
PHD RESEARCH PROPOSAL

Research on the Effectiveness of Normative Ethical Decision-Making Models in Ethical Decision Making in Business and AI support

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CONTENTS

Contents	2
Abstract - PhD Research Proposal	3
Relevance of NEDM-Models in Business.....	4
Research on effectiveness of NEDM-Models in a phased process	7
Need for research and contribution to science, business and society.....	15
Research planning	17
References	18

“The ethical decision is always the fearsome decision. When something matters enough that we are afraid of the consequences—afraid that even the honorable choice could result in harm or loss or sorrow—that’s when ethics are involved.”

— *Henry W. Bloch* (Bloch, 2010)

ABSTRACT - PHD RESEARCH PROPOSAL

Normative ethical decision-making models (NEDM-models) provide a reasoning process to ensure that an ethical decision enjoys a solid ethical justification, to prevent ethical judgments may be done too quickly and intuitively, under time pressure as in business time counts or are based on improper framing, and therefore rationalized afterward if necessary. NEDM-models help professionals in ethical decision making in a systematic and standardized process when confronted by an ethical dilemma and come to a final decision. This PhD study aims to answer the question whether ethical decision making in business improves by using a normative ethical decision-making model. A limited number of empirical studies in the health sector support a positive impact on the quality of ethical decision making by using the NEDM-model.

This PhD study will be developed in different phases, concluded in publications. Paper 1 answers the question which NEDM-models are available in business research, compares different models, and analyses whether they have been sufficiently empirically tested. Paper 2 constitutes empirical research on the effectiveness of using existing NEDM-models in resolving business ethical dilemmas. If there is a positive impact, the ambition is to increase the quality of ethical decision making in business by testing different NEDM-models in phase three or develop a new NEDM-Model. The last paper is optional and involves literature research with the ambition to increase the quality even further by using Artificial Intelligence (AI) on the tested NEDM-models. AI could answer data-based steps of NEDM-Models through a more in-depth data analysis.

Keywords: business ethics, decision-making models; normative ethical decision making; NEDM-model; literature review, artificial intelligence; AI ethics

RELEVANCE OF NEDM-MODELS IN BUSINESS

In business, professionals encounter ethical dilemmas frequently. For instance, in the financial industry, decisions on ethical dilemmas regarding price discrimination are made, and although legally allowed in some cases, they might not be ethically desirable. Other examples are dilemmas on sales strategies acquiring a new business at companies that use child labor abroad, or those being directly or indirectly active in the tobacco or oil industry. Furthermore, there is the current issue of withdrawal of investments in Russia versus loss on return. In other industries (e.g., car-industry), there are dilemmas pertaining to investments in electric versus diesel cars, as well as debates on moral choices regarding self-driving cars. The management of health insurance companies faces ethical dilemmas regarding the prices of medicines, medical treatments versus policy pricing and market competition, and even more confronting, price of an extension of life versus treatment costs. There are also ethical dilemmas on more general topics in business as diversity and inclusion needed to be discussed at the business table. Making the wrong ethical choice can harm business, and leaders can be pointed at as liable.

Some ethical judgments may be done too quickly and intuitively, under time pressure as in business time counts or are based on improper framing, and therefore rationalized afterward if necessary. Later, one might realize that the impactful aspects or impediments where applicable were not taken into consideration for proper ethical decision making. Employing carefully considered judgment tools could be of assistance in helping business professionals with the judgment process. It is rather interesting when tools tested outside the business industry provide evidence of an increase in the quality of ethical decision-making (Johnson M. , 2020).

To support leaders in identifying, analyzing and acting on ethical dilemmas, normative ethical decision-making models (NEDM-models) have been developed. The philosopher Hare (1981) described two levels of moral thinking, intuitive and critical. Also the philosopher Kahneman et al. (1973) is well-known on research of level 1 and 2 thinking. Level 1 is based on our ethical reflexes (or intuitions) by which we must be guided. Level 2, by contrast, includes reflection when principles conflict or in novel situations where the intuitive level is insufficient, such as an ethical dilemma, critical evaluation is needed. Johnson (2020) stated, this level 2 requires describing the situation fully, the experiences of those involved, impartial consideration of preferences, individual rights, justice, and full consideration of alternative actions and their consequences. And stated that this higher level of conscious deliberation is the

basis for decision-making models and their structure. Schwartz (2017) stated that these models provide a reasoning process to ensure that the decision enjoys a solid ethical justification which is hopefully not tainted by emotions, biases, tendencies, rationalizations, or self-interest. Despite the popularity of dual process theory, dual process accounts of human reasoning and decision making have come under intense scrutiny in recent years. Cognitive scientists and philosophers alike have come to question the theoretical foundations of the ‘standard view’ of dual process theory and have challenged the validity and relevance of evidence in support of it (Grayot, 2020). In this research on NEDM-Models the focus is not on specific level 1 or 2, the use and reflection on both is incorporated. In a decision analysis by Gutheil et al. (1991, p. 41), the fundament of a NEDM-model was defined in the following manner: “Decision analysis is a step-by-step procedure enabling us to break down a decision into its components, to lay them out in an orderly fashion, and to trace the sequence of events that might follow from choosing one course of action or another.”

An example of a simplified NEDM-model is the modified model of Peale and Blanchard (1988). These three questions are answered to consider different perspectives based on legality, balancing and feeling, before a decision on the ethical dilemma is made: (1) How will it make me feel about myself? (2) Is it balanced (for each stakeholder)? and (3) Is it legal?

Based on the preliminary empirical results on the use of NEDM-models in the health sector these models are helpful (Johnson, 2020). The first empirical studies on using a NEDM-model in ethical decision-making were conducted in the health sector and most of them do support a positive impact on the quality of ethical decision making by using a NEDM-model (Johnson, Weeks, Peacock, & Domenech Rodriguez, 2021). However, Johnson (2020) stated that the effects of the integrated ethics training course in the earlier empirical studies could not be separated from the effect of using an NEDM-model. In the latest empirical study, without the incorporation of an ethical training course, a small number of participants participated, and as Johnson stated, this is a shortcoming of this study. If this study is replicated, extensive efforts will be needed to ensure a large enough sample size for sufficient power. Also Ethical decision-making models from unrelated fields such as business were not included in this research as Johnson stated ‘due to the different ethical responsibilities’.

Given these observations, it would be interesting to develop novel research to test the relevance of these results in a business context. Empirical research is then necessary to test whether NEDM-models are also effective in improving the quality of ethical decision making in business management, because based on the first results of the literature research, none of

the NEDM-models used in business have been empirically tested yet. This proposed PhD study answers the main question, which is whether the quality of ethical decision making in business may be improved by using a normative ethical decision-making model? In a phased process, I will answer the research question.

RESEARCH ON EFFECTIVENESS OF NEDM-MODELS IN A PHASED PROCESS

The main research question of this PhD thesis is; *Can the quality of ethical decision making in business be improved by using normative ethical decision-making models?*

Based on the preliminary results in the health sector, my hypothesis is that using NEDM-models in business will improve the quality of ethical decision making. A growing number of researchers indicates the importance of including a dual process of reason and emotion/intuition in a decision-making model (Schwartz, 2011, p. 73). The moral reasoning process is considered to have several features, system 1, is effortful, non-automatic, slow, methodological, compared to system 2, the more intuitive process, which is effortless, immediate, inaccessible, and not controllable and only the results enter our awareness. Both aspects play a role in ethical decision making and using an NEDM-Model could combine both aspects to increase the quality of our ethical decision-making.

To answer the research question via hypothesis testing, the research process is divided into three phases, in a linear process to develop a solid foundation for theory building. There is also an optional fourth phases to answer the question if Artificial Intelligence (AI) can add value to a NEDM-Model. The theory that using NEDM-Models will increase quality in decision making is based on the fundament of the combination of dual-process theory combined in an NEDM-Model (Kahneman et al. 1973, Hare 1981, Schwartz 2011, Grayot 2020, Johnson 2020) to increase the quality of ethical decision-making. The first phase explores which NEDM-models are developed in business context, analyzing the ethical theory used and design choices of the different models, the development of NEDM-models over time, and whether there is empirical evidence in business literature that could assist with, and improve the quality of, ethical decision making in business. The second phase is the most time-consuming phase, involving empirical research on the effectiveness of using existing NEDM-models to answer business ethical dilemmas. If there is a positive impact, the desire is to increase the quality of ethical decision making in business by testing different NEDM-model(s) and further develop the existing ones or design new ones in the third phase. The fourth optional phase focuses on innovation, and through literature research, it analyzes whether quality could be increased even more using Artificial Intelligence (AI) on the tested NEDM-models. AI could assist in using NEDM-models or even answer data-based steps through a more in-depth data analysis. I will

analyze here which specific steps of an NEDM-model AI is capable of answering and whether AI is available to do so.

Phase 1: A review of normative ethical decision-making models

The literature research answers which NEDM-models have been developed in business context and whether there is empirical evidence in business literature that could assist with, and improve the quality of, ethical decision-making in business. I found over 120 normative NEDM-models in journals, books, and websites. The purpose of this review is to develop a novel accessible overview of the NEDM-models presented in relevant business journals focusing on business ethics. More specific, I will analyze the NEDM-Models published in relevant business journals and books and present an overview of the different ethical theories incorporated in the NEDM-models, the specific design of the different stages in the models, compared also to standardized decision-making models. A comparison will be done of models used in the health sector and their differentiations based on Johnson's (2021) research. And most impactful if there is empirical research in business research papers and books on the effectiveness of NEDM-Models.

As for the literature research, the library search tool incorporate Humanities Source Ultimate, Education Source, ERIC, Psychology and Behavioral Sciences Collection, APA PsycInfo, Erasmus Library, Google Scholar, and Web on Science. Some specific journals will be selected for detailed research if the search results on library search tools provided more than one NEDM model in the journal. Journals incorporated are the *Journal of Business Ethics*, *Business Ethics Quarterly*, *Business Ethics the Environment and Responsibility*, *Ethics & Behavior*, *Counseling & Values*, and *Journal of Counseling & Development*. Snowballing will also be used by examining the reference lists of relevant articles found. The selected search terms are *ethical decision framework*, *empirical and steps*, *ethical decision making*, *model*, *steps*, and *normative*. In EBSCO, the search strategy of Johnson (2021) will be copied, and business included instead of being specifically excluded. The selected models are normative, providing a step-by-step systematic approach for answering ethical questions. Some model publications will be added as they are presented in books or digitally, and as the number of scholarly papers on decision-making models is limited. The overview will not be exhaustive due to many models written in ethics textbooks.

From the initial results of this review, I conclude that NEDM-models are well-known in the health-sector, however in business are rare, and as far as current research has been able to find, they have not yet been tested for their effectiveness.

Phase 2: Effectiveness of normative ethical decision-making models

Phase 2 focuses on empirical research via hypothesis testing and is divided into different parts. The models will be tested on their effectiveness of increasing the quality of ethical decision making. The hypothesis will be tested through a two-way approach, the first one in a lab environment to reduce biases as much as possible, and the second approach is testing in business meetings on the spot. However, biases might increase, but the research results will be more connected to business reality. The hypothesis is that using NEDM models in business will improve the quality of ethical decision making compared to not using them. Quality is measured through the quality level of solutions chosen on an ethical dilemma vignette when using or not using an NEDM-model in a lab environment. An ethical vignette will be modified or newly designed based on a relevant ethical dilemma in business, and when testing on the spot, it is even more modified to a relevant ethical dilemma in the specific business line. In part 2 a more detailed explanation is presented how ‘quality’ is defined and tested. Phase 2 is divided into five parts, from selecting NEDM-Models, ethical vignette design to empirical testing in lab and on-the spot and at different companies.

Part 1: Selecting NEDM-Models. Based on the literature research results in Phase 1, I will select relevant existing NEDM-models in business context to be tested on their effectiveness. The NEDM-models in business can be separated in linear questionnaires or flowcharts. The time-consuming impact of models differs highly, from complex to smart/clear steps. In addition, in the design of models, the differentiation is high between models using one word versus complex sentences up to 30 words. NEDM-models can also be divided to those that are practice-based versus theoretically/philosophically based models. The relevance definition determining which NEDM-model is to be used for empirical testing must be developed as well as the suitability of the NEDM-model in the context of hypothesis testing. For instance, if the test-lab setup is intended for a group deliberation process, a limited number of models is available. Another dependency is the requirement if an NEDM-model should have the availability to be learned by heart as a number of NEDM-models are so complex so that a visualization of the model should be available in the decision-making phase. Another relevant aspect is whether there is a requirement for explicit ethical theory deliberation or incorporating

more than one theory, as this will also limit the number of testable NEDM-models to the most. Testing different models provides research results not only on the effectiveness of using a model but also the differentiation per model.

Part 2: Selecting ethical dilemma. The ethical dilemma vignette used will be selected from the literature, based on previous findings (Johnson, 2020) on ethical decision making or newly designed. If necessary, it will be modified according to a relevant business ethical dilemma, and for specific testing on the spot, even more adjusted to the relevant context of the specific business line (for instance, focused on dilemmas in health insurance, financial services, or property and casualty risks when being tested in Achmea). The decision quality will be analyzed based on the open-ended response of the participants to the vignette. Similar to the measure developed and validated by Mumford and colleagues (Mumford et al., 2006), a hypothetical vignette is used for determining the most possible solutions, and assigning a numerical value to them. At least three experts in the field with significant experience in ethical decision making will assist in developing this measure. They will be asked to determine the most possible solutions to the vignette and to order these solutions in terms of quality. I will order the solutions of the different experts to determine similarity and ensure the maximum number of possible solutions. The solutions will then be rated by using a Likert-type scale from unethical to very ethical. Participant responses will be evaluated (as open ended response on the vignette) and placed into one of the possible solutions. If multiple solutions are scored, each response will be scored separately and averaged for a final score. A survey questionnaire will be added with questions on professional experience, ethics training and familiarity with NEDM-Models and if applicable, how the NEDM-Model provided is used. Participants are measured on their ethical decisions and, therefore, the effectiveness of using an NEDM-model.

Part 3: Testing in lab environment. In the lab environment, all groups will be supervised by specialists to analyze the behavior of the group and the aspects considered for answering the ethical question. All participants will also complete a survey afterward. Based on the first literature research, 13 empirical studies in the health-sector are known, and most of them use a variance methodology with a treatment group, an informed control group, and an uninformed control group (Gawthrop & Uhlemann, 1992) to test the effectiveness of the models by comparing the test results of different groups. In Johnson's thesis (2020) references has been made to the empirical studies from among others of; Tymchuck (1986), Gawthrop and Uhlemann (1992), Garcia, Winston, Borzuchowska, and McGuire-Kuletz (2004), Garcia, McGuire-Kuletz, Froelich, and Dave (2008). Based on these tested research designs, we can

apply the same methodology in business context and compare outcome results. The hypothesis testing will therefore be done by empirical research. A similar research setup will be implemented, using three different groups. One group will answer an ethical dilemma vignette without any support, the second group with an NEDM-model provided, and a third group will receive upfront an explanation of the NEDM-model before answering the dilemma. The research question will be examined using a two- or three-way analysis of variance (ANOVA) (Forza, 2002) using group, NEDM-model with or without explanation and no NEDM-model provided. A fourth and fifth group will be implemented as a copy of the second and third group with one differentiation, and they will use another NEDM-model for support in answering the same ethical dilemma. The target is to have a minimum of 20 participants per individual group representative for the workforce of Achmea (Achmea is strongly committed to supporting the invitation process to acquire the necessary participants); therefore, there are 60 participants in total (also participants in other companies are participating as explained in more detail in part 5). If available, we can also consider measuring the level of moral awareness over time by analyzing the participating people upfront and after their participation as another measurement for increased quality on using NEDM-models.

Part 4: On-the-spot testing. In addition to lab testing, I will also conduct testing on the spot in team meetings. More biased results, which could be more excluded in a lab environment, will be the downside; however the benefit is test results based on more business reality. Team leaders will be informed upfront and asked to test the vignette in a team meeting. The vignette used in the lab test set-up will be modified on a business-line specific relevant dilemma, to develop a questions comparable with ethical dilemmas in daily operations in the specific business-line. Participants in the meeting will be asked to discuss the dilemma in a normal team-meeting and complete a survey afterward. There will be no external supervision during the discussion or a formal introduction to test the models in the most natural circumstances as possible. Different teams will be challenged with or without using an NEDM-model when answering the dilemma, and the team leader will introduce the specific NEDM-model. Based on the survey results of team members and leaders afterwards, test results will be compared.

Part 5: Testing different companies. Another variable to add is the business context. As Achmea is already committed to this PhD research, their leadership team and employees will be invited as test participants. To reduce biased outcomes, the hypothesis testing will be conducted in at least two different companies. The same test setup will be implemented to compare the outcome results.

Phase 3: Develop a new or updated NEDM-model

If phase 2 concludes that there is a positive impact, the ambition is to increase the quality of ethical decision making in business by testing developed NEDM-models in Phase 3 or a new NEDM-Model. The necessity of this part depends on the outcome of the first empirical results. If the first test results conclude that no improvement of quality is measured when using an existing NEDM-model, we will develop a new model to test if this conclusion still holds. If a maximum quality result is concluded using one of the existing NEDM-models, there is no foundation to implement this phase. If test results provide a foundation to expect increase quality possibilities, these new or developed model will also be empirically tested. This will be done in the same setup as mentioned in Part 2, with the goal to increase the quality of our decision-making using an NEDM-model.

Overall, there will be a cycle in theory development, using qualitative, and variance theory models to find evidence whether the hypothesis could be rejected or not, and based on that result, a new theory will be developed and implemented.

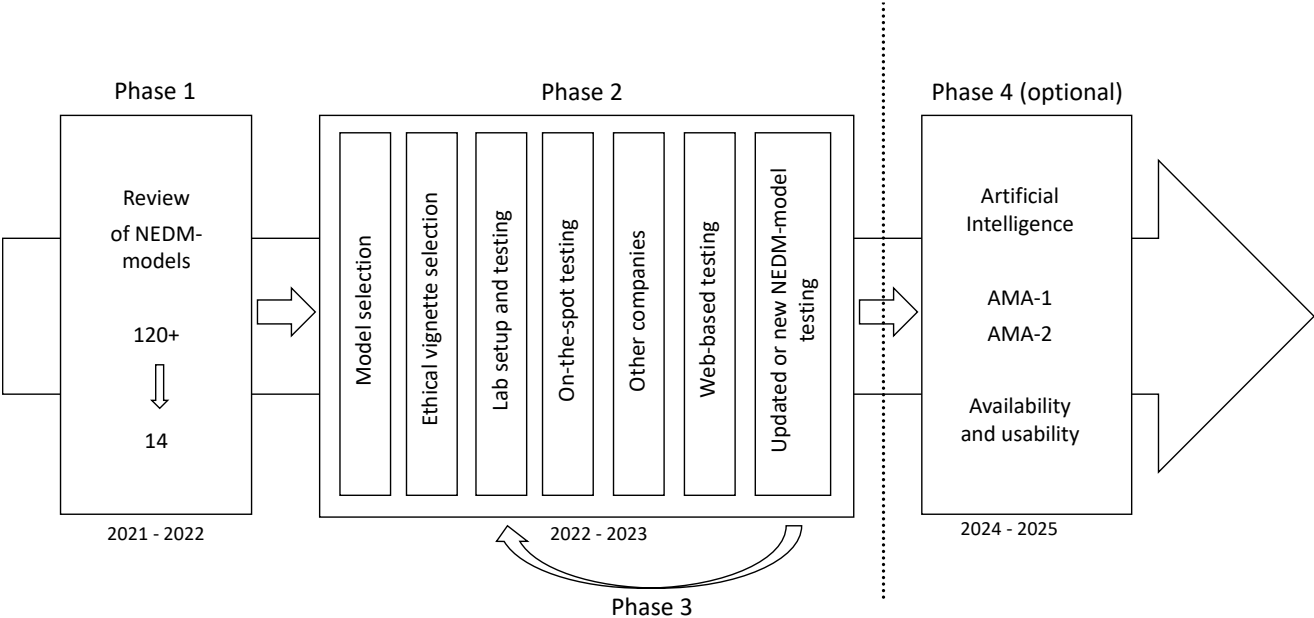
Phases 2 and 3 are challenging to test the effectiveness of NEDM-Models because of many variables; however, it is also the most interesting as it will answer the question of what happens in practice. What is the effect of using them? Furthermore, which model is preferable in what specific situation? Based on the outcome, I will be able to conclude the effectiveness per tested model and increase the effectiveness as much as possible. After finishing this phase, I aim to be able to reject or accept the hypothesis.

Optional phase 4: Added value of AI to a normative ethical decision-making model

To further increase the quality in ethical decision making by using NEDM-models, the fourth phase will focus on innovation and analyze whether there is a positive impact of using AI on the tested NEDM-models. AI could assist in answer data-based steps by more in-depth data analysis. As stated by Giubilini and Savulescu (2017) humans are suboptimal information processors in the sense that they often fail to consider all the information required to make a rational or a moral decision. Sometimes the information is not available because there is not enough time or cognitive resources. Sometimes the information is available, but people fail to give it proper consideration because of the influence of intuition and emotions. They describe a form of moral AI that could be used to improve human moral decision-making, named Artificial Moral Advisor (AMA). Gabriels (2021) developed four types of AMA's, AMA-1 is already available as an ethical impact actor, AMA-2 is the implicit ethical actor, AMA-3 the

explicit ethical actor, and AMA-4 the complete ethical actor. Nowadays, we are in the transition from AMA-2 to AMA-3. In the debates in the car-industry on moral choices regarding self-driving cars, the car will be able in the nearby future to make an ethical decision explicit (Tymchuk, 1986) (Garcia , Winston, Borzuchowska, & McGuire-Kuletz, 2004) (Garcia , McGuire-Kuletz, Froelich, & Dave, 2008) (Garcia , Winston, Borzuchowska, & McGuire-Kuletz, 2004)(AMA-3), based on the criteria as implemented by the programmers.

In this part of the thesis, I will present a literature research on the availability, and if applicable, the research on usability, of AMA-1 and 2 on NEDM-models resulting from Phase 3. AMA-1 will generate and analyze data and will provide predictions, and it is focused on supporting answering specific steps in an NEDM-model. AMA-2 has already been making implicit decisions based on data, which are not analyzable by a human due to the amount. Additionally, there will always be a human supervisor. For example, in some NEDM-models, the question “Is it legal” can in some cases already be answered by AI in a more efficient and better way than humans as all legislation is difficult to analyze and is also time consuming (Faggella, 2020). This part analyzes which steps of an NEDM-model can be answered by AMA-1 and 2, and whether they are available yet, based on published literature. This phase depends on the outcome of the first three phases that define which NEDM-model provides the largest effect on quality improvement and whether AI can provide support in the NEDM-model steps.



Visualization of PhD Research process

In Phases 2 and 3, the business professionals of Achmea will participate as a test group. Achmea is strongly committed to this PhD research, and it will provide support in the invitation to all possible participants and development of a lab environment for empirical testing and open the possibility to conduct testing in team meetings. In addition on the test possibilities with Achmea, I will also invite other companies to participate to reduce biases in test results. First thoughts are on Rabobank, ABN Amro or the Dutch Tax Authorities to reduce the biased results of one company. I have already contacted these other companies, and their input will help sharpen the focus of this research.

NEED FOR RESEARCH AND CONTRIBUTION TO SCIENCE, BUSINESS AND SOCIETY

My research goal is a product of the specific demand by Achmea as a result of my TIAS E-MBA program in 2020. The development of a first concept NEDM model (Versteegt, 2020) in the research module of the E-MBA program and its usability in ethical decision making in the workplace was the reason for discussion with management and board members of the company. They understood the need for further research as they became aware of the fact that the question “*How do you answer ethical questions and will an NEDM-Model help in making these decisions?*” remains unanswered. Based on that specific problem, using the initial literature review results, and after deliberations with several companies and professors at different universities, I developed more specific questions to place the problem statement in a broader context, as the effectiveness of using NEDM-models is unknown in business. With this PhD project, I will be able to combine knowledge from practitioners and researchers, and produce knowledge that is more penetrating and insightful (Van de Ven, 2007).

Improving the quality of answering ethical questions is not only important for Achmea but also for other companies, as clients tend to base their business decisions depending on those choices; making the wrong decision could therefore impact business results. Since starting the PhD, there have been frequent discussions with Achmea and other companies for input and reflection to deepen the specific business needs on ethical decision making. This will serve as an input for the research and development of research methodology.

As the initiative for the PhD began with the interest of the company to develop a more in-depth research on ethical decision-making, there is also significant commitment among the board of directors to support this research and increase the level of moral awareness and ethical decision-making quality. On a monthly basis, a dialogue is organized with one of the Board members, supported by the ethical committee members, on a two-yearly basis to discuss the research setup and findings as an input for the research process in each research phase.

My personal goals for this PhD study are contributing to science while improving the quality of ethical decision making within Achmea and other companies. The ultimate goal is to make (senior) business managers, directors, and CEOs be familiar with the use of NEDM-models when answering an ethical question by knowing how to use an NEDM-model, within five years. This will help them increase the quality of their ethical decisions.

The participation in the European Business Ethics Network (see www.eben-net.org) is also initiated aiming to develop a peer group academic discussion on this topic as research input. I target publication of every research phase in relevant journals: *Journal of Business Ethics* (impact factor: 6.002), *Business Ethics Quarterly* (4.077), *Business Ethics: An European Review* (2.919), *Ethics & Behavior* (1.601), or *Journal of Academic Ethics* (1.442). The first publication, the review on NEDM-Models, is targeted in *Business Ethics Quarterly*. The focus is on presenting and discussing the results during and after finishing every phase so as to develop relevant input for the next research phase.

To combine an academic perspective with that of practitioners, I have also developed the website www.jopversteegt.com to translate research paper in more simplified publications, which can also be published in different involved companies during the research and open the dialogue on this impactful research.

This research is focused on business context; however, research results could be relevant to other sectors as well, especially if the conclusion is made that in health and business sectors, using NEDM-models does contribute to the quality of ethical decision making.

RESEARCH PLANNING

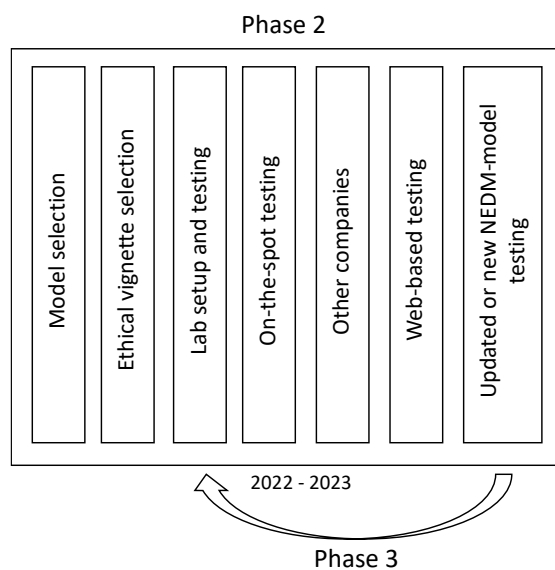
The research is divided in four phases, and the PhD research is a combination of a separate publication connected to every phase of the research study.

Phase 1: A review of normative ethical decision-making models

The overview of the NEDM-models in business is aimed to be ready for publication in July/August 2022.

Phases 2 and 3: The effectiveness of normative ethical decision-making models

The goal is to test different models in real situations, and these two phases are divided into different parts.



The aim is to start this phase from September/October 2022 and finish no later than December 2023.

Phase 4 (optional): The added AI value to a normative ethical decision-making model

In Phase 4, I research the impact of Artificial Intelligence (AI) on a NEDM-model. The aim is to start this phase from January 2024 and finish no later by December 2024.

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