

**PhD Candidate:** Jakub Golik, Gdansk University of Technology  
**Title of PhD Thesis for Evaluation:** Modelling Expected Utility Function of Career Choice Problem among Students

**Date:** 24 August 2023

**External Examiner:** Professor Mathew Hughes  
**External Examiner's Academic Affiliation:**  
Schulze Distinguished Professor and Professor of Innovation and Entrepreneurship  
School of Business  
University of Leicester  
Brookfield  
266 London Road  
Leicester LE2 1RQ  
United Kingdom

**External Examiner's Areas of Expertise and Research Interests:**

Dr Mathew (Mat) Hughes is Schulze Distinguished Professor of Family Business and Professor of Innovation and Entrepreneurship at the University of Leicester School of Business, UK. He received his PhD from the University of Wales, Aberystwyth, graduating on 2005. He previously held appointments as Professor of Entrepreneurship and Innovation at the School of Business and Economics, Loughborough University, Reader in Entrepreneurial Management at Durham University, and Lecturer then Associate Professor of Entrepreneurship and Innovation at the University of Nottingham. At Loughborough University, Professor Hughes co-founded and co-directed the Centre for Corporate Entrepreneurship and Innovation, the first of its kind in the UK. He presently serves as the Departmental Director of Research for the Marketing, Innovation, Strategy and Operations Department at the University of Leicester School of Business.

His research expertise lies in entrepreneurship and innovation and their intersection with strategy and management. Professor Hughes' expertise includes the strategy and management of entrepreneurship and innovation in various contexts with a specific focus on entrepreneurial orientation, innovation ambidexterity, and social capital and relational strategy. His work directly addresses the conditions and circumstances for business growth, and in collaboration with Dr Boyka Simeonova, is co-creator of the 'Making Better Entrepreneurial Decisions Under Uncertainty' decision-making tool for managers and entrepreneurs, funded by the Enterprise Project Group.

Professor Hughes has published over 90 scholarly articles in world-leading and internationally excellent journals including Entrepreneurship Theory and Practice, Strategic Entrepreneurship Journal, Journal of Product Innovation Management, Long Range Planning and R&D Management. He also sits on the Editorial Boards of the British Journal of Management, Journal of Management Studies, and Journal of Business Venturing, among several others. Professor Hughes is an Associate Editor of the Journal of Business Research and Journal of Family Business Strategy, and Senior Editor of the leading practitioner website [www.familybusiness.org](http://www.familybusiness.org), funded by the Richard M. Schulze Foundation.



Professor Hughes is an award-winning researcher, teacher, and doctoral supervisor. He has supervised more than 18 PhD students through to successful completion and examined candidates in many different countries.

He is a member of the Scientific Council of La Fabrique de L'Exportation, a French think tank located in Paris, France. Professor Hughes also hosts a successful podcast series on Apple Podcasts, Spotify, SoundCloud and Amazon, rated by Feedspot as among the Top 25 UK Innovation podcasts in 2021.

### **General overview:**

This thesis represents an independent and comprehensive piece of scientific work of appropriate academic standard. It is well-presented, well-written, and presented in clear English as required by the regulations; formulates relevant research questions, has adequate theoretical and empirical basis, and treatment of the literature; adopts an interesting methodological approach; and presents findings of interest to scholarly, practice, and policy communities. The thesis contributes to new knowledge to the discipline and is of a academic standard capable of publication as part of the scientific literature in the field.

In general:

- The PhD Candidate shows familiarity with, and understanding of, the relevant intellectual and creative context.
- The thesis provides a reasonably comprehensive study of the topic.
- Research questions have been identified and explored through the thesis.
- The methods and techniques applied in the execution of the thesis are appropriate to the subject matter and properly applied.
- The research findings are suitably articulated.
- The thesis makes an original contribution to the subject with which it deals.
- The command and the quality of the English language and the general presentation are satisfactory.

However, through the course of my review, I concluded that before being publicly defended for the PhD degree, important changes are required. I elaborate on these concerns in the next section of my report.

### **Comments on the thesis and areas of concern:**

1. I would like to see more explanation given for why Conjoint Analysis is described as applicable to the field of entrepreneurship, why it is suited to study entrepreneurship, and its advantages over other experimental designs. The Abstract as well as text on p.13 of the Introduction are good instances of where a much more report explanation and discussion are needed.
2. It is also noted that Conjoint Analysis is gaining popularity among entrepreneurship researchers and so it is further important to explain why this is so and the benefits and limitations of it. It is possible the work has a methodological contribution to offer the field of entrepreneurship research if it helps demystify the usefulness of conjoint Analysis for the field, advances/enhances the tool, and moves forward its use in entrepreneurship research.



3. The introduction could benefit from better linking the economic choice problem to entrepreneurship. In particular, this important statement is left undeveloped: "Some scholars claim that the development of entrepreneurship research has been impeded by the "equilibrium ideal" among classical economists (Landstrom, 1999)." The motivating the study and setting the value and contribution of the work to entrepreneurship requires this statement to be elaborated on.
4. The introduction on p.13 as well as the remainder of Chapters 1 and 2 should be very clear in clarifying between self-employment and business owner. The thesis treats them as synonymous, relying on following what has been occurring in economics-based studies of entrepreneurship. I can agree with this but only if there is a clear definition of business owner - as hypothetically this can extend to shareholder. There needs to be clarity here as to how these are defined and measured/operationalized. Moreover, thought (perhaps in the Limitations section of the Discussion) should be given to variation in self-employment behaviour (e.g., whether in entering self-employment the individual effectively runs a lifestyle business, growing little and employing few people, to one that are more growth oriented and achieve much higher economic contribution. That subtly to would be of tremendous value to the thesis/study.
5. The objective of the research is stated as (p.13): "The main research objectives are to find out how students who are about to enter the labour market soon (i.e. master's degree students of their last year) make decisions concerning their career choice, what drives them in particular, and how is the expected utility of entrepreneurship (self-employment) different among students of different courses (from social studies to engineering and mathematics)." However, what I am missing here is "why this is needed" (what is the research gap?) and "why it is important" (what is the value of doing so?). For instance, on p.14 it is stated that the design and results of the experiment "contradict some of the conclusions made by Douglas and Shepherd (2002)", but the text is yet to speak of Douglas and Shepherd's work. The study gap and contribution need further development through the Introduction.
6. Why does the work choose to rely on, and pin itself on, Douglas and Shepherd's (2000) "Career Choice as a Utility Maximizing Response Model"? Moreover, through Chapter 1, p.23 onwards (Section: "Utility & Career Choice Models in the literature") empirical studies testing the original Douglas and Shepherd (2000) model as reported. However, it is not clear to me why it continues to be seen as the superior choice or what amendments were needed based on lessons learned from empirical studies reported in this section. Moreover, based on statements on p.31, "There are many interesting works in the entrepreneurship research literature based on the utility-maximization theory or presenting different career choice models not necessarily with the use of Conjoint Analysis", why were these not chosen instead? This section does not end with any specific rationale for the original choice, any amendments made to the Douglas and Shepherd model based on subsequent research or protect sufficiently against alternative explanation. What is more confusing is then why does the next section, "Job Attitudes" begin with the statement "In order to construct a new model...". Greater clarity is needed through the two preceding sections to explain and build up the rationale for the subsequent construction of a "new" (which I assume you mean "revised") model (and what is added, changed or removed from the Douglas and Shepherd model on which the

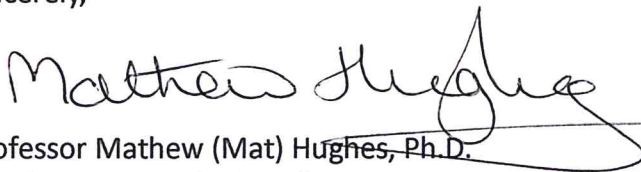
work hangs itself and why). Note, see text on p.53 for why this matter is important (because there is a claim there to be synthesizing “three main theoretical “pillars”... “Career Choice as a Utility Maximizing Response Model” ... classic measures of entrepreneurial self efficacy ... and entrepreneurial intention ... and finally the (Hackman & Oldham, 1975), Job Characteristics Model”.

7. I find the hypotheses in Chapter 2 ‘came out of the blue’ with no theoretical rationale or set up provided. I would expect at least 1-3 paragraphs per hypotheses to set out the rationale and argumentation for a hypothesis. If the intention was to rely on the arguments in Chapter 1, then the hypothesis should be located near those arguments. Chapter 1 however was a review of the prior literature and therefore in Chapter 2 I would expect to see a rationale for each hypothesis put forward in this study and to be tested.
8. On p.40 it is noted that “Conjoint Analysis is a perfect tool to study decision process and “theory in use” (Shepherd, 2015; Shepherd & Zacharakis, 2018)”, but reasons for why this is the case are not provided or elaborated on. I would like to see this remedied.
9. Methods are generally well explained, especially for those less familiar with Conjoint Analysis and the subsequent design and conduct of the experiment.
10. The Discussion and Conclusions section is too thin. At present the contribution boils down to ‘the study uses a rarely used method in entrepreneurship study’, and “the first to use more sophisticated Adaptive Choice-Based Conjoint analysis”. This does not pass the “So what?” test. For instance, having used this method, how do the findings advance and move forward debate in entrepreneurship research about career choice and entrepreneurial intention? How should scholars now think differently about entrepreneurial career choices and entrepreneurial intentions? How do the findings challenge and advance theory to do with entrepreneurial intentions and career choice?
11. The implications of the work are underdeveloped. For instance, on p.97 it is stated as a final sentence of a paragraph “Last but not least, the model could potentially serve as a ground for policy recommendations regarding entrepreneurship incentives or a practical tool for employees or career advice centres.” This is not enough. It is incumbent upon the author to specify those policy implications. The reader should not have to guess at them.

**Decision:**

At this stage the thesis requires changes and improvements to meet the bar needed to progress to public defence.

Sincerely,



Professor Mathew (Mat) Hughes, Ph.D.  
Schulze Distinguished Professor  
Professor of Innovation and Entrepreneurship  
Departmental Director of Research (Marketing, Innovation, Strategy and Operations)  
School of Business

University of Leicester  
Brookfield, 266 London Road  
Leicester LE2 1RQ  
United Kingdom



Leicester, 5<sup>th</sup> October 2023

Professor Mathew Hughes  
Schulze Distinguished Professor and Professor of Innovation and Entrepreneurship  
School of Business  
University of Leicester  
Brookfield  
266 London Road  
Leicester LE2 1RQ  
United Kingdom  
E-mail: m.hughes@leicester.ac.uk

## REVIEW OF THE DOCTORAL THESIS

### "MODELLING EXPECTED UTILITY FUNCTION OF CAREER CHOICE PROBLEM AMONG STUDENTS"

written by Jakub Golik

The subject of the review is the doctoral dissertation entitled "Modelling Expected Utility Function of Career Choice Problem among students", written by Jakub Golik at the Faculty of Management and Economics of the Gdansk University of Technology under the supervision of Prof. Krzysztof Zięba. The formal basis for its writing was a letter dated June 11th, 2023, from the Chairperson of the Scientific Field Council of Social Sciences of the Faculty of Management and Economics of the Gdansk University of Technology, Prof. Tomasz Korol. The legal basis of the review is the act "Introductory provisions of the Act – The law on higher education and science of July 3rd 2018" (article 179). The evaluated doctoral thesis has been assigned to social science, the discipline of economics and finance.

#### External Examiner's Areas of Expertise and Research Interests:

Dr Mathew (Mat) Hughes is Schulze Distinguished Professor of Family Business and Professor of Innovation and Entrepreneurship at the University of Leicester School of Business, UK. He received his PhD from the University of Wales, Aberystwyth, graduating in 2005. He previously held appointments as Professor of Entrepreneurship and Innovation at the School of Business and Economics, Loughborough University, Reader in Entrepreneurial Management at Durham University, and Lecturer then Associate Professor of Entrepreneurship and Innovation at the University of Nottingham. At Loughborough University, Professor Hughes co-founded and co-directed the Centre for Corporate Entrepreneurship and Innovation, the first of its kind in the UK. He presently serves as the

Departmental Director of Research for the Marketing, Innovation, Strategy and Operations Department at the University of Leicester School of Business.

His research expertise lies in entrepreneurship and innovation and their intersection with strategy and management. Professor Hughes' expertise includes the strategy and management of entrepreneurship and innovation in various contexts with a specific focus on entrepreneurial orientation, innovation ambidexterity, and social capital and relational strategy. His work directly addresses the conditions and circumstances for business growth, and in collaboration with Dr Boyka Simeonova, is co-creator of the 'Making Better Entrepreneurial Decisions Under Uncertainty' decision-making tool for managers and entrepreneurs, funded by the Enterprise Project Group.

Professor Hughes has published over 90 scholarly articles in world-leading and internationally excellent journals including Entrepreneurship Theory and Practice, Strategic Entrepreneurship Journal, Journal of Product Innovation Management, Long Range Planning and R&D Management. He also sits on the Editorial Boards of the British Journal of Management, Journal of Management Studies, and Journal of Business Venturing, among several others. Professor Hughes is an Associate Editor of the Journal of Business Research and Journal of Family Business Strategy, and Senior Editor of the leading practitioner website [www.familybusiness.org](http://www.familybusiness.org), funded by the Richard M. Schulze Foundation.

Professor Hughes is an award-winning researcher, teacher, and doctoral supervisor. He has supervised more than 18 PhD students through to successful completion and examined candidates in many different countries. He is a member of the Scientific Council of La Fabrique de L'Exportation, a French think tank located in Paris, France. Professor Hughes also hosts a successful podcast series on Apple Podcasts, Spotify, SoundCloud and Amazon, rated by Feedspot as among the Top 25 UK Innovation podcasts in 2021.

**General overview:**

This thesis represents an independent and comprehensive piece of scientific work of appropriate academic standard. It is well-presented, well-written, and presented in clear English as required by the regulations; formulates relevant research questions, has adequate theoretical and empirical basis, and treatment of the literature; adopts an interesting methodological approach; and presents findings of

interest to scholarly, practice, and policy communities. The thesis contributes to new knowledge to the discipline and is of an academic standard capable of publication as part of the scientific literature in the field.

In general:

- The PhD Candidate shows familiarity with, and understanding of, the relevant intellectual and creative context.
- The thesis provides a reasonably comprehensive study of the topic.
- Research questions have been identified and explored through the thesis.
- The methods and techniques applied in the execution of the thesis are appropriate to the subject matter and properly applied.
- The research findings are suitably articulated.
- The thesis makes an original contribution to the subject with which it deals and these contributions are capable of being published in reputable academic journals.
- The command and the quality of the English language and the general presentation are satisfactory.

Through the course of my review, I observed several areas of strength and richness. Moreover, I identified several matters that should make for important and insightful moments of discussion during public defence for the PhD degree, important changes are required. I elaborate on these matters in the next section of my report.

**Comments on the thesis and areas of concern:**

1. I would like to see more explanation given for why Conjoint Analysis is described as applicable to the field of entrepreneurship, why it is suited to study entrepreneurship, and its advantages over other experimental designs. The Abstract as well as text on p.13 of the Introduction are good instances of where a richer explanation and discussion can be provided. I am encouraged by the application of a novel methodology in our field, and this opens the scope for enriching its use in the study of entrepreneurship.



2. It is also noted that Conjoint Analysis is gaining popularity among entrepreneurship researchers and so it is further important to explain why this is so and the benefits and limitations of it. It is possible the work has a methodological contribution to offer the field of entrepreneurship research if it helps demystify the usefulness of Conjoint Analysis for the field, advances/enhances the tool, and moves forward its use in entrepreneurship research. I look forward to hearing more about this at the defence.
3. The introduction could benefit from better linking the economic choice problem to entrepreneurship. In particular, this important statement is left undeveloped: "Some scholars claim that the development of entrepreneurship research has been impeded by the "equilibrium ideal" among classical economists (Landstrom, 1999)." I see the value of the study, but one of the most important benchmarks editors and reviewers now set for publication is study motivation. Motivating the study and setting the value and contribution of the work to entrepreneurship requires elaborating on.
4. The introduction on p.13 as well as the remainder of Chapters 1 and 2 should be very clear in clarifying between self-employment and business owner. The thesis treats them as synonymous, relying on following what has been occurring in economics-based studies of entrepreneurship. I can agree with this but only if there is a clear definition of business owner – as hypothetically this can extend to shareholder. There needs to be clarity here as to how these are defined and measured/operationalized. Moreover, thought (perhaps in the Limitations section of the Discussion) should be given to variation in self-employment behaviour (e.g., whether in entering self-employment the individual effectively runs a lifestyle business, growing little and employing few people, to one that are more growth oriented and achieve much higher economic contribution. That subtly would be of tremendous value to the thesis/study and I look forward to learning more about the candidate's views on these matters.
5. The objective of the research is stated as (p.13): "The main research objectives are to find out how students who are about to enter the labour market soon (i.e. master's degree students of their last year) make decisions concerning their career choice, what drives them in particular, and how is the expected utility of entrepreneurship (self-employment) different among students of different courses (from social studies to engineering and mathematics)." However, what I am missing here is "why this is needed" (what is the research gap?) and "why it is important" (what is the value of doing so?). For instance, on p.14 it is stated that the design and results of the experiment "contradict some of the conclusions made by Douglas and Shepherd (2002)", but the text is yet to speak of Douglas and Shepherd's work. The study gap

and contribution need further development by elaborating more on Douglas and Shepherd's work and where that sits against contemporary work. This will be an important discussion point at the public defence.

6. Why does the work choose to rely on, and pin itself on, Douglas and Shepherd's (2000) "Career Choice as a Utility Maximizing Response Model"? Moreover, through Chapter 1, p.23 onwards (Section: "Utility & Career Choice Models in the literature") empirical studies testing the original Douglas and Shepherd (2000) model as reported. However, it is not clear to me why it continues to be seen as the superior choice or what amendments were needed based on lessons learned from empirical studies reported in this section. Moreover, based on statements on p.31, "There are many interesting works in the entrepreneurship research literature based on the utility-maximization theory or presenting different career choice models not necessarily with the use of Conjoint Analysis", why were these not chosen instead? This section does not end with any specific rationale for the original choice, any amendments made to the Douglas and Shepherd model based on subsequent research or protect sufficiently against alternative explanation. What is more confusing is then why does the next section, "Job Attitudes" begin with the statement "In order to construct a new model...". Greater clarity is needed through the two preceding sections to explain and build up the rationale for the subsequent construction of a "new" (which I assume is meant "revised") model (and what is added, changed or removed from the Douglas and Shepherd model on which the work hangs itself and why). Note, see text on p.53 for why this matter is important (because there is a claim there to be synthesizing "three main theoretical "pillars"... "Career Choice as a Utility Maximizing Response Model" ... classic measures of entrepreneurial self efficacy ... and entrepreneurial intention ... and finally the (Hackman & Oldham, 1975), Job Characteristics Model". I look forward to learning more about these conceptual elements.
7. I find the hypotheses in Chapter 2 came somewhat 'out of the blue' with a lack of theoretical rationale or set up provided. I would expect at least some paragraphs of theoretical argumentation per hypotheses to set out the rationale and basis for each hypothesis. If the intention was to rely on the arguments in Chapter 1, then the hypothesis should be located near those arguments. Chapter 1 however was a review of the prior literature and therefore in Chapter 2 I would expect to see a rationale for each hypothesis put forward in this study and to be tested. The student can elaborate on these matters at the defence to showcase their knowledge of the theory and literature in framing these hypotheses.



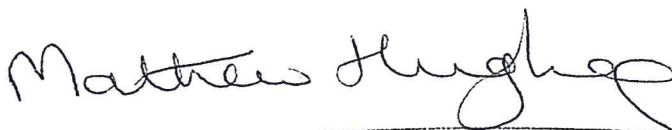
8. On p.40 it is noted that “Conjoint Analysis is a perfect tool to study decision process and “theory in use” (Shepherd, 2015; Shepherd & Zacharakis, 2018)”, but reasons for why this is the case are not provided or elaborated on. I would like to hear the case for this at the public defence.
9. Methods are generally well explained, especially for those less familiar with Conjoint Analysis and the subsequent design and conduct of the experiment. The candidate deserves credit for this explanation as it is not always easy to describe a method unfamiliar to the field of study in a way that conveys its application and use. Congratulations and well done!
10. The Discussion and Conclusions section is too thin. At present the contribution boils down to ‘the study uses a rarely used method in entrepreneurship study’, and “the first to use more sophisticated Adaptive Choice-Based Conjoint analysis”. I feel the candidate undersells his contribution and the value of the work! To address this, one might pose the “So what?” test. For instance, having used this method, how do the findings advance and move forward the debate in entrepreneurship research about career choice and entrepreneurial intention? How should scholars now think differently about entrepreneurial career choices and entrepreneurial intentions? How do the findings challenge and advance theory to do with entrepreneurial intentions and career choice? I look forward to posing these questions at the defence and hearing the responses of the candidate.
11. The implications of the work are underdeveloped. For instance, on p.97 it is stated as a final sentence of a paragraph “Last but not least, the model could potentially serve as a ground for policy recommendations regarding entrepreneurship incentives or a practical tool for employees or career advice centres.” This is a missed opportunity. It is incumbent upon the author to specify those policy implications because there is clear and genuine value to the candidate’s work. The student can be confident that the work has meaningful implications to offer, but the reader should not have to guess at them. Therefore, I look forward to learning more about these implications at the defence.

In summary, the thesis reports a good standard of work. It reports the formulation, development, execution and outcomes of a robust and interesting study into entrepreneurship and as a career choice problem among students. It introduces and uses a research method and form of analysis uncommon to the field of entrepreneurship. While it has contributions and implications to offer its stakeholders, these can and should be elaborated on. The thesis is primed for public defence and where I see need for additional information, I look forward to receiving these at the defence forum.

**Recommendation and Decision:**

Overall, I conclude that this dissertation satisfies the requirements for a PhD thesis. It meets the statutory requirements for doctoral dissertations and the criteria for an original solution to a scientific problem. I recommend that the Candidate should be allowed to publicly defend his thesis in the discipline of economics and finance. Therefore, I accept the thesis for public defence taking into account different doctoral procedures between UK and Poland.

Sincerely,

A handwritten signature in black ink that reads "Matthew Hughes". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Professor Mathew (Mat) Hughes, Ph.D.

Schulze Distinguished Professor

Professor of Innovation and Entrepreneurship

Departmental Director of Research (Marketing, Innovation, Strategy and Operations)

School of Business

University of Leicester

Brookfield, 266 London Road

Leicester LE2 1RQ

United Kingdom





UNIVERSITY OF  
LEICESTER

School of Business  
University of Leicester  
Brookfield, 266 London Road  
Leicester LE2 1RQ  
United Kingdom  
Email: [m.hughes@leicester.ac.uk](mailto:m.hughes@leicester.ac.uk)

Tomasz Korol (Ph.D.,D.Sc.,Eng.)  
Chairman of Social Sciences Council of Gdansk University of Technology  
c/o Olimpia Bednarczuk / Tomasz Korol  
80-233 Gdansk, Poland  
Str. Narutowicza 11/12  
Gdansk University of Technology,  
Faculty of Management and Economics  
Telephone number: +48 58 348 6317

November 15<sup>th</sup> 2023

**Re.: Mr Jakub Golik, "Modelling expected utility function of career choice problem among students"**

Dear Professor Korol, dear Tomasz:

Concerning PhD candidate Mr Jakub Golik, thesis entitled "Modelling expected utility function of career choice problem among students", I declare that I am changing my review of Mr. Golik's doctoral dissertation of August 24, 2023, to the review of October 5, 2023, which allows this thesis to be publicly defended. I justify this change by taking into account different doctoral procedures between the UK and Poland that I was not fully aware of initially. I confirm that the reviewed doctoral dissertation meets the requirements for doctoral dissertations under Polish law."

Yours sincerely,

**Professor Mathew (Mat) Hughes**  
**Schulze Distinguished Professor**  
**Professor of Innovation and Entrepreneurship**  
**Departmental Director of Research (MISO)**