Students' Wisdom and Perceptions of Wisdom Enablers in Undergraduate Management Education

By

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# Statement of authorship

Except where reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis accepted for the award of any other degree or diploma. No other person's work has been used without due acknowledgment in the main text of the thesis. This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

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## Abstract

Collectively and individually, managers have a significant social, economic and environmental impact on other people's lives. They need wisdom to judge and evaluate possible responses to the challenges that they and those they manage face. Responding to this claim, management education academics and researchers argue that contemporary management education is not conducive to wisdom development. However, there is a scarcity of empirical evidence to support such claims. Hence, the aim and purpose of this study is to document students' perceptions of any wisdom enablers in undergraduate management education programs and explain potential relationships between perceived wisdom enablers and the current level of students' wisdom.

The theoretical platform of the study is the Implicit Theory of Wisdom\*. The research method is quantitative. Two sets of data were collected from the same student population at a school of management in one metropolitan Australian university. The two data collection instruments were: a) the Three-Dimensional Wisdom Scale (3D-WS) (Ardelt, 2003) and b) a custom designed Students' Perceptions of Wisdom Enablers Questionnaire (SPWEQ).

The data provided empirical evidence of the wisdom enablers perceived to be present in the management education programs and their statistically significant positive correlation with the students' wisdom scores. Hence, the data suggest that students' perceptions of wisdom enablers in undergraduate management education can be a statistically good predictor of their wisdom scores.

Specifically, the data show a statistically significant difference in the average wisdom scores in relation to students' employment status and reported life hardship experiences as wisdom enablers that lie in the realm outside the formal management education. This discovery presents an opportunity for future management education program design. The challenge is how to improve the development of students' wisdom and make them not only work, but also life ready; and capable of wisely responding to the political, economic, social and environmental conundrums of our time.

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# Acronyms

3D-WS	Three-dimensional wisdom scale
AMOS 25	IBM structural equation modelling program, version 25
ANOVA	Analysis of Variance
ASTI	The Adult Self-Transcendence Inventory
BCHEAN	Business College Human Ethics Advisory Network
BWP	Berlin Wisdom Paradigm
BWSS	Brief Wisdom Screening Scale
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIN	Model Chi-Square (X2)
CR	Critical Ratios
df	Degree of freedom
DIKW	Data, information, knowledge, wisdom pyramid
DRT	Deep Rationality Theory
FVS	Foundational Value Scale
GFC	Global financial crisis
MBA	Master of Business Administration
PCA	Principal Components Analysis
PME	Positive Management Education
POS	Positive Organisational Scholarship
PRME	Principles of Responsible Management Education
PWS	Practical Wisdom Scale
RJRA	Reasoning, Judgement and Reflective Action
RMSEA	Root Mean Square Error of Approximation
rxy	Pearson's linear correlation coefficient
SAWS	Self-assessed wisdom scale
SD-WISE	San Diego Wisdom Scale
SOTL	Scholarship of Teaching and Learning
SPSS	Statistical Package for the Social Sciences
SPWEQ	Students' perception of wisdom enablers in
	undergraduate management education questionnaire

# Acronyms

SRMR	Standardized Root Mean Square Residual
STEM	Science, Technology, Engineering and Mathematics
SWIS	Situated Wise Reasoning Scale
TWR	Transcendent Wisdom Rating
WDS	Wisdom development scale
WICS	Wisdom, intelligence, creativity
WITHAQ	Wise Thinking and Acting Questionnaire

# Chapter 1 Introduction

## 1.1 Research rationale

There is a vast body of literature across the globe that critiques contemporary management education practice, arguing that it is incongruent with the development of students' mindfulness, conceptual skills, reflection and practical wisdom faculties (Grey, 2002; Mintzberg & Gosling, 2004; Pfeffer & Fong, 2002; Rooney & McKenna, 2005; Small, 2004b). As a counterbalance, there is also a body of literature that elaborates educational institutions' endeavours to introduce social entrepreneurship, corporate social responsibility, sustainability, ethics and governance into their management education programs. Illustrative are stand-alone courses, institutional accreditations for adherence to the Principles of Responsible Management Education (PRME) and ISO 26000 international standards (Baden & Higgs, 2015; Czykiel, Figueiró, & Nascimento, 2015; Fisher & Bonn, 2017; Moratis, 2013; Prior Jonson, McGuire, & O'Neill, 2015; Roos, 2017; Zhu, Rooney, & Phillips, 2016). However, despite this evidence I would assert that the general practice of management education seems to assume either that teaching of wisdom is unimportant or might be a by-product of other more important employability skills.

While not addressing the development of wisdom explicitly, Alvesson & Willmott (2003), Grey and French (1996) and Reynolds (1999) argue that managers as a social group either collectively or individually have an enormous social, economic and environmental influence and impact on the lives of others. Therefore, they argue managers' activities cannot be steered only by instrumental and utilitarian objectives of economic prosperity or international competitiveness. As a result, they propose that the rationale for management education in the globalised world cannot have a narrow, instrumental focus on training potential managers about how to maximise profits. Instead, management education should introduce management students to the higher questions about the role of management more generally in society. It should

provide students with the conceptual skills and wisdom that produce *eudaimonia* (human flourishing) to evaluate what it means for managers to act responsibly in the sustainability-oriented world (McKenna & Biloslavo, 2011).

To respond responsibly to such challenges, I suggest that managers need diverse conceptual skills and wisdom faculties, combined with an ability to balance the interests of different stakeholders by adapting and shaping a variety of economic, social and environmental contexts, over short, medium and long-time frame lines.

Fish (2013) has argued that in Australian undergraduate business and management education institutions the underpinning philosophy, learning and scholarship of practice are predominantly aligned with the western world management education tradition. Such educational tradition is based on egoistic professional objectives that embrace specialised disciplines to meet industry expectations. However, after several corporate scandals that were not just the failure of a few 'rotten apples' (P. S. Adler, 2002), and in the aftermath of the climate change debate and global financial crisis (GFC), there was a call for a new management morality. Consequently, topics about management ethics, social responsibility and sustainability have proliferated either as standalone or imbedded programs. Under government and industry pressure, apart from discipline and technical skills, there is an expectation that Australian universities will incorporate in their business management curriculum consideration of sustainability, ethics and employability skills. Fisher and Bonn (2011, 2017) conducted a snapshot, web-based content analysis of business and management courses in 40 Australian universities to see if they included the concept of sustainability in either the title or description of their courses. Three-quarters of the courses failed to include even one subject that mentioned sustainability in their title or description. Stand-alone courses, that addressed the study of ethics, proliferated in undergraduate management education, even though the research on the effectiveness of the stand-alone courses, in comparison to the integrated mode of delivery is inconclusive (Prior Jonson et al., 2015). It has also been found that the industry deems Australian graduates not 'job ready' due to a lack of soft, non-technical, employability or generic skills

such as communication, teamwork, problem solving, initiative, decision-making and ethics (D. Jackson, 2009; D. Jackson & Hancock, 2010). Hence, employability skills, conceptual ambiguity, development, measurement, transfer and alignment with industry present a significant challenge for Australian universities.

As a sequel to the previously mentioned Fish's argument and Fisher and Bonn's research methodology I conducted a snapshot, web-based program and course content analysis at the Australian university where the data for this study were collected. In the School of Management, four undergraduate programs with eight common core and 32 major and minor courses (subjects), which in total contained 221 itemised learning outcomes, were analysed. The aim was to determine if they included in their learning outcomes key wisdom enabling words, identified in my study. Sourced from Table 3.1, p. 84 and the Students Perceptions of Wisdom Enablers Questionnaire (SPWEQ) available in Appendix A, p. 192, the following key words related to wisdom enablers were used to calculate the number of hits (mentions) in the learning outcomes (the numbers in brackets present the number of mentions): wisdom (0), wise (0), cognitive (1), problem (15), solving (7), critical (34), critical analysis (15) critical thinking (0), reason (1), logic (2), practice (34), judge (3), complex (0), ambiguity (0), team (12), lead (7), emotion (0), moral (0), ethics (14), share (0), common (0), diversity (2), reflect (10), evaluate (37), feedback (2), knowledge (17), uncertainty (0), creativity (2), intuition (0). The word 'sustainability' had seven hits in all learning outcomes. I would argue that this snapshot research supports my previous assertion that management education seems to assume either that teaching of wisdom is unimportant or might be a by-product of other more important learning outcomes.

Notwithstanding the extensive research in the management education literature elaborated in Chapter 2, the literature is inconclusive about the relationships and only rarely provides real, empirical evidence that the current management education practice is or is not contributing to the development of students' wisdom. However, if we synthesise research about sustainability, ethics, generic skills and results of wisdom enablers mentions noted in this study, we might conclude and assume that there are elements of indirect and implicit teaching of wisdom. Moreover, regardless of some attempts to promote and justify the introduction of explicit teaching for wisdom in management education (Bachmann, 2014; Intezari & Pauleen, 2016; Küpers & Pauleen, 2015; McKenna, 2017) there is still no tangible evidence that the current management education practice, especially at the undergraduate level, is or is not related to the development of students' wisdom. This gap in the research literature warrants investigation.

## 1.2 Research aims and objectives

The aim of this research study was to examine the relationships of association between the current level of students' wisdom and their perceptions of the presence of wisdom enablers in undergraduate management education. In each of the primary areas of interest (management education and wisdom), there is an extensive literature. However, their combination is in its infancy, as elaborated in more detail in Chapter 2.

Figure 1.1 presents the research aims in terms of the relationship between the two variables, undergraduate management education as an independent variable and wisdom as a dependent variable. Management education can have an impact of expansion or contraction on the development of students' wisdom.



Figure 1.1 Relationship between management education and students' level of wisdom

Students enter undergraduate management education and exit after several years of education, with a certain level of wisdom, possibly a very low one. As indicated by the dotted lines shown in Figure 1.1, their educational experience might influence the wisdom level in both directions. Hence, this study sought to assess the relationship of association between the two variables.

First, this cross-sectional, interdisciplinary study examined the current level of students' wisdom across the number of students' demographic factors such as ages, genders, domiciles (local vs international), stages of study, employment status, types of financial support and life hardship experiences. Second, the research examined students' perceptions of the presence of wisdom enablers in undergraduate management education. Last, the research outlined the relationship of association between students' perceptions of the presence of wisdom enablers, as wisdom promoters in undergraduate management education. In brief, the study investigated the following research questions:

- 1. What is the current level of wisdom of undergraduate management education students in one Australian university?
- 2. What are undergraduate management education students' perceptions of the wisdom enablers in their undergraduate management education?
- 3. What is the relationship of association between the current level of wisdom of undergraduate management education students and their perceptions of the wisdom enablers in their undergraduate management education?
- 4. What is the relationship of association between the current level of wisdom of undergraduate management education students and life wisdom enablers?

## 1.3 Theoretical models and methodology

This research adopts constructionism as an epistemological stance and realism, specifically critical realism, as an ontological theoretical perspective. Constructionism deems that 'truth and meaning do not exist in some external

world' (Gray, 2014, p. 20), but subjects construct such meaning and understanding by their interactions where the meaning is not discovered, but developed, shaped and transmitted within social contexts. The term 'critical realism' evolved from transcendental realism coined by Bhaskar (2008), who makes a distinction among generative mechanisms, events and experiences in the domains of real, actual and empirical reality. Notwithstanding the acceptance of epistemic relativism, critical realism does not accept ontological and judgemental relativism (Sayer, 2000).

Congruent to the ontological and epistemological context, the focus of this study is on the empirical reality of wisdom based on experiences in a specific social context. Such experiences are the result of the application of socially influenced conceptual frameworks and theories of wisdom in interpreting such experiences. Adopting critical realism as theoretical perspectives, I assume that the object of the research – wisdom – is independent of the researcher and can be measured. I remain conscious that this task can be very difficult and such a scientific method that seeks to tap reality can sometimes be fallible due to the inherent subjectivity in the creation and interpretation of such reality; in this case, wisdom (Gray, 2014). Implicit theories of wisdom are used as an overarching theoretical framework of wisdom.

Following this argument, the theoretical reasoning of this study is deductive. Its purpose is explanatory, and its time frame cross-sectional, by using descriptive surveys. This study adopts a mono, multi-strand quantitative method. Two sets of quantitative data were collected from the same population of participants at the same time. The two datasets were kept independent during the initial analysis, and later, to calculate their transformation, combination, comparison and interrelation, they were converged. Data were collected in a context where I had no direct professional involvement with the participants. Two questionnaires with closed-ended questions and rating scales, which yielded ordinal types of quantitative data, were used. The first questionnaire was a standard, previously validated 3D-WS questionnaire (Ardelt, 2003); hence, no pre-testing was conducted. However, for the second questionnaires a thematic analysis approach was taken in its design. This questionnaire was developed

specifically for this project and required reliability and validity testing prior to actual data collection.

Data analysis was conducted sequentially. In the first phase, quantitative data from both databases were kept separate. Data were categorised, cleaned and coded. Missing or degraded data were separated for exclusion. Cleaned datasets were separately analysed to measure differences and variances of students' wisdom scores and perceptions of wisdom enablers against students' demographic attributes. In the second phase, the two sets of quantitative databases were converged to measure the correlation and relationship of association between students' wisdom scores and students' perceptions of wisdom enablers in undergraduate management education.

## 1.4 Research contribution and limitations

This study closes the gap in management education research by providing empirical evidence of wisdom development among undergraduate management education students and the presence of identifiable wisdom enablers in the selected current undergraduate management education programs. It also discovered a statistically significant correlation between students' levels of wisdom and their perceptions of wisdom enablers in the current management education programs. The study also affirms that the wisdom enablers in the investigated undergraduate management education programs are statistically good predictors of the level of students' wisdom.

However, the study has its limitations, which are a direct consequence of its cross-sectional nature, sample type and size. The results of the study cannot be generalised and are applicable only to the specific undergraduate management education context in which the data were gathered. However, the study can be fully replicated among the similar student cohorts from other universities, other study programs and other countries. Furthermore, due to its cross-sectional character, the study only explains the relationship of association between the two variables, not their causality. Nevertheless, it is

argued that this study justifies some future longitudinal studies to identify any possible causal relationships.

## 1.5 Thesis outline

Chapter 1 provides a brief context for the study. Chapter 2 provides a literature review, including characteristics of a wise person, wisdom measurement, teaching of wisdom and congruence between wisdom and management education. Chapter 3 outlines the methodology and research design, including the theoretical perspective, sampling, data collection and data analysis. Chapter 4 presents the results of a quantitative statistical analysis, including reliability, validity and hypothesis testing. In Chapter 5, a discussion and interpretation of the results are presented, and finally in Chapter 6 the conclusion, the contribution to existing knowledge and practice and research limitations are discussed.

## 1.6 Chapter summary

In the introductory chapter, I elaborated the rationale of the study, arguably grounded on the incongruence between the character of contemporary management education and the requirements for appropriate knowledge, skills and wisdom of future managers to wisely respond to the political, economic, social and environmental challenges of our time. However, there is a scarcity of empirical evidence to support such argument. Hence, the aim of this study was to provide empirical evidence of the relationship between the students' wisdom and wisdom enablers in contemporary undergraduate management education. In the next chapter, I analyse the available literature to clarify how this thesis will contribute to current understandings of wisdom development in business management education.

# **Chapter 2**

# **Literature Review**

The purpose of this chapter is to provide a summary of literature that is relevant to the research questions and this study. To set a framework for wisdom definition and a platform for the first research question, in the first part I elaborate what different civilisations, cultures and disciplines deemed as wisdom and who they considered as a wise person. The second part discusses endeavours to measure wisdom and elaborates methods of wisdom measurement as a pathway to the selection of the quantitative research instrument. The third part focuses on controversies about wisdom education in general, and dilemmas if wisdom can or cannot be taught and what pedagogy should be implemented in teaching for wisdom. The last part turns specifically to management education to identify prevalent underpinning management philosophies, pedagogies and educational practices. Finally, a synthesis of findings and conclusion on the main research question are presented to develop an argument for inclusion of wisdom into management education.

### 2.1 What makes a person wise?

The concept of wisdom is almost as old as human civilisation and has transcended and stood the test of time. Throughout history, humans have had a different understanding of wisdom's meaning and interpretation. Labouvie-Vief (1990) asserts that the historical trajectory of wisdom can be explained through a duality of two modes of knowing that ideally function in a balanced dialogic relationship. The first mode is Mythos, where truth is psychological, experiential, oral, narrative, informal and subjective. The other mode is Logos, with meaning based on reason, explicit premises, stable principles, precise rules and solution algorithms, which can be validated through debate and analysis. Truth is logical, knowledge mechanical, computable and deductive. According to Labouvie-Vief (1990), the pre-Platonic time was Mythos, exhibited in Homer's poems, while the Logos appeared following the societal shift from

communities of gatherers, hunters and nomads to complex social organisations and networks. The result was the emergence of the concept of mind as a source of virtue and wisdom, where the body is evil, a source of lusts and desires. However, more recent interest in the topic of wisdom reveals the emergence of a new paradigm in the western intellectual tradition (Birren & Svensson, 2005). There has been a shift in the primacy of objective forms of knowledge to more subjective organismic forms to get a more complete picture of reality and human mental functioning.

Regardless of historical, cultural, social and political contexts, humans appear to be in search of the knowledge of the fundamental truth about living a meaningful life and what is good and important (Fischer, 2015; Grimm, 2015). There is a common thread that wisdom has been a pursuit of universal, timeless and unchanging truth, whereas the concept of universal truth has varied throughout history, subject to the particular value system of the historical, cultural, social and political context. Saul (2004), paraphrasing Giambattista Vico, claims that some uniform ideas that developed independently of each other at different times and geographic locations to people anonymous to each other must have a common thread of truth. Wisdom relates to values. Hence, there must be enough room for ignorance, dissonance and surprise. Wisdom flourishes in the space between total order and total contingency, thus there is little room for wisdom in rationally or institutionally controlled societies based on the Cartesian quest for certainty (Assmann, 1994).

Instead of using a chronological approach and elaborating the meaning of wisdom in a specific historical era, in this section I prefer to use 'Evolutionary Hermeneutics' (Csikszentmihalyi & Rathunde, 1990), a term used to explain the meaning of concepts that pass the test of the time and can be brought into a present body of knowledge and into contemporary problems. A thematic approach is an attempt to identify and provide an overview and integration of common themes, uniform ideas about wisdom that have pervaded across different historical contexts. Such themes are classified in comparatively timeless categories by answering a simple question: What makes a person wise?

For millennia, the research for an answer on this question was in the disciplinary domain of philosophy, but recently psychology has taken a leading role in studying the concept of wisdom (Assmann, 1994; Birren & Svensson, 2005; Trowbridge & Ferrari, 2011). Such transiton will be analysed and elaborated in more detail in the consequent sections of this chapter. In the following paragraphs, I only identify the main themes and introduce different definitions of a wise person from the perspective of each theme.

Throughout history, persons were considered wise if they:

- a) followed instructions given by a divine being or an authority (Birren & Svensson, 2005; Curnow, 2008);
- b) abided to the laws of nature (Hazlitt & Hazlitt, 1984);
- c) minimised suffering and pain (Narasu, 1993);
- d) relied on personal observation and experience (Birren & Svensson, 2005; Sivananda, 2000);
- e) used reason and logic (Aristotle, 1908);
- f) followed moral codes (Kant, 1898);
- g) possessed certain psychological faculties.

The following sections explain each theme in more details.

#### 2.1.1 Following instructions given by a divine being or an authority

Ancient Egypt books of Ka'Gemni and Ptah-Hotep emphasise that the practical virtues of wisdom are patience, honesty and conformity, while greed and selfishness are human vices (Curnow, 2008). A wise person is quiet in following instructions and exercising obedience as a noble deed because 'that which is desired by the God is obedience; disobedience is abhorred of the God' (Ptah-Hotep, 1906, p. 18). Takahashi and Overton (2005) explain that Egyptian texts, similarly to ancient Mesopotamian texts, give instructions on how to succeed in the world by using proverbs that give a fragmented insight of the world. This is achieved by compiling a list of words that represent an integrative approach to wisdom associated to rulership. In the ethical sense, the words instruct how to live, and in the scientific sense how the world works. The Hebrew books of the Old Testament outline the gap between the divine being and humans claiming that '... the LORD giveth wisdom: out of his mouth [cometh] knowledge and

understanding' (Proverbs 2:6, The King James Version of The Holy Bible). They instruct humans to fear God and succumb to unconditional obedience because 'The fear of the LORD [is] the beginning of knowledge: [but] fools despise wisdom and instruction' (Proverbs 1:7, The King James Version of The Holy Bible).

In Christianity, the fear of God is the beginning of all wisdom and only the divine being is the ultimate truth and the source of wisdom, while humans can gain wisdom only through simple faith and moral perfection (Birren & Svensson, 2005). According to Aquinas (1947), apart from philosophical knowledge, there is a need for knowledge by God's revelation and the knowledge by revelation must be accepted by faith because God is the ultimate wisdom, '... the highest cause of the whole universe, namely God, is most of all called wise' (p. 6). Boethius (2009) asserts that God is an originator and the end of all things, is perfect and nature starts from the perfect, and then degenerates to the weaker forms.

In Hebrew language the word 'hokmah' or wisdom is used to denote four different things: a) knowledge of God; b) knowledge of workmanship; c) acquisition of moral principles; and d) notions of cunning and subtlety (Maimonides, 1904). Therefore, a wise person is one who possesses any of those faculties. The 'wise' person can deploy their wisdom to acquire four kinds of perfection: perfection that regards property, the perfection that regards the form and the shape of the body, the perfection that regards moral and excellency in a person's character, and last the metaphysical perfection that regards God. According to Maimonides (1904) prophets distinctly claim that '... the knowledge of God, i.e. true wisdom, is the only perfection which we should seek, and in which we should glorify ourselves' (p. 560).

We can conclude that across different ancient epochs, in different ancient social contexts from the Sumerians, Egyptians, Hebrews and later to Christians, wisdom was deemed as a product of religion, authority and tradition, and individuals were deemed wise if they possessed revealed knowledge and exercised unconditional obedience to the authority of the revealed knowledge.

#### 2.1.2 Abiding by the laws of nature

While the first wisdom theme was construed by religion, in the second theme religion was displaced by nature and natural laws to which humans have a relationship of inferiority. Stoics accept outer world challenges as given. They succumb to the laws of nature and request from people to have the ability to adapt to these laws. They profess wholeness and relatedness of everything in the universe. Hence, Marcus Aurelius proclaims that 'for everything that exists is in a manner the seed of that which will be' (Hazlitt & Hazlitt, 1984, p. 139). Thereupon, he gives advice on how to be wise: 'pass then through this little space of time conformably to nature, and end thy journey in content' (Hazlitt & Hazlitt, 1984, p. 140). Wise is the one who uses wisdom that instructs them in general principles, not instrumental knowledge. The wise person is governed by reason, not passion, and is content with existing. Every act is done conscientiously to satisfy nature. The wise person is content with their present state, what is within their zone of control and influence, and accepts the inevitable because, according to Seneca 'the more the bird flaps and flutters in the snare, the surer she is caught' (Hazlitt & Hazlitt, 1984, p. 40). The wise person is always ready and free of surprises, prepared for contingencies either bad or good – to be in control of the situation.

Congruent to the Stoics, Chinese wisdom according to Lao-Tzu's teaching emphasises obedience to natural law and restraint from excessive effort, plush extravagance, easy indulgence and any interference into a natural cause of things because the course of nature is such that:

'What was in front is now behind; What warmed anon we freezing find. Strength is of weakness oft the spoil; The store in ruins mocks our toil' (Lao-Tzu, p. 9).

In *The Essays* by Renaissance French philosopher Montaigne, practical wisdom implies life lived in accordance with nature because 'whatever happens contrary to the course of nature may be troublesome; but what comes according to her should always be pleasant' (Montaigne, 1877, Book 3, Ch 13). A wise

person is always aware of their ignorance, and knows that they can learn from others, and that a person can never be wise but by their own wisdom.

In conclusion, in these teachings of wisdom wise persons perceive themselves as a part, a component of the bigger system of nature that they have to discover to be able to adapt to not to conquer.

#### 2.1.3 Minimising suffering and pain

The teachings of Buddhists, Epicurus and Lao Tzu are concerned with the problem of pain and elimination of suffering caused by it, and this can be done by disciplining our needs, wants and desires. Love and purity are the ultimate wisdom to the Buddhists. To reach salvation and wisdom they must '... renounce all selfish desires, and live to build up a character of which the outward signs are purity of heart, compassion for all, courage and wisdom born of calm insight into truth' (Narasu, 1993, p. 38). According to Epicurus (Cahn, 2012), health of body and peace of mind are the ultimate objectives of life, and they can be achieved if we pursue pleasure because pleasure is the absence of physical pain and a mind free from anxiety. Such a state of pleasure is not the result of hedonistic self-indulgence, but the consequence of moderation and temperance because 'barley cakes and water provide the highest pleasure when someone in want takes them' (Cahn, 2012, p. 333). Hence, the wise person is happy with a little. Succumbing to desires obscures the view of the Mother of all things, therefore:

'Always without desire we must be found,If its deep mystery we would sound;But if desire always within us be,Its outer fringe is all that we shall see' (Lao-Tzu, p. 1).

In summary, the more a person knows about their desires, the less they are controlled by them and the wiser the person is.

#### 2.1.4 Relying on personal observation and experience

While the previous wisdom themes have similarities regardless of their either religious or philosophical roots and historical contexts, this theme turns to empiricism, which is interpreted differently in the east than in the west. The eastern empirical wisdom of the *Upanishad's Vedas* and Buddha's sutras is quite different to western empiricism. It is rather reliant on personal experience than reason, and wisdom can be attained through the practice of selfdevelopment, meditation and yoga, because 'The Self is one. Unmoving, it moves faster than the mind. The senses lag, but Self runs ahead. Unmoving, it outruns pursuit' (*The Upanishads*, 1919, p. 15).

The object (world) and subject are inseparable, and this metaphysical split is absent with strong 'relatedness' of everything including world and self. Although the subject is affected by the quality of their nature and three Gunas – Sattwa, Rajas and Tamas – the wise person has no attachment to the object and grieves 'neither for the living nor for the dead' (Sivananda, 2000, p. 19) ... 'is not shaken by adversity ... does not hanker after pleasures ... neither rejoices nor hates ... completely casts off ... all the desires of the mind and is satisfied in the Self by the Self' (p. 27). Words are insufficient and not necessary for wisdom. Things must be instantly experienced to be known, the subject must be a 'childlike' being, flexible and sensitive (Takahashi, 2000). The subject can be wise only through personal observation and experience because 'he who seeth inaction in action and action in inaction, he is wise among men; he is a Yogi and performer of all actions' (Sivananda, 2000, p. 42).

Contrary to largely eastern views, western empiricism and the Renaissance with the rebirth of philosophy, literature and culture, brought to the stage science and scientific inquiry. The only real world is a material world (material ontology) and consequently, wisdom can be only scientific knowledge. The purpose of the scientific method is not only to discover the laws of nature, but to conquer them in contrast to the teachings of Lao-Tzu and Montaigne who professed compliance with the natural laws. Francis Bacon claimed that the wise man [*sic*] uses a positivistic approach and discovers natural laws by using the inductive method as the way to be knowledgeable (Birren & Svensson, 2005). Bacon claimed that the four species of idols and false notions – tribe idols, den or cavern idols, market idols and theatre idols – beset and preoccupied human consciousness and understanding, therefore only 'the formation of notions and axioms on the foundation of true induction is the only fitting remedy by which we can ward off and expel these idols' (Bacon, 1901, p.

20). He asserts that nature is so subtle that meditations, speculations, or any other theories of humankind are insane and only science with the inductive method 'is such as to leave little to the acuteness and strength of wit' (p. 84).

John Locke stated that the wise man [*sic*] can obtain knowledge and wisdom by reflecting and abstracting from sensory and personal experience, asserting that such wisdom is not innate and imprinted, but 'acquired by thought and meditation, and a right use of their faculties ... by a right and careful employment of their thoughts and reason' (J. Locke, 1824, p. 66). Notwithstanding references to wisdom, Locke situated it in the context of knowing God by asserting 'that wise men of all nations came to have true conceptions of the unity and infinity of the deity' (p. 66).

In comparison to the previous themes where a wise person subordinates to the bigger system, either the divine being or to nature, western empiricism introduces a homocentric approach in which a wise person is above the bigger system, aiming not only to understand but also to conquer it.

#### 2.1.5 Applying reason and logic

Plato and Aristotle in their epic works have a dualistic and exclusionary concept of wisdom and associate it only to the human species. Thus, in Platonic dialogues we can distinguish the concept of *sophia* associated with a contemplative life, *phronesis* as a practical wisdom and *epistome* as a form of scientific knowledge (Osbeck & Robinson, 2005; Robinson, 1990). In this wisdom overview, aligned with the purpose of this study, only practical wisdom is elaborated in more detail.

Plato's wisdom is the virtue of reason and its application in teaching, social and political organisation. Everyone should strive for wisdom. According to Plato (1961), the statesman in making laws should have in view all the four cardinal virtues: prudence, justice, temperance and courage. The greatest ignorance is to know and not to do the good and noble, being aware of goodness, but embracing and practising evil. It is ignorance of the highest things and the real knowledge that causes the ruin of civilisation, not a lack of instrumental knowledge. It is wise not to give power to individuals who possess only instrumental knowledge because they must be stigmatised as ignorant, even

though they are versed in all sorts of mental dexterity. Nevertheless, those whose mental condition is the reverse of this shall be entitled 'wise', even if 'they spell not neither do they swim' (Plato, 1961, p. 211). The most pleasant, wisest and the noblest lives are as follows: a) the temperate; b) the rational; c) the courageous; and d) the healthful life. The role of education is to develop wisdom, not only craft, because it is all about how the city as a whole would best deal with itself and with the other cities, that it can be called wise city (Plato, 1961). Plato deductively concludes it is necessary that the private man [*sic*] should be wise in the same ways and because of the same things as the city was wise. Contrary, if the focus in education is only on instrumental knowledge and 'craft', it can cause vulgarity of their pursuit, greed and covetousness.

Aristotle (1908) distinguishes between practical and speculative wisdom, which correspond to the two parts of the human soul: rational and irrational. Practical wisdom is a demonstration of the ability to deliberate about what is a good life for self, but also about the good life in general. It balances particulars with the universals because only a man [sic] who 'knew that light meats are digestible and wholesome' ... and knows ... 'that chicken is wholesome is more likely to produce health' (Aristotle, 1908, p. 103). Practical wisdom, concerned with universals and particulars, can be obtained with experience. Hence, young people do not possess practical wisdom due to the lack of deliberating experience and inquiry into a particular kind of things. Thus, a natural predisposition for judgement, intuitive reason and understanding correlates to life experience and ageing. Reasoning is a prerequisite for excellence in deliberation. The excellence in deliberation requires correctness to produce a good outcome, but also by right means because good ends can be attained by false premises. Practical wisdom closely relates to understanding because we need to understand things that can be questioned and deliberated, not the things that are invariable and unchangeable or that come into being. Furthermore, Aristotle (1908) asserts that understanding is not an acquisition or possession of practical wisdom, it is an exhibition of opinion to make a sound judgement and appropriate discrimination of the equitable. As previously stated, a person can deliberate only about what is variable. We can consequently conclude that practical wisdom is the variable part of the rational soul. The person cannot deliberate about necessity (that is, science), and

something that cannot do or make (that is, art), but only about something that is good or bad for a person. Practical wisdom is concerned about the proper means for proper ends that are desired by moral virtue where cleverness is one of its faculties (Aristotle, 1908). To be wise a person must be good because virtue in the strict sense involves practical wisdom. There is no goodness without practical wisdom, but there is no practical wisdom without moral virtue.

It took almost 2000 years, until the age of Enlightenment, for reason and logic to be resurrected and to reappear in the agenda of wisdom discourse. The French philosopher Descartes, writing in the 17<sup>th</sup> century, put into focus reason and deemed that wisdom could only be attained through cognitive contemplation, reflection and ethical deliberation (Birren & Svensson, 2005). Descartes is cognisant of the deceptiveness of senses and distinguishes the corporeal and the physical body from the mind, but also dialectically acknowledges their symbiosis because 'thought is an attribute that belongs to me ... I am, I exist ... Just when I think ... I am not more than a thing which thinks' (Descartes, 1952, p. 79). Notwithstanding his devotion to a doubting mind and to questioning everything, Descartes admits that religious wisdom rests on revelation and faith, that there is an idea more perfect than the human mind and such an idea rests with God.

We can conclude that, according to the rational and logical school, persons are wise, only if they can subordinate their passions and desires to reason, differentiate real knowledge from instrumental knowledge, discriminate universals from particulars and produce good ends with right means.

#### 2.1.6 Following moral codes

German moral philosopher Kant (1898) broke with empiricism and human a priori knowledge about transcendent objects with his moral philosophy based on human autonomy and freedom to impose laws to oneself. Freedom is critical because morality judgement presupposes that individuals have an opportunity and ability to act differently. Moral judgement is applicable only to a free agent who, at the time of action, has power and is in control of their actions, when the causes of the actions are within the person. There is mutual reciprocity between freedom and morality because the full exercise of freedom is to act morally and

by acting morally people exercise and demonstrate freedom. To act there has to be a will based on some principle called the *maxim*. It is the set of rules and policies that prescribe – what to do and why – such as 'to increase my fortune by every safe means' (Kant, 1898, p. 115). Maxims are sets of rules and principles that can be material and formal. The material principle corresponds to a hypothetical imperative that prescribes a rational act concerning how one should act to satisfy or gratify some desire, such as if you have a desire for a coffee at a café. The formal principle has no reference to the desires and corresponds to a categorical imperative that applies to anyone unconditionally as a universal moral law. The categorical imperative prescribes to 'act only in accordance with that maxim through which you can at the same time will that it become a universal law' (Kant, 2002, p. 37) such as helping others in need. Notwithstanding the freedom to choose maxims, our actions are not free because they are caused by desires, as representation of nature in us. These desires determine the law and the course of our action governed by the principles of a hypothetical imperative. The only way to gain autonomy and have freedom is to act according to formal principles and the categorical imperative. Even when formulating maxims for satisfying our desires, we need to be cognisant of permissibility of our maxims to become universal moral laws. Therefore, we can conclude that there is reciprocity of freedom and unconditional practical law. Human reason produces not only consciousness about moral laws, but also an idea of an ideal world in which prevails the complete virtuousness and happiness that Kant calls the highest good (Kant, 1898). The highest good is not the separate end or another particular moral duty, but a sum of all existing particular moral duties. The condition of reaching the highest good is a belief in the immortality of the soul and the existence of God.

Kant's moral philosophy is based on reason and distinguishes scholastic philosophy, which is purely theoretical, and cosmic philosophy, which is more worldly. The objective of the cosmic philosophy is the search for wisdom according to the 'categorical imperative' and a person is wise if they conduct their life according to the categorical imperative and being dutiful in promoting the highest good. Congruent to the western version of moral philosophy in the East is Confucius' moral teaching that insists on a purity of heart, moral altruism and excellence. It can be mastered through self-discipline and self-restraint by studying rituals and rules that teach how to reconcile personal desires with family and community, with especial emphasis on filial piety, extended family, and vertical and multi-generational lineage. Such concern about others and deprecation of self-aggrandisement is reflected in the practice of the 'Golden Rule', which is congruent to Kant's 'Categorical Imperative': 'What you do not want others to do to you, do not do to others' (B. Watson, 2007, p. 109) and in the motto and life mission of Fan Zhongyan, a Confucian scholar and official in Song-dynasty China, that 'scholars-officials should be the first to worry about the world's troubles and the last to take pleasure in its happiness' (Yang, 2016, p. 4). To be wise a person desires virtue because those who are without virtue 'cannot endure straightened circumstances, nor can he enjoy favourable circumstances for long' (B. Watson, 2007, p. 32). While humans can learn from each other, everyone must find their own way to wisdom.

In brief, according to Kant and Confucius, a wise person follows the moral codes of the Categorical Imperative and the Golden Rule to achieve intrapersonal harmony and the altruistic highest good for all of humanity.

#### 2.1.7 Possessing certain psychological faculties

Psychology as a scientific discipline was founded in the late 19<sup>th</sup> century, and after several decades of neglect, the studies of wisdom had been taken over from philosophy by psychology (Small, 2004a). Grimm (2015) hypothesises that wisdom research lost prominence in that period due to social and cultural doubt about the existence of objective facts about well-being and that the objective facts can be known. The tide changed in the last three decades of the 20<sup>th</sup> century, and a number of researchers approached wisdom from different angles, bringing different dimensions and dynamics into wisdom discourse. Those dimensions and dynamics include an attempt to a) define wisdom, b) conceptualise and measure wisdom, c) understand the development of wisdom throughout life span and ageing, d) investigate measurement and the plasticity of wisdom, e) understand wisdom biology, and f) apply psychological knowledge about wisdom in life contexts (Baltes, 2004; Baltes, Staudinger,
Maercker, & Smith, 1995; Birren & Fisher, 1990; Jeste et al., 2019; Staudinger & Glück, 2011).

Psychological research of wisdom created two conceptual dimensions or research fields by distinguishing personal wisdom from general wisdom (Staudinger, 2008). Personal wisdom refers to the first-person ontology and individuals' personal experience in their personal lives, including insight into their personal selves. General wisdom relates to the third-person ontology and observers' perspectives and insight on life in general when an individual's own life is not directly affected (Staudinger, 2013, 2019). Distinguishing the difference and asymmetry between personal and general wisdom is important due to Solomon's paradox, because people often tend to be wiser when they need to reason about other people's problems than when they need to reason about their own problems (Grossmann & Kross, 2014).

Furthermore, psychological researchers of wisdom developed two different theories: the implicit theory of wisdom and explicit theory of wisdom (Sternberg, 2013a). The implicit theory of wisdom – also known as the folk, common sense approach, naive psychology and ethno-psychology (Baltes, 2004; Baltes & Staudinger, 2000; Bluck & Glück, 2005) - relies on the beliefs or mental representations that lay people have about wisdom and what characteristics wise people have (Baltes, Glück, & Kunzmann, 2002; Glück & Bluck, 2011). This includes cognitive, reflective judgement, socioemotional and motivational components. The cognitive component assumes an insight into oneself, other people and the entire world. The reflective judgement component relates to taking multiple perspectives, including self-examination and self-insight. The socioemotional component relates to emotional intelligence, regulation of emotions and tolerance of ambiguity. Last, motivational components transcend self-interest to the well-being of other people and the entire world (Staudinger & Glück, 2011). The most common methods for assessing people's conception of wisdom are wisdom descriptors studies and real-life approaches that include nominations of wise individuals, autobiographical narratives, in-depth gualitative interviews and experimental designs (Weststrate, Bluck, & Glück, 2019). I turn to these in the following paragraphs.

In a pioneering work by Clayton (1976), and seminal work by Clayton and Birren Jr (1980), the empirical studies involved population sample of different age groups and genders. Participants had to make a judgement how similar were the number of stimuli and descriptors to their perceptions of wise people. A cluster of similarity crystalised around three main wisdom domains: cognitive, affective and reflective. Wisdom was considered as the ability to grasp human nature, which operates on principles of contradiction, paradox and change (Clayton, 1982). Holliday and Chandler (1986) conducted several studies with around 500 participants, investigating whether wisdom can be understood as a prototype or a central concept. Such categorisation consisted of a) collecting and analysing descriptions of wise people, b) generating the prototype typifying the category of wise people, and c) empirically demonstrating that information about wise people was processed in a manner consistent with categorisation theory. The authors deny a monistic nature of wisdom because wisdom is not technical knowledge, not mere intelligence, but a balance of technical, practical and self-reflective knowledge. A truly wise person deals in essences, avoids impromptu actions and often refrains from action at all. Holliday and Chandler conclude that wisdom can be thought as a well-defined, prototypically organised competency descriptor.

Sternberg (1985, 1990, 2000) elaborated several implicit theory studies with an interest in the correlation between wisdom, intelligence and creativity. He found a weak correlation between creativity and wisdom. In his studies, business professors even perceived negative correlation between wisdom and creativity, which is a very interesting finding for our future discussion. Intelligence and wisdom were perceived more similarly. There are three aspects of intelligence – analytical, creative and practical – and wisdom is an outgrowth of practical intelligence that is based on tacit knowledge. While intelligence relates to a domain or formal knowledge (Csikszentmihalyi & Rathunde, 1990) tacit knowledge is associated with a field or informal knowledge that is action oriented, relevant to the attainment of goals that people value, and is obtained without the help of others. It increases with experience on a job, and from what people learn from such experience. According to Sternberg's implicit theory, the wise individual has similar analytical reasoning skills as an intelligent individual, but with a certain sagacity that is not always found in the intelligent individual.

Such sagacity is manifested in an ability to listen and evaluate the advice of others in dealing with different kinds of people. It also manifests in the ability to process and evaluate information before making decisions by making good judgements with short and long-term consequences. The wise individual knows how to use the experience of others, and to learn from their own and the mistakes of others, ready to embrace changes if experience dictates it. Consequently, it is not surprising that there was a weak correlation between wisdom and creativity because a wise person is a conserver of life experience while a creative person is one who defies life experience.

McKee and Barber (1999) and Montgomery, Barber, and McKee (2002) used an a priori phenomenological method to identify key features of lived wisdom. The method was not based on practical observation, but on an intuitive insight of a participant's inner state, to discover the essence of subjective experience. According to the authors mentioned at the start of this paragraph, wisdom is knowledge of overcoming illusion, because wisdom is seeing through such illusion. The seeing through illusion is an ability to avoid powerfully appealing life errors, temptations and seductions.

Biloslavo (2013) and Biloslavo and McKenna (2013) developed an Integrated Wisdom Development Model, arguing that wisdom consists of four dimensions: cognitive, conative, affective and moral. A person must develop in all four domains to be deemed wise, because none of them individually is sufficient for the development of wisdom. Wisdom develops in three stages: formal, systematic and metasystematic. A wise action is a synthesis of the four wisdom dimensions at the metasystematic level.

Contrary to implicit theory, explicit theories of wisdom are a construction of experts, not of lay people. According to explicit theory, wise people demonstrate exceptional knowledge of wisdom acquisition, exceptional knowledge about the use of wisdom, exceptional knowledge about life contexts and exceptional social functioning (Baltes et al., 2002). Birren and Fisher (1990) deem people wise if they are empathic, understanding, open to change, have a highly developed personality, transcend narcissism, are aware of their own limitations, accept ambiguous situations, probe for truth and avoid rigidity. Attaining wisdom occurs on the intrapersonal, interpersonal and transpersonal level,

manifesting itself in feelings, thoughts and actions. Therefore people are only wise if they demonstrate traits in all cells: a) intrapersonal, including self-development, self-knowledge, integrity; b) interpersonal, including empathy, understanding and maturity in relationships; and c) transpersonal, including self-transcendence, the recognition of the limits of knowledge, philosophical and spiritual commitments (Achenbaum & Orwoll, 1991; Orwoll & Perlmutter, 1990). Wise people know how to construct a pattern that leads to a good life. Wise people exercise self-control, self-knowledge, breadth and depth, constancy and hierarchical ranking of commitments (Kekes, 1983).

According to Kitchener and Brenner (1990), reflective judgement is a central characteristic of wisdom, and a wise person can distinguish between well and ill-structured problems. A wise person can also recognise uncertainty and relativity of multiple perspectives, can overcome such relativities, find shared meanings, evaluate alternative interpretations, develop synthetic views, and offer tentative solutions for problems at hand. Kennedy Arlin (1990) argues that wisdom is not only the ability to solve problems and make good judgement, but even more: the ability to ask questions and find problems. The basis of questioning are doubts, ambiguities and problem finding. This includes the following: a) a search for complementarity; b) detection of asymmetry; c) openness to change; d) pushing limits; e) a taste for problems of importance; and f) preference for certain conceptual moves. This is because wise people are open to new information, and they are willing to change their own views.

Explicit theories focus on cognitive and behavioural expressions of wisdom, and the processes involved in the joining of cognition with behaviour. There are three groups of explicit theories of wisdom (Baltes et al., 2002; Baltes & Staudinger, 2000): a) wisdom as a personal characteristic or a personality disposition; b) wisdom as a post-formal and dialectical thinking; and c) wisdom as an expert system dealing with the meaning and conduct of life, as developed by researchers at the Max Planck Institute in Berlin.

Sternberg (1998) developed a balance theory of wisdom as an application of tacit knowledge to achieve a common good by balancing intrapersonal, interpersonal and extra personal interests, and balancing responses to environmental contexts by adaptation and shaping the existing context and

selecting new environmental contexts. Balance theory is an interaction between individual and situational context for achieving ends that yield common good. The concept of common good differentiates wisdom from practical intelligence because wisdom insists not only on the interests of oneself, but also on the interests of others, which makes wisdom incompatible with egocentricity.

Kitchener and Brenner (1990) argue that wisdom operates and is activated in the realm of difficult, real-life problems with no clear-cut solutions; hence, expertise and expert knowledge are an essential element of wisdom. Human knowing is characterised by uncertainty that puts limits on human knowing, and wisdom is the capacity to make the right judgement and decision in the state of uncertainty. Wisdom is the ability to develop and defend good judgements about difficult and wicked-decision problems. To develop good judgement, Orwoll and Perlmutter (1990) emphasised the importance of personality-based wisdom indicators such as self-development and self-transcendence. To study wisdom, they suggest studying the life of people who are considered wise.

Kramer (1990) introduced the term 'organicism' as an interdependence of variables as they evolve over time. Integration is the central tenet of interdependence or organicism – that is, together with embodiment and positive effects – congruent with a process view of wisdom explored by Yang (2008a). Organismic framework assumes inseparability of psychological adaptation and its functional context. Functions of wisdom in adult life include the following: a) life planning; b) advising others; c) management and guidance of society; d) life review; and e) the meaning interaction of life. All functions of wisdom are interrelated and reciprocal processes. Cognitive and affective processes facilitate development of all functions of wisdom and foster wise judgement in at least five ways: a) recognition of individuality; b) recognition of context; c) effectiveness with others; d) recognition of change; and e) attention to both cognition and affect. Kramer (1990) differentiates wisdom from practical and social intelligence by comparing relativistic and dialectical thinking. Relativistic thinking emphasises the subjective, arbitrary nature of knowledge where knowledge is a function of the standpoint of the observer, while dialectical thinking involves integration of all knowledge as an interplay between conflict and its resolution.

Researchers at the Max Planck Institute for Human Development in Berlin conducted comprehensive studies from different angles such as age (Mickler & Staudinger, 2008; Pasupathi, Staudinger, & Baltes, 2001; Staudinger, 1999), gender (Staudinger, Smith, & Baltes, 1992) and professional specialisation (Staudinger, Maciel, Smith, & Baltes, 1998) by presenting participants difficult hypothetical scenarios and collecting their 'think aloud' responses. Trained evaluators would then rate responses using the following criteria: a) factual knowledge; b) procedural knowledge; c) contextual knowledge; d) value relativism and tolerance knowledge; and e) management of uncertainty (Baltes, 1993; Baltes et al., 2002; Baltes & Kunzmann, 2003; Baltes & Smith, 1990; Baltes & Staudinger, 2000). They concluded that wisdom is 'an expert knowledge system in the fundamental pragmatics of life permitting exceptional insight, judgement, and advice involving complex and uncertain matters of the human condition' (Baltes & Staudinger, 1993, p. 76). They clearly differentiate the concept of wisdom from a wise person because wisdom is, in the spirit of explicit wisdom theory, a body, a system of knowledge, while the wise person is just an approximation of wisdom – people are only carriers of wisdom (Baltes & Kunzmann, 2004). The Berlin wisdom paradigm developed instruments to measure general wisdom by using performance-based measures and the Bremen measure as its analogue for measuring personal wisdom.

Ardelt (2004a, 2004b) argued that wisdom cannot exist independently of individuals because knowledge can be understood at the intellectual level, whereas wisdom can be understood at the experiential level. Wisdom is independent of scientific advancements and it provides universal answers on universal questions by teaching the art of living for the benefit of oneself and the others. Consequently, wisdom is a property of an individual, and research should focus on an ideal type of wise person. It should measure how close people come to the ideal type of a wise person, instead of measuring the ideal type of expert wisdom-related knowledge.

Nevertheless, Grossmann, Dorfman, and Oakes (2020) argue that neither a person-centric approach nor general wisdom-related tendencies provide insight into the definition of wisdom construct due to flawed methods and either social desirability bias or memory-related bias. Hence, they propose an alternative

approach that is based on a socio-ecological perspective on wisdom that takes into consideration contextual roles of culture, religion, economics and situation. Moreover, the Toronto Wisdom Task Force jointly synthesised a common wisdom model for empirical science that consists of two central psychometrically oriented components of wisdom in psychology: a) moral aspirations and orientation towards shared humanity, and b) perspectival aspects of meta cognition that consider intellectual humility and diverse perspectives and contexts (Grossmann, Weststrate, et al., 2020).

Notwithstanding the recent psychologists' dominance in the research of wisdom, the voice of contemporary philosophers has also been heard in the wisdom discourse by critiquing psychological theories of wisdom and the definition of a wise person. Philosophers' love for wisdom stems from wisdom's tendency to produce happiness, ability to be not only means for other ends but an end itself (Nozick, 1989). Wisdom also produces the knowledge and appreciation of the deepest significance of whatever occurs in various dimensions of reality, including their ramifications, by understanding the ultimate goods, not only their proximities.

Swartwood and Tiberius (2019) and Tiberius and Swartwood (2011) argue that the folk implicit theories of wisdom by themselves cannot provide a plausible explanation of wisdom and a wise person. Hence, they revised and specified central elements of wisdom identified by implicit theories through relevant empirical and philosophical theories. Such revision included theories of decision-making and philosophical aspects of a good life, until they became convinced that the wisdom theories were action-driven, rationally compelling and empirically adequate. They concluded that both implicit and explicit psychological theories can have a plausible explanation of wisdom if they have a compelling philosophical rationale. Therefore, Swartwood and Tiberius advise the philosopher to take wisdom seriously once again and to work together with psychologists when developing and testing wisdom theories.

Moreover, Swartwood (2020) argues that the interdisciplinary approach to wisdom research and study requires social scientists to abandon the pursuit of measuring wisdom. Such measures do not measure wisdom as it is conceptualised by philosophers. Therefore, Swartwood seeks a refocus on an

exploration of how the practical and relevant characteristics of wisdom, determined by logically entailed philosophical reasoning, can be developed and how they correspond to human psychology.

Indeed, Whitcomb (2011) critically surveyed, from an epistemological perspective, apologetic, twofold and practical views on wisdom, arguing that wisdom is neither epistemic humility nor epistemic accuracy, even if combined with exceptional knowledge, as depicted in Plato's *Apology of Socrates*. It is neither a kind of practical knowledge nor justifiable belief on how to live well. Wisdom is rather a twofold consequentialism that combines knowing how to live well and explanatory knowledge and deep understanding of the fundamental truths that produce good ends. Whitcomb further argues that the twofold consequentialist theory better explains why wise people are able to give good advice, and why they are not wicked. It also explains why foolishness is the absence of wisdom, and why wisdom is hard to obtain. Moreover, the twofold consequentialist theory provides an explanation of other theories with which it disagrees and explains why and when people are wise or unwise.

Under the influence of Whitcomb's critical survey of wisdom theories, Ryan (2012) revisited her views on wisdom as epistemic humility, knowledge and living well, and hybrid theory from her previous works (Ryan, 1996, 1999). She eventually developed a Deep Rationality Theory (DRT) of wisdom. She states that a person is wise at time 't' if they possess a wide variety of justified beliefs on a wide variety of academic subjects and rational living. However, they should also possess very few unjustified beliefs with sensitivity to their limitations with deep commitment towards acquisition of wider, deeper rational beliefs about reality, and living a rational life.

In congruence with Ken Wilber's integral theory, Walsh (2011, 2015) provided cross-cultural and cross-disciplinary syntheses of wisdom, starting with four quadrants of dimensions or domains of reality: interior/individual, exterior/individual, interior/collective and exterior/collective. All four quadrants are interdependent and irreducible. The expression of wisdom can be found in all four quadrants, but to find it an integral methodological pluralism should be used. He argues that the philosophical distinction of wisdom to *phronesis* and *sophia* and psychological theories to implicit and explicit theories are insufficient

to expound the essence of wisdom. Hence, Walsh introduces four wisdom subtypes: one practical and three epistemic types of wisdom. The practical type of wisdom responds to life issues, while the intuitive, conceptual and transconceptual wisdom, as epistemic types of wisdom, correspond to knowledge concerning issues. Nevertheless, to fully grasp the meaning of wisdom, individuals need to cultivate it themselves.

It is evident from the thematic analysis of what makes a person wise that the understanding of wisdom and its definition has historically differed across philosophical and psychological schools. They have their merits and limitations, but each of them contributes with their voice to the polyphony, sometimes even cacophony of this complex composition.

## 2.1.8 Reflection and relevance of the study

Based on the thematic analysis elaborated in the previous sections of this chapter, my study took a personal wisdom approach, following the path of the implicit theory of wisdom. This approach was congruent with the first research question, which aimed to determine how close management students as individuals were to the ideal type of a wise person. The question was not interested in students' performance in relation to an ideal of wisdom-related knowledge that is aligned with explicit theories of wisdom. This study required a research instrument designed according to the implicit theory of wisdom approach.

I accept the existence of wisdom, wise people and wisdom measurement, regardless of differences in interpretation of their meaning over time, historical contexts, and philosophical or psychological schools. This statement is central to determining the ontological stance of critical realism and the epistemological stance of constructionism in this study which are elaborated in more detail in Chapter 3. Based on the thematic analysis conducted in this chapter, I synthesised the views of different philosophical and psychological schools of wisdom and what makes a person wise. In the synthesis I also adhered to core elements of wisdom and wisdom principles of management that are based on reason, but also allowed for non-rational decision-making (McKenna, 2013). The wisdom principles of management are directed to humane and virtuous

outcomes, but still stay practical and articulate (McKenna, Rooney, & Liesch, 2006; Rooney, McKenna, & Liesch, 2010).

Mindful of the literature reviewed for the purpose of my study, in the context of management education, a wise person, manager and leader demonstrates the following faculties in no specific order of priority:

- a) temperance, justice, courage and fortitude,
- b) experiential learning and critical reflexivity,
- c) reason and logical thinking,
- d) emotional awareness,
- e) possession of factual, tact and procedural knowledge,
- f) acceptance of limitations of knowledge and uncertainty,
- g) acknowledgement of a bigger system,
- h) ability to balance particulars with universals,
- i) use of right means to produce good ends,
- j) possession of a moral and ethical compass,
- k) adaptability to different environmental contexts,
- I) possession of different time perspectives,
- m) ability to balance conflicting interests of different constituencies.

## 2.2 Can wisdom be measured?

Implicit theories of wisdom provided a concept of an ideal type of wise person, but there was no adequate scale or a measurement tool to measure how close people are to the ideal type. To fill in this gap, several self-reported directly testable scales were developed to measure personal, not general wisdom. Webster (2019) identified nine self-reporting scales that focus on self-transcendence, the cognitive aspect of wisdom and the individual attributes of personal wisdom: Three-dimensional wisdom scale (3D-WS) (Ardelt, 2003); Self-assessed wisdom scale (SAWS) (Webster, 2003); Adult Self-Transcendence Inventory (ASTI) (Levenson, Jennings, Aldwin, & Shiraishi, 2005); Brief Wisdom Screening Scale (BWSS) (Glück et al., 2013); Wisdom development scale (WDS) (Brown & Greene, 2006; Greene & Brown, 2009); Foundational Value Scale (FVS) (Jason et al., 2004); The Wise Thinking and

Acting Questionnaire (WITHAQ) (Moraitou & Efklides, 2012); The San Diego Wisdom Scale (SD-WISE) (M. L. Thomas et al., 2019); and Situated Wise Reasoning Scale (SWIS) (Brienza, Kung, Santos, Bobocel, & Grossmann, 2017). In the following paragraphs each of them is briefly explained.

Following the Clayton and Birren wisdom tradition discussed in this chapter, Ardelt (2003) conducted quantitative and qualitative interviews with a sample of 180 older adults who completed a self-administered questionnaire, which included in total 132 questions. After refinement and consolidation, the final version of the 3D-WS consists of 39 questions across three wisdom domains: cognitive, affective and reflective. These indicate that the 3D-WS is a reliable and valid instrument, and not only necessary, but also sufficient to measure wisdom. The scale validity and reliability were also tested on the young population (Ardelt, 2010, 2018; Bailey, 2009) and in cross-cultural contexts (Benedikovicová & Ardelt, 2008). Due to the scale relative length that could be prohibitive for its use, M. L. Thomas, Bangen, Ardelt, and Jeste (2017) developed an abbreviated 12-item version of the scale, the 3D-WS-12, and results suggested that it could be a valid instrument for measurement of wisdom.

To develop a new self-assessed wisdom scale, Webster (2003) conducted three studies, assessing five interrelated dimensions of wisdom: emotional regulation, humour, critical life experiences, reminiscence and life reflection, and openness to experience by using originally a 30-item questionnaire, and in the follow-up study (Webster, 2007), a 40-item questionnaire. An interesting debate developed between the Ardelt (2011), Taylor, Bates, and Webster (2011), and Webster, Taylor, and Bates (2011) regarding differences between wisdom domains and its predictors, correlates and consequences. Regardless of differences in measuring wisdom facets, the authors generally agreed that both measures have in common a multidimensional nature and the inclusion of non-cognitive factors.

Levenson et al. (2005) and Aldwin, Igarashi, and Levenson (2019) state that self-transcendence, as increasing reliance on internal and spiritual faculties with greater connectedness with past and future, is a critical component of wisdom. They developed The Adult Self-Transcendence Inventory (ASTI), an

instrument for measuring construct of transcendence and indirectly wisdom. They found that personality traits such as extroversion, openness to experience, agreeableness and conscientiousness have positive correlation with transcendence, but negative correlation with alienation. Apart from personality traits, social support, spirituality, meditation and positive emotions also positively correlate with self-transcendence, while self-transcendence has a negative relationship with neuroticism.

Glück et al. (2013) compared, with respect to their content, reliability, factorial structure and construct validity, four well-established wisdom measures: three self-reported personal wisdom measurement instruments (3D-WS, SAWS and ATSTI) and a performance-based measure Berlin Wisdom Paradigm (BWP). None of them performed better than the others against absolute standards; hence, the authors introduced the 20-item Brief Wisdom Screening Scale (BWSS) as a compilation of items from the three self-reported scales that had the highest correlation with the absolute standards. They also provided recommendations for further researchers who were considering selection of 3D-WS as a wisdom measure. The authors stated that the 3D-WS spans a broad range of aspects of wisdom and has stronger focus on them than the other measures. These features were considered in selecting 3D-WS as a wisdom measure for my study, because such features are important due to my study's philosophical, psychological and educational perspective on wisdom. In the follow-up study, Glück (2018) introduced some new promising approaches to measuring wisdom, such as the MORE Life Experience Model (Glück & Bluck, 2013; Glück, Bluck, & Weststrate, 2019) and the state-level hybrid model (Brienza et al., 2017), elaborated in more detail later in this section. These rely on real-life experience, and some other routes to measuring wisdom such as an informant perspective on the wisdom, and the investigation of actual wise behaviour.

Brown and Greene (2006) wanted to better understand college students' growth and their college in and out of class campus experiences. They assumed that wisdom was a construct that would the best reflect complexity of students' learning outcomes and their overall college experiences. They defined wisdom as a multidimensional construct consisting of the following dimensions: self-

knowledge, interpersonal understanding, judgement, life knowledge, life skills and the willingness to learn. Their study provided an empirical support for five wisdom factors, but not for the willingness to learn what the authors attributed to the sample homogeneity. Hence, they evaluated the validity and reliability of the Wisdom Development Scale on the much larger sample, including over 3000 professionals and college students (Greene & Brown, 2009).

Jason et al. (2001) and Jason et al. (2004) conducted two studies based on a sample of university undergraduates and Buddhists from two temples. First, they aimed to collect data about people's perception about wisdom; and second, to test such perception in order to develop a wisdom measurement instrument that they called The Foundational Value Scale. The instrument consisted of 23 items that were factor analysed, and after statistical testing they identified the following wisdom components: a) harmony (consisting of balance, self-love, good judgement, appreciation and purpose in life), b) warmth (involving kindness, compassion and animation), c) intelligence (involving problem-solving capacity), d) connection to nature (considering reverence for the environment, and a sense of life's interconnectedness), and e) spirituality (conducting spiritual life and experiencing the union with God).

As a part of a study about the cognitive facet of wisdom and its relation with memory, affect, and hope, Moraitou and Efklides (2012) developed a 13-item wisdom measurement instrument that focused only on the cognitive component of wisdom. The Wise Thinking and Acting Questionnaire had three interrelated factors: practical wisdom, integrated dialectical thinking and awareness of life uncertainty. For the instrument validation purpose, Ardelt's 3D-WS was used, hypothesising that WITHAQ's factor, Practical Wisdom, would negatively relate to the 3D-WS's cognitive domain and that the Integrated Dialectical Thinking factor would positively relate to the reflective domain of the 3D-WS. These hypotheses were confirmed because both relations were in the predicted direction.

M. L. Thomas et al. (2019) argue that none of the self-reported measures for assessment of the individual level of wisdom take into consideration a neurobiological underpinning of the wisdom construct, especially the role of

brain regions in the prefrontal cortex: insula, hippocampus and amygdala. They claim that their multi-structured construct of wisdom consisting of six wisdom domains commonly cited in the literature, confirmed with the Delphi method by international wisdom research experts, and mixed-method study of wisdom in ancient Indian documents, form the basis of a neurocircuitry wisdom model. The six wisdom domains are: a) general knowledge of life and social decision-making; b) emotional regulation; c) pro-social behaviours; d) insight; e) value relativism – tolerance for divergent values; and f) decisiveness. Consequently, they developed the San Diego Wisdom Scale (SD-WISE), which is based on the recent findings in psychological and neurobiological models of wisdom traits. SD-WISE was administered along with 3D-WS and SAWS, aiming to compare and test if the subscales of the new measure and subscales of the existing empirical instruments measure the same wisdom traits. Results suggested that five of the above domains were successfully measured.

According to Brienza et al. (2017), global, de-contextual performance-based and self-reported wisdom measures are subject to attribution, blind spot, selfdeception and impression management bias, and therefore they question their ability to capture wisdom balance-related tendencies. They argue that statelevel measures that take into consideration concrete local situations are less biased and provide a more genuine method to measure wise reasoning. Thereupon, they designed a novel state-level hybrid model for measuring wise reasoning that integrates observer-based evaluations and advantages of selfreported measures. In the large-scale psychometric research (n = 4,463) that consisted of eight separate studies, they combined an event reconstruction technique to access episodic memory, as an observer-based evaluation component, and develop a newly designed 21-item Situated Wise Reasoning Scale (SWIS). The SWIS, as a self-reported measure, addresses five interrelated facets of wise reasoning: a) intellectual humility/limits; b) change/multiple outcomes; c) others' perspectives; d) a search for compromise/resolution; and e) an outsider's vantage point. The authors argue that, apart from a lesser bias, the hybrid model provides a foundation for testing wisdom as a process and allows dynamic modelling of the mutual relationship between people and their situational contexts.

All studies elaborated in this section of the chapter were cross-sectional studies that imposed certain limitations on their findings and results interpretation. The only longitudinal study was conducted by Wink and Helson (1997), measuring practical wisdom by using Practical Wisdom Scale (PWS) and Transcendent Wisdom Rating (TWR) consisting of open-ended questions for an example of wisdom. They discovered a correlation to the intra, inter and transpersonal domains of personality with positive correlation between practical wisdom, ageing and nature of life experience.

It is evident from the elaborated wisdom measurement tools that there is no definitive research consensus about the definition of wisdom, its domains and measurement scales. Bangen, Meeks, and Jeste (2013) synthesised different views and concluded that the most common subcomponents of wisdom were as follows: a) social decision-making and pragmatic knowledge of life, including social reasoning, ability to give good advice, life knowledge and life skills; b) pro-social attitudes and behaviours such as empathy, compassion, warmth, altruism and a sense of fairness; c) reflection and self-understanding such as introspection, insight, intuition, and self-knowledge and awareness; d) acknowledgment of and coping effectively with uncertainty; and f) emotional homeostasis including affect regulation and self-control. Walsh (2015) added to that list perspicacity that connotes perceptual and cognitive clarity, discernment and deep, accurate insight. Less frequent subcomponents include the following: a) value relativism and tolerance by taking a non-judgemental stance and acceptance of other value systems; b) openness to new experience; c) spirituality; and d) a sense of humour. Bangen et al. (2013) also indicate that self-report, informant-based, and performance-based wisdom measures have their advantages and disadvantages. Hence, wisdom can be best assessed by using a variety of sources by their integration, leaving researchers to decide what is the most appropriate method for their research context. Kunzmann (2019) concludes that due to the wisdom character to integrate knowledge, personality and competence, a combination of performance-based and selfreport approaches should be used to measure wisdom.

After considerable deliberation and evaluation of the wisdom measurement instruments by analysing and comparing wisdom domains, identified in the list

of the wise person faculties on page 30, and the wisdom components in measurement scales, the original 39-item Ardelt's 3D-WS questionnaire was selected as a quantitative research instrument and diagnostic tool, to address the first research question. The rationale is based on its span on a broad range of aspects of wisdom in comparison to other scales, pragmatic reasons of time and funding constraints, the scale simplicity, reasonable length, administrative convenience, and already tested validity and reliability on a comparable sample type and the scale popularity among researchers. The questionnaire results presented the current indicator of students' wisdom in comparison to the ideal type and were utilised to design another questionnaire to measure students' perceptions about the presence of wisdom enablers in undergraduate management education content, pedagogy and assessment methodology, and how they related to each other in each wisdom domain: cognitive, affective and reflective.

## 2.3 Can wisdom be taught?

Apart from the interest in the definition of wisdom and its measurement, researchers are also curious about the link between wisdom and ageing, wisdom plasticity and possibility of improvement and application of wisdom in a different life context. If wisdom is not a static but dynamic phenomenon, we can assume that it might be taught. I turn to this argument in the next section.

There is a general consensus about the positive correlation between wisdom and life span, but only ageing is not a sufficient ingredient for the possession of wisdom; therefore, there is no direct trajectory of wisdom with ageing (Brugman, 2006; Sternberg, 2005b). Humans can grow wiser but, ageing is not a guarantee for wisdom (Clayton & Birren Jr, 1980; Staudinger, 1999). Humans will rarely find wisdom because for such growth, wisdom takes time, and depends on depth and clarity of priorities (Kekes, 1983). Hence, time is not enough, it also must include incremental personal change (Achenbaum & Orwoll, 1991). Late adolescence and early adulthood are the primary age in which wisdom-related knowledge emerges and is a pivotal period for the development of self-identity and wisdom (Bang & Montgomery, 2013; Kunzmann & Baltes, 2005; Pasupathi et al., 2001; Richardson & Pasupathi, 2005; Webster, 2013). However, apart from ageing and getting older, other conditions, facilitating and enhancing factors are needed to be wise. These include intelligence, which by itself is not a powerful predictor of wisdom (Baltes & Kunzmann, 2003; Baltes & Smith, 2008; Chen, Wu, Cheng, & Hsueh, 2011; Pasupathi et al., 2001). According to Baltes (1993) and Baltes, Smith, and Staudinger (1992), human intelligence has two components: a) fluid-like mechanics or cognitive mechanics that symbolise the hardware of the mind, and b) crystallised pragmatics or cognitive pragmatics that symbolise the software of the mind. They have a different trajectory with ageing; while the cognitive mechanics are focused on memory and can deteriorate by ageing, cognitive pragmatics are focused on wisdom and can develop with ageing. Ardelt (2000b) also agrees that there is a decline of intellectual knowledge through ageing, but there is a positive correlation with wisdom-related knowledge. She asserts that it is more important for elderly people to acquire wisdom than intellectual knowledge. It is important to attain not descriptive knowledge as new truths and facts, but interpretive knowledge of rediscovery of old truths and better understanding of existing phenomena and events with deeper understanding of such phenomena and events. It is not important to change the external world, but the inner world of the knower, because it helps to cope with the unexpected, uncertain and unknown. Wisdom and wise reasoning have an ameliorating effect on negative associations between life hardship, adversity and depressive rumination during earlier years. Wise reasoning also enhances subjective well-being and life satisfaction of old age people, by strengthening their ability to easier manage ageing-related physiological and psychological losses (Ardelt, 2016; Ardelt & Ferrari, 2019; Ardelt & Jeste, 2018; Ardelt & Oh, 2010; Etezadi & Pushkar, 2013; Grossmann, Na, Varnum, Kitayama, & Nisbett, 2013).

Kekes (1983) elaborates that wisdom is a knowledge of means for good ends and the good ends is an ingredient of interpretive knowledge or knowledge of significance of descriptive facts. Humans rarely challenge basic assumptions that provide a form for descriptive knowledge. The interpretive knowledge is concerned with the rediscovery of old truths to understand the connection between basic assumptions and commitment to ideals (Ardelt, 1997).

Contrarily, with ageing most people end up with despair and withdrawal rather than integrity, caused by isolation and segregation imposed on old people in modern society. The isolation and segregation diminish the continuity of ageing and wisdom due to incompatibility between individual and social changes over time (Clayton, 1975). Nevertheless, wisdom has more impact on life satisfaction than physical health, socio-economic status, one's financial situation, physical environment and social relations (Ardelt, 2000a), because wisdom is an outcome of certain experience over a lifetime and a mediator or a catalyst for understanding and interpretation of other life experiences.

Not all research is in agreement about the positive correlation between ageing and development of wisdom. Meacham (1990) even claims that there is no support that wisdom increases with age, guite opposite, there is evidence that there is a loss of wisdom with ageing. Wisdom adds to the new knowledge and recognises that there is much more that we do not know. Such cognisance creates the perception of widening the gap between all knowledge and the proportion of what one knows and can know, and disturbs the balance between knowing and doubting. Furthermore, Meacham (1990) claims that the essence of wisdom is not what is known, but how it is known and put into use. With the accumulation of wealth, power, success, information and knowledge (especially in education, where the emphasis is on knowing rather than doubting), people lose wisdom due to, on one hand, excessive confidence in knowing, and the other hand, ignoring and doubting. Accumulation, stereotyping and intolerance, cultural change and tragedy or cataclysmic change of context (Kekes, 1983) are reasons for the loss of wisdom due to ageing. Baltes (1993) asserts that the balance between gains and losses because of ageing is possible and suggests the implementation of a model of general adaptation and compensation that includes coping strategies of ageing such as a) activation of change and use of different possible selves; b) changes in levels of aspirations and expectations; c) changes in goals; and d) changes in social compensations and social norms.

Especially significant and important for this study are findings that the primary age when wisdom emerges are late adolescence and early adulthood, and how important are enhancing factors for its further development. Therefore, the

second research question of this study aims to identify such enhancing factors during the management education.

If wisdom can be lost, can wisdom be developed, nurtured and maintained to decelerate its loss, and on the contrary to contribute to its accession? Meacham (1990) asserts that wisdom can be maintained through immersion into a wisdom atmosphere by avoiding extremes of confident knowing and paralysing doubt. It can also be maintained through detachment from knowledge, success, power and importance that represent threats or risk to wisdom, what contradicts main business objectives and contemporary perception of a successful life.

The major domains of ontogenetic conditions, antecedents and processes that influence development of wisdom can be classified in the following categories: a) facilitative experiential contexts and exposure to structured and critical human life experience; b) expertise and knowledge relevant factors; c) role modelling and mentorship; d) dialectical, critical, and judicial thinking; e) reflectiveness; f) acceptance of uncertainty; g) person-related factors such as empathy, mindfulness, acceptance, respect, non-selfishness, moral perspectives and values (Ardelt, 2010; Baltes et al., 2002; Baltes & Smith, 2008; Baltes & Staudinger, 1993; Staudinger & Glück, 2011; Sternberg, 1998, 2000).

If we accept an assumption of wisdom plasticity and possibility of wisdom maintenance and development, the next question is how this can be acquired. According to Ardelt (2000b), the acquisition of wisdom should be a combination of cognition, self-reflection and self-awareness with determination and constancy to liberate oneself from internal stymieing forces such as fears, jealousy, hostility and desires. The outcome of such an approach will be an increase of awareness and cognisance of knowledge limitations; the existence of different paradigms; doubt about existing beliefs, values, knowledge and information; and greater concern about universal than particular. Ardelt further suggests that wisdom education should include writing an autobiography, studying humanities and the liberal arts, and, according to Staudinger and Glück (2011), by reading classical wisdom literature.

According to Sternberg, Jarvin, and Reznitskaya (2008), in western education the emphasis is on the development of cognitive skills and intelligence, but not wisdom-related abilities because students might have good academic records but poor judgement. Intelligent people are not necessarily wise because some fallacies of smart people are egocentrism, omniscience, omnipotence, invulnerability, ethical disengagement and a lack of sense of values that, as already demonstrated, are an integral part of wise thinking (Sternberg, 2001, 2004, 2013b).

Smith (2014) argues that such focus on cognitive skills can be attributed to globalisation, neo-liberalism, neo-conservatism and market supremacy, where the purpose of education is to train human capital for the global market. He claims that an imperial venturing is disguised in the rhetoric of democracy, freedom, human rights and the rule of law, casting doubt on trust in existing knowledge, and causing moral and mental crises inspired by surveillance culture and fear. Maxwell (2007) states that present academic inquiry is focused on acquiring knowledge to solve a social problem that is a consequence of contemporary economic market supremacy. There is a need to refocus on promoting wisdom as developing capacity to understand the value of life for self and others, and how to solve the problem of living not problems of knowledge. This crisis is caused by using science without wisdom. Knowledge inquiry demands a sharp split between the intellectual aim and social or humanitarian aim of inquiry. This approach is making progress towards better knowledge of social phenomena, but not towards a better world. Academia should be a kind of people's civil service. For wisdom inquiry it is fundamental to have emphatic understanding when imagining what people think, feel, desire, fear, plan, see, love and hate. Therefore, Maxwell proposes a profound and comprehensive intellectual and academic revolution with a radical transformation from knowledge to wisdom where the primary aim of inquiry is not enhancement of knowledge, but rational inquiry on how to enhance personal and social wisdom where problems of knowledge and technology are subordinate and secondary (Maxwell, 1984, 2004, 2007, 2013, 2014).

Smith (2014) realises that there is an evident dichotomy between the neo-liberal socio, economic, political ideology of self-interest, competitiveness and

toughness in the public sphere; and sweet, gentle, forgiving, generous and supportive behaviour to others fostered in the private sphere such as family, school or classroom. There is a big question about how to reconcile such a dichotomy and re-imagine education and pedagogy in the aftermath of neoliberal and neo-classic supremacy. Paris (2001) wonders where and how in the environment of education commercialisation, dictated by the market law of supply and demand, demand for wisdom education can be generated. Smith (2014) is confident that mental conceptions of the world should be the starting point because how we imagine the world is very critical to de-naturalise market logic. Therefore, teaching wisdom is a negation of the didactic method because the teacher should provide a context for critical thinking and students must devise their own understanding of wise thinking. Students need to experience the variety of cognitive and affective situations that warrant wise decisionmaking, attempting to develop critical thinking and social and moral components of character development, by being taught not what but how to think, being engaged in activities that promote the ability to think reflectively, dialogically, dialectically and critically (Reznitskaya & Sternberg, 2004). Dialogical thinking involves the usage of multiple frames of reference, whereas dialectical thinking promotes the integration of opposing views, including how ideas and situations evolve. Critical thinking involves the teaching of analytical and reasoning skills, the ability to apply them, and the ability to monitor a critical thinking process or reflection (Halpern, 2001).

Smith (2014) continues that wisdom in teaching and education is not practising meditation and mindfulness with dissociation of cultural schizophrenia, but wisdom must critically and forcefully address the problems of our time and deconstruct market logic of Mythos and show the way out. A wisdom-driven curriculum and pedagogy should abandon treating education as a preparation for a competitive global market. The emphasis should be on a unity of being by seeing the world as an open space and learning to be still because the wisdom tradition is based on stillness, while the essence of capitalism is maintenance of distraction. Wisdom has several traditional characteristics. It a) possess inherent unity of birth and death, b) contradicts the values of power by revealing the paradoxical nature of experience, c) fractures the temporal enframing of conventional interpretation; d) understands the natural world as pedagogical,

and e) honours the intermingling of implicate and explicate orders. This requires a different understanding of time where the focus is not on chronological time, but 'kairos' time beyond specific measurement. Smith (2014) concludes that the basic achievement of wisdom should be freedom from fear, delusion, limitations and parochial culture.

To achieve freedom from fear and delusion, Fraser and Hyland-Russell (2011) argue that education should depart from the concept of 'educare' to train, outcome-based training for the needs of the market place, and embrace 'educere' with emphasis on individuals and the process of growth, transformation and wisdom, because there is need for an integrated form of knowledge that leads to wisdom. Contemporary overemphasis on rationality in education is distant to faith, spirituality and soul or 'Bildung' (self-cultivation) towards wisdom; hence, wisdom requires teaching that is complex, integrated and based on philosophical dialogue (Helskog, 2019). The importance of language used in teaching is critical, especially the power of metaphors that create a physical, mental, emotional and moral space that fosters introspection, reflexivity and development of wisdom. Complementary to the term 'Bildung', the cultivation of wisdom in the classroom was promoted by introduction of the 'Glück' (Happiness) curriculum that embraced learning through the senses, mind, body, spirit and guts by providing a space, activities and exercises that students can explore, experience and reflect on how to design a better life (Reams, 2015).

Students must experience cognitive and affective processes that stimulate wise thinking, good judgement and decision-making by developing in themselves the ability for wise use of such knowledge, rather for good than for ill, because teaching wisdom is not about what, but how to think (Sternberg, 2001, 2004; Sternberg et al., 2008).

Sternberg (2013c, 2020), Sternberg and Hagen (2019) and Sternberg et al. (2008) have no doubts that schools should foster wise thinking, and wisdom should be a part of curriculum because even smart people, including mangers and leaders, can be toxic and susceptible to foolishness or a lack of wisdom due to six fallacies: unrealistic optimism, egocentrism, omniscience, omnipotence, invulnerability and ethical disengagement. According to

Sternberg (2001, 2013b), supported by Jones (2015), wise use of knowledge is already present implicitly in teaching – for example, history and literature – but they claim that wise thinking should be explicit and taught in every discipline. Sternberg distinguishes the difference between domain and field knowledge, where the domain knowledge is formal knowledge while the field knowledge is informal knowledge. Scaffolding and role modelling are very important methods of imparting wisdom as a part of informal knowledge acquisition. Wisdom is less directly taught than indirectly acquired through imparting values that are an integral and essential component of wisdom and wise thinking. Wisdom and wise thinking require tacit knowledge, analytical thinking, creative thinking, practical thinking and social intelligence.

According to Sternberg (2001) and Sternberg et al. (2008), the rationale for teaching wisdom is that knowledge is insufficient and does not guarantee satisfaction and happiness in life. It is wisdom that brings value into judgements; wisdom is an avenue for creating a better world. Students are members of the wider community and will develop skills to judge rightly and justly for the benefit of the community. Sternberg et al. (2008) developed and implemented a curriculum in teaching history classes consisting of a set of six distinct procedures that develop three wisdom-based thinking skills of thinking reflectively, dialogically, and dialectically. The procedures are as follows: a) read classic works and engage in reflective thinking! Connect classic maxims with personal context where they can apply; b) engage students in class discussions, projects and essays; use dialogical and dialectical thinking; different perspectives and opposing perspectives; c) promote studying not only truth, but also values; d) put emphasis on critical, creative and practical thinking for good ends and common good; e) encourage students to think about the importance of final ends, because any topic can be used for better or worse ends; and f) practise not preach, because the best classroom is where the teacher is a role model. Complementary to this pedagogical model, Sternberg (2003a, 2005a, 2009) and Sternberg, Jarvin, and Grigorenko (2009) also developed a model for liberal education and leadership under the acronym WICS – based on the synthesis of wisdom, intelligence and creativity – as a unified model for admission, teaching and assessment at any level and for any subject.

The foundation of this curriculum is Sternberg's Balance theory of wisdom (Sternberg, 1998, 2003b) based on the axes of tacit knowledge – practical intelligence – wisdom – common good. Wisdom develops by providing problems that need wise thinking that leads students to think about the common good in problem resolution. It teaches them to balance different interests by providing examples of wise thinking and role modelling wisdom. Wisdom helps students to think dialectically by demonstrating appreciation for wise thinking and encouraging usage of wise thinking outside the classroom. It is an application of the maxim that the educational objective should be teaching the tools of wisdom, not the wisdom itself because thinking is a tool for wisdom and teaching thinking is a means to achieve the ends – wisdom (D. Kuhn & Udell, 2001).

Complementary to the above pedagogical attempts, Trowbridge (2008) developed the 'Wisdom as Skill program' to foster wisdom development in elderly people. In this context, wisdom was defined as a 'profound understanding of the basic realities of existence, living in alignment with them, and making the best possible choices conformant with this understanding' (p. 72). The basic realities of existence include suffering and death, good and evil, an aesthetic appreciation of the world, the limits of human knowledge and emotional sensitivity, the tendency to perceive the world from self-centred perspective, transcendence, equality among beings, love, happiness and misery. Activities within the program included: learning about wisdom by reading philosophical, psychological and religious texts; and gathering with people who manifested wisdom. Furthermore, the program also included developing and leaving by a wisdom perspective trough internalising number of principles related to wisdom. Reflection about own life situations and writing journals are practices of exercising wisdom.

Grossmann (2017a) and Huynh and Grossmann (2018) advocate a constructivist versus essentialist model of wisdom by suggesting wisdom variability in cross-situational and cross-cultural contexts. Hence, they argue that wisdom-focused education and a wisdom-fostering curriculum should a) capitalise on students' own lives and experiences to develop wisdom through self-reflection; b) contextualise virtuous exemplars of the wisdom of others; c)

teach wisdom from fables, parables, aphorisms and stories; d) boost wisdom by adopting a cloud, fly on the wall, self-distanced or ego-decentred perspective; and e) capitalise on cultural awareness and social class differences. They also raised awareness of implications that teaching wisdom have on the development of teachers' wisdom.

We can ask ourselves if there was any more important set of skills than teach skills for achieving wisdom. Ferrari and Kim (2019) believe that education for wisdom is the only true liberal education and can be achieved by holistic education on the axis of six connections: a) life – body – mind, b) Earth, c) soul, d) community, e) thoughtfulness, and f) subject connection. These connections are grouped into inner and outer physical, feelings and thinking manifestations. However, if education for wisdom is indispensable for a liberal education, why (we can wander) is it ignored and neglected in contemporary society? On one hand, Dancy (1980) claims that wisdom has disappeared from the educational discourse because of a value vacuum and because of a decline in the Judeo-Christian values of morality with nothing to fill in the gap. The contemporary education does not distinguish the difference between 'education in' from 'education for' because teaching wisdom is the education for. On the other hand, R. Davis (2014) argues that the neglect of teaching for wisdom can be attributed to the theory of enlightenment and the dominant role or reason, instead considering adherence to instinct, custom, tradition, myth, community, piety and faith. He urges that the development of imagination and memory in children is the most important educational goal. Imagination and memory are critical in teaching arts, poetry, oratory and jurisprudence, through which wisdom is pursued and acquired. Hence, R. Davis (2014) argues that 'ars topica' as 'the invention and exploration of arguments designed to investigate the matter at hand in any phase of the intellectual or moral enquiry' (p. 49) should precede 'ars critica', the Carthesian teaching of rational enquiry and critical pedagogy. In other words, 'topica' – art, poetry and rhetoric – should proceed 'critica' – logic, mathematics and the broader science – because full rationality requires both.

Rosch (2008) goes even further by insisting on a beginner's mind that has a primordial, basic wisdom, the wisdom that everybody has. It is the world as it

is, a self-revealing truth that God has put into everything that exists. There is no need for more information, knowledge, logic, ego and skills to be wise, because wisdom is a form of learned ignorance cultivated by humility and meekness of demeanour (Chia & Holt, 2007). We need to unlearn what we have accumulated through education and experience because it veils such wisdom. Clark, Clark, Fidler, and Underwood (1993) challenge the relationship between expertise and wisdom by questioning if some expertise should be relinquished to gain wisdom, because teaching wisdom is knowing when to help, when to respond and when to be silent. Rosch (2008) continues that it will lead to a revelation of the actual self and the real world in terms of what is an avenue to a good life. Such contemplative education complements rational and sensory education, and includes areas such as meditative relaxation and mindfulness, social-emotional intelligence and compassion, developing the ability to communicate serious concerns about death and life.

Ebertz (1996) states that the goal of teaching is knowledge with understanding, and that understanding is having good reason for beliefs, especially having justified beliefs. Beliefs are only justified if they are based upon 'foundational' or basic beliefs. Coherentists claim that beliefs are justified when they 'hang together' in a coherent, systematic way with other beliefs, because coherence between beliefs is necessary for justification. Stanovich (2001) considers wisdom as an element of rational analysis that is dissociated from intelligence, and a wise person is a demonstration of instrumental and epistemic rationality, but the rationality of belief – either theoretical, evidential or epistemic – depends on how accurately person's beliefs represent external reality. According to Ebertz (1996), the objective of teaching is to motivate students to constantly connect beliefs and discover inconsistencies, helping them to develop coherent sets of beliefs. Such teaching objectives can be achieved by using the Socratic method. Socrates questioned previously unquestioned assumptions bringing to light inconsistencies, lack of clarity and ignorance. He examined the lives, and not simply the beliefs, of those with whom he spoke, prodding his hearers towards greater understanding.

Calhoun (1996) elaborated on the Socratic method where a teacher coaches a student by asking probing, leading questions, guiding discussion through the

following steps: a) guided enquiry, b) midwifer, c) refutation or examination (with a well-known claim that the 'unexamined life is not worth living', d) exhortation (by using the metaphor of a gadfly to spur the sluggish and sleepy horse into action), e) cooperative enquiry, f) prophetic transmission, and g) positive argumentation. The purpose of education in using this method is not a transmission, but guiding a person to a right direction that will result in a student's conversion. Calhoun (1996) concludes that the enquiry is a fundamental tool of the Socratic model to convert students to a life of philosophical inquiry, helping them to awaken, give birth, engage, stimulate or motivate an active life of intellectual humility, reflection, curiosity and rational inquiry.

We might ask ourselves if wisdom is worth teaching. Lum (1996) argues that Socrates asked questions not to teach others, but to learn about the nature of wisdom himself, that everyone can be their own best teacher. To be wise means to possess knowledge of what is the quality of goodness about the object of knowledge in question. Wisdom is the knowledge of how to make judgements and judgements are the result of thinking as a process, whereas wisdom is knowledge of such forms of thinking that lead to good judgement. Lum (1996) identified three phases of philosophical inquiry leading to wisdom: a) the a priori conditions, b) the proper conditions, and c) the a posteriori movements. First, the a priori conditions involve questioning and examining assumptions to recognise ignorance that is characterised with admonition and cross-examination, as two forms of education, and three dialogical styles: adversarial, self-refutation and dialectical questioning of self and others. Second, the proper conditions mean dialectic as a function of reason and intelligence with two methods: synthetic and oppositional. Third, the a posteriori movements are characterised by judgement and establishment of the ideal model.

Hedlund (1977) puts an emphasis on the importance of meaning in education, especially personal meaning that gives life direction. The active symbols as providers of personal meaning can include religion, cultural characteristics, rugged individuality, ecology and feminism. These emerge from experience. Wisdom is not just consciousness in the purposive mode, but awareness of the

whole system structure with the need for humility and realisation that an individual is a part of the whole and bigger system without the ability to control the whole. Such symbolic thinking is situated in the right brain function which is intuitive, but both sides of the brain are necessary for the creation of personal meaning and wisdom. Hedlund (1977) concludes that there is a need to teach people their own consciousness to achieve wisdom, because cultural and state symbols failed to do it. The primary purpose of education should be the creation of symbols of personal meaning.

Personal meaning is also determined by a person's character and therefore Park and Peterson (2008), to better understand wisdom, unpacked its components by classifying character strengths into: a) wisdom and knowledge consisting of creativity, curiosity, love of learning, open-mindedness and perspective; b) courage including authenticity, bravery, persistence and zest; c) humanity such as kindness, love and social intelligence; d) justice defined as fairness, leadership and teamwork; e) temperance including forgiveness, modesty, prudence and self-regulation; and f) transcendence, consisting of appreciation of beauty and excellence, gratitude, hope, humour and spirituality. The character strength 'inventory' is in correlation between two perspectives; that is, wisdom and other strengths of character. The other strengths of character are social intelligence, hope, open-mindedness, bravery, zest, authenticity, curiosity, leadership, gratitude and love as a relationship to cognitive and affective elements. Park and Peterson (2008) identified that there was minimal association of character strength with age and formal education, but no correlation with gender was found. Character strengths can be encouraged by using enabling factors, societal institutions and deliberate interventions. Enabling factors are characteristics of a person or environment that are 'naturally-occurring' and conducive to the character strength development, while the societal institutions are social groups that stimulate membership character strength. Probably the most significant factor from the pedagogical perspective are deliberative interventions such as education and psychological counselling that intentionally aim to develop character strength. According to Norman (1996), the indispensable character trait of wisdom is sound judgement because the expertise of the wise person has to do with the 'how-to' live well, not only one's own life, but the life of all humans as well, by

understanding the difference between life means and ends. Hence, he deems that wisdom is not a kind of knowledge, but the character trait of sound judgement exemplified in behaviour by understanding wisdom not as a capacity or its product, but as a character trait, and the exercise of sound judgement is a condition of having such traits. If wisdom cannot be understood as knowledge, imparting it cannot be straightforward, but if wisdom is considered as a character trait to make a sound judgement, it can be cultivated and fostered by example and by emulating the practice of wise people.

Lehrer and Smith (1996) agree that wisdom is a virtue of having a concept of judgement. Possession of such virtue makes the possessor wise and a qualified judge. As a qualified judge and an expert in understanding and judging value, the possessor has an ability to make an evaluative judgement of what is worth, and of what is good. Therefore, education and teaching should go beyond the transfer of information to the evaluation of it because wisdom is the undefeated personal justification of what we accept and prefer. Socratic questioning of what we have been taught is a method of accepting and preferring what is a real worth. The basic attainment of education is the understanding of the worth of what one accepts and prefers.

Dancy (1980) – inspired by Protagoras, Aristotle and Bacon – developed a curriculum divided into formal and hidden parts, where wisdom is divided into dispositions, skills and knowledge. Disposition includes reflectiveness and considerateness; skills consist of decision-making, persuasion and negotiation; and knowledge encompasses literature, history and social science. Curnow (2008) suggests Epicurean teaching of wisdom by compression to make teaching easy to memorise. Proverbs as teaching methods combined with something else can be a starting point of teaching wisdom. The aim was not just memorisation, but also to act upon it, with a practical objective of living wisely because experience is a catalyst for the development of wisdom through practising deliberation and reflection (Marshall & Thorburn, 2014). For example, Stoics, such as Seneca practised writing letters to friends or even to himself and Marcus Aurelius wrote a personal journal. Drawing upon Aristotle's definitions of wisdom, Henderson and Kesson (2004, p. 47) urge for a 'Curriculum Wisdom' that has seven inquiry domains: a) 'technē (craft

reflection); b) poesis (soulful attunement to the creative process); c) praxis (critical inquiry); d) dialogos (multiperspectival inquiry); e) phronesis (practical, deliberative wisdom); f) polis (public moral inquiry); and g) theoria [or Sophia] (contemplative wisdom)'.

Houston (2011) – comparing the wisdom with intelligence, cleverness, knowledge, common sense and trivial wisdom – agrees that wisdom can be acquired through experience, and therefore the teaching of wisdom should offer an opportunity for vicarious experience, the reading of literature and study history, and the recounting of the experiences of elders. This way students will be able to question personal subjectivism because questioning pure subjectivism without reference to any objective values and objective good is incompatible with wisdom.

As we can see, teaching for wisdom is a complex and demanding task. According to D. M. Lee (1993), expertise in teaching is the intersection between knowledge, imagination and moral action. A good teacher must have content area knowledge, pedagogical knowledge and practical knowledge. Especially significant is the teacher's tacit knowledge in teaching, including personal thoughts, beliefs, values, desires, doubts, uncertainties and questions. Teaching congruent to wisdom is democratic, dialogical and ecological. It requires intuition, silence and post-formal reasoning. The teacher should be like a symphony conductor in full control of music and orchestra. However, the teacher should be at the same time a member of a jazz orchestra where each musician is simultaneously a player, conductor and composer where improvisation is the essence.

Bassett (2011) provided teachers with 10 recommendations for teaching and practising wisdom:

- a) use a perplexing problem or confounding quandary to make the shift in perspective that wisdom seems to require,
- b) review strategies for living a life committed to the common good,
- c) get to know the lives of the Nobel Peace Prize winners and others considered wise,

d) include wisdom evidence from daily life,

e) use role models and be one,

- f) honour experience by reflecting on it,
- g) make amends,
- h) see everything as a story,
- i) realise that everything is hardly only one thing,
- j) keep your focus on what matters.

If teachers practise the above recommendations, they will be able to access the wisdom dimensions of self-knowledge, understanding of others, judgement, life knowledge, life skills and willingness to learn (Brown, 2004). They will also be able to avoid wisdom hazards such as tangles, including complex multidimensional trade-offs, blind spots, especially past personal blindness, and action gaps such as a gap between thinking and application (Perkins, 2001).

In summary, we can conclude that there is multiplicity and diversity of views, perspectives and practices regarding teaching wisdom. Such diversity includes views on wisdom teaching feasibility, explicit or implicit educational format and pedagogical methods. The intersection where such views diverge are important because very often, they hide critical insights. One of such insights, important for this study, are findings that the primary age when wisdom emerges is late adolescence and early adulthood and that the enhancing enablers for wisdom further development are crucial for its growth.

Nevertheless, for the purpose of this study, there is an assumption that wisdom is teachable, amenable to the intervention, and can be fostered in formal education regardless of all educational imperfections and barriers. If wisdom is thought, implicitly or explicitly, the teaching for wisdom will affect wisdom development among learners either as its progression, neutrality, or regression. This has been supported by short-term longitudinal studies that involved experimental and control groups (Ardelt, 2018; Bruya & Ardelt, 2018) and studies without a control group (DeMichelis, Ferrari, Rozin, & Stern, 2015; Sharma & Lal Dewangan, 2017). All variations of pedagogical excursions in the

landscape of education for wisdom are a backdrop for exploration of factors that are conducive to the development of wisdom in undergraduate management education addressed in the second research question of my study. Regardless of scepticism that wisdom itself essentially cannot be taught, from the perspective of my study, Rooney, Küpers, Pauleen, and Zhuravleva (2019) and Rooney and McKenna (2007) argue that business management curricula can be inculcated with processes that promote and enable development of wisdom. Such processes include the establishment of a development program framework that adopts understanding of a psychologicalcultural system of dispositions called 'habitus' and mindfulness to enable embodiment of wisdom into future managers and leaders.

## 2.4 Should wisdom be a part of management education?

Painter-Morland (2015) asserts that management education discourse and practice are determined by management philosophy of ontological and epistemological assumptions that privilege an instrumental approach based on utilitarian objectivism. Well-being is defined by monetary wealth determinants that advocate promotion of organisational and individual self-interest based on value-free measurable facts. According to R. C. Davis (1958), the dominant management philosophy is based on the right to private property, the free market economy and economic decentralism, grounded on the doctrine of intelligent selfishness, active promotion of social and economic progress and progressive conservatism of positive motivation. It is supported by the philosophy of economic service by private enterprise to the public interest, mainly customers. Profit is a principal objective of any business endeavour that can be achieved through confidence in the executive leadership that recognises the labour rights of collective bargaining. It is the philosophy of individualism, economic rationality and scientific philosophy of management that suffers from moral muteness and silence (Chung, 2016).

Within the dominant paradigm of management philosophy and ontological and epistemological assumptions, Grey, Knights, and Willmott (1996) assert that there are three teaching approaches to management: disciplinary, staff development and critical management studies. Management education is provided in formal education at business schools and universities, management training at the workplace and self-development (Starkey & Tempest, 2005). In the next section I elaborate in more detail the three dominant management teaching approaches (disciplinary, managerialist and critical) to identify their differences and similarities.

First, the disciplinary approach is rather about the management than for management due to its focus on the content and acquisition of a body of management knowledge (Currie & Knights, 2003). It puts an emphasis on a scientific model of positivistic determinism aiming to discover patterns and laws, causality and functionality in explanation of management phenomena (Bennis & O'Toole, 2005; Ghoshal, 2005). The priority is given to research, not education, and exists to support scholars' interests. The disciplinary approach rests on the dominance of the American model of management education based on the idea that management is a set of universal principles and analytical techniques without cultural sensitivity and specific context. This approach is founded on Kantian interpretation of rationality where subjective experience is transformed into objective knowledge asking for universality, general laws, inclusive theories and exhaustive categorisation (Clegg & Ross-Smith, 2003). An example of such overreliance on science in economics is a scientific fallacy that aggregate demand and full employment can be maintained by monetary policy (Von Hayek, 1975). Rationality is situational, implicated with power; hence, context cannot be understood without power. Different power centres operate in and through different rationalities (Clegg & Ross-Smith, 2003). The disciplinary approach to management education with empiricism, positivistic determinism and scientific inquiry is value neutral and context independent. Very often it neglects or ignores sensually undetectable faculties and aspects of management, such as beliefs and attitudes, that casts a shadow on its wisdom.

Second, the staff development approach is also called managerialist (T. J. Watson, 2001), technicist and commonsensical perspective (Grey & Mitev, 2004). It seeks to balance the practical, as well as the educational relevance of management. The focus is on the study of specific techniques useful for

organisational effectiveness and individual professional development of managers. The managerialist model moves management education towards vocational education and ensues a significant shift of power (Zell, 2001) from educators to external stakeholders such as employers and governments. Businesses attained influence on curriculum design by moving from theory, abstraction and general knowledge to a narrow focus on competence, technical skills and short-term business objectives. All is profit driven to satisfy shareholder needs by neglecting other stakeholders that raises the question: if the educational aspect is diminishing in favour of the vocational, can management education cease to be educational (McHenry, 2008; A. B. Thomas & Anthony, 1996; Trank & Rynes, 2003; Willmott, 1994). The outcome of such power shift is an inauguration of a market concept, commodification, commercialisation, digitisation and corporate domestication of teaching and knowledge itself, where teachers are transmitters of knowledge and students are consumers or customers (Antonacopoulou, 2002; Hay, 2008; Trank & Rynes, 2003). Knowledge is valued only if it can be, under market conditions, translated into cash or merchandise, in an environment where universities compete for customers, not students, who select universities in terms of value for money (Starkey & Tempest, 2008). Education by commodification of knowledge, is taken from professionals and reduced to a simple generic format that can be offered and sold on the market where students' incentive to go to business schools is 'a path to career security and financial riches' (Pfeffer & Fong, 2004, p.1503). Education by commodification of knowledge becomes learning as a matter of obtaining a qualification to get a job, not the learning per se, to do a job (A. B. Thomas & Anthony, 1996; Trank & Rynes, 2003). The managerialist model of management education is educating not a knowledgeable and inquisitive citizen, but a good, obedient employee and an insatiable consumer (Cunliffe, Forray, & Knights, 2002). According to Rooney and McKenna (2005, 2007), tendencies of technocratic rationality, economic ideology and organisational isomorphism that minimise development of wisdom attributes and habits – such as reflexivity, virtue, intuition, and imagination – do not generate an intellectual type of, in Giambattista Vico's terms, a wise person (sapientes), but an imprudent savant and an astute ignoramus.

Having in mind the historical review of wisdom constructs presented in this chapter, we can ask ourselves several rhetorical questions about the neo-liberal management philosophy and managerialist approach to management education. Is the belief in rights of private property, free market, profit maximisation and enhancement of shareholder well-being a new religion? Is the market a new divine, ultimate authority that warrants unconditional obedience to the revealed knowledge of its divinity and authority, that returns us to the primordial meaning and understanding of wisdom? Can neo-liberal managerial values, based on hubris and treatment of the bigger system either, as a collateral or a subject to custodianship, be considered wise? Do consumerism, consumption and commodification of every aspect of human life leave any room and opportunity for reflection? Can the bombardment with advertising and other promotional activities, that not only stimulate existing but also create new desires, be manifestations of wisdom and a pathway to happiness? Aren't the desires causes of bodily pain and agitation of mind that perpetuate anxiety and the perception of inadequacy?

According to Grey (2002), the managerialist approach to management education is a cynical charade, purely symbolic and the credentialing knowledge that is virtually useless because for students the mere payoff is the qualification. He deems that management education should be less about developing certain skills and technical knowledge. It should comprise the capacity to develop a certain type of person who can do a managerial job and who is enculturated into certain managerial values. Current management education practice, as a product of disciplinary society, reproduces an even more disciplinary society that resembles Foucault's panoptic cage or prison (Boje, 1996), and generates structure of social inequality and elite reproduction. A managerialist approach to management education is a socialisation process that enculturates students into values and a language code of business, including the latest jargon and buzzwords. More important than language itself are ideological messages and values expressed through the language, such as market relations, market primacy, managerial dominance, and its linkage with democracy. According to Willmott (1994), managerial work is conditioned with capitalistic values and priorities, instrumental in perpetuating capitalist relations, with managers in an ambivalent position. On one hand, they are

objects, the sellers of their labour, and on the other hand they are subjects as agents of capital control.

Third, critical management studies approach to management education, critique not only workplace practice, but also the philosophical and political foundations of management in an attempt to narrow a gap between management education as acquisition of technical skills and competence, and critical scholarship as a moral and political dimension of management (Willmott, 1994).

Management is neither about neutral techniques nor narrow, market capitalistic values. Thus, management education should explicitly address the political, philosophical and ethical nature of its practice. It should focus on values relating to ethics, reason and consequences of all management actions, and deny its uncritical transferability and generalisation to different contexts (Grey, 2004).

Critical management education can aid the struggle to subvert and disturb the process of exploitation for profit by questioning the ideological role of education and its involvement in students' socialisation by facilitating consciousness or self-identity (Contu, 2011). According to Contu, to achieve such objectives, critical management education practice pedagogy that involves a) subversion of traditional curriculum, b) deviation from the traditional curriculum, c) hybridisation of the traditional curriculum, d) experimentation with traditional course design and class relations, and e) over-identification with the positions and behaviours of the mainstream education.

The critical approach relies on experiential and action learning, which uses students' work and non-work experiences to rather problematise than validate such experiences (Grey et al., 1996). Critical action learning is a mixture of self-reflection in action learning and social reflection from critical theory. Students take responsibility not only for their own learning needs and interests, but also contribute to the life of community to meet their needs and interests (Reynolds, 1999). A critical approach also problematises management theories and assumptions (Currie & Knights, 2003), through adoption of a reflection on critical content and critical process of management (Reynolds, 1999). Critical reflective questioning, based on a causal loop diagram, questions the
managerial context, and taken-for-granted social, political and economic issues and assumptions (Romme & Seggelen-Damen, 2015). It focuses on social, not on an individual analysis of power relations and emancipation.

The primary component of the critical approach is the relationship between a teacher and a student, where both develop knowledge and understanding of management through dialogue and discussion. The teacher's role as an expert and source of power and authority changes, and the traditional teacher student relationship disappears. The rationale for critical management in the globalised world, due to managers' social and environmental impact on people's lives, cannot have narrow instrumental objectives because managers as a social group have considerable influence on society, employment, organisational culture, and the balance between business interests and environment (Reynolds, 1998). Most issues facing business leaders are questions of judgement and decision-making. Executive decisions are made on variability in the range of data from statistically small samples, where decisionmakers are not fact collectors but facts users and integrators. Therefore, they need guidelines on how to interpret facts and make decisions in absence of clear facts, because values are equally important as facts (Bennis & O'Toole, 2005; Galvin, 1996; Malan & Kriger, 1998). Hence, a broadly accepted Ackoff decision-making model of data, information, knowledge and wisdom (DIKW pyramid) is under scrutiny and subject to revision (Intezari & Pauleen, 2019; Lloyd, 2007; Rowley, 2006). According to Grint (2007, p. 243) 'good judgement comes from experience and experience comes from bad judgement', supporting this statement with Piet Hein's verse:

'The road to wisdom? Well, it's plain And simple to express: Err and err and err again, but less and less and less' (p. 243).

Wise managers use the benefit of experience and hindsight to make judgements; they stand scrutiny, possess expertise, intellect, understanding and knowledge with the ability to analyse, estimate and make decisions judiciously (Small, 2004a).

It is questionable how judicious decisions are if shareholders' values become more important than customers, employees and other stakeholders, and if managers are pure value appropriators and distributors instead of value creators through new product development and innovation (Bartlett, Ghoshal, & Moran, 1999; Pfeffer, 2005). Small (2004b) suggests that the new value system should be integrated into the development of managers, including key moral virtues (for example, trust, justice, honesty, integrity, fairness, prudence, respect, competition, professionalism and wisdom), as well as traditional Judeo-Christian values (for example, democracy, individuality, equality, autonomy, efficiency and freedom). Inauguration of such a value system would have a profound impact on the language of business. This would include new values terminology such as wholeness, posterity, community, appropriate scale, diversity, quality, dialogue, spiritual fulfilment, and a new philosophy of common purpose and common ground (Hay, 2008).

In this context of values, there is also a debate about management as a profession. Is management a profession or not? In this section I analyse a debate, discourse and argument about management as a profession, aiming to discover a rationale for management teaching and education.

Bennis and O'Toole (2005) and Zeleny (2006) assert that management should be considered as a profession with the elements of a profession, based on the professional model of dentistry, medicine and law. These professions have an accepted body of knowledge, system of certifying that people have such a body of knowledge, commitment to the public good and an enforceable code of ethics. To develop managers in this spirit the curriculum of management education must be infused with multidisciplinary, practical and ethical questions, oriented towards practice and focused on customer needs with the integration of knowledge and practice. Professional education should be focused on the fundamental not transient, on the significant not obvious (Trank & Rynes, 2003).

On the other hand, Billsberry and Birnik (2010) state that management is not a profession but a contextual practice, a blend of science (episteme), skills (techne) and practical wisdom (phronesis) that has implications for teaching by focusing on problem-oriented research not theory, with reflexivity as the main component of management contextual practice. Giacalone (2004) also challenges management as a profession, arguing that management schools teach students to be brilliant tacticians who learn how to create wealth, where financial success is not defined by transcendental responsibility. It is cheating themselves and others of good living because, apart from economic and financial goals, management and business curricula should have a transcendental objective, what other professions, such as doctors and engineers have, while management and business education have none. Management and business curricula have no higher order ideal! Transcendence outcomes cannot be shown statistically because they have no direct contribution to growth and GDP. Giacalone concludes that transcendent educational goals include empathy, generativity, mutuality, civil aspiration and intolerance of ineffective humanity.

There is a powerful critique of the current business schools and especially their most prestigious, cash cow program Master of Business Administration (MBA). Ghoshal (2005) asserts that current management theories have strengthened management practices that all now condemn, for example, agency theory, what resulted in the delegitimisation of organisations and management as a profession. Allegedly, there is no strong evidence and correlation between formal management education and career success, and no significant impact of university research on management practice (Ghoshal, 2005; Pfeffer & Fong, 2002; Starkey & Tempest, 2005). Even contrary, there is evidence of a positive correlation between the tendency to behave illegally and corruptly with the possession of an MBA and love of money (Pfeffer, 2005; Tang & Chen, 2008). Hence, current business schools practice has rigorous irrelevance, icy hearts, shrunken souls and market shakeout (Hay, 2008). Such practice chronically suffer from several risks including hubris, supply and demand of graduates, loss of focus, the Science, Technology, Engineering and Mathematics (STEM) agenda, managerialism, competitive landscape and a trap of teaching the 'one best way' (Barnatt, Starkey, & Tempest, 2016; Dyllick, 2015; Pettigrew &

Starkey, 2016). The combined risks threaten business and management schools' survival and prosperity in the future and challenge their academic legitimacy and impact.

Such a vigorous critique of business schools and management education and practice raises the question of what management education should look like. In this section I elaborate innovative ideas, views and practices in management education design and implementation, to obtain awareness and inspiration about the potential future curricula and program designs.

According to Gosling (1996) and Pfeffer and Fong (2002), managers make decisions that affect others; hence, managerial skills have been identified as a core competence required for economic prosperity and possibly even for economic development. Managers handle a variety of unpredictable problems, confront a variety of events, and therefore their education should put the benefits of others above any personal gain. Mangers should possess physical fitness and intellectual ability, to discriminate between adventitious events and underlying principles that go beyond practical utility, based only on usefulness criteria and utilitarian morality. To achieve such a noble objective of putting the benefits to others above any personal gain, management education needs a new narrative and a new morality that engages the humanities, social science and liberal arts (Hay, 2008; Starkey & Tempest, 2008). This engagement will develop knowledge and practices how to balance economic, social and ecosystems, by focusing on what is essential, not on what is useful. The essence and beauty of education and research is to provide grace, meaning, delicacy and elegance to human life (Augier & March, 2007; Hay, 2008; Starkey & Tempest, 2008).

According to Starkey and Tempest (2005, 2008), the new narrative will be a new hybrid, the quest for truth and unity of culture where universities are champions of culture and of a healthy society, which will satisfy society's human and cultural capital needs. Universities will be deeply engaged in research for the creation of the right kind and fundamentals of knowledge, including selfknowledge and self-development, wisdom, leadership, integrative thinking and reflexivity. Management education at business schools will develop critical

reflective practitioners with understanding of social, power and ethical implications of business practice.

In conjunction with Clegg and Ross-Smith (2003), Antonacopoulou (2010) argues that reflection is not enough to make business schools critical. The reflection must be supplemented with phronesis, a discipline that is pragmatic, variable and context dependent. Phronesis is based on practical rationality to build contextual knowledge, which engages with tension that reflection exposes. Reflexive practice is a critique of perspectives, arguments and propositions, common sense, received wisdom, dominant assumptions and personal biases. Antonacopoulou (2010) also argues that reflexive critique and critical thinking should be imbedded in the entire program, not just presented as a stand-alone module. Roca (2007, 2008) also advocates the inauguration of an integrated model of phronesis, Levinas' moral impulse, practical wisdom and ethics in management education. The integrated model would promote education not only of cognition but also moral imagination, because humans in their decision-making process are not only driven by reason, but also with feelings. The moral imagination is pedagogically delivered through imaginative use of conventional case studies and stories, that are intentionally personalised and morally charged.

According to Mintzberg and Gosling (2002), management education in business schools should go beyond 'students', to managers as participants; beyond 'globalization', to international experiences rooted in particular cultures; beyond 'teaching', to learning through reflection; beyond education organised around the business functions, to a structure built on managerial 'mindsets'; and beyond 'classrooms', to education extended into the manager's workplace. They assert that managers cannot be made in classrooms, but can improve their capabilities in the classroom, because management is practice comprising craft and art with some science. With international exposure, learning is a result of intersection of experience and reflection, where reflecting is wondering, probing, analysing, synthesising and struggling. Managers are sandwiched between action and reflection because action without reflection is thoughtless, and reflection without action is passive (Gosling & Mintzberg, 2003).

The nature of managerial work and not management functions should determine the organisation of management education. Management education is defined by how knowledge has been created, not how it is used, because management is practice that combines art, craft and science, and has to be experienced in context (Mintzberg & Gosling, 2004). Due to management complexity, it cannot be compartmentalised in business functions, but should be based on a synthesis of knowledge that demonstrates wisdom and capacity to combine knowledge from different sources and be used judiciously (Mintzberg & Gosling, 2004; Nodoushani & Nodoushani, 1996). This type of management education requires special mindsets: reflective (self), collaborative (relationships), analytic (organisation), worldly (context) and action (change) (Gosling & Mintzberg, 2003; Mintzberg & Gosling, 2002) because, according to Gosling (1996) and Pfeffer and Fong (2002), the main aim of education is learning how to reflect or think about business issues.

To achieve the educational objectives and expectations, the pedagogy for management education should have the following experiential reflection and facilitative tenets (Gosling & Mintzberg, 2006; Mintzberg, 2005; Mintzberg & Gosling, 2004):

- a) management education should be restricted to practicing managers who are selected on demonstrated performance. This tenet aligns with a business apprenticeship model (Daly, 2017);
- b) managers should stay on a job to practice their education with the education customisation to their work context;
- c) education should leverage life experience and work;
- d) reflection is a key to thoughtful learning;
- e) the impact on organisations should follow from reflection in the classroom;
- f) management education should become interactive learning with an impact on architecture, faculty and pedagogy.

Pfeffer and Fong (2004) outlined two potential paths for management education in business schools. First, as a path to develop important, relevant knowledge and serve as a source of critical thought and inquiry about organisations and management. It can be accomplished by taking the lead in making management a profession through the development of students' critical thinking and analytical abilities. Second, the path to rediscover business schools' roots as university departments or university-based professional schools, relevant to the management profession they supposedly serve. At the same time business schools need to behave more like educational and research institutions, and less like the firms they teach about. However, according to Fukami (2007), the most notable need for transformation of educational institutions is the concept of the Scholarship of Teaching and Learning (SOTL), which recognises teaching as an integral and respectable part of faculty scholarship, rather than the source of funding to do research so professors, wise themselves, can practise what they preach in a cooperative learning environment.

As a sequel to the critique of current models of management education and debate as to what management education should be, a number of management teaching programs attempted to implement some of the previously mentioned principles. Mintzberg (2005) explores the implementations of previously mentioned concepts of management as a blend of craft, art and science, as metaphors for managerial experience, insight and analysis in the international MBA program. Ghoshal (2005) and Karakas (2011) are proponents of the Positive Organisational Scholarship (POS) and Positive Management Education (PME) models. These models study what is positive, thriving, flourishing and life-giving in organisations, and what fosters excellence, abundance, resilience and virtuousness in organisations. The PME model is built on six tokens of transformation: complexity, community, creativity, spirituality, flexibility and positivity. The tokens of transformation derive the following dimensions: fostering integrative and holistic thinking, building a sense of community through high-quality relationships, creative brainstorming and skill building through innovative projects. The PME model integrates spirituality into the classroom by fostering flexibility and empowerment through individual attention and customisation, and designing positive, enabling and nurturing learning platforms.

Carroll and Peat (2010) proposed a radical and controversial, multidimensional and intra-curricular model approach to higher management and business education and teaching. Furthermore, Parker (2018) advocates an even more radical model by shutting down and bulldozing business schools and replacing them with a reflexive or meta-organising model. Inspired by the educational model of Plato's guardians in *The Republic*, without certificates and schools, learning emerges as a relation between people in organisation-less knowledge and learning networks with different densities and concentrations. The 'production-based' model is replaced with the 'service-station' model, and regular top-ups of knowledge and learning become a norm (Hawawini, 2005).

Starkey, Hatchuel, and Tempest (2004), and Ferlie, McGivern, and De Moraes (2010) advocate to replace the models of business and management education, based on pseudo-scientific or case study methods, with the public interest model of business schools, metaphorically called 'agora'. The 'agora' provides support for a renewed professionalisation project, development of broad long-term knowledge based on social science, and an engagement with the corporate world.

According to Ferris (2002), a student as a customer model should be replaced with the classroom business model with students as junior partners and teachers as senior partners. Moreover, Kunkel (2002) suggests turning the classroom into a laboratory for free enterprise based on the consultant business model where the pricing system is used for allocation of grades. Franz (1998) argues that the student as a customer metaphor and the student as a product metaphor of management education does not fulfil the task of education for developing effective participants in society, and skilled and effective adults with developed characters. Therefore, he proposes a metaphor of character development and physical fitness where external control and compliance are replaced with commitment and self-discipline. Focused attention and passivity are replaced with creativity and curiosity, and rote memorisation with understanding and application. According to Elkin, Martin-Niemi, and Cathro (2013), voluntary rather than mandatory students' engagement aids movement of students from generalised, theoretical knowledge towards context-specific practical wisdom.

In Küpers and Gunnlaugson (2017) editorial critique of a hyper-uplifting hubris, hydra-headed menace of monstrous hyper-capitalism, McKenna (2017) advocates the education and training of wise management and leadership based on Stoic philosophy directed towards developing expertise and disposition through the building of a stable and virtuous character, students' status within an organisation and knowledge capacity based on reason. According to Hays (2017), the centrepiece of a wise course curriculum is a Reasoning, Judgement and Reflective Action (RJRA) model, while Küpers (2017) and Küpers and Pauleen (2015) affirm that embodied 'aesth-ethics' and artful approaches to management education, which integrate ethics and art, cultivate habits and improvisation as the basis for the development of wisdom, representing an act of a balance of body, mind and reflective practice.

Bachmann (2014) inaugurated inquiry-based learning in management education by designing the competency-based three-pillar model of practical wisdom. The model comprises the integrative pillar, normative pillar and cultural heritage pillar. Bachmann argues that certain practical wisdom competences improve through consecutive phases of the can inquiry process. Notwithstanding the need for teaching wisdom in management education, Mackay, Zundel, and Alkirwi (2014) suggest the incorporation of 'metis' in management education. Metis is defined as a combination of flair, wisdom, subtlety of mind, deception, resourcefulness, vigilance, forethought, opportunism, various skills and experience acquired over the years. While phronesis at the end aims for a good life (eudaimonia), metis does not have such appeal. Metis is a value-neutral engagement that presents a situational resourcefulness, not wisdom.

It is evident from the analysis and critique of management education discourse and practice that there is a lot of noise about inadequacy, ideological bias and conformity to the dominant political and socio-economic values based on the management philosophy of the private property rights and the free market economy. While disciplinary and staff development approaches to management education are undoubtedly in the direct function of improving efficiency and effectiveness of such a system, and contribute to its reproduction and perpetuation, the critical approach attempts to challenge its ideological

pillars, but without a real and genuine intention to change the dominant paradigm and provide a blueprint of the alternative edifice. All critics of management education, including critical management educators, resemble the refusing colonial administrators (Perriton & Reynolds, 2004) who were servants and beneficiaries of the economic and social colonial system, being in the service of a global western capitalist economy and the part of an integral apparatus that promotes its interests. It would be also morally and ethically questionable to 'turn their back on the role that most of them are paid to fulfil as employees' (T. J. Watson, 2001, p.386). In summary, management education is a product and a portion of the western capitalist order that with its critique contributes to the vitality and sustainability of the same order.

Managers as a third social class have historically emerged between the two traditional social classes of capital and labour. They emerged after the separation of ownership and management of the means of production when corporations became recognised as a legal person. Fallaciously, shareholders were elevated to owners or proprietors of corporate capital, and managers to their agents, but with their own selfish interests. Ghoshal (2005) argues that such a simplistic principal – agent model is a direct consequence of adherence to scientific management and an assumption that nice mathematical models apply to enormously complex economic, social and moral issues in public corporations. If the expected management role is truncated just to the principle – agent model congruent to the dominant management philosophy of the private property rights and the free market, then, according to the faculties that a wise manager should exercise, synthesised and presented in this study, we can infer that wisdom is not an indispensable attribute of managers.

Notwithstanding the need for managers' cognitive capacity to manage economic complexity of the principle – agent model, the judgements and decisions they make as a social group, either collectively or individually, have an enormous social, economic and environmental influence and impact on the lives of others (Alvesson & Willmott, 2003; Grey & French, 1996; Reynolds, 1999). Therefore, managers and leaders must possess the ability to deal with cognitive complexity, behavioural complexity and social intelligence (McKenna, Rooney, & Boal, 2009) with ontological acuity, as a capacity, to grasp

categorical and epistemic foundations of knowledge, and the context that drives such foundations, by practising reflexivity and agency (McKenna & Rooney, 2008). They need to balance intrapersonal, interpersonal and extra-personal interests by adapting and shaping the existing context and selecting new environmental contexts in the short and long term for the common good (Biloslavo, 2009; Sternberg, 1998) by using not only cognitive, but also affective and reflective domains (Ardelt, 2003), and wisdom-related integral metacompetences including reflection, insight and intuition (Intezari & Pauleen, 2016). Hence, a management-wise decision-making process requires multiperspective considerations, including cognitive versus emotional mastery, selfawareness versus awareness of others, and internal versus external reflection (Intezari & Pauleen, 2018; Pauleen & Intezari, 2017).

Management is a product of a particular historical context in which it emerges, takes a shape and then gives the same or modified shape back to the same context that produced it (Alvesson & Willmott, 1996). Management can, on the one hand, contribute positively to a social practice by promoting autonomy, democracy and ecologically sustainable development; and, on the other hand, impact negatively by fostering an oppressive workplace ethos and egotism. Therefore, management education is instrumental in creating and shaping the world view that future managers will return to the context they originate from, because the cultivation of wisdom in managers' education is a unique response to the contemporary world problems of leadership, sustainability, inequality, gross national happiness and civic discourse (Grossmann & Brienza, 2018).

#### 2.5 Chapter conclusion

Based on the literature review findings, my study assumes that undergraduate management education, regardless of its character and approach, affects the development of students' wisdom, either positively or negatively, and that wisdom can be measured. Due to the scarcity of experiential evidence, there is a need to determine the relationship between current management education and the development of students' wisdom. Therefore, the focus of this study and the main research question is the examination of the relationships of association between the current level of students' wisdom, and their perceptions of the presence of wisdom enablers in undergraduate management education. In the first stage, the study intended to measure wisdom development trajectory by an instrument that reflects desired wisdom faculties and domains. In the second stage it aimed to identify factors in undergraduate management content, pedagogy and assessment practices that could contribute to such a wisdom development trajectory. Last, it measured the relationship of association between the two above variables. This study opens an opportunity and an avenue to some future studies to develop an educational program for the development of management students' wisdom, by using findings from this study in designing a program's content, pedagogical methods and assessment instruments. We must be realistic that no wisdom development program will be embraced in mainstream management education under the existing dominant management philosophy and business value system, or that it will generate ideally wise managers. However, any wisdom-minded management education program can incrementally contribute to the increased level of future managers' consciousness even as an approximation to the ideal prototype of wisdom.

## 2.6 Chapter summary

The overview of the literature has provided a historical, social, political, economic, educational and environmental context for this study. Throughout different historical times and contexts, humans were considered wise if they demonstrated: a) obedience to authority and the laws of nature; b) the ability to minimise suffering; c) observation and reflection on personal experiences; d) reason and logic; e) morality; and f) possession of certain psychological faculties. Several self-reported and performance-based instruments have been developed to measure if a person is wise or not. Fortunately, wisdom can be developed through the implementation of explicit and implicit wisdom-related pedagogy. Nevertheless, the dominant contemporary management education approach is still the staff development, managerialist approach with an emphasis on instrumental knowledge and vocational education. However, due

to the absence of clear facts about human knowledge and environmental factors, the essence of leaders' and managers' jobs is to make judgements and decisions in the conditions of extreme unpredictability and complexity. Such judgements and decisions affect the conduct of business and have significant impacts on people's lives, which justifies a rationale of teaching wisdom in management education (Intezari & Pauleen, 2014).

In the next chapter I elaborate in more detail the thesis research design, including epistemology, philosophical paradigm, theoretical perspective, and research methodology as tools for achieving the research goals.

# Chapter 3 Methodology

This chapter elaborates the stages involved in exploring the relationship between undergraduate management education and the development of students' wisdom. The chapter structure consists of several sections where each section starts with the elaboration of a theoretical background of each research stage and concludes with the justification for implementation of the specific theoretical concept in this study.

The opening sections detail the research questions, working hypotheses, epistemology, theoretical perspective and research methodology.

The next sections discuss the research design including research method, measurement of process reliability and validity, sampling strategy, data collection and data analysis.

The chapter concludes with a discussion of ethical considerations and research limitations. The entire research design process is presented in Figure 3.1, p. 71, Research Design Process Map and is elaborated in more details in this chapter.



Figure 3.1 Research design process map

# 3.1 Research questions

The aim of the research was to examine the relationship of association between undergraduate management education and development of students' wisdom that may or may not be impacted by their experiences. As reviewed in Chapter 2, in each of the primary areas of interest (management education and wisdom), there is extensive literature. Students enter undergraduate management education with a certain level of wisdom and exit several years later with a certain level of wisdom. The interest of this study is the relationship of association between these two variables, not the implied causality that the changes in the independent variable might cause on the dependent variable. The following research questions and hypotheses were formulated:

#### Main research question:

What are the relationships of association between the current level of wisdom of undergraduate management education students, their perceptions of wisdom enablers in undergraduate management education, and life wisdom enablers?

#### Guiding question 1:

What is the current level of wisdom of undergraduate management education students at one Australian university?

## **Guiding question 2**

What are these undergraduate management education students' perceptions of the wisdom enablers in their undergraduate management education?

# 3.2 Working hypotheses

According to White and McBurney (2013), a hypothesis is a speculative statement that assumes that the relationship between two or more variables is valid for the purpose of testing, and can be either accepted or rejected. There are two operational variables in this study: the wisdom scores as a dependent variable and the presence of wisdom enablers in undergraduate management education as an independent variable. The approach is a realist, essentialist, theoretical or deductive 'top-down' approach, driven by the implicit theories of wisdom.

This study was interested in the relationship of association between these two variables, rather than any implied causality, because of the potential effect of intervening and extraneous variables (Gray, 2014) such as students' life experiences, employment status and life hardships that could not be directly observed, measured and manipulated.

There are two types of research hypotheses: alternative and null. The alternative hypothesis is a statistical term for the research hypothesis itself, while the null hypothesis or 'straw-man' hypothesis is an 'empty' hypothesis that will be true only if the alternative hypothesis is false (White & McBurney, 2013). The strict purpose of the null hypothesis is to be rejected, not accepted, confirmed or supported. If the null hypothesis is rejected, what is left is the alternative hypothesis, which is more interesting if supported by data. Due to the logic of the statistical test, it cannot be done directly, but only indirectly through the rejection of the null hypothesis.

Based on the statistical logic and research questions, the following three null hypotheses were formed:

- 1. There will be no statistically significant difference in wisdom scores among students of different ages, genders, stages of study, domiciles, types of financial support, employment status and life hardship.
- There will be no statistically significant difference in students' perceptions about wisdom enablers among students of different ages, genders, stages of study, domiciles, type of financial support, employment status and life hardship.
- There will be no statistically significant difference in the relationships of association between the students' wisdom scores, students' perceptions of wisdom enablers in undergraduate management education and life wisdom enablers.

# 3.3 Epistemology and theoretical perspective

When T. S. Kuhn (1996) introduced the term 'paradigm' to refer to a widely accepted world view, belief or concept, he claimed that in the absence of any paradigm all facts seem equally relevant. According to Guba and Lincoln (1994), paradigms, as basic beliefs that deal with the ultimate or the first principle, are world views that define the nature of the world, an individual's place in it and the relationship between the individual and the world and its parts. Paradigms do not need approval or authentication, and not one of them

is superior or inferior to other paradigms. They are just an attempt to devise the most informed and sophisticated response to the ontological, epistemological and methodological questions. The answers they provide are human constructions, the invention of human minds prone to error, and the proponents of each paradigm must use persuasion and utility, not evidence to defend and argue their stance. Morgan (2007) distinguishes four basic versions of the paradigm concepts as shared belief systems about the knowledge that researchers seek and the way they interpret collected evidence. These comprise a) paradigms as worldviews, b) paradigms as epistemological stances, c) paradigms as shared beliefs among members of a specialty area, and d) paradigms as model examples of research.

In this study, the term 'paradigm' is primarily used as an epistemological stance version. Epistemology, as a branch of philosophy, deals with the nature of knowledge, explores understanding what is entitled in knowing and 'how we know what we know' (Crotty, 1998, p. 8), ranging from objectivism, constructionism and subjectivism. According to Crotty (1998), objectivist epistemology claims that meaningful reality exists independently of any consciousness, and that humans can only discover the meaning of the object that already exists within it, which is just waiting to be discovered. Constructionism rejects the objectivists' view of knowledge, claiming that the meaning cannot be just discovered, but that it comes into existence only after human engagement with the reality in the outer world and therefore there is no meaning without the engagement of the human mind; in other words, meaning is constructed not discovered. It is important, at this stage, to distinguish the difference between constructionism with the emphasis of culture in shaping and moulding the human view of the world and how we construct meaning of worldly phenomena, from constructivism as a unique experience of an individual as a valid and worthy way of making sense of the world. In subjectivism, meaning is not the result of interaction between subject and object, but it is imposed by the subject on the object.

According to Gray (2014), the two arguably dominant and influential ontological theoretical perspectives, which can be congruent to a researcher's

epistemology, are positivism and interpretivism or relativism (Robson, 2002) with strands of symbolic interactionism, phenomenology, realism, hermeneutics and naturalistic inquiry. There are also the number of other stances that emerge from them such as critical enquiry, feminism, postmodernism and pragmatism. Positivists argue that reality is only what can be sensed and what can be subject to empirical inquiry based on scientific observation and facts. The reality is value free and is reliant on quantitative data. According to the positivists, both natural and social sciences share the same methodological principles that should deal only with facts. Interpretivism or relativism denies symmetry between the natural and social world, and asserts differences between people and the objects of natural science, aiming to grasp a subjective meaning of social actions that requires different logic and methodological principles and research procedures (Bryman, 2016). The interpretivism relies on qualitative methodologies and language, not only as an object of study, but also as an instrument of world representation and construction (Robson, 2002).

The research in my study adopts constructionism as an epistemological stance and realism, specifically critical realism, as a theoretical perspective. Constructionism deems that 'truth and meaning do not exist in some external world' (Gray 2014, p. 20), but the subjects are constructing such meaning and understanding by their interactions where the meaning is not discovered, but constructed, developed and transmitted within a social context even for the same phenomena such as wisdom. We could see from the literature review in the second chapter that in different historical contexts, different people and different cultures constructed different meaning for the same phenomenon called wisdom. We can only assume, because we cannot access evidence to support it, that wisdom as a phenomenon has been existent within the evolutionary social context from the inception of the human species. Humans have applied tacit knowledge in the fundamental pragmatics of life, using exceptional insight, judgement and advice about complex and uncertain matters of their living condition throughout history. However, different cultures in different social, economic, political and historical contexts, from primordial societies to contemporary civilisations, have given it a different name, construed different meaning, and attributed to it the association that we do with

the phenomenon of wisdom. Wisdom has existed where humans have existed, and its properties were not created by humans, but became wisdom when it was constructed and represented by a mind that gave wisdom its meaning. When the mind became conscious of wisdom as an object, it intentionally reached out to this object and gave it referentiality, relatedness and meaning, and in such intentionality of interaction and interplay between a subject (mind) and an object (wisdom) the meaning emerged (Crotty, 1998).

Ontologically, the existence or being of wisdom as an object in the world is conceivable and possible without the mind, but the meaning of wisdom is not conceivable and possible without the mind, making the realism of the ontology and constructionism of epistemology mutually compatible. According to Chia (2002), a realist position is that which science portrays to be a true, accurate and faithful picture of the world, and the object of research exists independently of the observer. Knowledge advances through theory building, and new discoveries are accumulated to the already known. Contrary to positivism, realism deems that there are different levels of reality systematically revealed by the application of scientific research methods, including generative mechanisms that are real even if they might not be observable.

Realism, on the one hand, accepts dualism between mind and matter and, on the other hand, accepts the dualism between theory about reality and reality itself because theories about reality reflect externally existing reality, which is considered itself stable and enduring. Critical realism, according to Guba and Lincoln (1994), is even more sceptical about reality, because it assumes that reality exists, but can only be imperfectly comprehended due to the imperfect human intellectual faculties and abilities to grasp the basically intractable nature of world phenomena. Therefore, reality must be relentlessly subjected to critical examination to support and facilitate its comprehension with consciousness that every new comprehension is just another approximation of reality.

According to Bunge (1993), complete truth is hard to find because the perception of facts partly depends on beliefs, expectations, sceptical attitude, and therefore it is fallible. Our perception is supplemented with the construction

of concepts, hypotheses and theories. Such theories cannot be same as their real referents because they are simplification and idealisation. Therefore, critical realism accepts epistemic relativism, but does not accept ontological and judgemental relativism (Sayer, 2000), because ontological questions cannot be explained in epistemological terms by being reduced to statements about knowledge that Bhaskar (2008) calls the epistemic fallacy. Consequently, the emerged confluence of ontological realism and epistemological relativism, resulted in an objectivist, but fallibilistic theory of knowledge because reality has great profundity, and human knowledge can discern into its depth without ever grasping its end. The term 'critical realism' evolved from transcendental realism coined by Bhaskar (2008), who makes a distinction among generative mechanisms, events and experiences in the domain of real, actual and empirical reality.

The first domain of the object of knowledge are generative mechanisms that exist independently of human knowledge and consciousness, and they provide causal laws that are analysed by their tendencies. The tendencies are powers and liabilities of things that might be exercised without manifestation in any specific outcome, because the tendencies can be possessed but not exercised, exercised but not realised, realised but not perceived or detected, or they can be transformed. The object of analysis is a real structure or a mechanism that exists and acts independently of human conditions. Bhaskar (1998) calls such knowledge intransitive objects of knowledge, real things and structures, mechanisms and processes, events and possibilities. The intransitive objects of knowledge are independent of their identification; invariant of our knowledge of them, and they exist in historically specific forms. They can be knowable as objects of scientific knowledge, but intransitive objects can exist without science. Scientists engage in experimental activities to discover structures or generative mechanisms that are the real basis of causal laws.

Throughout history, philosophers and psychologists have endeavoured to discover generative mechanisms, causal laws and their tendencies as intransitive objects of knowledge about wisdom that can range from life experience, possession of tacit knowledge, and exposure to complex and uncertain life situations, as cultural and social generative mechanisms. Recently, scientists discovered neurobiological correlates of complex psychological features attributed to wisdom, such as prefrontal cortex frontostriatal and frontolimbic circuits and monoaminergic pathways as biological generative mechanisms of wisdom (Jeste & Harris, 2010; E. E. Lee & Jeste, 2019; Meeks & Jeste, 2009; Sanders & Jeste, 2013). Such cultural, social and biological generative mechanisms provide causal laws that explain why a certain person is or is not wise. The generative mechanisms manifest themselves in possession of tendencies for wisdom that might be exercised without manifestation in any specific outcome. They can be possessed but not exercised, or they can be exercised but not realised. They can be also realised, but not perceived or detected as wisdom. While not a subject of this study, nevertheless the study assumes the existence of this reality of wisdom.

The second domain of the object of knowledge is transitive, actual or established knowledge used to generate new knowledge. The transitive objects include facts and theories, paradigms and models, methods and techniques of inquiry, and science cannot exist without transitive objects as scientific or prescientific antecedents. This domain of wisdom has been extensively analysed in the previous chapter by elaborating philosophical perspectives and interpretations of wisdom, explicit and implicit psychological theories of wisdom, models, and instruments for measurement of wisdom. The focus of this study is not on developing new or contributing to the existing theories, models or measuring instruments of wisdom in the actual domain of wisdom, but in purposefully and selectively using them in the empirical domain of knowledge about wisdom.

The third domain of the object of knowledge is empirical knowledge that is based on experiences which are a social product and the result of application of socially influenced conceptual frameworks that interpret sensed data. The experiences are not the outcome of events, but a combination of such events and our prior knowledge of them, constructed on the senses' perception, which are limited to the segments of reality that we are capable of perceiving with the senses we possess, including available artificial tools (Elder-Vass, 2004).

The focus of my study is on the empirical reality of wisdom based on experiences in a specific social context where such experiences are the result of application of socially influenced conceptual frameworks. Relying on a definition of wisdom by psychological theories of wisdom, the research initially intends to discover the current level of wisdom among undergraduate management education students by using an already validated research instrument. With an adoption of critical realism as a theoretical perspective, I assume that the object of the research, wisdom, is independent to the researcher and that it exists, and can be measured. I am conscious that this task can be difficult, and that this scientific method can tap reality that sometimes can be fallible due to inherent subjectivity in the creation and interpretation of such reality, in this case wisdom (Gray, 2014).

In the next stage, the study explores societal constructs as potentialities or tendencies conducive to enable the development of wisdom that could or could not manifest themselves in specific experiences of wisdom detected in the first stage of the study. This introduces epistemological relativism into the research because, if different people in different times and places had a different interpretation and meaning of wisdom, they had different and separate realities. Hence, if people understood wisdom as an effective interpretation of historical and cultural phenomena rather than as an eternal truth, the outcome of this study is also a construct. That is a manifestation of a specific, separate reality as a segment of reality perceived by available senses and instruments in interpreting the phenomenon of wisdom that can differ from manifestations of the same reality in some other educational context. It is important at this stage of the research to emphasise that this study is taking the epistemological stance of subjectivism.

# 3.4 Research methodology

In selecting research methodology, a researcher can opt for an objectivist (positivist) or subjectivist (anti-positivist, interpretivist) paradigm. The objectivist

paradigm views the natural and social worlds as real and external to the individual, whereas the subjectivist paradigm treats the world as a kind of personal and human creation (Cohen, Manion, & Morrison, 2013).

Decisions about the research methodology can also be subject to a theoretical model approach of either deductive or inductive reasoning. Deductive reasoning starts with a universal view or principle and moves to particulars, by testing hypotheses that can confirm, reject or modify the principle, aiming to explore and explain the relationship between or among the particulars. Inductive reasoning starts with particulars by collecting and analysing data about particulars to identify emerging patterns and relationships among particulars that might result in possible generalisations, theories or binding principles (Bryman, 2016; Gray, 2014).

Gray (2014) classifies research methodologies, without any intention to be exhaustive, into experimental and guasi-experimental research, descriptive and analytical surveys, ethnography, phenomenological research, grounded theory, action research and case studies, heuristic inquiries, and so on. In classical experimental research, a random sample of participants is assigned into an experimental group that receives treatment, and a control group that does not receive treatment, manipulating an independent variable to see its effect on the dependent variable. Descriptive surveys measure characteristics of population to describe data or variables of interest while analytical surveys are generally used to test the theory by exploring the correlation between variables. Ethnography aims to understand cultural phenomena, their meaning and how they affect the life of different groups in their living environment. Grounded theory works on systematic and restless data collection and analysis to actively construct data about the phenomenon. Phenomenological research aims to inductively collect large volumes of data by using unstructured data collection methods, generating 'thick description' about participants' experiences and perspectives on research phenomena that can be hard to replicate. In action research and case studies, the emphasis is on promoting change through close collaboration between researcher(s) and participants. Heuristic inquiry is autobiographical and starts with a personal problem by emersion in an active

experience and open-ended self-dialogue to get inside the problem, making the research deeply descriptive and subjective. This study adopts a descriptive survey as a research methodology and therefore requires some elaboration.

According to Cohen et al. (2013, p. 256), surveys 'gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events'. Descriptive surveys are designed to gather data about what occurred, not why it occurred, and are usually conducted to learn about peoples' values, attitudes, opinions and perceptions. The workhorse of any survey method is a questionnaire that can be self-administered, either as postal, delivered and collected; online; or interviewer administered, either as structured face-to-face interviews, focus groups discussions or telephone conversations. Each survey method has its advantages and disadvantages, but the purpose of the enquiry, the type of questions asked, the characteristics of the population and the available resources, including time and budgets, are usually taken into the equation when deciding about the survey method (Cohen et al., 2013; Gray, 2014). An online questionnaire was selected in this study because of the time and cost constraints, and high information technology literacy of the population in focus.

According to Robson (2002), research methodologies can be also classified by their purpose in exploratory, descriptive, explanatory and emancipatory research. The exploratory research is seeking new insight, aiming to find what is happening. The objective of the descriptive research is to portray a phenomenon. The explanatory research seeks to identify and explain the relationship, but not necessarily causal, between different aspects of the phenomenon. Last, the emancipatory research is engaged in social action or change.

Regarding a time frame, research can be either cross-sectional or longitudinal (Bryman, 2016). In cross-sectional research, usually associated with a survey, researchers are taking a snap-shot approach by collecting data at one point of time focusing on the relationship among variables in a single group (Robson,

2002), while in the longitudinal study data are collected over time, involving repeated measures in the same group of participants, which can follow some intervention to examine its effect over time.

The theoretical reasoning of this study is deductive, purpose explanatory and time frame cross-sectional, using descriptive surveys, and starting with implicit theories of wisdom as an overarching theoretical framework. Snap-shot surveys with undergraduate management students were conducted to describe and explain the relationship between management education and development of students' wisdom without an intent to explore causation of such relationship, but rather explain their association. There were two different data collection instruments. The first instrument measured the level of students' wisdom while in the other instrument, students expressed their perceptions on wisdom enablers in management education content, pedagogy and assessment tools.

This study used two closed-ended, rating scale questionnaires, ranging from 'strongly agree' to 'strongly disagree' and 'definitely true of myself' to 'not true of myself'. These questionnaires yielded ordinal type of quantitative data. The first questionnaire, which measured the current level of students' wisdom, was a standard 3D-WS questionnaire (Ardelt, 2003) available in Appendix B, p. 197. Wisdom is considered as a latent variable evidenced by the indicators of the three domains: cognitive, affective and reflective. To develop the scale, Ardelt (2003) conducted qualitative and quantitative interviews with a sample of 180 members of a social group of older adults. A 3D-WS questionnaire originally included a total of 132 items. After refinement and consolidation, the final version of the 3D-WS consisted of 39 items across three wisdom domains: 14 items for cognitive, 13 items for affective and 12 items for the reflective domain. Items in the cognitive domain measured an understanding of life and the desire to know and understand (for example, 'Ignorance is bliss'). Items in the affective domain assessed the presence of positive and nurturing emotions and behaviour and the absence of negative or indifferent emotions and behaviour. (for example, 'I am annoyed by unhappy people who just feel sorry for themselves'). Items in the reflective domain measured the ability and willingness to look at phenomena and events from different perspectives and

assessed the absence of subjectivity and projections (for example, 'Things often go wrong for me by no fault of my own').

The second questionnaire was a custom-designed questionnaire and measured students' perceptions of wisdom enablers, as wisdom promoters, in undergraduate management education that were derived from the implicit theory of wisdom themes. The research interest was a theoretical field of implicit theory of wisdom and therefore in this study the theoretical thematic analysis approach was used to design the second questionnaire. Three domains of wisdom in implicit theory of wisdom (cognitive, affective and reflective) had been determined by the literature review and included a personal interest to identify how they would play out across the management education through students' eyes. Questionnaire items in the cognitive domain measured students' perception of wisdom enablers that promote the development of the cognitive domain of wisdom (for example, 'I was involved in problem-solving activities'). Items in the affective domain measured students' perception of wisdom enablers that promote the development of the affective domain of wisdom (for example, 'By working in a group, I made several friends'). Items in the reflective domain measured students' perception of wisdom enablers that promote the development of the reflective domain of wisdom (for example, 'Assessment task(s) involved self-evaluation').

The dominant implicit theory of wisdom themes, expected faculties of a wise person, and initial, preliminary thematic codes at semantic or explicit level, identified in the literature review and the design of 3D-WS, were synthesised and mapped in the Table 3.1, p. 84, as a part of content validation. Numbers in brackets against each domain and theme represent question (item) numbers in Students' perceptions of wisdom enablers in the undergraduate management education questionnaire (SPWEQ), available in Appendix A, p. 192.

Wisdom	Dominant wisdom themes in implicit	Characteristics of a wise person
Domains	theories of wisdom	from literature review
Cognitive	<ul> <li>a. Ability to understand life (5)</li> <li>b. Knowledge of the positive and negative aspects of human nature (6)</li> <li>c. Inherent limits of knowledge and life's unpredictability and uncertainties (7, 9)</li> <li>d. Knowledge of the ambiguity of human nature and life (8)</li> <li>e. Exceptional understanding of situation or phenomenon (5)</li> <li>f. Reasoning ability (1, 2, 4)</li> <li>g. Perspicacity (1, 3)</li> </ul>	<ul> <li>a. Reasoning as well as logic (1, 2, 4)</li> <li>b. Possession of factual, tacit and procedural knowledge (5)</li> <li>c. Acceptance of limitations of knowledge and uncertainty (6, 7, 9)</li> <li>d. Insight and creativity (3)</li> <li>e. Intuition, perceptiveness and discernment (1, 3)</li> </ul>
Affective	<ul> <li>a. Presence of positive emotions and behaviour towards other beings (2, 9)</li> <li>b. Sympathy and compassion (3, 8, 9)</li> <li>c. Absence of indifferent or negative emotions and behaviour towards others (4)</li> <li>d. Interpersonal skills (5, 6, 7)</li> <li>e. Social unobtrusiveness (9)</li> <li>f. Sagacity (1)</li> </ul>	<ul> <li>a. Emotional awareness (3, 9)</li> <li>b. Temperance, courage, fortitude (8, 9)</li> <li>c. Use of right means to produce good ends (1)</li> <li>d. Possession of a moral and ethical compass (1)</li> </ul>
Reflective	<ul> <li>a. Reflective thinking by looking at phenomena and events from many different perspectives (1, 2, 10)</li> <li>b. Developed self-awareness and self-insight (5, 11)</li> <li>c. Insight into the true nature of things (8)</li> <li>d. Reduction of one's self-centeredness, subjectivity, and projections (6, 9)</li> <li>e. Learning from ideas and the environment (3, 4)</li> <li>f. Judgement (8, 10)</li> </ul>	<ul> <li>a) Experiential learning and critical reflexivity (1, 2, 11)</li> <li>b) Acknowledgement of a bigger system (10)</li> <li>c) Possession of different time perspectives (10)</li> <li>d) Balancing particulars with universals (8)</li> <li>e) Adaptability to different environmental contexts (3)</li> <li>f) Balancing conflicting interests of different constituencies (7, 8)</li> </ul>

# Table 3.1 Mapping of wisdom domains, themes, and wisdom enablers research questions in SPWEQ

The methodological assumption is that management education influences the development of students' wisdom, and by analysing and combining two datasets the aim was to explain the nature of their relationship through the eyes of the main stakeholder, student population.

# 3.5 Research design

Research design represents a plan of data collection, measurement and analysis, including techniques for data collection, approaches for sample selection, and approaches to data analysis (Gray, 2014). In essence, it is the plan of how to turn research questions into a project (Robson, 2002). Robson (2002) distinguishes two main approaches to the research design: fixed and flexible design research. While the fixed design research insists on a strict research specification before reaching the data collection stage, concerned with aggregates, group characteristics and general tendencies, the flexible design research evolves with the data collection, very often multiple techniques of data collection. Robson (2002) asserts that the traditional fixed design research includes experimental, quasi-experimental and non-experimental designs, such as relational and comparative designs, that very often corresponds to a quantitative research method or strategy. The traditional flexible design research is associated with case study, ethnography and grounded theories that are usually associated with a qualitative research method or strategy.

#### 3.5.1 Research method

Regardless of a debate about a big divide and of 'paradigm wars' (Gage, 1989), the research literature still categorises research methods along continuum from quantitative to qualitative including mixed methods design. Difference in epistemological positions, relationship between researcher and subject, research focus, relationship between theory or concepts and research, scope of findings and nature of data are determinants for their categorisation (Bryman, 1984, 2016). The following paragraphs outline the major characteristics of the quantitative method because this study is using a mono, multi-strand (QUAN+QUAN) (Teddlie & Tashakkori, 2006) quantitative research method. Concurrent timing was used to collect two sets of quantitative data from the same population of participants. Two datasets were kept independently during the initial analysis, but in the second stage their transformation and combination was performed for comparison and interrelation. The justification for this decision rests on an intention to extend

the depth of inquiry by using different data collection instruments for different inquiry components.

In its purist interpretation, the quantitative method is associated with epistemological objectivism and positivism, deductive reasoning, fixed experimental or quasi-experimental research design, numerical data collection from a random probability sample by using surveys with structured questionnaires to collect pure facts. The researcher is a distant outsider, and collected data are statistically analysed by using descriptive or inferential statistics that yield numerical data. Gray (2014) distinguishes two stages in experimental and quasi-experimental research: the planning stage and the operational stage. The planning stage consists of identifying the issue or questions of interest, reviewing of relevant literature and theories, developing questions and forming a hypothesis, and identifying dependent and independent variables. The operational stage consists of conducting the study and data collection, using descriptive statistics to describe data, using inferential statistics to evaluate statistical hypotheses, accepting or rejecting hypotheses and preparing formal reports for publication or presentation.

Bryman (2016) asserts that the main preoccupation of the quantitative research is as follows: a) assigned importance of concepts and indicators for their measurement; b) validity and reliability of the measurement process; c) exploration of causality between or among variables; d) generalisation of findings to the large population that goes beyond the particular research context; and e) replication of the study to reduce or eliminate researcher's biases and values. The concepts are the major theoretical pillars around which the entire research is organised, and, in this study, the major concepts are wisdom and wisdom enablers in management education. The concepts are measured through indicators that stand for such concepts and the indicators for measurement of wisdom are its domains: cognitive, affective and reflective. The indicators of management educations are content, pedagogy and assessments. These are measured by using measurement scales, such as the Likert scale, because measurement provides an opportunity to estimate the degree of relationship between these two concepts.

#### 3.5.2 Measurement of process reliability and validity

There are numerous types of tests for assessing reliability and validity of the measurement process in the quantitative research. These include: stability (test/re-test), internal reliability, equivalence, inter-observer consistency, intrajudge reliability, face validity, internal validity, external validity, criterion validity, concurrent validity, predictive validity, construct validity, content validity, statistical validity, convergent and discriminant validity (Bryman, 2016; Cohen et al., 2013; Gray, 2014; Robson, 2002). For the purpose of this study, attention was given to internal reliability and the following types of validity: face, construct, content and convergent validity.

Measurement of a process reliability means measurement of 'dependability, consistency and replicability over time, over instruments and over groups of respondents' (Cohen et al., 2013, p. 199). The most common ways of measuring internal reliability are the split-half method, which can be calculated by using the Spearman-Brown formula r = 2r/(1+r), where 'r' represents the correlation between the two halves of the instrument; and Cronbach's alpha, which calculates the average of all possible split-half reliability coefficients (Bryman, 2016; Cohen et al., 2013). The Cronbach's alpha value can vary from '1', as a perfect internal reliability, to '0' indicating no internal reliability, but as a rule of thumb the value of '0.7' and the above is considered as acceptable (Gray, 2014).

The internal reliability, as the stability or constancy of a scale of the 3D-WS questionnaire, was tested in previous studies. For the US sample, Cronbach's alpha for the cognitive, reflective and affective dimensions ranged from 0.71 to 0.85 (Ardelt, 2003), 0.72 for the student sample, 0.66 respectively for the older adult sample (Ardelt, 2010), 0.71 and 0.66 for the Slovak sample (Benedikovicová & Ardelt, 2008), 0.71 to 0.85 (Ardelt, 2018) and 0.75 to 0.80 (Bailey, 2009). These research results give confidence about the reliability of this instrument when used in this study. However, there is a need to trial it with an Australian sample. The reliability of the other quantitative instrument used in this study was also tested using the same approach by running a pilot study. This is detailed in Chapter 4.

Validity refers to if 'a particular instrument in fact measures what it purports to measure' (Cohen et al., 2013, p. 179), or that 'an indicator (or set of indicators) that is devised to gauge a concept really measures that concept' (Bryman, 2004, p. 151). Face validity means that the instrument at least appears to measure what it claims to measure; in our case, the concept of wisdom, what was validated by supervisors of this study. Construct validity is concerned with how a particular measure or data collection instrument correlates to the theory that is relevant to the concept that it intends to measure. It can be addressed by convergent and discriminant techniques (Cohen et al., 2013) that measure the level of inter-correlation among different constructs. The cognitive, reflective and affective dimensions of the 3D-WS significantly correlated with each other and ranged from 0.30 to 0.50, and the skewness and kurtosis were all in acceptable ranges (Ardelt, 2003). The instrument demonstrates content validity if it adequately and comprehensively covers the concepts that it professes to cover. Descriptions of wisdom in 3D-WS resemble the descriptions given by participants in previous wisdom studies and the 3D-WS significantly correlated with a 3-dimensional wisdom ratings by three independent judges of the qualitative interviews (Ardelt, 2003). The instrument conforms to the predictive validity if it uses future not current measurement criteria. As predicted the 3D-WS was significantly and positively correlated with mastery, general well-being, purpose in life, and subjective health, while it was significantly and negatively related to depressive symptoms, feelings of economic pressure, death avoidance and fear of death (Ardelt, 2003). Last, convergent and discriminant validity refer to the instance when the results for two related or similar concepts, constructs, factors, attributes or elements are either consistent, converge to each other, or are different, unrelated or divergent to each other (Cohen et al., 2013). Correlation, regression and factor analyses are commonly used in quantitative method studies to demonstrate convergent validity, while *t*-tests, chi-square tests, analysis of variance, and collinearity diagnostics are used to demonstrate divergence. The 3D-WS was unrelated or divergent to the respondents' demographic and economic status, but it was significantly and positively correlated, convergent with education, longevity of employment and occupation, although the correlations are weaker than the correlations with mastery, general well-being, purpose in life, subjective health, depression,

death avoidance and fear of death (Ardelt, 2003). Based on the results of the above analysis, no pre-testing of this instrument was conducted for the purpose of this study. However, as suggested by the questionnaire author (see Appendix C, p. 200, the 3D-WS questionnaire reliability and validity were also tested after the actual research data collection.

#### 3.5.3 Sampling

Sampling is a key component of every research and has a profound impact on the generalisation of results to the entire population in quantitative research and the ultimate quality of research findings in qualitative research, therefore 'sampling is destiny' (Kemper, Stringfield, & Teddlie, 2003, p. 275). The sample is a segment, part or a subset of the total population, where the population means the universe of units that share the common characteristics or traits (Bryman, 2016). According to Cohen et al. (2013) researchers should consider the following factors in deciding on sampling strategy: sample size, representativeness, access and type of research. These factors will be observed in further analyses of sampling methods.

There are two main sampling methods: probability and non-probability (Bryman, 2016; Cohen et al., 2013; Gray, 2014; Robson, 2002). The probability sample, commonly associated with the quantitative research method, is selected on the basis of its representation of the wider population, where each unit of the population can have a known chance of being selected into the sample. The probability sample can take the form of a random, systematic, stratified, cluster, or multi-stage sample. Simple random sampling is the preferred sampling method when the population is homogeneous and all members of the population are accessible. Random numbers table or computer-generated numbers can be assigned to the units in the population or sampling frame. Systematic sampling is the modified random sampling method where only the starting number of the sampling frame is randomly selected, while the other sample members are selected in systematic rather than a random manner. Stratified random sampling is a further modification of the simple random sampling method where the population is initially divided into homogenous groups with similar characteristics and then sample members are

randomly selected from each stratum to achieve higher sample representativeness and reduce sampling error. The cluster sampling method is applicable in the case of a limited access to the population as a whole, which can be large and widely dispersed. Hence, researchers opt to randomly select groups within the population to use as a sample than to randomly select individual units from the total population. Last, the multi-stage sampling method is a further extension of cluster sampling by involving successive random selection through more than one stage, even with a different unifying purpose in different stages.

Contrary to probability sampling, the non-probability sampling method, commonly associated with qualitative research, targets a particular group, fully conscious that such a group may not be representative of the broader population, and with no intention to generalise findings, but represents only itself (Cohen et al., 2013). There are several types and sub-types of non-probability samples: convenience sampling, quota sampling and purposive sampling (which include subtypes such as: representativeness or comparability sampling, special or unique cases sampling, and sequential sampling) (Cohen et al., 2013; Gray, 2014).

In convenience sampling, often known as accidental or opportunity sampling, researchers select individuals or a captive audience to whom they have access, which might be available and willing to participate at the time until the sample size have been reached, making it the least costly, but also the least credible of all non-probability sampling methods because the findings can represent only a convenience sample.

Quota sampling resembles random stratified probability sampling because the sample units are selected from the chosen strata, but researchers collect data from the chosen strata using not random, but the non-random approach until the in-advance fixed quota has been fulfilled. Quota sampling has a relative or proportional representation of the wider population, providing that the proportion of strata in the wider population is known, but the sample is not a

representative sample of the whole population and the findings cannot be generalised to the whole population.

Purposive sampling is used in cases when particular people, events or cases are chosen on the grounds of a researcher's judgement that they can provide important information or perspectives on the specific phenomena of interest that could not be obtained by other sampling methods. According to Teddlie and Yu (2007), purposive sampling has several sub-types of sampling and in their taxonomy of sampling techniques, they distinguish the following sub-types of purposive sampling: a) representativeness or comparability sampling that include typical case sampling, extreme of deviant case sampling, intensity sampling, maximum variation sampling, homogeneous sampling and reputational case sampling; b) special or unique cases sampling, including revelatory case sampling, critical case sampling, politically important case sampling and complete collection sampling; and c) sequential sampling that includes theoretical sampling, confirming and disconfirming case sampling, opportunistic or emergent sampling, and snowball or chain sampling. Teddlie and Yu (2007) conclude that purposive sampling trades-off the breadth of studies associated with probability sampling for the greater depth of the purposive sampling studies characteristics.

To reconcile the divide between probability and non-probability sampling regarding research breadth and depth, Collins, Onwuegbuzie, and Jiao (2006) introduced a 2-dimensional mixed method sampling model applicable in either concurrent or sequential mixed method design by using one of the following sampling types: identical, parallel, nested and multilevel sampling. In identical sampling, in both quantitative and qualitative stages of the research, researchers use the same members of the population, usually for validation of research findings. In parallel sampling, the samples for quantitative and qualitative research are different, but still selected from the same underlying population, aiming to compare two or more cases or groups within the same population. In nested sampling, the sample units chosen for one stage of the research study epitomise a subset of the participants selected for the next stage of the research study to refine ideas; hence, this sampling method is very

popular among grounded theorists. Last, in multilevel sampling, two or more samples, which are not necessarily of the same size, are selected from different populations to facilitate comparisons between or among such subgroups that are selected from different levels of the research study (Onwuegbuzie & Leech, 2007).

If 'sampling is destiny', the sample quality – including sample absolute and relative size, accepted sampling error, time and cost, non-response rate, heterogeneity of the population, and kind of analysis (Bryman, 2016) – has a consequential impact on the interpretation of research results. According to Cohen et al. (2013), there is no clear answer on the question of the appropriate sample size, but it will depend on the purpose of the study, the nature of the population, the level of desirable accuracy, the anticipated response rate, the number of variables in the research and the used research method.

#### 3.5.3.1 Study sampling strategy option

Based on the judgement of 'who will provide the best perspectives on the phenomena of interest' (Gray, 2014, p. 217), a non-probabilistic, purposive, typical sample sampling strategy was opted in this study. The rationale was based, first, on the results of antecedent research findings that late adolescence and early adulthood are the primary age when wisdom-related knowledge emerges (Baltes & Kunzmann, 2003; Baltes & Smith, 2008; Pasupathi et al., 2001); second, the sampled school, programs and courses or subjects are majors and minors in undergraduate management studies with a high level of relevance to the study's phenomena; and third, the researcher's network and 'easy' accessibility to the targeted students' population.

In overview, this research was conducted at an Australian metropolitan university, College of Business, and School of Management. In the second semester of 2018 the School of Management had five single stand-alone undergraduate programs or areas of study and seventeen double degree programs. Only active, full-time, city campus, single Bachelor degree undergraduate students at the School of Management were invited to participate in this study. In semester two of 2018 there were 1943 students that met the above selection criteria.
#### 3.5.4 Data collection

Gray (2014) distinguishes several data collection methods: questionnaires, interviewing, non-participant observation, ethnography, participant observation, focus groups, unobtrusive measures and secondary analysis. In questionnaires, participants are asked the same set of questions in a predetermined order. Questionnaires as a data collection method were used in this study and will be elaborated in more detail. Interviewing is a largely exploratory verbal exchange, in a structured or unstructured manner, between a participant and an interviewer, involving examination of participant's feelings, opinions, attitudes, values or perceptions. Observation is a systematic recording of peoples' actions and the analysing of their behaviour, which can be a participant or non-participant (naturalistic), and overt or convert in its nature. The focus group is organised discussion among purposefully selected participants to elicit, through interaction and discussion, their views and perspectives on a targeted topic. Unobtrusive measures use sources that are independent of the researcher's presence and can include documentary evidence, physical evidence and archival material such as files, maps, drawings, sound recordings and photographs. In a secondary analysis, researchers use existing data, collected for some prior studies and for the purpose that is different to the original study. These data can involve census data, government and business records, such as annual reports and meeting minutes, newspaper articles, websites, social media, and so on.

As already mentioned, questionnaires were used in this study (see Appendix A, p. 192 and Appendix B, p. 197) as primary data collection instruments. Their selection was decided with the research questions and data analysis in mind. According to Gray (2014) and Bryman (2016), the rationale for using questionnaires is in their low cost in terms of money and time, respondent's convenience, relatively simple data analysis of closed questions, assurance of respondent's anonymity and absence of the interviewer's bias. Questionnaires also have a number of drawbacks such as the inability to prompt, probe or ask many questions that are not salient to respondents. Questionnaires can be read as a whole, and the researcher does not know who actually answered the

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questions. Also, questionnaires might not be appropriate for some respondents. They have a greater risk of missing data, and usually have a lower response rate.

There is a large range of different types of questionnaires, but as a rule of thumb the size of the sample will determine the type of a questionnaire (Cohen et al., 2013). Larger size samples open the room for more structured closed and numerical questionnaires, while smaller size samples are associated with less structured, more open and word-based questionnaires. Closed-ended question questionnaires stipulate a range of responses from which a respondent must make a selection, while open question questionnaires enable respondents to provide answers that are not framed within limitations of pre-set responses. In designing closed, numerical questions, researchers must decide the appropriate metric or scale of data. The scale of data can be nominal, ordinal, interval and ratio. The nominal data imply categories, ordinal order or rank, interval a scale of values with equal interval without a zero point, and ratio continuous values and true zero point (Cohen et al., 2013). Those scales will be elaborated in more detail in the data analysis section of this chapter.

Cohen et al. (2013) distinguish six types of close, numerical questions: dichotomous, multiple choice, rank ordering, rating scales, constant sum and ratio data. Dichotomous questions require only 'yes' or 'no' answers and are used when a clear and unequivocal response is required. Multiple choice questions are designed to capture a range of answers to prescribed statements. Rank ordering questions are similar to multiple choice questions. They ask respondents to compare values across variables, enabling respondents to identify priorities, strength and preference. Rating scales, such as Likert, Thurstone and Guttman scales, generate numbers while building a degree of respondents' response sensitivity and differentiation, giving a researcher an opportunity to determine frequencies, correlation, and other forms of quantitative data analysis. With constant sum questions, respondents are asked to allocate a predetermined number of points across a number of items. This enables researchers to identify priorities, compare highs and lows, and to indicate equality of choices. Ratio data questions use continuous variables with

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a true zero, where no fixed answer or category are provided, but respondents put an exact numerical figure in the answer. This results in much higher answer accuracy in comparison to categories of data, enabling usage of high-level statistics in data analysis such as regression, factor analysis and structural equation modelling.

#### 3.5.4.1 Study data collection method

This study used two closed-ended question, rating scale questionnaires that yield ordinal types of quantitative data. The first questionnaire was a standard, previously validated 3D-WS questionnaire (Ardelt, 2003) (see Appendix B, p. 197); hence, no pre-testing was conducted, while the second questionnaire was custom-designed and pre-testing was conducted. Both questionnaires were simultaneously distributed to the student cohort of participants to address the first and second guiding research questions. Before the distribution of the second questionnaire, a pre-test was conducted to pilot the questions and the questionnaire (Gillham, 2007). The first round of piloting was done by supervisors of this study and peer doctoral candidates who were not specialists in the research targeted group, followed by a group of students from the feeding, pathway program, which is similar to the targeted group, but not from the actual sample of participants who got the actual questionnaire. A comprehensive statistical data analysis of the SPWEQ questionnaire pilots testing is presented in Chapter 4.

As already mentioned, an online questionnaire was administered via email by providing a link to the web-based surveys Qualtrics. The rationale for such a data collection approach was the cost, time, participants' level of literacy, participants' convenience, researcher effects and data processing factors. The main envisaged problem with the online data collection was response rate due to the absence of tangible incentives. Certain ethical issues associated with the online data collection are addressed in the ethics section of this chapter. Data collection was conducted at an Australian metropolitan university, College of Business and School of Management. Ethics approval was obtained from the Arts, Social Sciences & Commerce College Human Ethics Subcommittee of the La Trobe University (see Appendix D, p. 207) and was registered with The

Business College Human Ethics Advisory Network (BCHEAN) of the targeted University.

The School of Management was purposefully selected for this study because its programs and courses, majors and minors in undergraduate management education, have a high level of relevance to the study's phenomena, and the accessibility to the targeted student population. In the second semester 2018, the School of Management had five single, stand-alone undergraduate programs or areas of study and 17 double degree programs. By using a nonprobability, purposive, typical sample sampling strategy, only students enrolled in a single program were invited to participate in this study. In total, 1943 School of Management, single-program Bachelor degree students enrolled in the second semester 2018 were invited to participate in the survey. A letter of support for the study and access to a coded students' batch email address by each study program, to protect students' anonymity, were obtained from the Head of School of Management.

Data collection was conducted in the second semester of 2018, from the 23<sup>rd</sup> of August 2018 to the 31<sup>st</sup> of October 2018 by using a self-administered, online, voluntary, anonymous, Qualtrics software survey. As a result, students could not be identified in any type of publication from this study. Lectures or tutorials were not used for conducting the survey, and students were expected to do it in their own time; however, the researcher obtained access and the support of academics to promote the study and encourage student participation. A three-minute promotional presentation was conducted at the start of 15 purposefully selected lecture sessions. Tutors were animated to display a promotional poster at the beginning of more than 100 tutorials; weekly reminders and progress reports were distributed to students during the entire data collection campaign. At the end of the campaign, 289 valid responses were received, which represents a 15% response rate.

#### 3.5.5 Data analysis

The online questionnaires yielded quantitative data; hence, a quantitative analysis was conducted by using the Statistical Package for the Social

Sciences (SPSS 25), a software application for statistical analysis. According to Cohen et al. (2013) and Gray (2014), data can be classified into categorical data and quantifiable data. The categorical data cannot be numerically quantified themselves, but they can be placed into sets as nominal data or ranked as ordinal data. The quantifiable data can be numerically measured as interval and ratio data. Data classification is important because it determines the type of statistical tests that can be used in the data analysis. Non-parametric statistics can be used with categorical (nominal and ordinal) data, while more precise parametric statistics can be used with quantifiable data (interval and ratio). The non-parametric statistics have no assumption about population because its characteristics are unknown, and data do not require to fit a normal distribution. Contrarily, parametric statistics assume knowledge of population and its characteristics, and that data fit a normal distribution.

Online questionnaires in this research yielded nominal data, such as the student's age groups, genders, subjects taught, funding source, employment status and life hardship. These data build up a frequency count about how often the nominal data occur. They also yielded ordinal data such as ranking of values and statements about wisdom domains on a Likert scale ranging from 'strongly agree' to 'strongly disagree', and 'definitely true of myself' to 'not true of myself', where the intervals between ranking or ordering is not identical.

There are two types of statistics: descriptive and inferential. Descriptive statistics describe, present and summarise a dataset, such as summary frequencies. Inferential statistics aim to make inferences, predictions and conclusions about the population, based on the collected data (Cohen et al., 2013; White & McBurney, 2013). Descriptive statistics include analyses of central tendencies such as mode, mean, median, minimum and maximum score, range, variance, standard deviation, standard error, skewness and kurtosis. Inferential statistics might include hypothesis testing, correlation, regression, multiple regression and difference testing methods such as *t*-tests, factor analysis and structural equation modelling. In this study, both descriptive and inferential statistics were used. They were used to conduct univariate analysis and crosstabulation to examine differences within and among

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variables such as the level of wisdom among different categories of students – including their ages, genders, study stages – after checking for the effect of employment status and life hardship. They were also used to examine relationships of association between variables such as students' level of wisdom across three wisdom domains and perceptions of wisdom enablers across three wisdom domains in undergraduate management education.

Even though the reliability test of the 3D-WS, for similar cohorts of participants, has previously already been elaborated in this chapter, the Cronbach's alpha value was calculated for both questionnaires used in this study. The Mann-Whitney U test for two independent variables (Cohen et al., 2013) was used to compare students' wisdom scores in 3D-WS questionnaire by students' domiciles and employment status. These tests compared the means of two groups to identify if there were any statistically significant differences between them. The same test was also used to compare any statistically significant differences between students' perceptions of wisdom enablers according to students' domiciles, employment status and life hardship. Furthermore, oneway ANOVA analysis of variance was conducted to compare the variances in wisdom scores and wisdom enablers according to student ages, genders and stages of study. The same analyses were conducted to test the first and second null hypothesis. Pearson product-moment correlation and Spearman rankorder correlation coefficient were used to calculate the association between student's wisdom scores in 3D-WS and students' perceptions of wisdom enablers in undergraduate management education, to test the third null hypothesis.

#### 3.6 Ethics

The main ethical dilemmas in every research are the cost/benefit ratio and how to find balance between research social benefits in pursuit of truth and personal costs to participants such as embarrassment, loss of trust, autonomy, selfdetermination and self-esteem (Cohen et al., 2013). Hence, there are several views on the resolution of this ethical dilemma: deontological, utilitarian, virtue ethics and situational ethics. A deontological perspective on ethics insists on treating people in research as ends not as means, in contrast to the consequentialist or utilitarian perspective, which focuses on outcomes and the greatest benefit for the greatest number. Virtue ethics unconditionally pursues what is good and right, while situational ethics sanctions a relativistic approach to the ethical problem. Seedhouse (2009) introduced an ethical grid of external (codes and laws), consequential, deontological and individual layers of ethical decisions in health care. Stutchbury and Fox (2009) provided a clear analysis of the grid as an epistemological device where ethical decisions should operate simultaneously in all four layers. However, every social research is permeated with ethical dilemmas and ethical issues such as informed consent, access and acceptance, non-maleficence, beneficence, human dignity, privacy, anonymity, confidentiality, betrayal and deception (Cohen et al., 2013).

The principle of informed consent rests on the human right to freedom, liberty and self-determination in a democratic society. If such freedom is under threat due to exposure to stress, pain or intrusion into people's privacy, it must be justified and consented by participants including the right on refusal and withdrawal from the research. There are some arguments against informed consent in cases of covert observation and experimental research techniques, provocation of the Hawthorne effect and reinforcement of power asymmetry between researchers and participants. Nonetheless, regardless of all pros and cons the principle of informed consent is a foundation for all other ethical considerations.

Access and acceptance involve gaining permission from the organisation or institution to conduct research with the targeted population. The principles of non-maleficence, beneficence and human dignity reflect the dichotomy of the ratio between benefits to the society and cost that an individual might suffer. Therefore, conducting a free scientific inquiry, searching the truth and generating knowledge must be carefully balanced with the physical, psychological, humane, proprietary, professional, emotional and cultural sacrifice of an individual. Greater consideration must be given to the latter.

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The principles of privacy, anonymity and confidentiality confront the conundrum between individual's right for seclusion and the public's right to know about sensitive information, observation setting and information dissemination. Regardless of critiquing these principles by the utilitarian school of ethics, the informed consent must clearly stipulate what information will be communicated to or withheld from public.

Betrayal is the breach of trust generated by either selfish, personal or professional motives, while the deception occurs when the truth is being compromised. Concern about unethical behaviour in conducting a research resulted in growth of ethical codes of practice, laws and regulations. The milestone of mitigating the risk of unethical research behaviour was the Nuremberg Code 1947, which was later superseded by the Declaration of Helsinki (Gray, 2014). This research is governed by the Australian Code for the Responsible Conduct of Research, National Statement on Ethical Conduct in Human Research, and the La Trobe University Human Research Ethics Committee, *Human Research Ethics Guidelines*.

According to the above ethical principles, to protect participants' privacy and meet research ethical standards, the protocol of informed consent (L. F. Locke, Spirduso, & Silverman, 2014) was put in place by adhering to the four key values and principles to ensure that a project is ethical: merit and integrity, justice, beneficence, and respect (*National Statement on Ethical Conduct in Human Research*, 2007 (Updated May 2015)). Also, Ethics approval was obtained from La Trobe University Arts, Social Sciences & Commerce College Human Ethics Sub-Committee (see Appendix D, p. 207).

Consent was also obtained from the targeted College of Business, School of Management, and students that participated in this research.

The consent included:

- research objectives,
- name of the researcher responsible for the study for eventual questions,
- description of participants,
- type of data and information sought,

- participation time and duration,
- statement that participation is voluntary,
- authority to access collected data and information,
- explanation of confidentiality and anonymity preservation,
- withdrawal from the research at any stage of the research,
- protection of collected data, that no data could be traced to any individual source,
- opportunity to receive feedback about the results, appropriate to participants' needs and interests.

# 3.7 Research limitations

One of assumptions of this study is that managers' education should introduce students to the higher questions concerning the role of management in society and provide them with the conceptual skills to evaluate what it means for management to act responsibly to themselves and the world, because managers' decisions and actions have an enormous social, economic and environmental influence and impact.

However, this study was limited to the selected undergraduate programs in one university, and one targeted non-probability, purposive sample. Therefore, this study does not represent the larger population of undergraduate management education programs, and its results cannot be generalised. Other management educators might connect their own experience and understanding of the need to develop managers' wisdom during undergraduate education and test the findings of this study in their own educational context from the same or a different perspective.

A researcher's 'attachment' to the concept of wisdom can impose a considerable bias during the data collection phase; that is, that of seeing and hearing what the researcher wants to see or hear. Furthermore, students can perceive the research topic as 'trivial' in the given socio-economic and ideological context and provide answers that do not reflect their honest opinion.

Students may be compelled to provide answers to the online questionnaire in a manner that is 'politically correct' to look smart.

# 3.8 Chapter summary

This chapter presents an overview of the research design, including research type, epistemological and theoretical perspective, research method, data collection, data analysis and ethical considerations. The methodology adopted explanatory, descriptive, cross-sectional an survey governed by constructionism and critical realism as theoretical perspectives. Quantitative research methods using questionnaires to collect data from a non-probability, purposive, typical sample are described. Data analysis by using descriptive and inferential statistics to answer research questions and test hypotheses are explained. Ethical issues and research limitations are addressed to identify potential risks and develop strategies for their mitigation. The next chapter provides a comprehensive explanation of data collection and statistical analysis of the research results.

# Chapter 4 Results

This chapter elaborates the results of data collection, including information about the testing of the data collection instruments' reliability and validity. The chapter continues with a comprehensive data analysis, by using descriptive and inferential statistics. Analyses are aimed at answering research questions related to students' wisdom scores, and their perceptions of wisdom enablers in undergraduate management education. The strength of the relationship between the students' wisdom scores and their perceptions of wisdom enablers and the impact of wisdom enablers on students' wisdom scores is considered last. The overview of statistical tests, including the testing of reliability and validity of data collection instruments, testing hypotheses and the associated constructs, are summarised in Table 4.1.

	Questionnaires/Research questions/Statistics	Statistical tests		
3-Dime	ensional wisdom scale (3D-WS)			
Testing	g reliability	Cronbach's alpha,		
Testing	u validity	The Pearson product-		
	, ·	moment correlation		
		coefficient ( <i>rxy</i> ),		
		Confirmatory Factor		
Studer	ts' perceptions of wisdom enablers questionnaire			
		Cronbach's alpha,		
(3800		Jöreskog's <i>rho</i>		
Testing	y reliability	Principal Component		
Testing	y validity	Analysis (PCA), Spearmen's <i>rho</i>		
		coefficient Confirmatory		
		Factor Analysis (CFA)		
Resea	rch guiding question 1:	· · · · · · · · · · · · · · · · · · ·		
Wł	nat is the current level of wisdom of undergraduate manag	gement education students?		
1.	Overall average scores of wisdom per each domain	Descriptive statistics		
2.	Average wisdom scores per each domain of students			
2	who completed at least one course			
3.	Average wisdom scores per each domain of students			
4.	The difference in average scores between students	Mann-Whitney U test.		
	who completed and students who did not complete at			
	least one course			
5.	Statistical significance and effect size of difference	Hedges' g Cont.		

	Questionnaires/Research questions/Statistics	Statistical tests
6.	Variances of Average scores of wisdom per each	
	and effect size	One-way ANOVA
7	Variances of average scores of wisdom per each	
/.	domain by students' ages, statistical significance and	One-way ANOVA
	effect size	
8.	Variances of average scores of wisdom per each	
	domain between local and international students,	Mann-Whitney U test
	statistical significance and effect size	
9.	Variances of average scores of wisdom per each	
	domain by students' stages of study, statistical	One-way ANOVA
	significance effect size	
10.	Variances of average scores of wisdom per each	
	domain by students' types of financial support,	One-way ANOVA
	statistical significance and effect size	
11.	variances of average scores of wisdom per each	
	comain by students' employment status, statistical	Mann-whitney U test
12	Variances of average scores of wisdom per each	
12.	domain between students who experienced life	Mann-Whitney I Ltest
	hardships and students who did not experience life	Mann Whithey & test
	hardships, statistical significance and effect size	
Resear	ch guiding question 2	
	What are undergraduate management education studer	ts' perceptions about the
	wisdom enablers in undergraduate management educat	ion?
13.	Total average scores of students' perceptions of	Descriptive statistics
	wisdom enablers per wisdom domain	
14.	Variances of students' perceptions of wisdom enablers	One-way ANOVA,
	per wisdom domain by students' stages of study,	Kruskal-Wallis test
45	statistical significance and effect size	
15.	variances of students' perceptions of Wisdom enablers	One-way ANOVA,
	significance and effect size	Kruskai-wallis
16	Variances of students' percentions of wisdom enablers	
10.	per wisdom domain by students' ages, statistical	Kruskal-Wallis
	significance and effect size	
17.	Variances of students' perceptions of wisdom enablers	
	per wisdom domain between local and international	Mann-Whitney U test
	students, statistical significance and effect size	
18.	Variances of students' perceptions of wisdom enablers	
	per wisdom domain by students' employment status,	Mann-Whitney U test
	statistical significance	
19.	Variances of students' perceptions of wisdom enablers	
	per wisdom domain by students' life hardships,	Mann-Whitney U test
	statistical significance	
<u>Iviain re</u>	search question	of windom of undorgraduate
manad	ament education students and their perceptions about	it the wisdom enablers in
	aduate management education by each wisdom domain	
undergi	addate management education by each wisdom domain	
20.	Correlation between students' wisdom scores and	Product Moment Pearson
	their perceptions of wisdom enablers per each domain	Correlation
21.	Prediction of students' wisdom scores based on their	
	perceptions of wisdom enablers and values of	Standard Multiple Linear
	independent variables that recorded a significant	Regression
	statistical difference	

## 4.1 Data collection instruments, reliability and validity testing

Two data collection instruments were used in this study: Three-dimensional wisdom scale (3D-WS) and Students' perceptions of wisdom enablers in undergraduate management education questionnaire (SPWEQ). The following section of this chapter elaborates testing of their reliability and validity.

#### 4.1.1 Three-Dimensional Wisdom Scale (3D-WS)

There were 289 valid responses to the 3D-WS questionnaire. Regarding the gender structure, 103 (35.7%) respondents declared themselves as male, 183 (63.3%) as female, and 3 (1.0%) as other; 44 (15.3%) were students less than 20 years of age, 214 (74.0%) students were 20–24 years of age, and 31 (10,7%) were students 25 or more years of age. Of the respondents,174 (60.2%) were local students and 115 (39.8%) were international students; 70 (24.2%) were in the first year, 103 (35.6%) were in the second year and 70 (24.3%) students were in the third year of study; 19 (6.6%) students were in the fourth or more years of study and 27 (9.3%) were graduated students.

The descriptive statistics of students' average wisdom scores across three wisdom domains – cognitive, affective and reflective, including mean, median, standard deviation, skewness and kurtosis – are presented in Table 4.2, and the distribution of average wisdom means is plotted in Figure 4.1, p. 106.

		Cognitive	Affective	Reflective	Average
Ν	Valid	289	289	289	289
	Missing	0	0	0	0
Mean		3.1861	3.2507	3.3777	3.2715
Median		3.1429	3.2308	3.3333	3.2592
Std Deviation	on	0.56480	0.45679	0.50480	0.43522
Variance		0.319	0.209	0.255	0.189
Skewness		-0.122	0.054	0.200	0.004
Std error of skewness		0.143	0.143	0.143	0.143
Kurtosis		0.472	-0.377	-0.558	-0.262
Std error of	kurtosis	0.286	0.286	0.286	0.286
Range		3.50	2.46	2.58	2.47
Minimum		1.00	1.92	2.08	1.86
Maximum		4.50	4.38	4.67	4.34
Sum		920.79	939.46	976.17	945.47

Table 4.2 Three-dimensional wisdom scale descriptive statistics



Figure 4.1 Distribution of 3D-WS average wisdom means

Although the skewness and kurtosis are in an acceptable range, calculated from minus twice the standard error of skewness and kurtosis to plus twice the standard error of skewness and kurtosis (Cohen, Manion, & Morrison, 2018), and univariate kurtosis of majority of individual items is within an acceptable range of -1.96 and +1.96, the multivariate kurtosis of each latent wisdom variable (cognitive 28.279, affective 28.990, reflective 24.927) is greater than the threshold of 5 (Byrne, 2013).

The Kolmogorov-Smirnov test and the Shapiro-Wilk test of normality also indicate that the data of the individual domains have a normality issue because the p value of the mean of each domain is lower than 0.05; however, the overall mean of three domains conforms to a normal distribution (Figure 4.1), because the p value of the average wisdom score is greater than 0.05 (Table 4.3).

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
Cognitive	0.065	289	0.005	0.988	289	0.014	
Affective	0.063	289	0.007	0.991	289	0.081	
Reflective	0.088	289	0.001	0.985	289	0.004	
Domains' average	0.042	289	0.200*	0.994	289	0.264	
*. This is a lower bound of the true significance.							
a. Lilliefors significance correction							

Table 4.3 Kolmogorov-Smirnov and the Shapiro-Wilk tests of normality

Cronbach's alpha, as an indicator of internal consistency, and Dillon-Goldstein's *rho* or Jöreskog's *rho*, as a composite reliability indicator, were used respectively to measure the internal reliability and the construct reliability of the results. Cronbach's alpha for the cognitive, affective and reflective domains of the 3D-WS questionnaire ranges from 0.684 to 0.801. The average score, measured as a mean average of the three domains alpha values, is 0.74, which exceeds the cut-off value of 0.7 (DeVellis, 2012; Howell, 2013), and confirms the internal reliability of the 3D-WS questionnaire for this sample size and participants' age (Table 4.4). However, the Jöreskog's *rho* test used to calculate construct reliability by using standardised estimates ranged from 0.611 to 0.738 with the average value of 0.659, which is below the cut-off value of 0.70 (Table 4.4).

Domain	Cronbach's Alpha	Jöreskog's <i>rho</i>
Cognitive	0.801	0.738
Affective	0.684	0.628
Reflective	0.737	0.611
Mean	0.740	0.659
average		

Table 4.4 3D-WS Cronbach's alpha and Jöreskog's rho values

The Pearson product-moment correlation coefficient (*rxy*) and Confirmatory Factor Analysis (CFA) were used to assess questionnaire validity. The score of each item was checked with the total score of their respective domain, then the score of each item of all three domains was checked with the overall total of all domains, and finally the correlation of each domain mean among each other was checked and with the overall mean. With the value of significance 0.01, sample size 289, degree of freedom (df) 2, in a 2-tailed test, and *r* table product moment value of 0.208, the *rxy* for each item in the cognitive domain ranged from 0.428 to 0.653, for each item in affective domain it ranged from 0.343 to 0.649. The *rxy* for each item for all domains checked against the overall total ranged from 0.111 to 0.615. Only item number 1 in Affective domain ('I am annoyed by unhappy people who just feel sorry for themselves') has been identified as

problematic with p = 0.061 and rxy = 0.111; hence, it will be monitored in further analysis. The means of cognitive, reflective and affective dimensions of the 3D-WS significantly correlate to each other and are presented in Table 4.5.

		Cognitive	Affective	Reflective	Average			
Cognitive	Pearson correlation	1.000	0.658*	0.551*	0.876*			
	Sig. (2-tailed)		0.001	0.001	0.001			
	Ν	289	289	289	289			
Affective	Pearson correlation	0.658*	1.000	0.582*	0.860*			
	Sig. (2-tailed)	0.001		0.001	0.001			
	Ν	289	289	289	289			
Reflective	Pearson correlation	0.551*	0.582*	1.000	0.829*			
	Sig. (2-tailed)	0.001	0.001		0.001			
	Ν	289	289	289	289			
Average	Pearson correlation	0.876*	0.860*	0.829*	1.000			
	Sig. (2-tailed)	0.001	0.001	0.001				
	Ν	289	289	289	289			
*. Correlation	*. Correlation is significant at the 0.01 level (2-tailed).							

Table 4.5 3D-WS Pearson correlation coefficient among domain means

Furthermore, the validity of the latent wisdom variables was measured by conducting a confirmation factor analysis in the IBM structural equation modelling program AMOS version 25. Standardised regression weights (factor loadings) per each item and domain are presented in Table 4.6.

Cognitive domain		Affective d	omain	Reflective domain		
Item number	Estimate	Item number	Estimate	Item number	Estimate	
WCOG01	0.359	WAFF01	0.057	WREF01	0.513	
WCOG02	0.402	WAFF02	0.418	WREF02	0.462	
WCOG03	0.474	WAFF03	0.343	WREF03	0.098	
WCOG04	0.526	WAFF04	0.133	WREF04	0.193	
WCOG05	0.600	WAFF05	0.534	WREF05	0.177	
WCOG06	0.360	WAFF06	0.302	WREF06	0.680	
WCOG07	0.393	WAFF07	0.431	WREF07	0.658	
WCOG08	0.531	WAFF08	0.218	WREF08	0.607	
WCOG09	0.499	WAFF09	0.527	WREF09	0.122	
WCOG10	0.627	WAFF10	0.603	WREF10	-0.018	
WCOG11	0.398	WAFF11	0.483	WREF11	0.709	
WCOG12	0.473	WAFF12	0.540	WREF12	0.409	
WCOG13	0.436	WAFF13	0.310			
WCOG14	0.578					

Table 4.6 First-order CFA, 3D-WS items factor loadings

According to the Table 4.6, standardised regression weights, as an equivalent to each item factor loadings per each domain ranged in the cognitive domain

from 0.36 to 0.63, in the affective domain from 0.06 to 0.60 and in the reflective domain from –0.02 to 0.71.

First, the fit of each wisdom domain observable variable was separately measured; and second, the fit of the mean scores for the cognitive, affective and reflective domains, as observable variables, were measured. Multiple fit indices should be used to test the overall fit of the model (D. L. Jackson, Gillaspy, & Purc-Stephenson, 2009; Kline, 2010; Schreiber, Nora, Stage, Barlow, & King, 2006) and therefore the following indices were used to match factor analysis conducted in previous comparable studies (Ardelt, 2003; Bailey, 2009): The Model goodness of fit was assessed using Chi-Square X<sup>2</sup> (CMIN), Probability level (p), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), and the Comparative Fit Index (CFI). Given chi-square is highly dependent on sample size, the estimate of X<sup>2</sup>/df is presented in this study. A value of 1 to 2 reflects a good fit, less than 3 represents an acceptable fit (Kline, 2010) and less than 5 represents an adequate fit (Schumacker & Lomax, 2012). If the RMSEA was less than 0.06 or 0.08, SRMR less than 0.06 or 0.09, and CFI higher than 0.95 or 0.90, it represents strong fit or acceptable fit, respectively. CMIN, p, RMSEA, SRMR and CFI, as the indices of fit, were calculated for each wisdom domain and results are presented in Table 4.7.

Indicator	X <sup>2</sup> (CMIN)	р	df	X²/df	RMSEA	SMRM	CFI
Cognitive	217.639	0.001	77	2.826	0.080	0.0642	0.808
Affective	151.487	0.001	65	2.331	0.068	0.0632	0.786
Reflective	394.454	0.001	54	7.305	0.148	0.1405	0.557

Table 4.7 3D-WS first-order CFA indices

Based on the results of Table 4.7, the cognitive and affective domains are close to the acceptable fit because Chi-Square X2/degree of freedom (X2/df = 2.826, 2.331, respectively), Root Mean Square Error of Approximation (RMSEA = 0.080, 0.068, respectively), Standardised Root Mean Square Residual (SRMR = 0.0642, 0.0632, respectively) and Comparative Fit Index (CFI = 0.808, 0.786, respectively), while the reflective domain demonstrates an inadequate fit because X2/df = 7.305, RMSEA = 0.148, SRMR = 0.0.1405 and CFI = 0.557.

The second-order confirmatory factor analysis model (see Appendix E, p. 209) was conducted to measure the goodness of the statistical fit of the three latent wisdom variables (cognitive, affective and reflective domains) to the theoretical model of wisdom. Standardised regression weights (factor loadings) per each item and domain are presented in Table 4.8.

Cognitive domain		Affective d	omain	Reflective domain		
Item number	Estimate	Item number	Estimate	Item number	Estimate	
WCOG01	0.331	WAFF01	0.064	WREF01	0.463	
WCOG02	0.426	WAFF02	0.448	WREF02	0.482	
WCOG03	0.462	WAFF03	0.390	WREF03	0.149	
WCOG04	0.544	WAFF04	0.149	WREF04	0.254	
WCOG05	0.582	WAFF05	0.533	WREF05	0.230	
WCOG06	0.368	WAFF06	0.202	WREF06	0.644	
WCOG07	0.393	WAFF07	0.448	WREF07	0.620	
WCOG08	0.498	WAFF08	0.200	WREF08	0.568	
WCOG09	0.498	WAFF09	0.543	WREF09	0.155	
WCOG10	0.628	WAFF10	0.482	WREF10	0.045	
WCOG11	0.457	WAFF11	0.439	WREF11	0.716	
WCOG12	0.463	WAFF12	0.545	WREF12	0.510	
WCOG13	0.430	WAFF13	0.425			
WCOG14	0.578					

Table 4.8 Second-order CFA, 3D-WS items factor loadings

According to the Table 4.8, standardised regression weights, as an equivalent to each item factor loadings per each domain ranged in the cognitive domain from 0.33 to 0.63, in the affective domain from 0.06 to 0.55 and in the reflective domain from 0.05 to 0.72, while each domain (cognitive, affective, reflective), as latent wisdom variables to the theoretical model of wisdom, had factor loadings of 0.92, 0.95 and 0.79, respectively (see Appendix E, p. 209).

Chi-Square X2/degree of freedom (X2/df), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR) and Comparative Fit Index (CFI), as the indices of fit, were calculated and are presented in Table 4.9.

Indicator	X <sup>2</sup> (CMIN)	р	df	X²/df	RMSEA	SMRM	CFI
Value	1727.303	0.001	699	2.471	0.071	0.0835	0.614

Table 4.9 3D-WS second-order CFA indices

Based on the results of Table 4.9, the theoretical wisdom model is close to the acceptable fit X2/df = 2.471, RMSEA = 0.071, SRMR = 0.0835), but CFI = 0.614 is below the acceptable threshold.

Additionally, the mean scores for the cognitive, affective and reflective domains, as latent variables of wisdom, were used as observable variables to estimate the goodness of statistical fit of the theoretical model of wisdom. According to Kline (2010), when using such a small number of observable variables, constraints should be used in conducting confirmatory factor analysis so that the model can be identifiable. Consequently, the Ardelt (2003) approach was followed and cognitive and affective domains were constrained so that the cognitive and affective domains could be equally loaded on the wisdom construct, because there is 'no theoretical reason for one loading to be higher than the other' (p. 303). Hence, the reflective domain was freely estimated with the assumption and expectation to have a higher factor loading on the wisdom construct than the other two domains. Perhaps this is because 'reflective thinking simultaneously fosters a deeper understanding of life and human nature and the development of sympathy and compassion for others' (Ardelt, 2003, p. 300). The goodness of fit statistics, using the same previously used indices, are presented in Table 4.10.

Indicator	<b>X</b> <sup>2</sup>	р	df	X²/df	RMSEA	SRMR	CFI
	(CMIN)						
Values	3.165	0.075	1	3.165	0.087	0.0741	0.993

Table 4.10 CFA indices, wisdom model with domains as observable variables

Based on the results of Table 4.10, the fit index  $X^2/df = 3.165$  is in the adequate range while the CFI = 0.993, SRMR = 0.0741 are in the acceptable range, and RMSEA = 0.087 is close to the acceptable level.

Divergent and convergent validity were assessed by measuring the correlation between average wisdom scores by each domain and students' demographics, such as age, gender, stage of study, the number of working hours, type of financial support and life hardship experiences (Table 4.11, p. 112).

			Cognitive	Affective	Reflective	Average
Spearman's	Age	Correlation	0.064	0.042	0.001	0.042
rho		coefficient				
		Sig.(2-tailed)	0.281	0.475	0.999	0.474
		Ν	289	0.289	289	289
	Gender	Correlation coefficient	0.051	0.150*	0.026	0.081
		Sig.(2-tailed)	0.385	0.011	0.659	0.169
		N	289	289	289	289
	Domiciles	Correlation coefficient	-0.165**	-0.165**	-0.073	-0.143 <sup>*</sup>
		Sig.(2-tailed)	0.005	0.005	0.216	0.015
		N	289	289	289	289
	Study stage	Correlation coefficient	0.047	0.061	0.138*	0.102
		Sig.(2-tailed)	0.422	0.302	0.019	0.084
		N	289	289	289	289
	Financial support	Correlation coefficient	0.139*	0.151**	0.058	0.135*
		Sig.(2-tailed)	0.018	0.010	0.323	0.022
		N	289	289	289	289
	Work. hours	Correlation coefficient	0.221**	0.208**	0.123*	0.212**
		Sig.(2-tailed)	0.001	0.001	0.036	0.001
		Ν	289	289	289	289
	Life hardship	Correlation coefficient	0.260**	0.256**	0.102	0.250**
		Sig.(2-tailed)	0.001	0.001	0.083	0.001
		Ν	289	289	289	289
* Correlation	is significant	at the 0.05 level (2	tailed)			

Table 4.11 3D-W	S convergence and	l divergence vali	dity testing

\*\* Correlation is significant at the 0.01 level (2 tailed)

There is no statistically significant correlation between the level of students' wisdom and their ages, genders and stages of study. However, there is a statistically significant negative relationship between their level of wisdom and domiciles, and statistically significant positive correlation of their level of wisdom with working hours (p = 0.001), life hardship experiences (p = 0.001, and types of financial support (p = 0.022) with small effect size (r = 0.212, r = 0.250, and r = 0.135 respectively). This is considered reasonable because these contexts require judgement and decision-making ability.

### 4.1.2 Students' Perceptions of Wisdom Enablers Questionnaire (SPWEQ)

Initially, 61 items in total were created (20 for the cognitive wisdom domain, 21 for the affective wisdom domain, and 20 for the reflective wisdom domain). A pre-test was administered in the early August 2018 to pilot the questions and assess questionnaire reliability and validity. The face validity of the questionnaire was performed by the researcher's work supervisor, a group of fellow doctoral candidates and academics in the researcher's workplace.

#### 4.1.2.1 Pilot 1 – testing reliability and validity of SPWEQ

After checking the face validity, a paper-based questionnaire was distributed to students doing the Associate Degree in Business at the School of Vocational Education within the same university, a feeding program and pathway to Bachelor degrees. Students took 5 to10 minutes to complete the questionnaire during their class time. Seventy-nine valid responses were recorded. Regarding the gender structure, 50 (63.3%) respondents declared themselves as male and 29 (36.7%) as female; 57 (72.2%) respondents were local students and 22 (27.8%) were international students; 11 (14%) students were in the first year, 58 (73.4%) were in the second year, and 10 (12.6%) were in the third year of their study; with the mean and median age of 21.

The descriptive statistics of results, including mean, median, standard deviation, skewness and kurtosis are presented in Table 4.12, p. 114. Affective and reflective domains' skewness and kurtosis are in the acceptable range (calculated from minus twice the standard error of skewness and kurtosis to plus twice the standard error of skewness and kurtosis) (Cohen et al., 2018), while cognitive domain and the averages of all three domains (Figure 4.2, p. 114) have an issue with distribution normality that was also confirmed with their Kolgomorov–Smirnov and Shapiro–Wilk tests (Table 4.13, p. 114).

		Cognitive	Affective	Reflective	Average
N	Valid	79	79	79	79
	Missing	0	0	0	0
Mean		3.6145	3.7606	3.5285	3.6345
Median		3.6364	3.8182	3.5625	3.6231
Mode		3.64	3.45	3.63	3.51ª
Std Deviation	on	0.46497	0.45899	0.42658	0.38800
Variance		0.216	0.211	0.182	0.151
Skewness		-1.285	-0.443	-0.129	-0.632
Std error of	skewness	0.271	0.271	0.271	0.271
Kurtosis		5.197	0.001	0.313	1.523
Std error of	kurtosis	0.535	0.535	0.535	0.535
Range		3.27	2.18	2.31	2.26
Minimum		1.45	2.55	2.38	2.19
Maximum		4.73	4.73	4.69	4.45
Sum		285.55	297.09	278.75	287.13
a. Multiple r	nodes exist.	The smallest va	lue is shown		

Table 4.12 Pilot 1 – perceptions of wisdom enablers descriptive statistics



Figure 4.2 Pilot 1 – distribution of average wisdom enablers means

Tests of Normality							
	Kolmo	gorov-Sr	nirnov <sup>a</sup>	0,	Shapiro-Will	<b>K</b>	
	Statistic	df	Sig.	Statistic	df	Sig.	
Cognitive	0.137	79	0.001	0.920	79	0.000	
Affective	0.095	79	0.074	0.977	79	0.161	
Reflective	0.101	79	0.043	0.982	79	0.331	
Domains'	0.082	79	0.200*	0.971	79	0.066	
average							
*. This is a lower bound of the true significance.							
a. Lilliefors Signifi	cance Corr	ection.					

Table 4 13 Pilot 1 -	Kolmogorov-S	Smirnov and th	e Shaniro-M	lilk tests
	Tronnegorov C			

The internal reliability of the three wisdom domain enablers – cognitive, affective and reflective – was measured by Cronbach's alpha using the Statistical Package for the Social Sciences (SPSS 25). Initially, it was 0.760, 0.613 and 0.707, respectively, with an average value for the three domains of 0.693.

To test construct validity, a principal component analysis (PCA) was conducted. This meant grouping variables that have something in common by detecting structures and commonalities in their relationships and identifying latent factors that relate to as many variables as possible. The aim was to reduce the number of actual variables, the assumption being that they might address the same underlying concept (Cohen et al., 2018). Hence, exploratory principal component analysis with Varimax rotation and Kaiser Normalization was conducted under the assumption that the factors were orthogonal. Eigenvalues equal to or greater than 1.00 were extracted and the Kaiser-Meyer-Olkin (0.542 for cognitive dimension, 0.613 for affective dimension and 0.72 for reflective dimension) and Bartlett tests of sphericity ( $\rho = 0.000$ ) indicated that, despite the small sample size, the data were suitable for factorisation. From the 20 cognitive domain variables, 21 affective domain variables and 20 reflective domain variables orthogonal rotation of the variables yielded seven factors for cognitive, eight for affective, and seven for reflective domain, with the total percentage of the total variance 67.238%, 69.958 and 69.449%, respectively, presented in Table 4.14a, p. 116, Table 4.14b, p. 117, and Table 4.14c, p. 118.

	Total Variance Explained									
	Initi	al Eigen va	lues	Extractio	Extraction sums of squared loadings			ction sums of squared Rotation sums of squared loadings loadings		
Comp onent	Total	% of Variance	Cumul ative %	Total	% of Variance	Cumul ative %	Total	% of Variance	Cumul ative %	
1	4.259	21.296	21.296	4.259	21.296	21.296	2.417	12.083	12.083	
2	2.347	11.736	33.031	2.347	11.736	33.031	2.075	10.377	22.459	
3	1.887	9.433	42.464	1.887	9.433	42.464	2.064	10.322	32.782	
4	1.464	7.322	49.786	1.464	7.322	49.786	1.961	9.806	42.588	
5	1.297	6.485	56.271	1.297	6.485	56.271	1.824	9.121	51.709	
6	1.164	5.822	62.094	1.164	5.822	62.094	1.672	8.362	60.071	
7	1.029	5.144	67.238	1.029	5.144	67.238	1.433	7.167	67.238	
8	0.985	4.923	72.161							
9	0.820	4.098	76.258							
10	0.718	3.588	79.846							
11	0.670	3.352	83.198							
12	0.586	2.931	86.128							
13	0.578	2.892	89.020							
14	0.467	2.335	91.355							
15	0.454	2.271	93.626							
16	0.427	2.137	95.763							
17	0.346	1.729	97.492							
18	0.216	1.082	98.574							
19	0.197	0.984	99.558							
20	0.088	0.442	100.00							
Extracti	ion Meth	od: Principa	al Compo	nent Ana	lysis.					

# Table 4.14a Pilot 1 – principal component analysis, cognitive domain

	Total Variance Explained								
	Initi	al Eigen va	alues	Extractio	on sums of loadings	squared Rotatio		n sums of squared loadings	
Comp	Tatal	% of	Cumul	Tatal	% of	Cumul	Tatal	% of	Cumul
onent	1 otal 3 729	17 757	17 757	1 otal 3 729	variance	17 757	1 otal 2 658	12 650	12 659
	5.729	17.757	17.757	5.725	11.151	11.151	2.000	12.039	12.039
2	3.009	14.331	32.088	3.009	14.331	32.088	2.589	12.328	24.987
3	1.786	8.503	40.590	1.786	8.503	40.590	1.834	8.735	33.722
4	1.674	7.974	48.564	1.674	7.974	48.564	1.765	8.403	42.125
5	1.288	6.131	54.695	1.288	6.131	54.695	1.624	7.731	49.857
6	1.143	5.444	60.139	1.143	5.444	60.139	1.478	7.040	56.896
7	1.061	5.054	65.194	1.061	5.054	65.194	1.413	6.728	63.624
8	1.001	4.765	69.959	1.001	4.765	69.959	1.330	6.335	69.959
9	0.964	4.589	74.548						
10	0.761	3.622	78.169						
11	0.737	3.512	81.681						
12	0.640	3.047	84.728						
13	0.545	2.595	87.323						
14	0.496	2.362	89.684						
15	0.473	2.255	91.939						
16	0.425	2.022	93.961						
17	0.347	1.653	95.614						
18	0.285	1.358	96.972						
19	0.247	1.177	98.150						
20	0.212	1.010	99.160						
21	0.176	0.840	100.00						
Extract	ion Meth	nod: Princip	bal Comp	onent An	alysis.	1		1	L

# Table 4.14b Pilot 1 – principal component analysis, affective domain

	Total Variance Explained									
				Extr	action Sun	ns of	Rotatio	n Sums of S	Squared	
	Initia	al Eigen val	ues	Squ	ared Load	ings		Loadings		
Comp		% of	Cumul		% of	Cumul		% of	Cumul	
onent	Total	Variance	ative %	Total	Variance	ative %	Total	Variance	ative %	
1	4.931	24.656	24.656	4.931	24.656	24.656	2.642	13.209	13.209	
2	2.304	11.519	36.175	2.304	11.519	36.175	2.569	12.847	26.056	
3	1.709	8.544	44.719	1.709	8.544	44.719	2.128	10.638	36.694	
4	1.415	7.074	51.792	1.415	7.074	51.792	1.950	9.750	46.444	
5	1.298	6.492	58.285	1.298	6.492	58.285	1.699	8.497	54.941	
6	1.223	6.116	64.401	1.223	6.116	64.401	1.691	8.455	63.396	
7	1.010	5.048	69.449	1.010	5.048	69.449	1.211	6.053	69.449	
8	0.906	4.529	73.978							
9	0.811	4.055	78.032							
10	0.707	3.535	81.567							
11	0.542	2.708	84.275							
12	0.528	2.641	86.916							
13	0.489	2.446	89.362							
14	0.399	1.993	91.354							
15	0.379	1.894	93.249							
16	0.378	1.888	95.137							
17	0.306	1.532	96.669							
18	0.277	1.384	98.053							
19	0.236	1.179	99.232							
20	0.154	0.768	100.00							
Extracti	ion Metho	d: Principa	I Compor	ent Anal	vsis.					

After the Varimax with Kaiser Normalization rotation, only variables with factor loadings >0.609 for cognitive domain, >0.437 for affective domain, and >0.499 for the reflective domain were selected for inclusion in their respective factors. After removing variables that were not included in the respective factors and conducting repetitive internal reliability tests, until there no further improvement could be done, the number of variables were reduced to 11 items for cognitive domain, 11 items for affective domain, and 16 items for reflective domain with a Cronbach alpha of 0.778, 0.765 and 0.829, respectively. Furthermore, the Jöreskog's *rho* was used to calculate construct reliability by using standardised estimates, and the *rho* values for cognitive, affective and reflective domains

were 0.723, 0.718 and 0.733, respectively, with an average value of 0.725, which is above the cut-off value of 0.70.

These identified factors mirror implicit theory of wisdom themes and the characteristics of a wise person presented in Table 3.1, p. 84. In further analysis, the validity of the latent wisdom enablers in the undergraduate management education construct was measured by conducting a confirmatory factor analysis. Standardised regression weights (factor loadings) per each item and wisdom enabler domain are presented in Table 4.15.

Cognitive	domain	Affective d	omain	Reflective domain	
Item number	Estimate	Item number	Estimate	Item number	Estimate
COG05	0.742	AFECT03	0.255	REFLECT01	0.418
COG06	0.640	AFECT04	0.404	REFLECT02	0.286
COG08	0.558	AFECT05	0.504	REFLECT03	0.466
COG09	0.457	AFECT06	0.679	REFLECT04	0.615
COG10	0.392	AFECT07	0.405	REFLECT05	0.567
COG11	0.523	AFECT08	0.324	REFLECT06	0.327
COG12	0.477	AFECT11	0.439	REFLECT07	0.244
COG15	0.366	AFECT12	0.121	REFLECT09	0.501
COG16	0.272	AFECT13	0.508	REFLECT10	0.410
COG19	0.252	AFECT20	0.646	REFLECT11	0.351
COG20	0.417	AFECT21	0.615	REFLECT12	0.522
				REFLECT13	0.618
				REFLECT14	0.622
				REFLECT15	0.435
				REFLECT17	0.550
				REFLECT19	0.686

Table 4.15 Pilot 1 – first-order CFA items factor loadings

According to the Table 4.15, standardised regression weights, as an equivalent to each item factor loadings per each domain ranged in the cognitive domain from 0.25 to 0.74, in the affective domain from 0.12 to 0.68 and in the reflective domain from 0.24 to 0.69.

First, the fit of each wisdom domain observable variable identified after the principal component analysis was separately measured; and second the fit of the mean scores for the cognitive, affective and reflective domains, as observable variables, was measured. Multiple fit indices should be used to test the overall fit of the model (D. L. Jackson et al., 2009; Kline, 2010; Schreiber et al., 2006) and therefore the following indices were used to match factor analysis

conducted in previous comparable studies (Ardelt, 2003; Bailey, 2009): Chi-Square X2/degree of freedom (X2/df), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR) and Comparative Fit Index (CFI). Due to the exploratory character of this research and after checking standardised residual covariances, a repeated indices modification was conducted until MI<10 was achieved because an MI value of less than 10 does not have any significant impact on overall model fit (Byrne, 2016). The fit indices of wisdom enablers as observable variables for each wisdom domain (factor) are presented in Table 4.16.

Indicator	X <sup>2</sup> (CMIN)	р	X²/df	RMSEA	SRMR	CFI
Cognitive	65.886	0.011	1.569	0.085	0.0709	0.881
Affective	77.804	0.001	1.945	0.110	0.1023	0.826
Reflective	122.982	0.045	1.255	0.057	0.0928	0.930

Table 4.16 Pilot 1 – CFA fit indices by domain

At this stage of the research, based on the results of Table 4.16, only the reflective domain has reached the acceptable fit ( $X^2/df = 1.255$ , RMSEA = 0.057, SRMR = 0.0928, CFI = 0.930), while the cognitive and affective domains are beyond the acceptable threshold.

Next, the second-order confirmatory factor analysis model (see Appendix F, p. 209) was conducted to measure the goodness of the statistical fit of the three latent wisdom enablers variables (cognitive, affective and reflective) to the theoretical model of wisdom enablers. Standardised regression weights (factor loadings) per each item and wisdom enabler domain are presented in Table 4.17, p. 121.

Cognitive of	domain	Affective c	lomain	Reflective	domain
Item number	Estimate	Item number	Estimate	Item number	Estimate
COG05	0.585	AFECT03	0.500	REFLECT01	0.350
COG06	0.610	AFECT04	0.442	REFLECT02	0.275
COG08	0.542	AFECT05	0.543	REFLECT03	0.447
COG09	0.473	AFECT06	0.583	REFLECT04	0.543
COG10	0.425	AFECT07	0.302	REFLECT05	0.560
COG11	0.511	AFECT08	0.445	REFLECT06	0.298
COG12	0.495	AFECT11	0.436	REFLECT07	0.278
COG15	0.373	AFECT12	0.047	REFLECT09	0.449
COG16	0.252	AFECT13	0.435	REFLECT10	0.476
COG19	0.253	AFECT20	0.662	REFLECT11	0.390
COG20	0.385	AFECT21	0.696	REFLECT12	0.517
				REFLECT13	0.592
				REFLECT14	0.636
				REFLECT15	0.514
				REFLECT17	0.599
				REFLECT19	0.691

Table 4.17 Pilot 1 – second-order CFA model, items factor loadings

According to the Table 4.17, standardised regression weights, as an equivalent to each item factor loadings per each domain, ranged in the cognitive domain from 0.25 to 0.61, in the affective domain from 0.05 to 0.70 and in the reflective domain from 0.28 to 0.69, while each domain (cognitive, affective, reflective), as latent wisdom variables to the theoretical model of wisdom, had factor loadings of 0.76, 0.93 and 0.98, respectively (see Appendix F, p. 209).

The goodness of fit statistics using the same previously used indices are presented in Table 4.18.

Indicator	X <sup>2</sup> (CMIN)	р	X²/df	RMSEA	SRMR	CFI
Values	1061.130	0.001	1.630	0.090	0.1059	0.654

Table 4.18 Pilot 1 – second-order CFA fit indices

While the fit of the first model for each domain across indices is close to the fit threshold, the second model demonstrates weaker fit data ( $X^2/df = 1.630$ , RMSEA = 0.09, SRMS = 0.1059, CFI = 0.654).

In order to explain some normality issues, a non-parametric Spearman rankorder correlation coefficient test was undertaken. The test aim was to further measure validity by checking the correlation of each item score with the total score for each domain, and totals of each domain with the overall total, and correlation of each domain mean to each other. With the value of significance 0.01, sample size 79, degree of freedom 2, in a 2-tailed test, and *r* table product moment value of 0.303, the *rxy* for each item in the cognitive domain ranged from 0.306 to 0.566, for each item in affective domain it ranged from 0.377 to 0.649, and for each item in the reflective domain it ranged from 0.301 to 0.664. The correlation between each domain mean with each other is strong and statistically significant (Table 4.19).

			Cognitive	Affective	Reflective
Spearman's rho	Cognitive	Correlation	1.000	0.572 <sup>*</sup>	0.662*
	-	coefficient			
		Sig. (2-tailed)		0.001	0.001
		Ν	79	79	79
	Affective	Correlation	0.572*	1.000	0.625*
		coefficient			
		Sig. (2-tailed)	0.001		0.001
		Ν	79	79	79
	Reflective	Correlation	0.662*	0.625*	1.000
		coefficient			
		Sig. (2-tailed)	0.001	0.001	
		N	79	79	79
*Correlation is sic	nificant at the (	0.01 level (2-tailed).			

Table 4.19 Pilot 1 – Spearman's *rho* correlation among each domain means

Based on the above output, including Cronbach alpha internal reliability, CFA indices, Spearmen's *rho* coefficient, we can conclude that the SPWEQ for this sample size is initially satisfactorily reliable and a valid instrument to continue with its retesting.

## 4.1.2.2 Pilot 2 – testing reliability and validity of SPWEQ

To further evaluate the reliability and validity of the same questionnaire a retest was conducted in mid-August 2018. Again, a paper-based questionnaire with the revised set of variables (11 items for cognitive, 11 items for affective and 16 items for reflective domain) was distributed to the same cohort of Associate Degree in Business at the School of Vocational Education, but not necessarily the same students participated in the survey due to its voluntary participation and anonymity. The survey was conducted during class time and 105 valid responses were recorded. Regarding the gender structure, 70 (66.6%) respondents declared themselves as male, 31 (29.5%) as female, 3 (2.9%) as transgender and 1 (1.0%) preferred not to disclose gender; 90 (85.7)

respondents were local students and 15 (14.3%) were international students; 36 (34.3%) students were in the first year, 67 (63.8%) were in the second year and 2 (1.9%) were in their third year of study; with a mean and median age of 20. The descriptive statistics of results – including mean, median, standard deviation, skewness and kurtosis – are presented in Table 4.20, and the average means distribution in Figure 4.3.

		Cognitive	Affective	Reflective	Averages
N	Valid	105	105	105	105
	Missing	0	0	0	0
Mean		3.8076	3.8743	3.6438	3.7733
Median		3.8000	3.9000	3.7000	3.8000
Mode		3.90	4.50	3.70	3.70ª
Std Deviation	on	0.43317	0.55262	0.53654	0.44706
Variance		0.188	0.305	0.288	0.200
Skewness		-0.273	-0.359	-0.596	-0.214
Std error of	skewness	0.236	0.236	0.236	0.236
Kurtosis		0.007	-0.409	1.314	-0.136
Std error of	kurtosis	0.467	0.467	0.467	0.467
Range		1.90	2.40	3.00	2.10
Minimum		2.70	2.50	1.80	2.70
Maximum		4.60	4.90	4.80	4.80
Sum		399.80	406.80	382.60	396.20
a Multiple r	nodes exist	The smalles	t value is show	vn	

Table 4.20 Pilot 2 – perceptions of wisdom enablers descriptive statistics



Figure 4.3 Pilot 2 – distribution of average wisdom enablers means

The skewness and kurtosis for cognitive, affective and the average of all domains are in the acceptable range (calculated from minus twice the standard error of skewness and kurtosis to plus twice the standard error of skewness and kurtosis (Cohen et al., 2018), while the reflective domain has distribution normality issue. The normality issue is also indicated in Kolmogorov-Smirnov test and the Shapiro-Wilk test of normality (Table 4.21).

Tests of Normality									
	Kolmo	ogorov-Sm	hapiro-Will	ĸ					
	Statistic df Sig. Statistic df				Sig.				
Cognitive	0.078	105	0.127	0.974	105	0.040			
Affective	0.094	105	0.024	0.975	105	0.048			
Reflective	0.106	105	0.006	0.969	105	0.014			
Average	0.092	105	0.029	0.984	105	0.246			
a. Lilliefors Significance Correction									

Table 4.21 Pilot 2 – Kolmogorov-Smirnov and the Shapiro-Wilk tests

Average Cronbach's alpha and average Jöreskog's *rho* scores for the cognitive, affective, and reflective domains of the SPWEQ were 0.840 and 0.803, respectively, which exceeds the cut-off value of 0.7 (DeVellis, 2012; Howell, 2013), and confirms the internal reliability and construct reliability of wisdom enablers in three wisdom domains (Table 4.22).

Domain	Cronbach's Alpha (α)	Jöreskog's <i>rho</i>
Cognitive	0.784	0.774
Affective	0.844	0.818
Reflective	0.892	0.817
Average α	0.840	0.803

Table 4.22 Pilot 2 – Cronbach's alpha and Jöreskog's rho values

Construct validity and internal reliability were also measured by a nonparametric test Spearman rank-order correlation coefficient and confirmatory factor analysis. The score of each item was checked with the total score of their respective domain, then the score of each item of all three domains was checked with the overall total of all domains, and finally the correlation of each domain mean was checked with each other and the overall mean. With the value of significance 0.01, sample size 105, degree of freedom 2, in a 2-tailed test, and *r* table product moment value of 0.254, the *rxy* for each item in the cognitive domain ranged from 0.344 to 0.658, for each item in the affective domain it ranged from 0.543 to 0.723, and for each item in the reflective domain it ranged from 0.454 to 0.676. The *rxy* for each item for all domains checked against the overall total ranged from 0.322 to 0.679. Spearman's *rho* correlation among each domain mean and their average mean are presented in Table 4.23.

			Cognitive	Affective	Reflective	Average
Spearman's <i>rho</i>	Cognitive	Correlation coefficient	1.000	0.626*	0.592*	0.793*
		Sig. (2-tailed)		0.001	0.001	0.001
		Ν	105	105	105	105
	Affective	Correlation coefficient	0.626*	1.000	0.790*	0.927*
		Sig. (2-tailed)	0.001		0.001	0.001
		Ν	105	105	105	105
	Reflective	Correlation coefficient	0.592*	0.790*	1.000	0.905*
		Sig. (2-tailed)	0.001	0.001		0.001
		Ν	105	105	105	105
Average		Correlation coefficient	0.793*	0.927*	0.905*	1.000
		Sig. (2-tailed)	0.001	0.001	0.001	
		N	105	105	105	105
*Correlation is	significant a	at the 0.01 level (2-	tailed).			

Table 4.23 Pilot 2 – S	Spearman's	rho correlation	among	domains'	means
	pourmun o	mo comolation	among	aomanio	mound

It is evident from the Table 4.23 that the cognitive, affective and reflective dimensions of the SPWEQ are statistically significantly correlated with each other and significantly above the *r* value (>0.254), and that this relationship is strong. A confirmatory factor analysis, as a multivariate statistical procedure, was conducted again to test how well the observable variables, as wisdom enablers, represent the three wisdom constructs (domains) – cognitive, affective and reflective – and which observable variable is related to which latent variable for this sample size. Standardised regression weights (factor loadings) per each item and wisdom enabler domain are presented in Table 4.24, p. 126.

Cognitive of	domain	Affective d	omain	Reflective	domain			
Item number	Estimate	Item number	Estimate	Item number	Estimate			
COG05	0.507	AFECT03	0.522	REFLECT01	0.626			
COG06	0.649	AFECT04	0.442	REFLECT02	0.660			
COG08	0.638	AFECT05	0.600	REFLECT03	0.612			
COG09	0.539	AFECT06	0.655	REFLECT04	0.661			
COG10	0.536	AFECT07	0.424	REFLECT05	0.483			
COG11	0.532	AFECT08	0.571	REFLECT06	0.468			
COG12	0.535	AFECT11	0.742	REFLECT07	0.368			
COG15	0.365	AFECT12	0.363	REFLECT09	0.443			
COG16	0.433	AFECT13	0.507	REFLECT10	0.457			
COG19	0.402	AFECT20	0.658	REFLECT11	0.638			
COG20	0.272	AFECT21	0.622	REFLECT12	0.611			
				REFLECT13	0.615			
				REFLECT14	0.576			
				REFLECT15	0.627			
				REFLECT17	0.818			
				REFLECT19	0.716			

Table 4.24 Pilot 2 – first-order CFA, wisdom enablers factor loadings

According to the Table 4.24, standardised regression weights, as an equivalent to each item factor loadings per each domain, ranged in the cognitive domain from 0.27 to 0.65, in the affective domain from 0.36 to 0.74 and in the reflective domain from 0.37 to 0.72. Using the same procedure as in the first test the fit indices Chi-Square X2/degree of freedom (X2/df), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR) and Comparative Fit Index (CFI) of wisdom enablers as observable variables for each wisdom domain (factor) were calculated and are presented in Table 4.25.

Indicator	X <sup>2</sup> (CMIN)	р	X²/df	RMSEA	SRMR	CFI
Cognitive	53.251	0.136	1.238	0.048	0.0659	0.957
Affective	55.482	0.065	1.353	0.058	0.0664	0.955
Reflective	139.926	0.005	1.399	0.062	0.0678	0.930

Table 4.25 Pilot 2 – CFA wisdom enablers fit indices by domains

Based on the results of Table 4.25, all three domains – cognitive, affective and reflective – have reached the acceptable fit ( $X^2/df = 1.238$ , 1.353, 1.399), (RMSEA = 0.048, 0.058, 0.062), (SRMR = 0.0659, 0.0664, 0.0678) (CFI = 0.957, 0.955, 0.930), respectively.

Next, the second-order confirmatory factor analysis model was conducted to measure the goodness of the statistical fit of the three latent wisdom enablers variables (domains) to the theoretical model of wisdom enablers (see Appendix G, p. 210). Standardised regression weights, as an equivalent to each item factor loadings per each wisdom enabler domain, are presented in Table 4.26.

Cognitive domain		Affective c	lomain	Reflective of	domain
Item number	Estimate	Item number Estimate		Item number	Estimate
COG05	0.539	AFECT03	0.454	REFLECT01	0.610
COG06	0.643	AFECT04	0.425	REFLECT02	0.607
COG08	0.680	AFECT05	0.639	REFLECT03	0.596
COG09	0.531	AFECT06	0.697	REFLECT04	0.631
COG10	0.551	AFECT07	0.442	REFLECT05	0.490
COG11	0.524	AFECT08	0.530	REFLECT06	0.482
COG12	0.505	AFECT11	0.680	REFLECT07	0.389
COG15	0.380	AFECT12	0.380	REFLECT09	0.454
COG16	0.456	AFECT13	0.481	REFLECT10	0.466
COG19	0.386	AFECT20	0.690	REFLECT11	0.674
COG20	0.403	AFECT21	0.556	REFLECT12	0.665
				REFLECT13	0.591
				REFLECT14	0.578
				REFLECT15	0.640
				REFLECT17	0.760
				REFLECT19	0.727

Table 4.26 Pilot 2 – second-order CFA, wisdom enablers factor loadings

According to the Table 4.26, standardised regression weights (factor loadings) ranged in the cognitive domain from 0.38 to 0.68, in the affective domain from 0.38 to 0.70 and in the reflective domain from 0.39 to 0.76, while each domain (cognitive, affective, reflective), as latent wisdom enablers variables to the theoretical model of wisdom enablers, had factor loadings of 0.85, 1.01 and 0.89, respectively (see Appendix G, p. 210).

The goodness of fit statistics using the same previously used indices are presented in Table 4.27.

Table 4.27 Pilot 2 -	- second-order	CFA fit ind	ices, all t	hree domains
			1000, un i	

Indicator	X <sup>2</sup> (CMIN)	р	X²/df	RMSEA	SMRM	CFI
Values	990.467	0.001	1.508	0.070	0.0802	0.784

While the fit of the first model per each domain across indices represents the acceptable fit, according to the Table 4.27, the second-order model demonstrates close to acceptable data fit (X2/df = 1.508, RMSEA = 0.070, SRMS = 0.0802, CFI = 0.784). When all standardised factors with loading lower than 0.5 were removed and the number of variables were reduced to 26, the model fit improved to (X2/df = 1.501, RMSEA = 0.069, SRMS = 0.0845, CFI = 0.845).

After the second pilot test, based on the above output, including Cronbach alpha internal reliability, construct reliability, confirmatory factor analysis indices and Spearmen's coefficient, we can conclude that the SPWEQ for this sample size is a sufficiently reliable and satisfactorily valid instrument to proceed with the actual data collection.

#### 4.1.2.3 Actual research testing reliability and validity of SPWEQ

The reliability and validity of the students' perceptions of wisdom enablers questionnaire was checked and measured for the actual data collection sample size, using the same indicators as in the previous tests. Data from both questionnaires were collected at the same time, simultaneously, but the number of participants varied because there was a qualifying question for the SPWEQ. There were 216 valid responses to the SPWEQ, because the questionnaire contained a qualifying question that eliminated the number of respondents: 'Have you completed at least one course, either successfully or unsuccessfully, including courses in Bachelor degree, Diploma of Commerce and Associate Degree in Business, if you followed that study pathway?' All students who responded 'NO' to the above question were directed to the end of the questionnaire.

Regarding the gender structure of the qualified 216 respondents, 74 (34.2%) declared themselves as male, 139 (64.4%) as female, and 3 (1.4%) as the other gender. Age wise, 27 (12.5%) were students of less than 20 years of age, 166 (76.9%) were 20 to 24 years of age, and 23 (10.6%) were 25 and over years of age. Regarding student domiciles 123 (56.9%) respondents were local students and 93 (43.1%) were international students. Regarding students' study stage,
34 (15.8%) were in their first year, 80 (37.0%) were in their second year, 61 (28.2%) were in their third year, 15 (7.0%) were in their fourth or more years of study, and 26 (12.0%) were graduated students. The mean and median age was 22.

After a comprehensive confirmatory factor analysis and a model fit testing and retesting to reach the model fit, the number or items in the dataset were further reduced from 38 to 29. The final version of the SPWEQ for the actual research sample size of 216 participants had nine items (questions) for the cognitive domain, nine items (questions) for the affective domain and 11 items (questions) for the reflective domain (see Appendix A, p. 192).

Descriptive statistics results – including the means, median, standard deviation, skewness and kurtosis by each domain (cognitive, affective, reflective) and average of all three domains – are presented in Table 4.28. There is a distribution normality issue (calculated from minus twice the standard error of skewness and kurtosis to plus twice the standard error of skewness and kurtosis (Cohen et al., 2018) what is illustrated in Figure 4.4, p. 130. This is also indicated by the Kolmogorov-Smirnov test and the Shapiro-Wilk test of normality (Table 4.29, p. 130), because of p<0.05 for all domains. This will affect the choice of selecting either parametric or non-parametric tests for estimating correlations in further analysis.

		Cognitive	Affective	Reflective	Average
N.	Valid	216	216	216	216
	Missing	0	0	0	0
Mean		3.7495	3.5813	3.5269	3.6192
Median	Median		3.6667	3.6364	3.6970
Std deviation		0.71829	0.70820	0.67026	0.65086
Skewness		-1.383	-1.061	-1.035	-1.392
Std error of skewness		0.166	0.166	0.166	0.166
Kurtosis		2.876	2.094	2.499	3.615
Std error of kurtosi	S	0.330	0.330	0.330	0.330

Table 4.28 Actual research – wisdom enablers descriptive statistics



Figure 4.4 Actual research – distribution of wisdom enablers means

	Tests of Normality													
	Kolmogo	rov-Sm	nirnov <sup>a</sup>	Shapiro-Wilk										
	Statistic	df	Sig.	Statistic	df	Sig.								
Cognitive	0.158	216	0.001	0.897	216	0.001								
Affective	0.099	216	0.001	0.935	216	0.001								
Reflective	0.102 216 0.001 0.934					0.001								
Average 0.129 216 0.001 0.902 216 0.001														
a. Lilliefors Si	gnificance C	orrectio	on.			a. Lilliefors Significance Correction.								

Table 4.29 Actual research – Kolmogorov-Smirnov and the Shapiro-Wilk tests

Average Cronbach's alpha and average Jöreskog's *rho* scores for the cognitive, affective and reflective domains of the SPWEQ were 0.907 and 0.907, respectively. That well exceeds the cut-off value of 0.7 (DeVellis, 2012; Howell, 2013) and confirms the internal reliability and construct reliability of wisdom enablers in three wisdom domains (Table 4.30).

Table 4.30 Actual research – wisdom enablers Cronbach alpha values

Domain	Cronbach's Alpha	Jöreskog's <i>rho</i>
Cognitive	0.912	0.912
Affective	0.897	0.898
Reflective	0.905	0.899
Average α	0.905	0.903

Due to distribution normality issues, construct validity and internal reliability were also measured by a non-parametric test Spearman rank-order correlation coefficient, and confirmatory factor analysis. The score of each item was checked with the total score of their respective domain. The score of each item of all three domains was next checked with the overall total of all domains, and finally the correlation of totals of each domain was checked with the overall total. With a value of significance 0.01, sample size of 216, degree of freedom of 2, in a 2-tailed test, and *r* table product moment value of 0.208, the *rxy* for each item in the cognitive domain ranged from 0.559 to 0.791, for each item in the affective domain it ranged from 0.600 to 0.778. The *rxy* for each item for all domains checked against the overall total ranged from 0.480 to 0.754. The Spearman rank-order correlation coefficient among each domain total and the overall total are presented in Table 4.31.

	Correlations of three domains totals									
			Cognitive	Affective	Reflective	All domains				
Spearman's <i>rho</i>	Cognitive	Correlation coefficient	1.000	0.651*	0.626*	0.826*				
		Sig. (2-tailed)		0.001	0.001	0.001				
		Ν	216	216	216	216				
	Affective	Correlation coefficient	0.651*	1.000	0.803*	0.916*				
		Sig. (2-tailed)	0.001		0.001	0.001				
		Ν	216	216	216	216				
Reflective		Correlation coefficient	0.626*	0.803*	1.000	0.910*				
		Sig. (2-tailed)	0.001	0.001		0.001				
		N	216	216	216	216				
	All domains	Correlation coefficient	0.826*	0.916*	0.910*	1.000				
		Sig. (2-tailed)	0.001	0.001	0.001					
		Ν	216	216	216	216				
*Correlation i	s significant	at the 0.01 level	(2-tailed).							

Table 4.31 Actual research – Spearman rank-order correlation coefficients

The same process was repeated by measuring the correlation between each domain means, demonstrating a strong relationship among domains (0.651, 0.626, 0.803, respectively). The Spearman rank-order correlation coefficient among each domain mean and the overall mean are presented in Table 4.32, p. 132.

	Correlations of three domains means									
			Cognitive	Affective	Reflective	All domains				
Spearman's <i>rho</i>	Cognitive	Correlation coefficient	1.000	0.651*	0.626*	0.837*				
		Sig. (2-tailed)		0.001	0.001	0.001				
		N	216	216	216	216				
	Affective	Correlation coefficient	0.651*	1.000	0.803*	0.918*				
		Sig. (2-tailed)	0.001		0.001	0.001				
		N	216	216	216	216				
	Reflective	Correlation coefficient	0.626*	0.803*	1.000	0.896*				
		Sig. (2-tailed)	0.001	0.001		0.001				
		N	216	216	216	216				
	All domains	Correlation coefficient	0.837*	0.918*	0.896*	1.000				
		Sig. (2-tailed)	0.001	0.001	0.001					
		N	216	216	216	216				
*Correlation i	s significant	at the 0.01 level	(2-tailed).							

Table 4.32 Actual research – Spearman rank, enablers correlation coefficients

A confirmatory factor analysis, as a multivariate statistical procedure, was conducted again to test how well the observable variables, as wisdom enablers, represent the three wisdom constructs (domains) – cognitive, affective and reflective – and which observable variable is related to which latent variable for this sample size. Standardised regression weights (factor loadings) per each item and wisdom enabler domain are presented in Table 4.33.

Cognitive of	domain	Affective c	lomain	Reflective of	domain
Item number	Estimate	Item number Estimate		Item number	Estimate
ECOG01	0.782	EAFF01	0.575	EREF01	0.615
ECOG02	0.804	EAFF02	0.677	EREF04	0.755
ECOG03	0.813	EAFF03	0.707	EREF05	0.720
ECOG04	0.844	EAFF04	0.727	EREF06	0.619
ECOG05	0.673	EAFF05	0.754	EREF08	0.681
ECOG06	0.754	EAFF07	0.708	EREF09	0.579
ECOG08	0.615	EAFF08	0.613	EREF10	0.712
ECOG10	0.719	EAFF10	0.771	EREF12	0.653
ECOG11	0.550	EAFF11	0.786	EREF14	0.734
				EREF15	0.712
				EREF16	0.736

Table 4.33 Actual research – first-order CFA, wisdom enablers factor loadings

According to the Table 4.33, standardised regression weights, as an equivalent to each item factor loadings per each domain, ranged in the cognitive domain from 0.55 to 0.84, in the affective domain from 0.58 to 0.79 and in the reflective domain from 0.62 to 0.76.

Using the same procedure as in the first test the fit indices Chi-Square X2/degree of freedom (X2/df), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR) and Comparative Fit Index (CFI) of wisdom enablers as observable variables for each wisdom domain (factor) were calculated and are presented in Table 4.34.

Indicator	X <sup>2</sup>	р	df	X <sup>2</sup> /df RMSEA		SRMR	CFI
	(CMIN)						
Cognitive	90.295	0.001	27	3.344	0.104	0.0475	0.941
Affective	70.380	0.001	27	2.607	0.086	0.0466	0.951
Reflective	61.147	0.044	44	1.390	0.043	0.0338	0.983

Table 4.34 Actual research – wisdom enablers CFA fit indices

Based on the results of Table 4.34, the X<sup>2</sup>/df index for all three domains is at an acceptable level (3.344, 2.607, 1.390, respectively); RMSEA shows great fit for the reflective domain, but not for cognitive and affective domains (0.104, 0.086, 0.043, respectively). SRMS index demonstrates a great fit for all three domains (0.0475, 0.0466, 0.0338, respectively), while CFI index shows acceptable fit for all three domains (0.941, 0.951, 0.963).

The second-order confirmatory factor analysis model was conducted to measure the goodness of the statistical fit of the three latent wisdom enablers variables (domains) to the theoretical model of wisdom enablers (see Appendix H, p. 210). Standardised regression weights, as an equivalent to each item factor loadings per each domain are presented in the Table 4.35, p. 134.

Cognitive of	lomain	Affective d	lomain	Reflective	Reflective domain	
Item number	Estimate	Item number	Estimate	Item number	Estimate	
ECOG01	0.780	EAFF01	0.613	EREF01	0.611	
ECOG02	0.800	EAFF02	0.634	EREF04	0.734	
ECOG03	0.816	EAFF03	0.679	EREF05	0.726	
ECOG04	0.834	EAFF04	0.743	EREF06	0.631	
ECOG05	0.702	EAFF05	0.741	EREF08	0.660	
ECOG06	0.791	EAFF07	0.703	EREF09	0.567	
ECOG08	0.643	EAFF08	0.609	EREF10	0.716	
ECOG10	0.760	EAFF10	0.757	EREF12	0.661	
ECOG11	0.690	EAFF11	0.741	EREF14	0.754	
				EREF15	0.705	
				EREF16	0.742	

Table 4.35 Actual research – enablers second-order CFA factor loadings

According to the Table 4.35 standardised regression weights, as an equivalent to each item factor loadings per each domain, ranged in the cognitive domain from 0.64 to 0.83, in the affective domain from 0.61 to 0.76 and in the reflective domain from 0.57 to 0.75, while each domain (cognitive, affective, reflective), as latent wisdom enablers variables to the theoretical model of wisdom enablers, had factor loadings of 0.88, 0.96 and 0.99, respectively (see Appendix H, p. 210). Using the same approach as in previous tests, model fit indices were calculated and are presented in Table 4.36.

Table 4.36 Actual research – second-order CFA, wisdom enablers indices

Indicator	X <sup>2</sup> (CMIN)	р	df	X²/df	RMSEA	SRMR	CFI
Values	719.639	0.001	375	1.919	0.065	0.0565	0.907

Based on the results of Table 4.36, the SPWEQ shows an acceptable fit across all indices (X2/df = 1.919, RMSEA = 0.065, SRMR = 0.0565 and CFI = 0.907).

Additionally, the mean scores for the cognitive, affective and reflective domains of wisdom enablers were used as observable variables to estimate the goodness of statistical fit of the theoretical latent model of wisdom enablers. According to Kline (2010), when using such a small number of observable variables, constraints should be used in conducting a confirmatory factor analysis so that the model can be identifiable. The model, with equal loading on cognitive and affective variables, was constructed and the confirmatory factor analysis was conducted. The goodness of statistical fit using the same previously used indices are presented in Table 4.37.

Indicator	X <sup>2</sup> (CMIN)	р	df	X²/df	RMSEA	CFI
Values	2.837	0.092	1	2.837	0.080	0.996

Table 4.37 Actual research – CFA fit indices, wisdom enablers construct

Based on the results of Table 4.37, the fit indices  $X^2/df = 2.837$ , CFI = 0.996 and RMSEA = 0.080 are all at the acceptable level.

Convergent validity was measured by standardised estimates as factor loadings and Critical Ratios (CR) as *t*-ratios. The factor loadings for all domains were above the recommended level of 0.40 (Hair, Ringle, & Sarstedt, 2013), (cognitive domain 0.643 to 0.834, affective domain 0.609 to 0.757, reflective domain 0.567 to 0.754), and critical ratios for all loadings were significant and larger than 1.96.

Discriminant validity was checked by the assessment of domains (factors) correlations to test how distinguishable they are from each other. Although a correlation of less than 1.0 is a necessary condition for demonstrating discriminant validity MacKenzie, Podsakoff, and Podsakoff (2011) suggest a more stringent method of assessing discriminant validity where intercorrelation between factors should be less than 0.71, to test whether the factors have common variances. As shown in Table 4.38, there is a presence of cross-loading for all three factors.

Table 4.38 Actual research – wisdom enablers correlation between domains

Correlations: (0	Estimate		
Cognitive	<>	Reflective	0.846
Cognitive	<>	Affective	0.839
Affective	<>	Reflective	0.964

We can conclude that data analysis and testing of the Three-dimensional wisdom scale (3D-WS) and Students' perceptions of wisdom enablers questionnaire (SPWEQ) revealed that, both data collection instruments were statistically reliable and valid instruments for the study's sample size.

## 4.2 Research questions and hypothesis testing

After the data collection due date on the 31<sup>st</sup> of October 2018, the data were transferred from the Qualtrics file to the SPSS 25 for further analysis. In total, 293 completed responses were received, but after coding and editing, four cases were removed from the data matrix as invalid, keeping a net of 289 valid cases in the SPSS dataset for the further data analysis.

## 4.2.1 Null (H<sub>0</sub>) Hypothesis 1

Null (H<sub>0</sub>) hypothesis 1 stated that there would be no statistically significant difference in the wisdom scores among students of different ages, genders, stages of study, domiciles, employment status and life hardships. To test this hypothesis, the Mann-Whitney U test and One-way ANOVA were used.

Ardelt (see Appendix C, p. 200) uses a strong and a weak criterion to interpret the average wisdom score. The stronger criterion indicates the average score of each domain above or under certain points, while the weaker criterion indicates the average score of all domains above or under certain points. To gain the high wisdom score, the average score must be higher than 4 points, while the scores lower than 3 points are considered as a low wisdom score. It is evident from Table 4.39, that the students' wisdom scores are in the lower zone of moderate wisdom, ranging from 3.19 to 3.38.

Student group	Number	Cognitive	Affective	Reflective	All domains
All students	289	3.1861	3.2507	3.3777	3.2715
Students who completed at least one course	216	3.1756	3.2618	3.3800	3.2725
Students who did not complete any course	73	3.2172	3.2181	3.3710	3.2688

 Table 4.39 Wisdom means by completion status

When the Mann-Whitney U test (Table 4.40) was calculated to determine whether there was any statistically significant difference, or the difference was by chance alone, in the average wisdom scores between students who completed at least one course and students who did not complete any course, no statistically significant difference was found (U = 7884.000, p = 1.000).

Test Statistics <sup>a</sup>								
	Cognitive	Affective	Reflective	Average				
Mann-Whitney U	7558.000	7526.000	7640.500	7884.000				
Z	-0.529	-0.581	-0.395	0.001				
Asymp. Sig. (2-tailed)	0.597	0.561	0.693	1.000				
a. Grouping variable: Hav	ve you comple	ted at least o	ne course, eit	her				
successfully or unsuccessfully, including courses in Bachelor degree, Diploma								
of Commerce and Associ	ate Degree in	Business, if y	ou followed t	hat study				
pathway?								

Table 4.40 Mann-Whitney U test, differences by the completion status

Hedges' g was used to measure the effect size to show how much one group differs from another, because the sample size differed. The effect size is weighted according to the relative size of each sample. The Cohen's rule of thumb was used to interpret results where small effect = 0.2, medium effect = 0.5 and large effect = 0.8. The Hedges' g = 0.008487, which means that the differences in the wisdom score between the two groups have small effect size (0.8%) on the average score of the total sample wisdom scores. On that ground, the two groups were not discriminated in the further analysis of the wisdom scores of the sample size of 289 students.

Out of 289 students, 103 (36%) declared themselves as male, 183 (63%) as female and 3 (1%) as 'other'. The average wisdom scores for each wisdom domain by genders are presented in Table 4.41, p. 138, and one-way ANOVA analysis of variances is presented in Table 4.42, p. 138.

		Ν	Mean	Std deviation	Std error
Cognitive	Male	103	3.1311	0.62455	0.06154
	Female	183	3.2178	0.53217	0.03934
	Other	3	3.1429	0.14286	0.08248
	Total	289	3.1861	0.56480	0.03322
Affective	Male	103	3.1553	0.45813	0.04514
	Female	183	3.3039	0.45108	0.03335
	Other	3	3.2821	0.31088	0.17949
	Total	289	3.2507	0.45679	0.02687
Reflective	Male	103	3.3552	0.51197	0.05045
	Female	183	3.3962	0.50319	0.03720
	Other	3	3.0278	0.20972	0.12108
	Total	289	3.3777	0.50480	0.02969
Average	Male	103	3.2139	0.46425	0.04574
	Female	183	3.3060	0.41875	0.03095
	Other	3	3.1509	0.15955	0.09212
	Total	289	3.2715	0.43522	0.02560

Table 4.41 Wisdom means by students' genders

Table 4.42 Variances of wisdom means by students' genders

		ANO	VA			
		Sum of Squares	df	Mean Square	F	Sig.
Cognitive	Between groups	0.501	2	0.251	0.785	0.457
	Within groups	91.371	286	0.319		
	Total	91.873	288			
Affective	Between groups	1.458	2	0.729	3.555	.030
	Within groups	58.634	286	0.205		
	Total	60.092	288			
Reflective	Between groups	0.482	2	0.241	0.945	0.390
	Within groups	72.906	286	0.255		
	Total	73.388	288			
Average	Between groups	0.603	2	0.302	1.599	0.204
	Within groups	53.948	286	0.189		
	Total	54.551	288			

One-way ANOVA analysis of variance (Table 4.42) found that there was no statistically significant difference between average wisdom scores among students according to their genders (F(2,286) = 1.599, p = 0.204), but there is a significant statistical difference in the affective domain wisdom scores

(F(2,286) = 3.555, p = 0.030). This was confirmed by the Brown-Forsythe test (p = 0.021), but not by the Robust Tests of Equality of Means Welch (p = 0.123). A Tukey HSD and Games-Howell post-hoc tests revealed that the mean score of the affective wisdom domain of males was statistically significantly lower than the females score (M = 3.1553, F = 3.3039, p = 0.022). However, the effect size of such difference is small (2.4%) because of the Partial Eta Squared value  $\Pi^2$  = 0.024.

Students were grouped by age into nine groups and their average wisdom scores by each age group are presented in Table 4.43, and one-way ANOVA analysis of variances are presented in Table 4.44.

Age		Ν	Mean	Std Deviation	Std Error
Domains'	18 years	10	3.1665	0.40611	0.12842
average	19 years	34	3.2102	0.46671	0.08004
	20 years	61	3.3025	0.41698	0.05339
	21 years	55	3.2858	0.39069	0.05268
	22 years	52	3.2293	0.48050	0.06663
	23 years	27	3.3255	0.49714	0.09567
	24 years	19	3.2016	0.43465	0.09972
	25 years	9	3.3881	0.46070	0.15357
	More than 25 years	22	3.3391	0.38487	0.08205
	Total	289	3.2715	0.43522	0.02560

Table 4.43 Wisdom means by students' ages

Table 4.44	Variances	of wisdom	means b	y students'	ages
					<u> </u>

		ANO	VA			
		Sum of Squares	df	Mean Square	F	Sig.
Cognitive	Between groups	2.092	8	0.261	0.815	0.589
	Within groups	89.781	280	0.321		
	Total	91.873	288			
Affective	Between groups	0.971	8	0.121	0.575	0.798
	Within groups	59.120	280	0.211		
	Total	60.092	288			
Reflective	Between groups	0.982	8	0.123	0.474	0.874
	Within groups	72.407	280	0.259		
	Total	73.388	288			
Average	Between groups	0.795	8	0.099	0.517	0.843
	Within groups	53.757	280	0.192		
	Total	54.551	288			

One-way ANOVA analysis of variance (Table 4.44) found that there was no statistically significant difference between average wisdom scores among students by their ages (F(8,280) = 0.517, p = 0.843). Any difference has a small effect size (1.5%), with the Partial Eta Squared value of  $\Pi^2$  = 0.015.

There were 174 (60%) local and 115 (40%) international students that participated in this research, and their average wisdom scores by each wisdom domain and students' domiciles are presented in Table 4.45.

Domiciles		Cognitive	Affective	Reflective	Average
Local	Mean	3.2553	3.3108	3.4052	3.3238
(domestic)	Ν	174	174	174	174
	Std deviation	0.55500	0.44841	0.49818	0.43129
International	Mean	3.0814	3.1599	3.3362	3.1925
	Ν	115	115	115	115
	Std deviation	0.56575	0.45624	0.51405	0.43102
Total	Mean	3.1861	3.2507	3.3777	3.2715
	N	289	289	289	289
	Std deviation	0.56480	0.45679	0.50480	0.43522

Table 4.45 Wisdom means by students' domiciles

The Mann-Whitney U test (Table 4.46) was calculated to determine whether there was any statistically significant difference in average wisdom scores between local and international students. A statistically significant difference was found between the cognitive domain wisdom scores (U = 8063.5, p = 0.005), affective domain wisdom scores (U = 8064.5, p = 0.005) and the average wisdom scores (U = 8322.0, p = 0.016).

Table 4.46 Mann-Whitney U test, differences by domiciles

Test Statistics <sup>a</sup>								
	Cognitive	Affective	Reflective	Domains' average				
Mann-Whitney U	8063.500	8064.500	9144.000	8322.000				
Z	-2.795	-2.795	-1.240	-2.420				
Asymp. Sig. (2-tailed)	0.005	0.005	0.215	0.016				
a. Grouping variable: Domiciles								

Hedges' g was computed to measure the effect size because the sample size differed, and the effect size is weighted according to the relative size of each sample: cognitive domain effect size Hedges' g = 0.310927, affective domain effect size Hedges' g = 0.334192 and average wisdom effect size Hedges' g = 0.304511, which means that the differences in the wisdom score between local and international students still have a small effect size (30.4%) on the average score of the total sample wisdom score.

The average students' wisdom scores per year and semester of their studies are presented in Table 4.47.

	Period	Ν	Mean	Std Deviation	Std Error
Domains'	Year 1, semester 1	28	3.2779	0.35353	0.06681
average	Year 1, semester 2	42	3.1984	0.39188	0.06047
	Year 2, semester 1	27	3.2108	0.51501	0.09911
	Year 2, semester 2	76	3.2624	0.48097	0.05517
	Year 3, semester 1	23	3.2660	0.39761	0.08291
	Year 3, semester 2	47	3.3604	0.42385	0.06183
	Year 4, semester 1	4	3.2167	0.22294	0.11147
	Year 4, semester 2	12	3.3306	0.58447	0.16872
	More than 4 years	3	3.1869	0.43010	0.24832
	Graduated	27	3.3064	0.38248	0.07361
	Total	289	3.2715	0.43522	0.02560

Table 4.47 Wisdom means by year and semester of study

One-way ANOVA (Table 4.48, p. 142) was conducted to determine if there was any statistically significant difference in the average wisdom scores among students' according to their year and semester of study. One-way ANOVA analysis of variance found that there was no statistically significant difference between the average wisdom scores among students according to their year and semester of study (F(9,279) = 0.468, p = 0.895) (Table 4.48, p. 142). Any difference has small effect size (1.5%) with the Partial Eta Squared value of  $\Pi^2$ = 0.015.

		ANO	VA			
		Sum of Squares	df	Mean Square	F	Sig.
Cognitive	Between groups	1.121	9	0.125	0.383	0.943
	Within groups	90.752	279	0.325		
	Total	91.873	288			
Affective	Between groups	0.690	9	0.077	0.360	0.953
	Within groups	59.402	279	0.213		
	Total	60.092	288			
Reflective	Between groups	2.392	9	0.266	1.045	0.405
	Within groups	70.996	279	0.254		
	Total	73.388	288			
Domains'	Between groups	0.812	9	0.090	0.468	0.895
average	Within groups	53.739	279	0.193		
	Total	54.551	288			

Table 4.48 Variances of wisdom means by year and semester of study

Students' types of financial support are divided into three groups: self-support only, parents support only, and other types of financial support. The students' wisdom scores according to their types of financial support are presented in Table 4.49 and plotted in Figure 4.5, p. 143.

		N	Mean	Std Deviation	Std Error
Cognitive	Self only	27	3.2989	0.49489	0.09524
	Parents only	95	3.0248	0.50106	0.05141
	Other	167	3.2596	0.59205	0.04581
	Total	289	3.1861	0.56480	0.03322
Affective	Self only	27	3.3020	0.48224	0.09281
	Parents only	95	3.1190	0.38865	0.03987
	Other	167	3.3174	0.47457	0.03672
	Total	289	3.2507	0.45679	0.02687
Reflective	Self only	27	3.4383	0.36806	0.07083
	Parents only	95	3.2982	0.49249	0.05053
	Other	167	3.4132	0.52731	0.04080
	Total	289	3.3777	0.50480	0.02969
Domains'	Self only	27	3.3464	0.38475	0.07405
averages	Parents only	95	3.1474	0.37827	0.03881
	Other	167	3.3301	0.45960	0.03556
	Total	289	3.2715	0.43522	0.02560

Table 4.49 Wisdom means by types of financial support



Figure 4.5 Wisdom means by types of financial support

One-way ANOVA (Table 4.50) was conducted to determine if there was any statistically significant difference in the average wisdom scores among students' reported types of financial support.

Table 4.50	Variances	in wisdom	means by	types of	financial s	upport
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	ANOVA						
		Sum of		Mean			
		Squares	df	Square	F	Sig.	
Cognitive	Between	3.718	2	1.859	6.031	0.003	
	groups						
	Within	88.155	286	0.308			
	groups						
	Total	91.873	288				
Affective	Between	2.460	2	1.230	6.105	0.003	
	groups						
	Within	57.632	286	0.202			
	groups						
	Total	60.092	288				
Reflective	Between	0.909	2	0.454	1.793	0.168	
	groups						
	Within	72.480	286	0.253			
	groups						
	Total	73.388	288				
Average	Between	2.188	2	1.094	5.975	0.003	
	groups						
	Within	52.363	286	0.183			
	groups						
	Total	54.551	288				

A statistically significant difference was found between the cognitive domain wisdom scores (F(2,286 = 6.031, p = 0.03), affective domain wisdom scores (F(2,286) = 6.105, p=0.003), and average wisdom scores (F(2,286) = 5.975, p = 0.003). This also confirmed Brown-Forsythe (p = 0.002) and the Robust Tests of Equality of Means Welch (p = 0.002), but with a small effect size (4.0%) with the Partial Eta Squared value of  $\Pi^2$  = 0.040. A post hoc Tukey HSD test showed that there was a statistically significant difference in wisdom scores between the group 'Other' and the group 'Parents only' in the cognitive domain (p = 0.003), the affective domain (p = 0.002) and the overall average wisdom score (p = 0.003).

The students' wisdom scores according to their employment status are presented in Table 4.51.

Employment s	tatus	Cognitive	Affective	Reflective	Average
Yes	Mean	3.2609	3.3147	3.4109	3.3288
	N	187	187	187	187
	Std deviation	0.55729	0.44887	0.50320	0.42958
No	Mean	3.0490	3.1335	3.3170	3.1665
	N	102	102	102	102
	Std deviation	0.55529	0.44996	0.50452	0.42785
Total	Mean	3.1861	3.2507	3.3777	3.2715
	N	289	289	289	289
	Std deviation	0.56480	0.45679	0.50480	0.43522

Table 4.51 Wisdom means by employment status

The Mann-Whitney U test (Table 4.52, p. 145) was calculated to determine whether there was any statistically significant difference in the average wisdom scores between students who had employment and students without employment. A statistically significant difference was found between the cognitive domain wisdom scores (U = 7476.000, p = 0.002), affective domain wisdom scores (U = 7496.000, p = 0.003).

Test Statistics <sup>a</sup>						
Cognitive Affective Reflective Average						
Mann-Whitney U	7476.000	7393.000	8516.500	7496.000		
Z	-3.039	-3.163	-1.505	-3.006		
Asymp. Sig. (2-tailed) 0.002 0.002 0.132 0.003						
a Grouping variable: emplo	vment status					

Table 4.52 Mann-Whitney U test, differences by employment status

Hedges' g was computed to measure the effect size because the sample size differed, and the effect size is weighted according to the relative size of each sample. Cognitive domain effect size Hedges' g = 0.380713, affective domain effect size Hedges' g = 0.403335 and average wisdom effect size Hedges' g = 0.378346, which means that the differences in the wisdom score between students who had employment and students without employment have small effect size (37.8%) on the average score of the total sample wisdom score.

Furthermore, the employed students reported the number of working hours per week and their average wisdom scores are presented in Table 4.53 and plotted in Figure 4.6, p.146.

	Hours per week	Ν	Mean	Std deviation	Std error
Domains'	0 hours per week	94	3.1776	0.39966	0.04122
averages	5 or fewer hours per week	22	3.3208	0.46491	0.09912
	6–10 hours per week	31	3.1944	0.45327	0.08141
	11–15 hours per week	32	3.2052	0.53322	0.09426
	16–20 hours per week	37	3.3502	0.40070	0.06587
	21–25 hours per week	19	3.3891	0.36242	0.08314
	26–30 hours per week	18	3.2703	0.45934	0.10827
	More than 30 hours per week	36	3.4697	0.39046	0.06508
	Total	289	3.2715	0.43522	0.02560

Table 4.53 Wisdom means by working hours



Figure 4.6 Wisdom means by working hours per week

Spearman's rank-order statistical test demonstrated the existence of a statistically significant positive correlation between students' wisdom scores and students' number of working hours per week (Table 4.54).

			Working hours
Spearman's rho	Cognitive	Correlation coefficient	0.221**
		Sig. (2-tailed)	0.001
		N	289
	Affective	Correlation coefficient	0.208**
		Sig. (2-tailed)	0.001
		N	289
	Reflective	Correlation coefficient	0.123*
		Sig. (2-tailed)	0.036
		N	289
	Average	Correlation coefficient	0.212**
		Sig. (2-tailed)	0.001
			289
*Correlation is sig	gnificant at th	ne 0.05 level (2-tailed).	
**Correlation is s	ignificant at t	the 0.01 level (2-tailed).	

Table 4.54 Spearman's rho correlation, wisdom and working hours

Furthermore, one-way ANOVA (Table 4.55) was conducted to determine if there was any statistically significant difference in the average wisdom scores among students who reported employment by the number of working hours per week. A statistically significant difference was found between the cognitive domain wisdom scores (F(7,281) = 2.519, p = 0.016), affective domain wisdom scores (F(7,281) = 2.307, p = 0.027) and total wisdom scores (F(7,281) = 2.429, p = 0.020), which also confirmed the Brown-Forsythe (p = 0.027) and Robust Tests of Equality of Means Welch (p = 0.016), but with a small effect size (5.7%) with the Partial Eta Squared value of  $\Pi^2 = 0.057$ . A post hoc Tukey HSD test showed that there was a statistically significant difference in wisdom scores between the group 'Zero hours per week' and the group 'More than 30 hours per week' in the cognitive domain (p = 0.007) and the overall average wisdom score (p = 0.013).

		ANO	VA			
		Sum of		Mean		
		Squares	df	Square	F	Sig.
Cognitive	Between groups	5.425	7	0.775	2.519	0.016
	Within groups	86.448	281	0.308		
	Total	91.873	288			
Affective	Between groups	3.265	7	0.466	2.307	0.027
	Within groups	56.827	281	0.202		
	Total	60.092	288			
Reflective	Between groups	2.101	7	0.300	1.183	0.312
	Within groups	71.288	281	0.254		
	Total	73.388	288			
Average	Between groups	3.113	7	0.445	2.429	0.020
	Within groups	51.439	281	0.183		
	Total	54.551	288			

Table 4.55 Variances of wisdom mea	ans by weekly working hours
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Students were asked in the questionnaire if they experienced any of the listed life hardship events since their first enrolment into a relevant program at the university. The wisdom scores per each domain for both groups were as follows: students who reported and students who did not report life hardship experiences, as presented in Table 4.56, p.148.

Have you experienced any life hardship event?		Cognitive	Affective	Reflective	Domains' average
NO	Mean	3.0443	3.1467	3.3588	3.1833
	N	108	108	108	108
	Std deviation	0.54255	0.43125	0.50187	0.42232
YES	Mean	3.2707	3.3128	3.3890	3.3242
	N	181	181	181	181
	Std deviation	0.56228	0.46144	0.50759	0.43541

Table 4.56 Wisdom means by life hardship experiences

The Mann-Whitney U test (Table 4.57) was calculated to determine whether there was any statistically significant difference in the average wisdom scores between students who experienced and students who did not experience life hardship events. A statistically significant difference was found between the cognitive domain wisdom scores (U = 7524.000, p = 0.001), affective domain wisdom scores (U = 7619.500, p = 0.002) and average wisdom scores (U = 7800.000, p = 0.004).

Table 4.57 Mann-Whitney U test, wisdom means differences by life hardships

Test Statistics <sup>a</sup>						
Cognitive Affective Reflective Average						
Mann-Whitney U	7524.000	7651.000	9273.500	7800.000		
Z	-3.277	-3.094	-0.729	-2.872		
Asymp. Sig. (2-tailed) 0.001 0.002 0.466 0.004						
a. Grouping variable: life	a. Grouping variable: life hardship experiences.					

Hedges' g was computed to measure the effect size because the sample size differed, and the effect size is weighted according to the relative size of each sample. Cognitive domain effect size Hedges' g = 0.407923, affective domain effect size Hedges' g = 0.368766 and average wisdom effect size Hedges' g = 0.327236, which means that the differences in the wisdom scores between students who experienced and students who did not experience life hardship events have small effect size (32.8%) on the average score of the total sample wisdom score.

Furthermore, students who reported life hardship experiences also reported the number of life hardship events they experienced. In total, 29 events were listed in the questionnaire (see Appendix A, p. 192) and students' answers were

grouped from 1 to 6 and more reported life hardship events. The students' wisdom scores per number of life hardship events are presented in Table 4.58, and plotted in Figure 4.7.

				Std.	
Number of events		Ν	Mean	deviation	Std. error
Averages	0.00	108	3.1833	0.42232	0.04064
	1.00	71	3.2057	0.45157	0.05359
	2.00	51	3.3172	0.44474	0.06228
	3.00	24	3.4397	0.36556	0.07462
	4.00	13	3.4048	0.38335	0.10632
	5.00	11	3.6644	0.35028	0.10561
	6.00	11	3.4340	0.32961	0.09938
	Total	289	3.2715	0.43522	0.02560

Table 4.58 Wisdom means by life hardship events



Figure 4.7 Wisdom means by life hardship events

Spearman's rank-order statistical test demonstrated the existence of statistically significant positive correlation between students' wisdom scores and the number of reported life hardship events (Table 4.59, p. 150).

			Life events total
Spearman's	Cognitive	Correlation coefficient	0.260*
rho		Sig. (2-tailed)	0.001
		N	289
	Affective	Correlation coefficient	0.256*
		Sig. (2-tailed)	0.001
		Ν	289
	Reflective	Correlation coefficient	0.102
		Sig. (2-tailed)	0.083
		Ν	289
	Domains' average	Correlation coefficient	0.250*
		Sig. (2-tailed)	0.001
		N	289
<ul> <li>Correlation is s</li> </ul>	ignificant at the 0.01	level (2-tailed).	

One-way ANOVA (Table 4.60) was conducted to determine if there was any statistically significant difference in the average wisdom scores among students who reported life hardship experiences by the number of life hardship events since they first enrolled into the management program.

	ANOVA									
		Sum of		Mean						
		Squares	df	Square	F	Sig.				
Cognitive	Between	7.919	6	1.320	4.433	0.001				
	groups									
	Within groups	83.954	282	0.298						
	Total	91.873	288							
Affective	Between	4.595	6	0.766	3.891	0.001				
	groups									
	Within groups	55.497	282	0.197						
	Total	60.092	288							
Reflective	Between	1.928	6	0.321	1.268	0.272				
	groups									
	Within groups	71.461	282	0.253						
	Total	73.388	288							
Average	Between	4.154	6	0.692	3.874	0.001				
	groups									
	Within groups	50.398	282	0.179						
	Total	54.551	288							

Table 4.60 Variances of wisdom means by life hardship events

A statistically significant difference was found between the cognitive domain wisdom score (F(6,282) = 4.433, p = 0.001) and affective domain wisdom score (F(6,282) = 3.891, p = 0.001), and the average wisdom scores (F(6,282) = 3.874, p = 0.001), but with a small effect size (7.6%) with the Partial Eta Squared value of  $\Pi^2$  = 0.076. A post hoc Tukey HSD test showed that there was a statistically significant difference in wisdom scores between the group 'Zero life hardship events' and the group 'Five hardship events' in the cognitive domain (p = 0.003), the affective domain (p = 0.031) and the overall average wisdom score (p = 0.016). Also, there was a statistically significant difference in wisdom score (p = 0.019 and the group 'Five life hardship events' in the cognitive domain (p = 0.019 and the overall average wisdom score (p = 0.016).

The results of the above analysis support Null hypothesis 1 that there is no statistically significant difference in students' wisdom scores according to their ages, genders and stages of study, but the results do not support it regarding students' wisdom scores according to their domiciles, employment status, types of financial support and experiences of life hardship. This is because their p<0.05. The four variables have a statistically significant difference as follows: domiciles, types of financial support, employment status and experiences of life hardship. These have a small effect size on the students' overall wisdom score. A series of two-way ANOVA or factorial ANOVA were conducted to measure the interaction effect among the above independent variables, but no statistically significant two-way interaction effect among them was found. A comprehensive commentary about the four variables, which have a statistically significant difference, is provided in Chapter 5 Discussion.

## 4.2.2 Null (H<sub>0</sub>) Hypothesis 2

Null (H<sub>0</sub>) hypothesis 2 stated that there would be no statistically significant difference in students' perceptions about wisdom enablers among students of different ages, genders, stages of study, domiciles, employment status, types of financial support and experiences of life hardship.

After the completion of an analysis related to the first guiding question and hypothesis 1 about the level of students' wisdom, the second guiding research question was addressed by measuring student perceptions about wisdom enablers in undergraduate management education. Only students who have completed at least one course (subject) participated in this survey. In total, 216 valid cases were recorded. Initially, the total average score of students' perceptions of wisdom enablers per wisdom domain was calculated and the results are presented in Table 4.61.

		Cognitive	Affective	Reflective	Averages
Ν	Valid	216	216	216	216
	Missing	0	0	0	0
Mean		3.7495	3.5813	3.5269	3.6192
Median		3.8889	3.6667	3.6364	3.6970
Std deviatio	n	0.71829	0.70820	0.67026	0.65086
Variance		0.516	0.502	0.449	0.424
Skewness		-1.383	-1.061	-1.035	-1.392
Std error of skewness		0.166	0.166	0.166	0.166
Kurtosis		2.876	2.094	2.499	3.615
Std error of	kurtosis	0.330	0.330	0.330	0.330
Sum		809.89	773.56	761.82	781.75

Table 4.61 Students' perceptions of wisdom enablers descriptive statistics

The same criteria that were used to interpret a wisdom score were used to interpret students' perceptions about wisdom enablers. It is evident from Table 4.61 that the students' perceptions scores are in the middle zone of a moderate wisdom range between 3.53 and 3.75, and that the cognitive enablers have the highest value. Due to already mentioned concerns about distribution skewness and kurtosis and ordinal character of data, a combination of parametric and non-parametric tests were conducted to measure statistical differences and variances between independent variables and their effect size.

Students' perceptions of wisdom enablers in undergraduate management education average scores by their stages of study are presented in Table 4.62, p. 153.

	Period	Ν	Mean	Std deviation	Std error
Domains'	Year 1, semester 1	12	3.5143	0.41636	0.12019
averages	Year 1, semester 2	22	3.6237	0.32521	0.06934
	Year 2, semester 1	20	3.6020	0.47199	0.10554
	Year 2, semester 2	60	3.6123	0.70930	0.09157
	Year 3, semester 1	20	3.6840	0.71142	0.15908
	Year 3, semester 2	41	3.6865	0.66756	0.10426
	Year 4, semester 1	4	3.1658	1.49764	0.74882
	Year 4, semester 2	9	3.2828	0.76123	0.25374
	More than 4 years	2	4.1229	0.24046	0.17003
	Graduated	26	3.6847	0.67226	0.13184
	Total	216	3.6192	0.65086	0.04429

Table 4.62 Means of wisdom enablers by study stages

A parametric one-way ANOVA and the non-parametric Kruskal-Wallis test were conducted to measure the variance of students' perceptions of wisdom enablers per wisdom domain by students' stages of study and their statistical significance and effect size. Neither, one-way ANOVA analysis of variance (F(9,206) = 0.745, p = 0.667) (Table 4.63), nor the Kruskal-Wallis test ( $\chi$ 2 = 8.721,  $\rho$  = 0.463) (Table 4.64, p. 154), have found that there was a statistically significant difference between the average perception of wisdom enablers scores among students by their year and semester of study. Also, any difference has small effect size (3.2%) with the Partial Eta Squared value of  $\Pi^2$  = 0.032.

	ANOVA									
		Sum of Squares	df	Mean Square	F	Sia.				
Cognitive	Between groups	5.626	9	0.625	1.223	0.282				
	Within groups	105.300	206	0.511						
	Total	110.926	215							
Affective	Between groups	2.632	9	0.292	0.573	0.819				
	Within groups	105.200	206	0.511						
	Total	107.832	215							

Table 4.63 Variances of wisdom enablers by study stages

	ANOVA									
		Sum of								
		Squares	df	Mean Square	F	Sig.				
Reflective	Between	2.156	9	0.240	0.523	0.857				
	groups									
	Within	94.431	206	0.458						
	groups									
	Total	96.587	215							
Average	Between	2.871	9	0.319	0.745	0.667				
_	groups									
	Within	88.206	206	0.428						
	groups									
	Total	91.077	215							

Table 4.64 Kruskal-Wallis H test, variances of enablers by study stages

Test Statistics <sup>a,b</sup>								
Cognitive Affective Reflective Average								
Kruskal-Wallis H	17.699	6.751	3.795	8.721				
df	9	9	9	9				
Asymp. Sig.	0.039	0.663	0.924	0.463				
a. Kruskal-Wallis test.								
b. Grouping variable: study stage.								

Out of 216 students, 74 (34%) declared themselves as male, 139 (64%) as female and 3 (2%) as 'other'. The average perceptions of wisdom enablers scores for each wisdom domain by genders are presented in Table 4.65.

		Ν	Mean	Std deviation	Std error
Cognitive	Male	74	3.6396	0.83671	0.09727
	Female	139	3.8185	0.64347	0.05458
	Other	3	3.2593	0.44905	0.25926
	Total	216	3.7495	0.71829	0.04887
Affective	Male	74	3.5571	0.78038	0.09072
	Female	139	3.6035	0.67335	0.05711
	Other	3	3.1481	0.25660	0.14815
	Total	216	3.5813	0.70820	0.04819
Reflective	Male	74	3.4791	0.77480	0.09007
	Female	139	3.5612	0.61296	0.05199
	Other	3	3.1212	0.20995	0.12121
	Total	216	3.5269	0.67026	0.04561
Average	Male	74	3.5586	0.76010	0.08836
	Female	139	3.6611	0.58737	0.04982
	Other	3	3.1762	0.30520	0.17621
	Total	216	3.6192	0.65086	0.04429

Table 4.65 Means of wisdom enablers by genders

A parametric one-way ANOVA (Table 4.66) and the non-parametric Kruskal-Wallis test (Table 4.67) were conducted to measure the variances of students' perceptions of wisdom enablers per wisdom domain by students' genders and their statistical significance and effect size.

	ANOVA									
Sum of Mean										
		Squares	df	Square	F	Sig.				
Cognitive	Between groups	2.277	2	1.138	2.232	0.110				
	Within groups	108.649	213	0.510						
	Total	110.926	215							
Affective	Between groups	0.675	2	0.337	0.671	0.512				
	Within groups	107.157	213	0.503						
	Total	107.832	215							
Reflective	Between groups	0.826	2	0.413	0.918	0.401				
	Within groups	95.761	213	0.450						
	Total	96.587	215							
Average	Between groups	1.104	2	0.552	1.307	0.273				
	Within groups	89.973	213	0.422						
	Total	91.077	215							

Table 4.66 Variances of means of wisdom enablers by genders

Table 4.67 Kruskal-Wallis H, variances of wisdom enablers by genders

Test Statistics <sup>a,b</sup>								
Cognitive Affective Reflective Average								
Kruskal-Wallis H	4.004	2.829	3.220	3.727				
df	2	2	2	2				
Asymp. Sig.	0.135	0.243	0.200	0.155				
a. Kruskal-Wallis test.								
b. Grouping variable: g	b. Grouping variable: gender.							

Neither the one-way ANOVA analysis of variance (F(2,213) = 1.307, p = 0.273) (Table 4.66) nor the Kruskal-Wallis test ( $\chi$ 2 = 3.727, p = 0.155) (Table 4.67), have found that there was a statistically significant difference between average perceptions of wisdom enablers score by students' genders, and any difference has small effect size (1.2%) with the Partial Eta Squared value of  $\Pi^2$  = 0.012.

The students' perceptions of wisdom enablers in the undergraduate management education average scores according to their ages are presented in Table 4.68, p.156.

		N	Mean	Std. Deviation	Std. Error
Domains'	18 years	5	3.5003	0.30075	0.13450
averages	19 years	22	3.7570	0.56230	0.11988
	20 years	44	3.5341	0.67078	0.10112
	21 years	44	3.6756	0.63760	0.09612
	22 years	44	3.6547	0.61353	0.09249
	23 years	20	3.5453	0.77516	0.17333
	24 years	14	3.5038	0.71602	0.19136
	25 years	8	3.7071	0.30081	0.10635
	More than 25 years	15	3.5966	0.88554	0.22865
	Total	216	3.6192	0.65086	0.04429

Table 4.68 Means of wisdom enablers by ages

A parametric one-way ANOVA (Table 4.69) and the non-parametric Kruskal-Wallis test (Table 4.70, p. 157) were also conducted to measure the variance of students' perceptions of wisdom enablers per wisdom domain according to students' ages and their statistical significance and effect size.

	ANOVA										
		Sum of		Mean							
		Squares	df	Square	F	Sig.					
Cognitive	Between groups	1.761	8	0.220	0.417	0.910					
	Within groups	109.165	207	0.527							
	Total	110.926	215								
Affective	Between groups	1.776	8	0.222	0.433	0.900					
	Within groups	106.057	207	0.512							
	Total	107.832	215								
Reflective	Between groups	1.769	8	0.221	0.483	0.868					
	Within groups	94.818	207	0.458							
	Total	96.587	215								
Averages	Between groups	1.367	8	0.171	0.394	0.923					
	Within groups	89.710	207	0.433							
	Total	91.077	215								

Table 4.69 Variances of means of wisdom enablers by ages

Test Statistics <sup>a,b</sup>								
	Cognitive	Affective	Reflective	Average				
Kruskal-Wallis H	2.471	3.208	4.527	2.769				
df	8	8	8	8				
Asymp. Sig.	0.963	0.921	0.807	0.948				
a. Kruskal-Wallis test.								
b. Grouping variable: age.								

Table 4.70 Kruskal-Wallis H test, variances of wisdom enablers by ages

Neither, the one-way ANOVA analysis of variance (F(8,207) = 0.394, p = 0.923) (Table 4.69), nor the Kruskal-Wallis test ( $\chi 2$  = 2.769, p = 0.948) (Table 4.70), have found that there was a statistically significant difference between the average perception of wisdom enablers score by students' ages, and any difference has weak effect size (1.5%) with the Partial Eta Squared value of  $\Pi^2$  = 0.015.

There were 123 (57%) local and 93 (43%) international students that responded to the questionnaire about perception of wisdom enablers in undergraduate management education and their average scores by each wisdom domain and domicile is presented in Table 4.71.

Domicile		Cognitive	Affective	Reflective	Averages
Local	Mean	3.7751	3.5519	3.4922	3.6064
(domestic)	Ν	123	123	123	123
	Std deviation	0.66840	0.66346	0.62454	0.60177
International	Mean	3.7157	3.6201	3.5728	3.6362
	Ν	93	93	93	93
	Std deviation	0.78182	0.76531	0.72725	0.71361

Table 4.71 Means of wisdom enablers by domiciles

The Mann-Whitney U test (Table 4.72, p.158) was calculated to determine whether there was any statistically significant difference in perception of wisdom enablers in the undergraduate management education scores between local and international students. No statistically significant difference was found between the average perception of wisdom enablers scores (U = 5248.000, p = 0.300).

Test Statistics <sup>a</sup>						
	Cognitive	Affective	Reflective	Average		
Mann-Whitney U	5711.500	5194.500	5160.000	5248.000		
Z	-0.018	-1.157	-1.233	-1.037		
Asymp. Sig. (2-tailed)	0.986	0.247	0.218	0.300		
a. Grouping variable: domiciles.						

Table 4.72 Mann-Whitney U test, differences of wisdom enablers by domiciles

Hedges' g was computed to measure the effect size because the sample size differed, and the effect size is weighted according to the relative size of each sample. The difference in average scores of students' perceptions of wisdom enablers by students' domiciles measured by Hedges' g = 0.045691, which means that the differences in the perception of the wisdom enablers scores between local and international students have a small effect size (4.6%) on the average score of the total sample score.

Students' perceptions of the wisdom enablers scores according to their employment status are presented in Table 4.73. The employment status counted for both paid and unpaid work.

Employment status		Cognitive	Affective	Reflective	Averages
Yes	Mean	3.7589	3.5964	3.5250	3.6268
	N	147	147	147	147
	Std deviation	0.72632	0.70921	0.68269	0.65667
No	Mean	3.7295	3.5491	3.5310	3.6032
	N	69	69	69	69
	Std deviation	0.70569	0.71015	0.64784	0.64277

Table 4.73 Means of wisdom enablers by employment status

The Mann-Whitney U test (Table 4.74, p.159) was calculated to determine whether there was any statistically significant difference in perceptions of wisdom enablers in the undergraduate management education scores according to the reported students' employment status. No statistically significant difference was found between the total perception of wisdom enablers scores (U 5044.000, p = 0.949).

Test Statistics <sup>a</sup>						
	Cognitive	Affective	Reflective	Average		
Mann-Whitney U	5038.000	4899.000	4955.000	5044.000		
Z	-0.078	-0.404	-0.273	-0.064		
Asymp. Sig. (2-tailed)	0.937	0.686	0.785	0.949		
a. Grouping variable: employment status.						

Table 4.74 Mann-Whitney U test, differences of enablers by employment

Hedges' g was computed to measure the effect size because the sample size differed, and the effect size is weighted according to the relative size of each sample. Difference in average scores of students' perceptions of wisdom enablers by students' employment status by Hedges' g = 0.03618, which means that the differences in the perception of the wisdom enablers scores between employed and unemployed students have weak effect size (3.6%) on the average score of the total sample score.

Out of 216 students, 24 (11%) reported self-financial support only, 69 (32%), financial support by parents only and 123 (57%) reported combined or other type of financial support. The average perceptions of wisdom enablers scores for each wisdom domain by the type of financial support are presented in Table 4.75.

		N	Mean	Std. Deviation	Std. Error
Domains'	Self-support only	24	3.7009	0.48207	0.09840
averages	Parents support	69	3.5333	0.70707	0.08512
	only				
	Other types of	123	3.6515	0.64616	0.05826
	support				
	Total	216	3.6192	0.65086	0.04429

Table 4.75 Means of wisdom enablers by type of financial support

A parametric one-way ANOVA (Table 4.76, p.160) and the non-parametric Kruskal-Wallis test (Table 4.77, p.160) were conducted to measure the variances of students' perceptions of wisdom enablers per wisdom domain by

students' type of financial support and their statistical significance and effect size.

ANOVA						
		Sum of		Mean		
		Squares	df	Square	F	Sig.
Cognitive	Between Groups	1.478	2	0.739	1.438	0.240
	Within Groups	109.448	213	0.514		
	Total	110.926	215			
Affective	Between Groups	1.292	2	0.646	1.292	0.277
	Within Groups	106.540	213	0.500		
	Total	107.832	215			
Reflective	Between Groups	0.315	2	0.157	0.348	0.706
	Within Groups	96.272	213	0.452		
	Total	96.587	215			
Average	Between Groups	0.798	2	0.399	0.941	0.392
	Within Groups	90.279	213	0.424		
	Total	91.077	215			

Table 4.76 Variances of means of wisdom enablers by a type of financial support

Table 4.77 Kruskal-Wallis H, variances of wisdom enablers by types of
financial support

Test Statistics <sup>a,b</sup>						
	Cognitive	Affective	Reflective	Average		
Kruskal-Wallis H	1.434	1.462	0.092	0.255		
df	2	2	2	2		
Asymp. Sig.	0.488	0.481	0.955	0.880		
a. Kruskal Wallis Test						
b. Grouping Variable: Fianc.support						

Neither the one-way ANOVA analysis of variance (F(2,213) = 0.941, p = 0.392) (Table 4.76) nor the Kruskal-Wallis test ( $\chi$ 2 = 0.255, p = 0.880) (Table 4.77), have found that there was a statistically significant difference between average perceptions of wisdom enablers scores by students' type of financial support, and any difference has small effect size (4.2%) with the Partial Eta Squared value of  $\Pi^2$  = 0.042.

Students were asked if they experienced life hardship events since their first enrolment in a relevant program at the university. The perceptions of the wisdom enablers average scores per each domain for both groups are as follows: students who reported and students who did not report life hardship experiences, as presented in Table 4.78.

Have you experienced life hardship?		Cognitive	Affective	Reflective	Averages
NO	Mean	3.6751	3.5626	3.4937	3.5771
	Ν	79	79	79	79
	Std deviation	0.76003	0.68778	0.66290	0.66390
YES	Mean	3.7924	3.5921	3.5461	3.6435
	Ν	137	137	137	137
	Std deviation	0.69229	0.72198	0.67613	0.64441

Table 4.78 Means of wisdom enablers by life hardships

The Mann-Whitney U test (Table 4.79) was calculated to determine whether there was any statistically significant difference in perceptions of wisdom enablers in undergraduate management education scores according to students' life hardships. No statistically significant difference was found between the average perception of wisdom enablers scores (U = 5224.000, p = 0.672).

Test Statistics <sup>a</sup>						
Cognitive Affective Reflective Average						
Mann-Whitney U	4837.000	5325.000	5271.500	5224.000		
Z	-1.302	-0.196	-0.317	-0.424		
Asymp. Sig. (2-tailed)	0.193	0.845	0.751	0.672		
a Grouping variable: life hardship experiences						

Table 4.79 Mann-Whitney U test, differences of enablers by hardships

a. Grouping variable. The hardship experiences.

Hedges' g was computed to measure the effect size because the sample size differed, and the effect size is weighted according to the relative size of each sample. Difference in average scores of students' perceptions of wisdom enablers by students' life hardships by Hedges' g = 0.101906, which means that the differences in the perceptions of the wisdom enablers scores between

students who experienced and who did not experience life hardships have small effect size (10.2%) on the average score of the total sample score.

The results of the above analysis support Null hypothesis 2 that there is no statistically significant difference in students' average perception of wisdom enablers scores according to their ages, genders, stages of study, domiciles, employment status, types of financial support and experiences of life hardship. The results support the hypothesis because their p>0.05.

## 4.2.3 Null (H<sub>0</sub>) Hypothesis 3

Null (H<sub>0</sub>) hypothesis 3 stated that there would be no statistically significant relationship of association between the students' current wisdom scores and students' perceptions of wisdom enablers in undergraduate management education.

After the completion of testing the statistical significance of differences and variances analyses that relate to the two guiding questions, the parametric Product Moment Pearson Correlation tests were conducted to measure the relationships between students' wisdom scores and their perceptions of wisdom enablers in undergraduate management education, which relates to the main research question. It is important to stress at this stage of analysis that 'a statistically significant correlation is indicative of an actual relationship rather than one due entirely to chance' ... and that ... 'a correlation does not necessarily imply a cause-and-effect relationship between two factors' (Cohen et al., 2018, p. 771).

The relationships between the students' average wisdom scores and their perceptions of wisdom enablers by wisdom domains were measured by Product Moment Pearson Correlation, Table 4.80, p. 163.

		Enablers cognitive	Enablers affective	Enablers reflective	Enablers average
Wisdom cognitive	Pearson correlation	0.293**	0.202**	0.146*	0.231**
_	Sig. (2-tailed)	0.001	0.003	0.032	0.001
	Ν	216	216	216	216
Wisdom affective	Pearson correlation	0.305**	0.201**	0.144*	0.235**
	Sig. (2-tailed)	0.001	0.003	0.034	0.001
	N	216	216	216	216
Wisdom reflective	Pearson correlation	0.282**	0.260**	0.176**	0.258**
	Sig. (2-tailed)	0.001	0.001	0.010	0.001
	N	216	216	216	216
Wisdom domains'	Pearson correlation	0.337**	0.253**	0.178**	0.277**
average	Sig. (2-tailed)	0.001	0.001	0.009	0.001
	Ν	216	216	216	216
*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).					

Table 4.80 Pearson correlation, wisdom and wisdom enablers means

It is evident from the above Product Moment Pearson Correlation analysis that there is a positive statistically significant correlation between the students' wisdom scores and students' perceptions of wisdom enablers in undergraduate management education, but the effect size of such correlation shows a weak relationship between variables, because r values range from 0.144 to 0.337 which is also visible from the scatter/dot diagram in Figure 4.8.



Correlation between students' wisdom and their perceptions of wisdom enablers, means of three domains

Figure 4.8 Scatter/dot diagram, correlation domains' averages

Finally, a simple linear regression was conducted to see what improvement in average students' wisdom score can be predicted from a given average score of students' perceptions of wisdom enablers in undergraduate management education. The average wisdom score is a dependent variable and average students' perception of wisdom enablers is an independent variable. A scatter diagram of regression of students' perceptions of wisdom enablers in undergraduate management education (Figure 4.8, p. 163) indicates a linear positive relationship between two variables with the adjusted R square of 0.072 (Table 4.81), which means that 7.2% of the average wisdom score can be accountable to students' perceptions of wisdom enablers in undergraduate management education.

Table 4.81	Simple	Linear	Regres	sion

Model summary <sup>b</sup>									
			Adjusted R	Std error of the					
Model	R	R square	square	estimate					
1	0.277ª	0.077	0.072	0.44753					
a. Predictors: (constant), Domains' average enablers score.									
b. Dependent variable: Domains' average wisdom score.									

ANOVA (Table 4.82) indicates that the regression model is statistically significant F(1,214) = 17.748, p = 0.001, and that statistically students' perceptions of wisdom enablers is a good predictor of the students' wisdom scores.

ANOVA <sup>a</sup>										
		Sum of		Mean						
Model		squares	df	square	F	Sig.				
1	Regression	3.555	1	3.555	17.748	0.001 <sup>b</sup>				
	Residual	42.861	214	0.200						
	Total	46.415	215							
a. Dependent Variable: Domains' average wisdom score										
b. Predictors: (Constant), Domains' average enablers score										

Table 4.82 ANOVA, a Simple Linear Regression

A standardised beta coefficient ( $\beta$ ) of 0.277 is found in the variable students' perceptions of wisdom enablers, which is statistically significant p = 0.001 (Table 4.83, p. 165). From the unstandardised coefficient value in Table 4.80, p. 162, we can expect that an increase in one unit of average score of students'
perceptions of wisdom enablers will result in a 0.198 unit increase in the students' average wisdom score.

Coefficients <sup>a</sup>									
	Unstandardised coefficients		Standardised coefficients			95.0% Confidence interval for B			
		Std				Lower	Upper		
Model	В	error	Beta	t	Sig.	bound	bound		
(Constant)	2.577	0.172		14.947	0.001	2.237	2.917		
Domains'	0.198	0.047	0.277	4.213	0.001	0.105	0.290		
average									
a. Dependent variable: Domains' average enablers score.									

Table 4.83 Linear Regression Standardised Coefficient Beta

Additionally, standard multiple regression was conducted with the two independent variables that indicated a statistically significant difference – number of working hours and experience of life hardship events – to see what improvement can be predicted in the average students' wisdom score from a given scores of the two independent variables.

The adjusted R square (0.081) (Table 4.84) indicates that the 8.1% of variance in average wisdom score can be explained by two predictors: students' number of working hours and number of life hardship experience events. ANOVA (F(2,286) = 13.706, p = 0.001) (Table 4.85, p. 166), indicates that such accountability is statistically significant. The Standardized Coefficient Beta ( $\beta$ ) of 0.159 and 0.222, respectively, (Table 4.86, p. 166) indicate that the life hardship experiences have larger contribution than number of working hours.

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Model Summary <sup>b</sup>								
Adjusted R Std. Error of								
Model	R	R Square	Square	the Estimate				
1	0.296ª 0.087 0.081 0.4172							
a. Predictors: (constant), life hardship events, working hours.								
b. Dependent variable: Domains' average wisdom score.								

ANOVAª									
		Sum of		Mean					
Model		squares	df	df square		Sig.			
1	Regression	4.771	2	2.386	13.706	0.001 <sup>b</sup>			
	Residual	49.780	286	0.174					
	Total 54.551 288								
a. Dependent variable: Domains average wisdom score.									
b. Predictors: (constant), life hardship events, working hours.									

Table 4.85 Standard Multiple Regression ANOVA

Table 4.86 Standard Multiple Regression Standardised Coefficients Beta

		Unstanc coeffi	dardised cients	Standardised coefficients		
Model		В	Std. error	Beta	t	Sig.
1	(Constant)	3.111	0.040		77.559	0.001
	Working hours	0.028	0.010	0.159	2.760	0.006
	Life hardship events	0.059	0.015	0.222	3.856	0.001

From the unstandardised coefficient value in Table 4.86, we can expect that an increase in one unit of life hardship experiences and the number of working hours will result in a 0.059 and 0.028 unit increase in the students' average wisdom score.

# 4.3 Chapter summary

Data analysis reveals that data collection tools are statistically reliable and valid instruments for the study's sample size. Students' wisdom scores across three domains are in the lower zone of a moderate wisdom range score between 3.19 and 3.38 points out of 5 points. There is no statistically significant difference in students' wisdom scores according to their ages, genders and study stages, but there is a statistically significant difference in the students' wisdom scores by students' domiciles, employment status, types of financial support and life hardship experiences, with small effect sizes on the overall wisdom score. No statistically significant difference in students' genders, ages, stages of study, domiciles, employment status, types of financial support and life hardship experiences. There is a statistically significant positive relationship of association between the students' wisdom scores and their perceptions of

wisdom enablers in undergraduate management education. However, the effect size of a such relationship is small because only 7.2% of the average wisdom scores can be attributed to students' perceptions of wisdom enablers in undergraduate management education. Moreover, 8.1% can be explained by students' life hardship experiences and number of working hours. Nevertheless, the predictive model still makes a unique statistically significant contribution to the prediction of the outcome. In the next chapter, I discuss, compare and critically evaluate the research results with the existing body of knowledge in the field of wisdom, identified in the literature review, to conclude with recommendations for the future.

# Chapter 5 Discussion

In this chapter, the results of the study, its hypotheses and research questions implications are reviewed and discussed. Chapter 5 begins with a critical evaluation of data collection instruments and identification of areas for their upgrade and further improvements. A comparison of the research findings and their critical evaluation with the existing body of knowledge in the field of wisdom, identified in the literature review, follows. Finally, some recommendations for the future, which might contribute to the study of wisdom in management education, are elaborated.

# 5.1 Evaluation of data collection instruments' reliability and validity

### 5.1.1 Three-Dimensional Wisdom Scale (3D-WS)

The Chapter 4 analysis showed that the 3D-WS is an adequate, reliable and valid instrument for assessing latent variable wisdom, defined as a combination of cognitive, reflective and affective personality characteristics, in the sample of 289 undergraduate management education students. The internal reliability, as the stability of constancy of a scale, and construct validity addressed by convergent and discriminant techniques, were used to support the above statement. Cronbach's alpha, as a measure of internal reliability for the cognitive, reflective and affective dimensions of the 3D-WS, ranged from 0.684 to 0.801, with an average score of the three domains alpha values of 0.74, which corresponds to the Cronbach's alpha values in previous studies with a comparable cohort of young adult participants (Ardelt, 2010, 2018; Bailey, 2009; Benedikovicová & Ardelt, 2008). This study also supports the findings of the aforementioned studies that the 3D-WS is unrelated or divergent to the students' demographics, such as their ages, genders and stages of study. The cognitive, affective and reflective dimensions of the 3D-WS are statistically significantly related to each other with a moderate effect size of  $r \ge 0.30$ 

(cognitive – affective r = 0.658, cognitive – reflective r = 0.551, and affective – reflective r = 0.582), while the CFA indices were generally close or within the acceptable or adequate fit range (X2/df = 3.165, CFI = 0.993, SRMR = 0.0741, RMSEA = 0.087). The assumption was that the reflective domain in this sample would factor higher than the other two domains on the wisdom construct. To check this assumption the three domains were specified to co-vary to each other without the latent wisdom variable that the domains could relate through their error variances, and covariances could be freely estimated (Byrne, 2013). In this way, the highest factor loading can be examined by the critical ratio (CR) associated with each covariance. The two highest critical ratio values were associated with the cognitive domain (Table 5.1), implying that the cognitive domain was the centrepiece of the wisdom construct in this sample of management education students, which is congruent with claims that contemporary management education fosters development of cognitive and conceptual faculties.

Covariance	CR		
Cognitive <> Affective	5.137		
Reflective <> Affective	4.507		
Cognitive <> Reflective	5.358		

Table 5.1 Inter-domain covariance within the wisdom construct, 3D-WS

Based on the Cronbach alpha internal reliability, Jöreskog's *rho* construct validity, confirmatory factor analysis indices and the Pearson product-moment correlation coefficient, we can conclude that the reliability and validity indicators and indices were generally within the acceptable or adequate range. Furthermore, the 3D-WS, for this sample size and participants' age, is close to statistically reliable and a valid instrument, but without any intention to generalise results, because some studies expressed either reservations about using wisdom-relevant measurement constructs in young adult undergraduate students (Brocato, Hix, & Jayawickreme, 2019), or could not find the 3-dimensional wisdom structure in a different cultural context (Hu, 2016).

Brocato et al. (2019) argue that the cognitive interview data in their Well-being Assessment study indicate that undergraduate students had difficulties with understanding wisdom-related constructs that resulted in their unintended interpretation. Such a discrepancy between the intended and interpreted meaning of wisdom constructs can endanger item validity and obfuscate findings of self-administered questionnaires. Therefore, they consider the introduction of an age threshold for the measurement of the reflexive wisdom dimension because the self-transcendent capacity develops over time, and to engage in self-reflection requires enough life experience. Indeed, Bang and Montgomery (2013) discovered among Korean and American students aged 18 to 22 that there was a contribution of age to the reflective domain of wisdom. Therefore, Brocato et al. (2019) propose additional qualitative research on the understanding of concepts relevant to wisdom by young adults, accompanied by cognitive interviews in the development of measurement instruments related to wisdom.

Indeed, it seems that my study supports the above claims because it identified that the Jöreskog's *rho* reliability test (see Table 4.4, p.107) and confirmatory factor analysis validity test (see Table 4.7, p. 109) of the 3D-WS reflective domain did not reach the acceptable fit for this cohort of students. This finding additionally supports the argument for the introduction of explicit teaching of wisdom in undergraduate management education, notably the development of reflective and reflexive abilities.

However, my study found no statistically significant differences in the average wisdom scores across the age groups of students in any of the three wisdom domains. Even when the student population was divided into two age groups – less than 20 and 20 years of age and older – no statistically significant difference was found between the two groups in the reflective domain of wisdom (U = 4935.000, p = 0.372). Furthermore, there was no statistically significant correlation between students' average wisdom score and their age (r = 0.056, p = 0.339). The development of wisdom constructs is not dependent upon age, but the association of age and wisdom is curvilinear, which varies with education, happiness and mental illness, with an inverse U-curve

culminating at mid-life (Ardelt, Pridgen, & Nutter-Pridgen, 2018; Bergsma & Ardelt, 2012; Kunzmann & Thomas, 2015; Labouvie-Vief, 1990; Webster, Westerhof, & Bohlmeijer, 2014). Age is not a predictor of the development of wisdom, but the concentration of life-events and the accumulation of significant life experiences conducive to the development of wisdom are (Yang, 2017), where education seems to be such a life experience as a credible wisdom development enabler. Therefore, not ageing, but exposure to specific experiences that require judgement and decision-making with the ability to transcend oneself, reflect upon and learn from those experiences is critical to the development of wisdom. Education with its curriculum and pedagogy, either explicitly or implicitly, may or may not provide an opportunity for exposure to the wisdom-conducive experiences, may or may not develop abilities for self-transcendence and reflection that nourish the wisdom-developing faculties in students. Later in this chapter, this matter is examined in greater detail.

The concept of wisdom varies, depending on national, cultural and religious divisions (Brezina & Ritomsky, 2010; Brezina & van Oudenhoven, 2012; Ferrari & Alhosseini, 2019; Grossmann et al., 2012; Sánchez-Escobedo, Park, Hollingworth, Misiuniene, & Ivanova, 2014; Takahashi & Bordia, 2000; Takahashi & Overton, 2005; Yang, 2001, 2011a). Wisdom itself is very different and varies enormously within a person from situation to situation or context (Glück et al., 2015; Grossmann, 2017a; Grossmann, Gerlach, & Denissen, 2016). If the conception of wisdom is not universal, but contextual, the logical guestion arises about the adequacy of the measures of wisdom, that have been developed in the western world, including 3D-WS, to be used in different cultural contexts. Kim and Knight (2015) adapted the 3D-WS to reflect the Korean cultural context by including additional culturally specific wisdom factors (modesty and unobtrusiveness) identified by Yang (2001), and expanded the 3D-WS from 39 to a 4-factor model of 45 items. The initial model resulted in a poor model fit, and after a sequence of modifications Kim and Knight reduced the number of items from 45 to 26 and renamed the wisdom factors as follows: cognitive flexibility, viewpoint relativism and empathic modesty. They reached adequate model fit, reliability and validity, claiming that their study confirmed that acculturation has an influence on wisdom. In the Polish adaptation of the

3D-WS, Steuden, Brudek, and Izdebski (2016) divided the reflective domain into the self-awareness and empathic domain, while in the Spanish version of 3D-WS, Garcia-Campayo et al. (2018) could not replicate the original long and short versions of the 3D-WS because of high cross-loading rates, so they proposed a new Spanish short version of the 3D-WS to measure wisdom in the general Spanish population.

Hu (2016) could not find a 3-dimensional wisdom structure using Ardelt's 3D-WS in his doctoral dissertation on measuring wisdom among undergraduate students in mainland China. Inter-item internal reliability of the three domains was poor, and consequently 3D-WS was abandoned. A Mainland Chinese Wisdom Paradigm was developed that is based on the Mainland Chinese Wisdom Model, which consists of five wisdom factors: a) ability in cognition, b) ability in practice, c) concern for others, d) eschewing world spirituality, and e) positive mindset. These reference the 4-factor wisdom model of Bang and Zhou (2014). Thereafter, based on the Berlin Paradigm, Hu, Ferrari, Wang, and Woodruff (2017) developed the Thin-Slice measurement of wisdom, which measures emotions associated with wisdom, recorded as verbal responses and facial expressions captured by camera, to be rated by the combination of Berlin Paradigm and Chinese newly developed wisdom criteria and the iMotion FACET module software.

In my study, 39.8% of the participants were international students, the majority of whom were from Asian countries, particularly China. The average wisdom scores for international students were statistically significantly different from the wisdom scores for local students in cognitive (U = 8063.5, p = 0.005) and affective domain (U = 8064.5, p = 0.005). In addition, there is statistically significant negative correlation between the average wisdom scores and the students' domiciles (r = -0.143, p = 0.015). Furthermore, the participant dataset was divided into two subsets of data: local and international students. Internal reliability and second-order confirmatory factor analysis were similar (0.744 for international students and 0.733 for local students). Second-order confirmatory factor analysis indices are compared and presented in Table 5.2, p. 173.

Indicator	X <sup>2</sup> (CMIN)	р	df	X²/df	RMSEA	SMRM	CFI
Local students	1320.583	0.001	699	1.889	0.072	0.915	0.600
International students	1397.678	0.001	699	2.000	0.094	0.1061	0.496

Table 5.2 Second-order CFA indices, local and international students

Indeed, the local students' model indices generated better fit than international students' model, but as already elaborated in the previous chapter, the overall model has a model fit issue. When the correlation of average wisdom scores of each item of all three domains was checked with the overall total of all domains, local students' dataset *rxy* ranged positively from 0.127 to 0.610, while the *rxy* for the international dataset ranged positively from 0.078 to 0.675, and all three domains in both datasets correlated strongly to each other. Regardless of the statistically significant difference in wisdom scores based on cultural differences among local and international students, there was not enough evidence in this study to question the appropriateness of 3D-WS, as a measure of wisdom, on the ground of the cultural differences.

#### 5.1.2 Students Perception of Wisdom Enablers Questionnaire (SPWEQ)

Two pilot studies were conducted to study the properties of the SPWEQ questionnaire. The initial results were encouraging because after conducting a principal components analysis and consolidating the number of items to 39 the scale appeared to be reliable with average Cronbach's alpha  $\alpha = 0.840$  and Jöreskog's *rho* = 0.803. Pilots also demonstrated content and construct validity by running a correlation test and a confirmatory factor analysis. The final study of the reliability and validity of the scale was carried out after the data collection of the study itself. A further reduction in the number of variables from 39 to 29 was required to attain a satisfactory level of model fit. The remodified scale had high internal reliability with Cronbach's alpha  $\alpha = 0.905$  and construct reliability with Jöreskog's *rho* = 0.903. Spearman's rank correlation coefficient also demonstrated a strong relationship between three wisdom-enabling domains: cognitive, affective and reflective (0.651, 0.626, 0.803, respectively). Second-order CFA showed acceptable model fit with the following indices: X2/df = 1.919, RMSEA = 0.065, SRMR = 0.0565 and CFI = 0.907. When the mean

scores for the cognitive, affective and reflective domains of wisdom enablers were used as observable variables to estimate the goodness of statistical fit of the theoretical latent model of wisdom enablers, the fit indices: X2/df = 2.837, CFI = 0.996 and RMSEA = 0.080 were at the acceptable level. Factor loadings for all domains were higher than the recommended level of 0.40 (cognitive domain 0.643 to 0.834, affective domain 0.609 to 0.757, reflective domain 0.567 to 0.754), demonstrating the convergent validity of the scale.

However, due to the limited scope of this study, participants did not complete any instrument that measures the perception of diametrically opposed concepts of wisdom enablers, such as foolishness enablers, to investigate discriminant validity of the scale. The only indicator of potential conflict regarding the discriminant validity of the scale is the presence of cross-loading for all three domains, because the intercorrelation between factors is greater than 0.71. Therefore, it is recommended that some future studies administer this questionnaire simultaneously with instruments that measure the perceptions of education enablers aimed at developing, for example, innovation, rational thinking, logic and emotional intelligence for an adequate assessment of discriminant and predictive validity.

This questionnaire is a pioneering attempt to construct a valid and reliable, standardised, self-administered instrument to identify the existence of wisdom enablers in undergraduate management education, because the author was not able to find any previous tool designed to fit the purpose of the research. Future empirical research is needed to replicate the methodology, test and compare the results with different sample sizes and structures in different educational contexts by embarking on and beyond management education, and expanding it to the sciences and humanities education. Further testing and retesting of its reliability and validity are needed so that robust and rigorous refinement of each scale item might be accomplished. It can be done by the elimination of redundant items that explain little or no overall variance or the addition of some items that explain additional wisdom enablers identified in this study, such as work experience and life adversity.

The SPWEQ takes into consideration only views of students on wisdom enablers in their education, but there is a further opportunity to extend it to the views of other educational stakeholders, such as academics, teachers, tutors and administrators. This would not be too hard if the minor adjustments are made in the syntax of the questionnaire questions.

This study identified a statistically significant positive correlation between SPWEQ and 3D-WS; however, the further convergent validity of the SPWEQ can also be tested by analysing its association with other existing measures of wisdom listed in this study, including performance-based wisdom measures.

Finally, after the two pilot tests and actual research dataset test, based on the Cronbach alpha internal reliability, Jöreskog's *rho* construct reliability, confirmatory factor analysis indices and Spearmen's coefficient correlation, we can conclude that SPWEQ, for the sample size of 216 cases, is a statistically reliable and valid instrument, and has acceptable reliability and validity levels to serve the purpose of this study.

# 5.2 First research question Null (H<sub>0</sub>) Hypothesis 1

The average wisdom score (3.27) of undergraduate management education students in this study is comparable to the wisdom scores in studies with the similar students' population (Ardelt, 2010; Benedikovicová & Ardelt, 2008), but the score was lower than in such studies (3.63 and 3.65 American sample respectively), which might be expected because business students express less interest in development of wisdom than students of humanities and the liberal arts (Ardelt, 2010).

This study did not reveal any statistically significant differences in the students' wisdom scores in terms of age, gender and stage of study. The impact of age on wisdom development has already been discussed and elaborated in Chapter 2 and earlier in this chapter. Even though there was no statistically significant difference in the wisdom scores regarding students' genders, there was a statistically significant difference identified in the affective wisdom domain score

between male and female students, because female students scored higher than males (M = 3.1553, F = 3.3039, p = 0.022), but with a small effect size on the overall wisdom score of only 2.4%. The interest in gender in wisdom studies mainly focused on the following: a) differences in attainment and expression of wisdom between men and women where gender might play a moderating role (Ardelt, 2009; Cheraghi, Kadivar, Ardelt, Asgari, & Farzad, 2015; Orwoll & Achenbaum, 1993); b) gender differences in perception of wisdom as an abstract concept and real-life context (Glück, Strasser, & Bluck, 2009); and c) capacity of the genders for relational compassion, moral development and transcendence (Levenson, 2009). This study has indicated that female students had a higher wisdom score than their male counterparts in all three wisdom domains, with a statistically significant difference only in the affective domain. It reflects the findings of the previous studies that females advocate a more integrative approach to wisdom that encompasses additional affective and compassionate components.

No statistically significant differences in the wisdom scores were found among students from different stages of the study, suggesting that their education stages have a neutral effect on the development of their wisdom. However, the final conclusion might be more appropriate after the interpretation of correlation between the students' level of wisdom and their perception of the wisdom enablers in their education, which will be discussed later in this chapter. At this stage, we can only conclude that the findings support a part of the first null hypothesis, which states that there would be no statistically significant difference in the students' wisdom scores regarding their ages, genders and the stages of study.

However, this study found that there was a statistically significant difference in the students' average wisdom scores between local and international students (U = 8322.0, p = 0.016), students' employment status (U = 7496.000, p = 0.003), types of financial support (F(2,286) = 5.975, p = 0.003), and life hardship experiences (U = 7800.000, p = 0.004). Furthermore, when standard multiple regression was conducted with the two independent variables – number of working hours and experiences of life hardship events as predictors of students'

wisdom scores – the results indicated that an 8.1% variance in average wisdom score can be explained by these two predictors and that such accountability is statistically significant.

The appropriateness of the use of western wisdom measurement tools in different cultural contexts has already been discussed in this chapter. However, the issue of culture in the wisdom discourse is further examined in more detail in order to clarify its relevance for this study. Several wisdom studies have used population samples from different cultural backgrounds, notably eastern countries such as Korea (Bang & Montgomery, 2013; Kim & Knight, 2015), Japan (Grossmann et al., 2012; Takahashi & Overton, 2005), Taiwan (Yang, 2001, 2008b), and Mainland China (Bang & Zhou, 2014; Hu, Ferrari, Liu, Gao, & Weare, 2016). These countries share a number of common threads about the influence of acculturation on wisdom due to different languages; socioeconomic and educational system; legal norms; opinions on gender roles; family values; religion; and world views about interpersonal harmony, social conflicts and their avoidance. Therefore, studying wisdom-related phenomena requires cultural understanding (Grossmann & Kung, 2019). This is the background that international students bring into their education at Australian universities, including the university where the data were collected.

According to the Australian University Ranking Website (2019), the significant proportion of enrolled students in Australian universities were international students. The ratio of international students who participated in this study was 39.8%. I would argue that the lesser wisdom scores of the international cohort of students than local students should not suggest that the international students are less wise than local students. Congruent to critical realism (Bhaskar, 2008) this outcome might be a reflection of different interpretations and meanings of wisdom influenced by already mentioned differences in historical and cultural background. The adequacy of western wisdom measurement instruments in different contexts has already been discussed but, based on the results of this study and due to a high proportion of international students among the enrolled students, there is room for further improvement in undergraduate management education. It can be enhanced by introducing

additional wisdom enablers, which reflect the elements of wisdom from the historical and cultural phenomena of wisdom from different contexts, including Aboriginal wisdom, for the benefit of all students. Such an infusion of blended wisdom from different cultural perspectives into teaching can truly transform (Yang, 2011a). The results of this study may be used by future studies on curriculum development with teaching for wisdom in mind.

In this study, 65% of students reported some sort of employment status. The study found a statistically significant difference in the wisdom scores between students who were employed and students who were unemployed. It was elaborated in Chapter 2 that the staff development, managerialist or technicist approach to management and business education promotes vocalisation, aiming to prepare and make students job ready. However, it seems that it neglects students' current employment status, and misses an organised effort to synthesise and integrate their educational and employment experiences.

Employment and professional experience, especially in jobs with frequent life or work dilemmas and interpersonal conflicts, such as leadership roles and experience in leading others, are more likely to require wise reasoning and foster development of wisdom (Grossmann, 2017b; Santos, Huynh, & Grossmann, 2017; Yang, 2011b, 2014). In a study about wisdom in an Indian context, Bansal, Nayyar, and Vij (2017) observed a strong relationship between wisdom and the length of work experience, variety of organisations worked for, and the type of position held within an organisation. These findings are congruent to the findings of my study about statistically significant positive correlation between students' wisdom score and the number of reported working hours.

Thus, if studying management and business is an applied discipline, it could be argued that management education students should have an adequate work context to have an opportunity to apply gained business and management knowledge. They should also have an opportunity to reflect on experienced and learned content in an adequate management and business context with life and work dilemmas, which require wise reasoning and foster development of wisdom. Consequently, undergraduate management education teaching methods and assessment strategy should be an integral part of students' actual work contexts. Educational institutions should facilitate and provide the context if the students do not have any, to initiate and stimulate a wise judgement and decision-making process that enables development of wisdom.

There is an assumption in dominant theoretical models of wisdom that the development of wisdom is based rather on life experience than on training and direction (Ardelt, 2005; Baltes & Staudinger, 2000; Glück & Bluck, 2013; Greene & Brown, 2009; Sternberg, 1998; Webster, 2003; Yang, 2013). However, not every experience is conducive to the development of wisdom. Sahrani, Matindas, Takwin, and Mansoer (2014); Weststrate and Glück (2017); Weststrate, Ferrari, Fournier, and McLean (2018); and Weststrate (2019) found that there was a positive association between wisdom and the exploratory processing of difficult life experiences that contributed to meaning making and personal growth. They argue that self-reflection on difficult life experiences is a key determinant for the growth of wisdom. Exploring a personal role in such difficult life events and confronting negative feelings through an effortful work gives meaning to such difficult life experiences and develops wisdom. Life adversity and difficult life events provide an opportunity to discover our limitations, which leads to the development of self-knowledge and humility as an acknowledgement of such limitations that is an integral facet of wisdom (Baehr, 2019; Krause, 2016; Porter, Gardiner, Davis, & Baehr, 2019). However, apart from humility, Brady, Ardelt, Plews-Ogan, and Pope (2019), supported by findings of Igarashi, Levenson, and Aldwin (2018), argue that other individual personality traits such as optimism, flexibility, fortitude and compassion, accompanied with appropriate social conditions such as peer-group support, a welcoming community, the visibility of role models, social, institutional and political structures that promote community and importance of social ecological factors rather than individuality, are vital for wisdom development from experience of adversity and life hardship events.

Difficult life experiences and suffering have generally negative perception and connotation in western culture. They are considered undesirable. They are

disliked and unwanted events that should be avoided at any price. However, in Buddhist philosophy (Narasu, 1993) they can be positive if used the right way. Suffering can be beneficial and ultimately reduce overall suffering by enabling personal and moral growth, providing that the appropriate skills, attitudes and practices are used to use suffering to cultivate wisdom. Adversity and suffering require reflection in different ways on novel objects and events, especially exploratory processing, which results in new insight into life (McRae, 2018). A good example of such transformational metamorphosis is the learning of wisdom through geographical dislocation, international migration, exile and transculturation – such experiences are often traumatic, visceral, disruptive and unsettling (Simandan, 2013).

Exploratory processing relates to the extent of the exploration and construction of deeper meaning from the difficult and stressful life experiences by rebuilding knowledge structures after a disruptive life event and therefore may be deemed as a key factor for wisdom development during early adulthood (Webster, Weststrate, Ferrari, Munroe, & Pierce, 2018). However, Ardelt and Bruya (2020) confirmed that the college students' levels of wisdom related to the lower level of perceived stress, arguing that elevation of wisdom in the student cohort might buffer perceived stress and instigate a virtuous cycle of wisdom increase and perception of stress reduction. Adversity and difficult life experience in human life must be acknowledged, because human life is imprinted by affliction, pain and vulnerability, and we cannot discover truth about it if we do not disclose the truth about 'dark' and 'bright' sides of adversity and hardship in human life (Kidd, 2018).

Indeed, the above statements are supported by this study because the findings revealed that there was a statistically significant difference in the wisdom score between students who reported and students who did not report life hardship events. Furthermore, statistically significant positive correlation was found between the students' wisdom scores and the number of reported experienced life hardship events. It was also corroborated with the statistically significant difference in the wisdom scores between students who financially support

themselves or have some other means of support and students who were supported only by parents, which implicitly implies differences in life challenges.

According to Grossmann (2017b), moderate frequency of experiencing adverse life events positively correlates with wiser thought, while traumatic life events are not uniformly associated with promotion of greater wisdom. However, selfreflection and self-awareness associated with wisdom facilitate recovery from either externally induced traumatic life events or internally inflicted traumatic struggles to heal psychosomatic wounds and development fulfillment and wellbeing for the individual and society (Ardelt & Grunwald, 2018).

It can be argued that intentional imputation of moderate adversarial learning and teaching events, as wisdom enablers, in undergraduate management education would be beneficial for the development of students' wisdom. Stress, conflict, failure, mental strain and suffering for the sake of learning are undesirable features in contemporary education that favour entertainment, excitement, fun, effortlessness and avoidance of oppressive burdens and irksome tasks (M. J. Adler, 1941). M. J. Adler (1941) critiqued radio, far before the invention of television and the internet, and its contribution to the confusion between education and entertainment. He argues that education is not something externally added to learners, like clothing to cajole them and is not guided by their likes and dislikes. Instead, it is an interior transformation of learners' minds and characters that can only occur through their own activity. The fundamental activity in any genuine learning is intellectual activity, generally known as thinking. Thinking is hard, painful, fatiguing, frustrating, not refreshing and it requires learners to work against the grain not with it. It is not characterised as a safe activity, but establishes a sort of pedagogical tension, emotional disturbance and disequilibrium as a positive force for educators and students to reflect on their values and beliefs about learning and teaching (Murris, 2008). In a nutshell, transformative learning is associated with adversity and life hardship in the learning process. Development of wisdom necessitates transformative learning that enlightens, deepens understanding and gives new insights.

I would argue that the first step in associating transformative learning and development of wisdom with adversity and hardship is the change in the general perception of the concept of failure. The concept of failure has generally negative connotations and is considered as an antonym to the concept of success (Lottero-Perdue & Parry, 2017). Failing an exam, assessment and subject is perceived as a loss, injury and deprivation, not as an opportunity for reflection and engagement in analytical and exploratory processing for personal growth that may promote the development of wisdom. Thus, if administrators and educators change their perception and understanding of the concept of educational failure and start considering it, not as something what they should be ashamed off and avoided at any price, but something that should be embraced as a welcome pedagogical tool for teaching students how to use it as an object for reflection and exploratory processing, then this can enable development of students' wisdom.

In conclusion, this study's findings did not support the part of the first hypothesis that relates to students' employment status, sources of financial support and reported life hardships. The findings suggest improvements in the undergraduate management curriculum and pedagogy design by integrating students' work contexts and tolerable adversity with their learning processes.

### 5.3 Second research question Null (H<sub>0</sub>) Hypothesis 2

The average score of students' perceptions of wisdom enablers in undergraduate management education is 3.62. This is in the upper range of the moderate zone. The score is an encouraging discovery because it connotes that wisdom enablers are already an integral part of undergraduate management education, even though they might be imbedded implicitly or accidentally. This score indicates that students perceived the presence of wisdom enablers in their current education, but it also implies that there is a lot of room for more targeted induction and design of explicit wisdom enablers suggested in this study.

The second hypothesis stated that there would be no statistically significant difference in students' perception about wisdom enablers among students of different ages, genders, stages of study, domiciles, employment status, types of financial support and experiences of life hardships. Indeed, this study did not find any statistically significant difference in students' perceptions of wisdom enablers regarding any of the above listed factors; hence, it supports Null hypothesis 2. It can be interpreted that such factors have a neutral effect on students' perceptions and their experiences with this wisdom-related component in the course design and delivery.

### 5.4 Third research question Null (H<sub>0</sub>) Hypothesis 3

The third hypothesis stated that there would be no statistically significant relationships of association between students' current wisdom scores and students' perceptions of wisdom enablers in undergraduate management education. However, this study has found a positive, statistically significant correlation between the students' wisdom scores and students' perceptions of wisdom enablers in undergraduate management education across all three wisdom domains and overall average wisdom and enablers scores. It is important to emphasise again that such correlation between the two variables is only a relationship of association and that does not automatically imply a cause-and-effect relationship. Linear regression unadjusted R square values indicated that only 8.6% of the cognitive domain, 4.1% of the affective domain, 3.1% of the reflective domain and 7.7% of the overall wisdom score can be accountable to students' perceptions of wisdom enablers. As already elaborated, there are the other contributing factors, including work experiences and life hardship experiences. It might look insignificant, but the analysis also indicated that students' perceptions of wisdom enablers in undergraduate management education are statistically a good predictor of the students' wisdom scores F(1,214) = 12.092, p = 0.001, because an increase in one unit of average score of students' perceptions of wisdom enablers will result in a 0.198 units increase in the students' average wisdom score.

Based on the above findings, the third null hypothesis is not supported. I would argue that the results and findings of this study justify further pursuit of the development of additional wisdom enablers in undergraduate management education policy, curriculum and pedagogy, because 'evidence suggests that individuals, who by virtue of their profession receive training, guided practice (mentorship), and massed experience in fundamental issues of life and the human condition, accumulate higher levels of wisdom-related knowledge compared to individuals without access to this type of experiential setting' (Staudinger et al., 1998, p. 14)

Managers, as professionals in their role, need to make judgements and decisions that affect the economic and social well-being of the broader public. Only rational and instrumental knowledge are insufficient to respond to challenges of our time. These challenges warrant wisdom-related knowledge that mangers should start receiving through structured training and guided practice at the very early stage of their education, training and professional development. It is an onerous task because, as demonstrated in this study, wisdom is a very complex concept and there is no single wisdom development enabler, but a plethora of life experiential events and contexts that span outside and beyond students' formal education. These events and contexts will become wisdom enablers only if they are captured and brought to the surface of students' consciousness to be integrated and synthesised with the formal curriculum for reflection, exploration and construction of deeper meaning and learning.

### 5.5 Chapter summary

Despite the strong critique of the Three-dimensional wisdom scale (3D-WS) regarding its adequacy when used with young adults and a culturally diverse population, this study has not found sufficiently strong evidence to challenge the suitability of 3D-WS as a wisdom measurement instrument for these cohorts. Students' perceptions of wisdom enablers questionnaire (SPWEQ) is a valid and reliable instrument, but further areas of improvement were detected especially in the realm of discriminant validity. There is no statistically significant difference in the wisdom scores regarding students' ages, genders and stages of study, but there is a statistically significant difference regarding students' domiciles, employment status, types of financial support and life hardship experiences that is congruent to some previous studies. Statistically significant

correlation between the wisdom scores and students' perceptions of wisdom enablers indicates that wisdom enablers are good predictors of students' wisdom scores and that pursuit of further development of wisdom enablers in undergraduate management education is justified. In the final chapter, I review the findings of this study and their implications on the body of knowledge about undergraduate management education.

# Chapter 6 Conclusion

This study was conducted to measure the level of wisdom of undergraduate management education students at one Australian university and these same students' perceptions of the presence of wisdom enablers in undergraduate management education. It also examined the relationships of association among the level of students' wisdom and their perceptions of wisdom enablers in their management education. The study has also sought to learn whether the wisdom enablers were statistically good predictors of the level of students' wisdom.

There is a wealth of research in the management education literature, about the social, economic and environmental significance of managerial decisions that warrant wisdom, elaborated in Chapter 2 (Alvesson & Willmott, 2003; Grey & French, 1996; Reynolds, 1999). The literature also critiques contemporary management education policy and practice that allegedly lacks teaching for wisdom (Grey, 2002; Mintzberg & Gosling, 2004; Pfeffer & Fong, 2002; Rooney & McKenna, 2005). However, the literature is inconclusive and only rarely provides tangible, empirical evidence that current management education practice is or is not conducive to the development of students' wisdom. My study targeted this gap, aiming to provide tangible, empirical evidence and create new understandings about the relationship between wisdom and contemporary undergraduate management education. The main empirical evidence was discussed in detail and summarised in specific chapters (Chapters 4 and 5). Therefore, this section of the study synthesises the empirical findings in relation to the theoretical backdrop that informed the three research questions:

1. What is the current level of wisdom of undergraduate management education students at one Australian university?

2. What are these undergraduate management education students' perceptions of the wisdom enablers in their undergraduate management education?

3. What are the relationships of association between the current level of wisdom of undergraduate management education students, their perceptions of wisdom enablers in undergraduate management education, and life wisdom enablers?

The measurement of the level of these students' wisdom and their perceptions of wisdom enablers in their undergraduate management education was based on the theoretical model provided by the Implicit Theory of Wisdom, which defines wisdom in relation to three domains: cognitive, affective and reflective (Ardelt, 2003). The study discovered empirical evidence of modest wisdom development among these students, the presence of identifiable wisdom enablers in the undergraduate management education programs, and a statistically significant correlation between students' levels of wisdom and their perceptions of wisdom enablers across all three wisdom domains. The study also affirmed that the wisdom enablers in these undergraduate management education programs were statistically good predictors of the level of the students' wisdom. Consequently, it seems reasonable to claim that this undergraduate management education practice supports the development of students' wisdom because this study provided tangible evidence that supports such a claim.

Based on this empirical evidence, a more focused and structured approach to the intentional teaching for the development of students' wisdom appears justified. This could involve designing a program of a particular type, where wisdom becomes an explicit learning outcome. Moreover, as demonstrated in Chapter 4, this study crystallised two statistically significant life wisdom enablers: students' work experiences and life hardship experiences that lie in the realm outside and beyond the formal management education experiences. These findings suggest the value of integration and sharing of experiences from outside the program with experiences within the program that itself is an exercise in the demonstration of wisdom.

Formal, contemporary management education aims to make students job ready, but ignores or neglects the power of their existing employment status and experiences in their learning process. This study provided evidence that management education is a good predictor of the students' wisdom development and that there is a statistically significant difference in average wisdom scores between students of different employment status. Therefore, I argue that this disconnection between formal management education and students' employment experiences is a lost opportunity that can be remedied by their synthesis and integration.

Moreover, work and jobs are very important, but not the only ingredient of human beings, their existence and their lives. Numerous events and experiences throughout the human life shape their views, values, attitudes and behaviours. The experiences of life adversity and hardship, if accompanied by self-reflection, have a profound impact on the development of human wisdom. Indeed, this study identified a statistically significant difference in the wisdom scores between the student cohort that reported and the cohort that did not report life hardship events. However, contemporary management education is averse to causing adversity or hardship to students, as a part of their learning experience, because it treats students as customers. I argue that students might be customers of the educational institutions that are obliged to provide students with adequate learning infrastructure, administrative and technical support. Their teachers are not service providers with students as passive service receivers in a relationship whose nature is a transactional exchange. I argue that both parties – teachers and students – are active participants and partners in mutual information dissemination, dialogue, argument, exchange of knowledge, and professional and life experience. They endeavour to create a new knowledge and experience that did not exist before the mutual interaction. The new knowledge and experience are a synthesis and integration of the prior knowledge and experience of both parties. There is no a priori guarantee that such synthesis and integration will eventuate. Both parties have equal responsibility for the learning outcome. Therefore, I argue that there is a need for a paradigm shift, where formal management education is an integral part of students' professional and personal lives, and where education and learning are nurtured by students' existing professional and personal life experiences. On the one hand the management education should synergistically impart the synthesised new knowledge and experiences to shape students' professional

and personal lives. On the other hand, students' professional and personal life experiences should give the same or modified shape back to the same educational context that produced such a shape.

The challenge and opportunity for management education policymakers and curriculum designers is to discern how to explicitly enhance experience within the program. The evidence suggests the value of embedding and integrating experiences outside the program into the future management education program design. Such inclusion can help to improve the development of students' wisdom.

The findings in this study align with the theoretical concepts of critical management studies, elaborated in Chapter 2, that practice an interaction between action and reflection by using students' work and non-work experiences for reflection, not only to validate but also to problematise such experience, so that wisdom can emerge. As documented in Chapter 2, the omnipresent and predominant perspective in contemporary management education is the managerialist, technicist or staff development model (Grey & Mitev, 2004; T. J. Watson, 2001). Such a model promotes vocational education, with a narrow focus on competence, technical skills and individual professional development. Hence, it is reasonable to expect resistance to explicitly teach for wisdom in mainstream management curriculum and education. Therefore, the first step might be to design and develop an elective subject named – Wisdom for Future Managers – that would incorporate and integrate findings from not only this, but also the other studies about the same topic. This subject learning outcomes can capture and bring to the surface of students' consciousness their life experiences within and beyond formal education. Thereupon, the learning outcomes can integrate and synthesise the emerged experiences for reflection, exploration and construction of a deeper meaning because only through reflection and construction of the deeper meaning such experiences transform into wisdom development enablers.

In an intention to investigate whether such an approach could be effective, a longitudinal follow-up of this study could be conducted with wisdom

measurement at the beginning and at the end of the course. The purpose of this design would be to establish not only a relationship of association between X and Y, but also to enable identification of any causal relationships between students' wisdom and potential wisdom-enabling experiences.

Another line of future research could be more rigorous and comprehensive research into work-related experiences, and the examination of specific cultural, work-related and life hardship wisdom enablers that closely relate to the professional context of management. Subsequently, such research findings could be considered as building blocks for the design of the new curriculum for wisdom development in undergraduate management education.

Furthermore, this study captured only students' perceptions of wisdom enablers. The views of management education academics, teachers and tutors were not considered. The views of professionals in this field could potentially enrich and deepen our understanding of the nature of wisdom enablers that promote the development of wisdom in undergraduate management education.

Despite the strengths of this study any future research in the same field should be aware of its limitations. First, the results cannot be generalised due to the research sample characteristics. The sample was non-probabilistic and purposeful, selected from a cohort of active, full-time students at only one university in Australia. It would be beneficial to replicate this research among the similar student cohorts from other universities, other study programs and other countries. Second, the findings also suggest that there is an opportunity for further improvement, by testing reliability and validity of the Students' perceptions of wisdom enablers questionnaire (SPWEQ) in order to capture the additionally identified items in the questionnaire design, such as wisdom enablers outside the management program. The SPWEQ positively correlated with the 3D-WS, but there are other instruments mentioned, (yet not included in this study) that conceptualise and measure wisdom. Formally testing the convergence between the SPWEQ and other instruments would increase confidence in the SPWEQ validity. Third, the data in this study are crosssectional and no causality of relationship between students' wisdom and

wisdom enablers in undergraduate management education can be claimed. As previously mentioned, a longitudinal study is needed to identify any possible causal relationships.

Finally, despite criticism of the contemporary management education for its emphasis on the development of instrumental knowledge and vocational skills, this study provided empirical evidence that still modestly contributes to the development of students' wisdom and is a good predictor of students' wisdom scores. It is my hope that a more focused and structured approach to curriculum design can, potentially, reliably equip students with competences indispensable to wise decision-making. Responding to some of the political, economic, social and environmental conundrums of our time, requires management education to be adaptable and agile in their curriculum responses. Graduates, to be work and life ready, will need a rich base from which to make sustainable decisions. Wisdom is one such enabler.

# Appendices

**Appendix A** – Students' perceptions of wisdom enablers in undergraduate management education questionnaire (SPWEQ)

Think ONLY about the content, teaching and assessments of courses you completed either successfully or unsuccessfully (including Diploma of Commerce and Associate Degree if you followed that study pathway), and respond how strongly you agree or disagree with the following statements: (1 = strongly disagree to 5 = strongly agree)

### Cognitive domain of the SPWEQ

- 1. I was involved in problem-solving activities.
- 2. I had an opportunity to be engaged in class discussions that required critical thinking.
- 3. I had to investigate for new ideas.
- 4. Reasoning and logical thinking were crucial for successful completion.
- 5. I obtained deep, real-life, practical knowledge.
- 6. After thinking I had to make judgement about the value of information, arguments or methods.
- 7. I was expected to understand complex questions.
- 8. It was acceptable that the same question could have different answers.
- 9. Ideologies were critiqued and argued.

### Affective domain of the SPWEQ

- 1. The emphasis in teaching was on learning about the common good.
- 2. By working in a group, I made several friends.
- 3. I had an opportunity to share my concerns with other students.
- 4. Teaching staff were responsive to my concerns.
- 5. I had an opportunity to be engaged in informal conversation.
- 6. Teaching staff encouraged group diversity.

- 7. I had an opportunity to lead project(s).
- The staff tried to understand difficulties I might have had with my work.
- 9. In groupwork I learned about the feelings, emotions, views and perspectives of others.

### Reflective domain of the SPWEQ

- 1. There was time in the class allocated for personal reflection.
- 2. Assessment task(s) had structured reflection activities.
- I had opportunity to apply theories or concepts to either practical problems or new situations.
- 4. Classic management history works were on the either prescribed or recommended reading list.
- 5. Assessment task(s) involved self-evaluation.
- 6. Assessment task(s) involved peer evaluation.
- 7. Teaching staff were wise role models.
- 8. When confronted with a problem or an issue I was expected to survey the situation and consider all relevant pieces of information.
- 9. The teaching staff provided helpful feedback.
- 10. In dealing with a problem or an issue I was expected to look at both: short and long-term consequences.
- 11.1 was encouraged to examine the strengths and weaknesses of my own views on a topic or issue.

The purpose of this part of the questionnaire is for you to provide some basic background information about yourself and your life experience. Please click the box that applies to you.

- 1. What is your age?
  - □ Less than 18 years
  - □ 18 years
  - □ 19 years
  - □ 20 years
  - □ 21 years
  - □ 22 years

- □ 23 years
- □ 24 years
- □ 25 years
- □ More than 25 years
- 2. What is your gender?
  - □ Male
  - □ Female
  - □ Transgender
  - □ Prefer not to disclose
- 3. Are you a local (domestic) or international student?
  - □ Local (domestic)
  - □ International
- 4. Indicate your year and semester of study!
  - □ Year 1, semester 1
  - □ Year 1, semester 2
  - □ Year 2, semester 1
  - □ Year 2, semester 2
  - □ Year 3, semester 1
  - □ Year 3, semester 2
  - □ Year 4, semester 1
  - □ Year 4, semester 2
  - □ More than 4 years
  - Graduated
- 5. How do you meet your study and life expenses? Click all that apply to you!
  - □ Self-support (job, savings)
  - Parents
  - □ Spouse or partner
  - □ Employer

- □ HECS (loans)
- □ Scholarship, grants
- □ Other resources (please specify)
- 6. Do you have a job(s), either paid or unpaid work? If 'yes' answer question 7, if 'no' skip to the question 8.
  - □ Yes
  - 🗆 No
- 7. How many hours per week do you work at your job(s)?
  - □ 5 or fewer per week
  - $\Box$  6 10 hours per week
  - $\Box$  11 –15 hours per week
  - $\Box$  16 20 hours per week
  - $\Box$  21 25 hours per week
  - $\Box$  26 30 hours per week
  - □ More than 30 hours per week
- 8. What have you experienced since you first time enrolled into courses that count to the Bachelor of Management qualification (including Diploma of Commerce and Associate Degree if you followed that study pathway)? You will find a list of events that you may or may have not experienced during your study time at this university. Please click only each relevant life event that you experienced.
  - Death of one or both of your parents
  - □ Living with a stepmother or stepfather
  - Taking up school (university) or advanced training after a longer break
  - □ Military service
  - □ Change of career
  - □ Starting of a business or a company
  - □ Closing of a business or a company
  - □ Termination of job by employer

- Divorce
- Dissolving of long-standing relationship
- □ Major relationship problems that you worked out
- □ Death of your partner
- □ Birth of a child
- Death of a child
- □ Abortion
- □ Giving birth to a disabled child
- □ Realisation that you cannot have children
- □ Estrangement from family
- Alcoholism, drug addiction, violence or psychological illness in the family
- Death of a close relative (siblings, grandparents)
- □ Suicide in the family
- □ Home ownership
- □ Homelessness
- □ Poverty
- □ Imprisonment
- □ Sudden decline in your financial situation
- $\Box$  Death of a loved pet
- □ Significant decline of your physical or mental health
- Major changes in your health behaviour (drugs, smoking, alcohol, diet)
- □ None

Thank you for participating in this survey!

# Appendix B – 3D-WS questionnaire

### Cognitive Dimension of the 3D-WS

How strongly do you agree or disagree with the following statements? (1 = strongly agree to 5 = strongly disagree)

- 1. Ignorance is bliss
- 2. It is better not to know too much about things that cannot be changed
- 3. In this complicated world of ours, the only way we can know what's going on is to rely on leaders or experts who can be trusted
- 4. There is only one right way to do anything
- 5. A person either knows the answer to a question or he/she doesn't
- 6. You can classify almost all people as either honest or crooked
- 7. People are either good or bad
- 8. Life is basically the same most of the time

How much are the following statements true of yourself? (1 = definitely true of myself to 5 = not true of myself)

- 9. A problem has little attraction for me if I don't think it has a solution
- 10.1 try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something
- 11.1 prefer just to let things happen rather than try to understand why they turned out that way
- 12. Simply knowing the answer rather than understanding the reasons for the answer to a problem is fine with me
- 13.I am hesitant about making important decisions after thinking about them
- 14.1 often do not understand people's behaviour

### Reflective Dimension of the 3D-WS

How strongly do you agree or disagree with the following statements? (1= strongly agree to 5=strongly disagree)

- 1. Things often go wrong for me by no fault of my own
- 2. I would feel much better if my present circumstances changed

How much are the following statements true of yourself? (1 = definitely true of myself to 5 = not true of myself)

- 3. I try to look at everybody's side of a disagreement before I make a decision
- 4. When I'm upset at someone, I usually try to 'put myself in his or her shoes' for a while
- 5. I always try to look at all sides of a problem
- 6. Before criticising somebody, I try to imagine how I would feel if I were in their place
- I sometimes find it difficult to see things from another person's point of view
- 8. When I am confused by a problem, one of the first things I do is survey the situation and consider all the relevant pieces of information
- Sometimes I get so charged up emotionally that I am unable to consider many ways of dealing with my problems
- 10. When I look back on what has happened to me, I can't help feeling resentful
- 11. When I look back on what's happened to me, I feel cheated
- 12. I either get very angry or depressed if things go wrong

# Affective Dimension of the 3D-WS

How strongly do you agree or disagree with the following statements? (1 = strongly agree to 5 = strongly disagree)

- 1. I am annoyed by unhappy people who just feel sorry for themselves
- 2. People make too much of the feelings and sensitivity of animals
- 3. There are some people I know I would never like
- 4. I can be comfortable with all kinds of people
- 5. It's not really my problem if others are in trouble and need help

How much are the following statements true of yourself? (1 = definitely true of myself to 5 = not true of myself)

- Sometimes I don't feel very sorry for other people when they are having problems
- 7. Sometimes I feel a real compassion for everyone

- 8. I often have not comforted another when he or she needed it
- 9. I don't like to get involved in listening to another person's troubles
- 10. There are certain people whom I dislike so much that I am inwardly pleased when they are caught and punished for something they have done
- 11. Sometimes when people are talking to me, I find myself wishing that they would leave
- 12. I'm easily irritated by people who argue with me
- 13. If I see people in need, I try to help them one way or another

# Appendix C – 3D-WS Instructions (Ardelt, 2003)

# [Note for investigators: *c* = *cognitive dimension; r* = *reflective dimension; a* = *affective (compassionate) dimension; rev* = *reversed*

Delete those abbreviations and the above title before administering the test. Respondents should not know that they fill out a 'wisdom' scale.

All 14 items of the *cognitive dimension* assess the absence of cognitive wisdom characteristics, such as the (in)ability or (un)willingness to understand a situation or phenomenon thoroughly (A1, A9, A11, B7, B13, B16, B23), the (un)acknowledgement of ambiguity, complexity and uncertainty in life (A3, A5, A7, A13, A15, B10), and the (in)ability to make important decisions despite life's unpredictability (B19). The *reflective dimension* contains 12 items, measuring the ability and willingness to look at phenomena and events from different perspectives (B1, B3, B5, B14, B17, B20, B24) and the absence of subjectivity and projections (A6, A10, B8, B11, B22). The 13 items of the *compassionate (affective) dimension* assess positive and caring emotions towards others (A12, B6), the motivation to nurture others' well-being (A14, B2, B9, B18), and the absence of indifferent or negative emotions toward others (A2, A4, A8, B4, B12, B15, B21).

After data have been collected, reverse the scales for all items that are labelled with a **'rev'** and then compute the average of the 14 cognitive items to get the score for the cognitive dimension, the average of the 12 reflective items to get the score for the reflective dimension, and the average of the 13 affective items to get the score for the affective dimension. A simple overall wisdom score can be obtained by calculating the average of the three dimensions of wisdom, that is, the average of the three averages, NOT the average of all 39 items. Wisdom can also be treated as a latent variable with the cognitive, reflective, and affective dimensions of wisdom as its effect indicators. A relatively high wisdom score is indicated by average scores of 4 or higher on the average of the three wisdom dimensions (weaker criterion). Conversely, a relatively low wisdom score is indicated by average scores below 3 on *each* of the three
wisdom dimensions (strong criterion) or a score below 3 on the average of the three wisdom dimensions (weaker criterion).

To do a rough validity check of the data compute the following (in SPSS): Compute validity = 1.

If (((b02r eq 5) and (a14 eq 1) and (b09 eq 1)) or ((b02r eq 1) and (a14 eq 5) and (b09 eq 5))) validity = 0.

I recommend excluding all cases with failed validity checks: select if (validity eq 1).

Please note that the 3D-WS was not developed through an exploratory or confirmatory factor analysis of all of its items. Hence, the three dimensions of the 3D-WS are not unidimensional constructs, but encompass several wisdom characteristics within the cognitive, reflective and affective wisdom domains. To test the psychometric properties of the 3D-WS, Cronbach's alpha values for each of the three wisdom dimensions should be reasonably high to confirm their internal reliability, and the three dimensions should significantly correlate with each other, with a Pearson's correlation coefficient of 0.30 or higher.]

This section asks you about your opinion and feelings. How strongly do you agree or disagree with the following statements? Please remember there are no right or wrong answers.

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)
<ol> <li>In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.</li> </ol>	C				

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	(1)	(2)	(3)	(4)	(5)
<ol> <li>I am annoyed by unhappy people who just feel sorry for themselves.</li> </ol>	а				
3. Life is basically the same most of the time.	C				
<ol> <li>People make too much of the feelings and sensitivity of animals.</li> </ol>	а				
<ol> <li>You can classify almost all people as either honest or crooked.</li> </ol>	C				
<ol> <li>I would feel much better if my present circumstances changed.</li> </ol>	r				
<ol> <li>There is only one right way to do anything.</li> </ol>	C				
<ol> <li>There are some people I know I would never like.</li> </ol>	а				
<ol> <li>It is better not to know too much about things that cannot be changed.</li> </ol>	C				
10. Things often go wrong for me by no fault of my own.	r				
11. Ignorance is bliss.	с				
12.I can be comfortable with all kinds of people.	a-rev				

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	(1)	(2)	(3)	(4)	(5)
13. A person either knows the answer to a question or he/she doesn't.	C				
14. It's not really my problem if others are in trouble and need help.	а				
15.People are either good or bad.	С				

## A. How much are the following statements true of yourself?

		Definitely true of myself (1)	Mostly true of myself (2)	About half-way true (3)	Rarely true of myself (4)	Not true of myself (5)
1.	I try to look at everybody's side of a disagreement before I make a decision.	r-rev				
2.	If I see people in need, I try to help them one way or another.	a-rev				
3.	When I'm upset at someone, I usually try to 'put myself in his or her shoes' for a while.	r-rev				

	Definitely true of myself (1)	Mostly true of myself (2)	About half-way true (3)	Rarely true of myself (4)	Not true of myself (5)
4. There are certain people whom I dislike so much that I am inwardly pleased when they are caught and punished for something they have done.	a				
<ol> <li>I always try to look at all sides of a problem.</li> </ol>	r-rev				
6. Sometimes I feel a real compassion for everyone.	a-rev				
<ol> <li>I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.</li> </ol>	C				
8. When I look back on what has happened to me, I can't help feeling resentful.	r				
<ol> <li>I often have not comforted another when he or she needed it.</li> </ol>	а				
10. A problem has little attraction for me if I don't think it has a solution.	c				
11.1 either get very angry or depressed if things go wrong.	r				

	Definitely	Mostly	About	Rarely	Not true
	true of	true of	half-way	true of	of
	myself	myself	true	myself	myself
	(1)	(2)	(3)	(4)	(5)
12. Sometimes I don't	а				
feel very sorry for					
other people when					
they are having					
problems.					
13.1 often do not	С				
understand people's					
benaviour.					
14. Sometimes I get so	r				
charged up					
emotionally that i					
consider many ways					
of dealing with my					
problems.					
15. Sometimes when	а				
people are talking to	-				
me, I find myself					
wishing that they					
would leave.					
16.I prefer just to let	с				
things happen					
rather than try to					
understand why					
they turned out that					
way.					
17.When I am	r-rev				
confused by a					
first things I do is					
survey the situation					
and consider all the					
relevant pieces of					
information.					
18.1 don't like to aet	а				
involved in listening					
to another person's					
troubles.					

	Definitely true of	Mostly true of	About half-way	Rarely true of	Not true of
	myself (1)	myself (2)	true (3)	myself (4)	myself (5)
19.I am hesitant about making important decisions after thinking about them.	C				
20. Before criticising somebody, I try to imagine how / would feel if I were in their place.	r-rev				
21. I'm easily irritated by people who argue with me.	а				
22. When I look back on what's happened to me, I feel cheated.	r				
23. Imply knowing the answer rather than understanding the reasons for the answer to a problem is fine with me.	C				
24.1 sometimes find it difficult to see things from another person's point of view.	r				

## Appendix D – Ethics approval

HEC18320 – New Application – Approved

humanethics@latrobe.edu.au

Reply all Thu 02/08, 14:01 Margaret Robertson; ZLATKO MUHVIC

\*\* This is an automatically generated email, please do not reply. Contact details are listed below.\*\*

Н

Dear Margaret Robertson,

The following project has been assessed as complying with the National Statement on Ethical Conduct in Human Research. I am pleased to advise that your project has been granted ethics approval and you may commence the study.

Application ID: HEC18320 Application Status/Committee: Arts, Social Sciences & Commerce College Human Ethics Sub-Committee

Project Title: Relationship between students' wisdom, and their perceptions about wisdom enablers in undergraduate management education

Chief Investigator: Margaret Robertson

Other Investigators: Zlatko Muhvic

Date of Approval: 02/08/2018 Date of Ethics Approval Expiry: 02/08/2023

The following standard conditions apply to your project:

- Limit of Approval. Approval is limited strictly to the research proposal as submitted in your application.

- Variation to Project. Any subsequent variations or modifications you wish to make to your project must be formally notified for approval in advance of these modifications being introduced into the project.

- Adverse Events. If any unforeseen or adverse events occur the Chief Investigator must notify the UHEC immediately. Any complaints about the project received by the researchers must also be referred immediately to the UHEC.

- Withdrawal of Project. If you decide to discontinue your research before its planned completion, you must inform the relevant committee and complete a Final Report form.

- Monitoring. All projects are subject to monitoring at any time by the University Human Ethics Committee.

- Annual Progress Reports. If your project continues for more than 12 months, you are required to submit a Progress Report annually, on or just prior to 12 February. The form is available on the Research Office website. Failure to submit a Progress Report will mean approval for this project will lapse.

- Auditing. An audit of the project may be conducted by members of the UHEC.

- Final Report. A Final Report (see above address) is required within six months of the completion of the project.

You may log in to ResearchMaster (<u>https://rmenet.latrobe.edu.au</u>) to view your application.

Should you require any further information, please contact the Human Research Ethics Team on: T: +61 3 9479 1443| E: humanethics@latrobe.edu.au.

Warm regards,

Human Research Ethics Team Ethics, Integrity & Biosafety, Research Office Appendix E - 3D-WS - second-order CFA model, standardised estimates



**Appendix F** – Pilot 1 – second-order CFA model, standardised estimates SPWEQ



**Appendix G** – Pilot 2 – second-order CFA model standardised estimates, SPWEQ



**Appendix H** – Actual research, second-order CFA model standardised estimates



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