 2021

DISCOUNTED ECONOMIC PROFIT VALUATION FOR WALMART (IN MILLIONS)							
	Year	**Invested capital**	**ROIC (%)**	**WACC (%)**	**Economic profit (mil)**	**Discount factor**	**Present value of economic profit (mil)**
1	2021	148.350,000	8.64%	5.19%	5.110,079	0,9506	4.857,77
2	2022	155.155,664	8.74%	5.19%	5.494,566	0,9037	4.965,38
3	2023	161.630,247	11.58%	5.19%	10.325,114	0,8591	8.869,99
4	2024	165.309,910	11.64%	5.19%	10.658,983	0,8167	8.704,70
5	2025	170.559,681	11.64%	5.19%	10.997,854	0,7763	8.537,98
6	2026	175.978,565	11.64%	5.19%	11.347,655	0,7380	8.374,58
7	2027	181.572,098	11.64%	5.19%	11.708,744	0,7016	8.214,42
8	2028	187.346,005	11.64%	5.19%	12.081,493	0,6669	8.057,43
9	2029	193.306,199	11.64%	5.19%	12.466,284	0,6340	7.903,55
10	2030	199.458,791	11.49%	5.19%	12.553,658	0,6027	7.565,98
10	Continuing Value			5.19%	400.595,077	0,6027	241.435,12
Present Value of economic profit							317.486,90
Invested Capital$_{2021}$							148.350,00
Invested Capital plus present value of economic profit							465.836,90
Value of operations							465.836,90
+Nonoperating assets							14.961
Enterprise value							480.797,90
-Value of debt							69.171,00
Equity value							411.626,90
Number of shares (at fiscal year ended 2017)							2.831,0
Estimated share value ($)							145,40

7.2.3. Adjusted Present Value (APV) Model

As discussed previously, the. APV model uses the unlevered cost of equity as a discount factor to discount future cash flows to the present. The reason for this is that using WACC as discount factor assumes a somewhat constant debt to equity ratio. Considering that this ratio may differ in the future, the APV model is recommended. This APV model, described as being more flexible, separates the value of operations into two components:

1)The value of operations as if the company was financed only by equity;
2)The value of the interest tax shields. (Koller, Goedhart, & Wessels, 2020)

The calculation of the value of operations by the Adjusted Present Value model is done by the following Equation 7-12:

Equation 7-12 – Value of Operations (VO)

$$VO = \sum_{T=1}^{10} \frac{FCFt + ITSt}{(1+Ku)^t} + \frac{CV10}{(1+Ku)^{10}}$$

Table 7-16 shows the forecast of interest tax shields assuming a marginal tax rate of 25%, as described in Chapter 6.1 above. (ValueLine, 2021)

Table 7-16 - Forecast of Interest Tax Shields

FORECAST OF INTEREST TAX SHIELDS (IN MILLIONS)					
Year	**Prior year net debt**	**Expected interest rate**	**Interest Payment**	**Marginal tax rate**	**Interest tax shield**
1	69.171,00	2,42%	1676,54	25,00%	419,14
2	69.930,83	2,42%	1694,96	25,00%	423,74
3	72.849,01	2,42%	1765,69	25,00%	441,42
4	75.889,97	2,42%	1839,40	25,00%	459,85
5	78.300,02	2,42%	1897,81	25,00%	474,45
6	80.787,71	2,42%	1958,11	25,00%	489,53
7	83.355,57	2,42%	2020,34	25,00%	505,09
8	86.006,24	2,42%	2084,59	25,00%	521,15
9	88.742,43	2,42%	2150,91	25,00%	537,73
10	91.566,94	2,42%	2219,37	25,00%	554,84

Table 7-17 shows the results for the calculation of the present value of the Company`s Free Cash Flow (including the Continuing Value which is the same, for this purposes as the one calculated in section 7.1.2 above) and Interest Tax Shields to find the Company`s valueof operations according to the APV model. As in previous models, we then add non-operating assets to find the enterprise value and deduct the value of debt to find the equity value, i.e., the intrinsic value. According to the APV model, Walmart`s intrinsic value as of 31 January 2021 is $408,314.08 million. Divided by the number of shares it gives us a share value of as of 31st January 2021of $144.23 per share.

Table 7-17 - Valuation of the Adjusted Present Value Model on January 31, 2021

ADJUSTED PRESENT VALUE OF WALMART						
	Year	**FCF (mil)**	**Interest tax shield**	**Discount Factor (Ku)**	**PV of FCF (mil)**	**Present value of ITS (mil)**
1	2022	5.880,304	419,14	,949,81	5.585,201	398,101,57
2	2023	6.582,213	423,74	,902,15	5.938,134	382,276,44
3	2024	14.523,081	441,42	,856,87	12.444,454	378,243,58
4	2025	13.585,277	459,85	,813,87	11.056,676	374,258,19
5	2026	14.014,497	474,45	,773,03	10.833,596	366,764,95
6	2027	14.457,460	489,53	,734,23	10.615,150	359,426,63
7	2028	14.914,614	505,09	,697,39	10.401,242	352,239,95
8	2029	15.386,419	521,15	,662,39	10.191,773	345,201,73
9	2030	15.873,353	537,73	,629,15	9.986,651	338,308,83
10	2031	18.216,399	554,84	,597,57	10.885,610	331,558,18
10	Continuing Value	604.043,044		,597,57	360.959,209	
PRESENT VALUE OF FCF AND ITS						462.524,08
VALUE OF OPERATIONS (MIL)						462.524,08
+NONOPERATING ASSETS (MIL)						14.961,00
ENTERPRISE VALUE (MIL)						477.485,08
-VALUE OF DEBT (MIL)						69.171,00
EQUITY VALUE (MIL)						408.314,08
NUMBER OF SHARES - AT FISCAL YEAR ENDED 2021 (MIL)						2831,0
ESTIMATED SHARE VALUE ($)						144,23

7.3. Summary of Valuation Applications

Table 7-18 summarizes the intrinsic value of the Company according to each of the analyzed models above. Comparison is also made to the share price of the Company as of 31 January 2021. We note that all the three models produced very similar intrinsic values which strengthens our analysis. We also note that the Company`s shares were fairly valued by the market as the differences between the intrinsic values and the stock price were very similar. We attribute these results to the fact that Walmart is a very stable and reliable company, and the market has factored in the same variables as the ones described in this work.

Table 7-18 - Summary of the Three Valuation Models

VALUATION MODELS	INTRINSIC PRICE ($) - JANUARY 31, 2021	SHARE PRICE ($) - JANUARY 31, 2021	OVER / UNDERVALUED	BY ($):	BY (%)
ENTERPRISE DCF	**144,21**	144,36	Overvalued	0,15	0,10%
ADJUSTED PRESENT VALUE	**144,23**	144,36	Overvalued	0,13	0,09%
DISCOUNTED ECONOMIC PROFIT	**145,40**	144,36	Overvalued	-1,04	-0,72%

Chapter Eight

Sensitivity Analysis, Recommendations for Management and Conclusions

8.1. Sensitivity Analysis

We have performed a sensitivity analysis to study the vulnerability of our valuation models and the impacts caused by changes to key factors in the valuation procedure, such as changes to the foreseen RONIC, growth rate in perpetuity (g) and market risk premium. Table 8-1 shows the result of deviations of an increase/decrease of 10% from the original estimated figures for RONIC (estimated at 11,46%), growth (g) (estimated at 2% in perpetuity) and market risk premium (estimated at 5,5%), respectively.

Table 8-1 – Sensitivity Analysis

	G			RONIC			Market risk premium		
TESTED VALUE	1,80%	2,00%	2,20%	10,31%	11,46%	12,61%	4,95%	5,50%	6,05%
% CHANGE TO ORIGINAL	-10,00%	0%	10,00%	-10,00%	0%	10,00%	-10,00%	0%	10,00%
NEW INTRINSIC VALUE									
DCF MODEL	138,89	144,21	150,25	141,18	144,21	146,69	164,87	144,21	127,54
% CHANGE TO ORIGINAL	-3,69%		4,19%	-2,10%		1,72%	14,32%		-11,56%
APV MODEL	138,95	144,23	150,22	141,22	144,23	146,69	164,73	144,23	127,68
% CHANGE TO ORIGINAL	-3,69%		4,15%	-2,09%		1,71%	14,21%		-11,47%
DEP MODEL	140,16	145,40	151,35	142,37	145,40	147,88	166,08	145,40	128,71
% CHANGE TO ORIGINAL	-3,69%		4,09%	-2,08%		1,71%	14,22%		-11,48%

As we can see, a change of 10% in the growth rate (g) in perpetuity may have a maximum positive or negative impact of 4,19% or -3,69%, respectively, for the EDCF model. As for RONIC, a 10% change may have a positive or negative impact of 1,72% or -2,10%, again in the EDCF model. Finally, an impact on the market risk premium could impact the valuation positively or negatively by up to 14,32% or -11,56%, respectively, in the EDCF model. We conclude, therefore, that the Company`s valuation is more sensitive to changes

in the market risk premium. Secondly, the Company`s valuation will respond stronger to change in the growth rate (g) and, finally, changes to RONIC will have a less impact on the Company's valuation.

8.2. Recommendations to Management

Considering the analysis done in Chapters 2, 3 and 4 as well as the valuations methods used and the underlying factors influencing such models, and assuming that the Company may have room to grow beyond what was expected as of 31 January 2021 (we recall that the market was in line with the calculated intrinsic value of the Company), we would recommend the Company`s Management to consider some of the following suggestions:

a) Prioritize the development, implementation, and growth of eCommerce platforms, not only to compete with its greatest competitor in this field – Amazon – but also to expand revenue streams. Prioritize sales growth for value creation.
b) Pay special attention to the Chinese and Indian markets. These countries have historically forecasted an above average GDP growth, and both have massive scale due to its enormous population. Also, these markets have great potential for technological implementations and eCommerce that could and should be maximized.
c) Study other jurisdictions and potential acquisitions to enter new, rapid growth markets. The Company has an extensive experience in entering (and exiting) new jurisdictions and has the capabilities to be efficient in its operations leveraged by its supply chain advantages.
d) Study the possibility of entering upstream operations to better control its supply chain and hedge against predicted inflation and potential further disruptions in the supply chain.

The above suggestions assume that the Company continues to steadily operate its core operations which drove a very steady growth in the past years and is forecasted to continue so in the future. However, while the Management can look into the suggested opportunities, it is our view, from the analysis made in this work, that the Company may still create value.

8.3. Conclusions

In this work we have proposed to analyze essentially two different matters:

- the intrinsic value of the Company as of 31 January 2021 and how it would compare to the stock price as of the same date; and
- how internal and external factors could influence the company`s valuation going into the future.

We believe we have clarified Walmart's resilience and powerful position in the markets where it operates, with special focus on the U.S. market. The analysis done to the Company and its operations, the industry, and the economic outlook allowed us to forecast the Company`s results for a ten-year period and produce three valuation models which showed us the intrinsic value of the Company. We also conclude that, the intrinsic value of the Company. We also conclude that the intrinsic value of the Company as of 31 January 2021 was pretty much the same value that the market attributed to the Company. This strengthens our view of the stability and trust that Walmart guarantees to its stakeholders.

We have also concluded, from our analysis, that whilst the Company shows great strengths and competitive advantages, it also faces some pressure from competitors as well as opportunities to which it cannot be indifferent. We have concluded that, depending on how the Company will act – or react – to such opportunities, this will influence the underlying factors determining the valuation models studied in this work. If the management is able to capitalize on the opportunities identified, while hedging against the inherent risks and threats from the industry, this is where the Company will find extra value.

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