



UNIVERSITI
TEKNOLOGI
MARA

ICEBIV

3rd International Competition of Entrepreneurship Business Innovation

**“ Promoting Innovative Entrepreneurship for a Sustainable Economy:
Pioneering Tomorrow’s Business Models”**



EXTENDED ABSTRACT

UiTM *di hatiku*

اوسها تقوى موليا



EXTENDED ABSTRACT



"Promoting Innovative Entrepreneurship for a Sustainable Economy: Pioneering Tomorrow's Business Models"

5th September 2024

In the joint collaboration involving:

Faculty of Business and Management,
Universiti Teknologi MARA Kedah Branch,

Faculty of Economics and Business,
Universitas Islam Bandung, and

Malaysian Academy of SME &
Entrepreneurship Development (MASMED)



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Assalammu'alaikum Warahmatullahi
Wabarakatuh.. Salam UiTM Dihatiku..

It is with immense pride and enthusiasm that I welcome you to the 3rd International Competition of Entrepreneurship Business Innovation (iCEBIV) 2024, hosted by the Faculty of Business and Management, UiTM Kedah Branch. This prestigious event is organized in collaboration with the Malaysian Academy of SME & Entrepreneurship Development (MASMED) and the Faculty of Economic and Business, Universitas Islam Bandung (UNISBA), Indonesia. This competition exemplifies our deep commitment to advancing creativity, entrepreneurship, and a spirit of innovation among our students and the wider community.

In today's rapidly evolving world, the ability to innovate has become a fundamental necessity rather than a mere option. Our institution understands the critical importance of innovative thinking in propelling economic growth, addressing urgent societal challenges, and paving the way for a sustainable future. This competition is designed to encourage participants to think critically, challenge conventional ideas, and develop groundbreaking solutions that can leave a meaningful impact in various areas.

This competition is not merely a challenge; it is a valuable platform for learning, collaborating and exchanging ideas. It brings together talented individuals from diverse disciplines, fostering an innovative culture that extends beyond academic boundaries. We encourage our students to apply their knowledge, channel their creativity, and turn their ideas into actionable business solutions.

As the Rector of UiTM Kedah Branch, I am deeply committed to supporting initiatives that help students reach their full potential. This competition provides them with a unique opportunity to showcase their abilities, gain critical experience, and establish networking that will be instrumental in their future careers. I am confident that the skills and insights gained from this experience will empower them to excel in an increasingly competitive and dynamic global landscape.

I would like to extend my heartfelt thanks to everyone who has contributed to the success of this event, including our dedicated faculty and staff, esteemed judges, sponsors, and partners. Your unwavering support and commitment have been integral to the successful realization of this initiative.

To all participants, I urge you to approach this competition with passion, creativity, and determination. This is your moment to shine, to challenge the limits of what is possible, and to create a lasting impact. Regardless of the outcome, your participation itself is a significant achievement, demonstrating your commitment to innovation and excellence.

Let us come together to make this competition a celebration of ideas, creativity, and the entrepreneurial spirit that embodies UiTM and UNISBA. I wish you all the best in your endeavours.

With warmest regards,

Profesor Dr Roshima Haji Said

Rector
Universiti Teknologi MARA (UiTM) Kedah Branch

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Bismillaahirrahmaanirrahiim

Assalamu'alaikum Warahmatullahi
Wabarakatuh

Every participant in the third International Competition of Entrepreneurship Business Innovation (ICEBIV) 2024 deserve my heartfelt congratulations and warmest regards. I extend these to the organizing committee and every one of them. This initiative is a demonstration of the productive collaboration that exists between universities in the ASEAN region. Maintaining a positive relationship between the two institutions, UNISBA and UiTM, will result in the production of academic programs and community service works that are both productive and innovative. In future collaboration, the implementation of this program is something that Universitas Islam Bandung (UNISBA) is strongly advocating for.

Universitas Islam Bandung (UNISBA) has reaffirmed its commitment to the internationalization program and has stated that it will continue offering assistance for various initiatives. It has been beneficial for the university to gain experience by participating in this program. The big ideas instilled in ICEBIV 2024 are thriving.

They will be ensured by the presence of entrepreneurs who have a global perspective and positively impact the surrounding community. Being an Islamic university, UNISBA, is obligated to establish a halal business ecosystem on a global scale by addressing contemporary issues such as the idea of innovation for sustainable business. This obligation is a requirement of the university. In light of this, the electronic proceedings that have been presented will prove to be advantageous for the development of scientific research and technological innovation. For their insightful and enthusiastic efforts in the successful implementation of the Memorandum of Agreement (MoA) between the two institutions, we would like to express our deepest gratitude to the Faculty of Economics and Business at UNISBA, the Malaysian Academy of Small and Medium Enterprise and Entrepreneurship Development (MASMED), and the Faculty of Business and Management at Universiti Teknologi Mara (UiTM) Kedah Branch. To be more specific, this partnership will result in many innovations, particularly in entrepreneurship, which is becoming an increasingly desirable occupation for the younger generation. When it comes to better understanding the global needs and challenges of today, international cooperation is evolving into an increasingly necessary requirement. Allah blesses the constructive actions that are being taken to generate benefits for society and universities. May Allah continue to bless these actions and our international collaboration for giving beneficial for our society and for the future.

Wassalamu'alaikum Warahmatullahi Wabarakatuh.

Warmest regard,

Prof. Dr. H. Edi Setiadi, S.H., M.H.
Rector Universitas Islam Bandung



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Assalamu'alaikum Warahmatullahi
Wabarakatuh

Alhamdulillah, under the grace and mercy of Allah Subhanahu Wata'ala, for this extraordinary occasion of the 3rd International Competition of Entrepreneurship Business Innovation (ICEBIV) 2024. This event is a testament to the strong bond between two great institutions which are Universiti Teknologi MARA (UiTM) and Universitas Islam Bandung (UNISBA). I am proud that our Faculty of Business and Management and MASMED have played a crucial role in bringing this collaboration to life.

I would like to express my heartfelt appreciation to everyone involved in making this event a reality. The 3rd ICEBIV 2024 is more than just a competition. It's a unique platform where we come together to celebrate creativity, unleash potential, and explore business ideas that have the power to impact our communities positively. It's inspiring to see so many bright minds gathered here today and ready to make a difference.

This year's competition offers three key categories namely Business Model Canvas Battle, Business Idea Battle, and Business Plan Battle. Each of these categories will serve as an invaluable platform for participants to validate their business ideas before turning them into successful ventures in the future.

These battles are not just about competition but about providing you with the feedback, guidance, and confidence to take your innovative ideas to the next level.

The theme of this year's competition, "Promoting Innovative Entrepreneurship for a Sustainable Economy: Pioneering Tomorrow's Business Model," resonates deeply with our mission. We live in a time where innovation and entrepreneurship are key to building a resilient and sustainable future. This competition is our way of nurturing that entrepreneurial spirit, encouraging you to think creatively and develop solutions that are not just innovative but also relevant to the challenges we face today.

To all the participants, I wish you a truly rewarding experience. Remember, every great idea starts with the courage to think differently and the willingness to take risks. Don't be afraid to dream big and this competition is your opportunity to do that. I hope you leave here with not just memories but valuable lessons that will guide you in your future endeavors.

As we look forward to the future, I sincerely hope that this won't be our last gathering. I'm already excited about the possibility of organizing the 4th ICEBIV next year. Let's keep this momentum going and continue to strengthen our collaboration in promoting entrepreneurship on a global scale.

Wassalamu'alaikum Warahmatullahi Wabarakatuh.

With Warmest Regard

Dr. Junaidah Ismail

Deputy Rector of Academic Affairs
UiTM Kedah Branch

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Assalamu'alaikum Warahmatullahi
Wabarakatuh,

Dear respected Rector of Universitas Islam Bandung (UNISBA),
esteemed Rector of Universiti Teknologi MARA (UiTM),
distinguished lecturers, talented competition participants,
and ladies and gentlemen.

First, let us thank Allah Subhanahu Wata'ala, because by His grace
and mercy, we can all gather in this prestigious event, the
3rd International Competition of Entrepreneurship Business
Innovation (ICEBIV) 2024. This event is one of the collaborations
between two educational institutions strongly committed
to building an innovative and globally competitive young
generation, the Faculty of Economics and Business of Universitas
Islam Bandung and Universiti Teknologi Mara (UiTM).

On this occasion, I express my highest appreciation to all the
committees and parties involved in organizing this event. The 3rd
ICEBIV 2024 is not just a competition but also an extraordinary
platform to develop potential, explore creativity, and explore
business ideas that can positively impact society, especially
students and professionals.

We are all aware that innovation and entrepreneurship are crucial to building a resilient and sustainable economy
in this era of globalization. Therefore, this competition has a crucial role in fostering the spirit of entrepreneurship
among students and professionals while encouraging the creation of business solutions that are creative,
innovative, and relevant to the needs of the times.

To the participants, I wish you enjoy and happiness by participating in this competition. Do not be afraid to
dream big and take risks when developing your ideas. Remember that every great innovation always starts with
the courage to think outside the box and take the first step. Hopefully, through the 3rd ICEBIV 2024 competition, all
of you can gain valuable experience that will help you in your future career journey.

Finally, I hope the 3rd ICEBIV 2024 can run successfully and benefit all participants and institutions involved. Let us
make this event a momentum to strengthen the cooperation between FEB Unisba and UiTM and advance the
world of entrepreneurship internationally.

Allow me to provide a "pantun" to encourage the organizers and participants of the 3rd ICEBIV 2024, which
characterizes literature and culture in Indonesia.

Jalan jalan ke Semanggi
Jangan lupa membeli batik bermotif
Ayo mahasiswa ramaikan ICEBIV bergengsi
Dikancah internasional dengan penuh ide inovatif

Wassalamu'alaikum Warahmatullahi Wabarakatuh

Sincerely,

Prof. Dr. Nunung Nurhayati, SE., M.Si., Ak., CA.
Dean Faculty of Economic and Business
Bandung Islamic University, Indonesia



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TRANSFORMING HEALTHCARE ECONOMICS THROUGH SCALABLE INNOVATIONS FOR MANAGING TYPE 2 DIABETES MELLITUS

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Abstract

The prevalence of Type 2 diabetes mellitus (T2DM) in Malaysia is rising rapidly, leading to significant increases in healthcare expenditures, primarily due to long-term medication dependence. This study aims to provide a sustainable, culturally relevant, and cost-effective solution for managing T2DM by promoting a low-carbohydrate dietary intervention. This dietary approach is designed to reduce reliance on pharmaceuticals and achieve diabetes remission, thereby alleviating financial burdens on the Malaysian healthcare system. Our business proposal involves developing a comprehensive educational resource titled "Low Carbohydrate Diet for Type 2 Diabetes Mellitus: A Beginner's Guide." This guide incorporates global best practices and scientific evidence to ensure efficacy while being tailored to fit the Malaysian population's unique cultural and dietary preferences. Through strategic collaboration with local nutritionists and dietitians, we have adapted the diet to align with traditional Malaysian foods and culinary practices, ensuring its relevance and acceptance among patients. The book is a validated educational tool, that empowers individuals with T2DM to implement sustainable lifestyle changes. It includes step-by-step dietary guidance, infographics, and real-life case studies to enhance understanding and motivation. Expert evaluation and feedback were incorporated to ensure scientific accuracy and credibility. By reducing the need for medications and preventing complications associated with T2DM, the proposed dietary program is expected to generate substantial healthcare cost savings. Furthermore, the program's scalability and adaptability across different regions highlight its commercialization potential. Ultimately, our business idea addresses the urgent need for a cost-effective and patient-centered method to achieve diabetes remission through a low-carbohydrate diet, promoting better health outcomes and economic benefits.

Keywords: *Diabetes Management, Low-Carbohydrate Diet, Deprescribing, Cost Savings, Business Idea Model*

1. INTRODUCTION

The rising prevalence of type 2 diabetes mellitus (T2DM) in Malaysia has resulted in high healthcare costs, owing to the need for long-term treatments (Chen et al., 2022). This reliance on drugs has imposed a significant financial load on the country's healthcare system, posing a vital public health issue. Diabetes drugs were the most widely used therapeutic category in 2016 (Pharmaceutical Services Programme, 2020), accounting for RM 522.85 million, or 30.33% of total medication expenditure for T2DM, CVD, and cancer. Over half of these expenditures (52.58%) were in the private sector, mainly through private pharmacies (23.96%), with public-sector clinics accounting for 32.74% (Idzwan et al., 2017). The high expense of diabetic medications originates from a concentration on pharmaceuticals to manage blood

glucose levels, which frequently ignores lifestyle measures that treat the disease's underlying causes.

New evidence suggests that a low-carbohydrate diet can result in T2DM remission, lowering or eliminating the requirement for medication (Chen et al., 2022a; Unwin et al., 2020). In 2020, the Ministry of Health (MOH) estimated that CVD, T2DM, and cancer cost RM10 billion, with T2DM accounting for RM5.7 billion in productivity losses.

The Malaysian government committed RM41.2 billion for healthcare in the 2024 budget, up 13.5% over 2023. This chart demonstrates an increased tendency in national health expenditure, as evidenced by the World Health Organization's compound annual growth rate (CAGR) (Murugiah, 2023). The CAGR for public healthcare spending is estimated to expand from 40.5% in 2022 to 59.5% by 2027, while the private sector will rise from 31.2% to 41.4%. Despite the benefits of low-carbohydrate diets for T2DM management, there is still a need to make these therapies more accessible and culturally appropriate to the Malaysian community (Hussein et al., 2013). The proposed idea aims to provide a comprehensive program centred on a low-carbohydrate lifestyle. The initiative consists of multiple components, including instructional tools such as a book customised to Malaysians' unique cultural preferences, online consultations and assistance, and patient investigations, resulting in a one-stop shop for diabetic patients and the community. The initiative also provides training for healthcare practitioners, appropriate workshops, and hands-on cooking sessions. This technique helps people with T2DM to control their illness by long-term lifestyle changes, minimising reliance on drugs and lowering financial loads on the healthcare system. Successful low-carbohydrate regimens have shown cost benefits by reducing diabetic medication use and complications (Chen et al., 2022b).

There is an urgent need for long-term, cost-effective medicines that target the root causes of diabetes and improve patient outcomes. Our business model is to address the escalating costs of treating T2DM by encouraging low-carbohydrate diets that achieve diabetes remission, reduce medication dependence, and lower total healthcare costs.

2. MATERIALS AND METHODS

A. Educational Resource Development

The development of the book, "Low Carbohydrate Diet for Type 2 Diabetes Mellitus: A Beginner's Guide," involved several stages to ensure that the final product is comprehensive, culturally relevant, and evidence based.

i. Literature Review

We conducted a comprehensive literature review of existing research and scientific studies on low-carbohydrate diets and their efficacy in managing T2DM. The review involved analysing peer-reviewed articles and clinical trials to gather evidence-based information. We examined successful implementations of low-carbohydrate interventions in other countries to identify best practices and lessons learnt that could be adapted to the Malaysian context.



ii. Cultural Adaptation and Customization

Our dietary plan aligns with Malaysian dietary habits and cultural preferences. By collaborating with local nutritionists and dietitians, we have adapted the low-carbohydrate diet to fit the Malaysian culinary context, ensuring it incorporates popular local foods.

iii. Content Development

We developed a detailed outline of the book, which included key topics, chapters, and sections to ensure comprehensive coverage of the subject matter. Next came drafting and writing. We composed the initial drafts of each chapter, focusing on clarity, accessibility, and engagement. This involved writing educational content and identifying suitable food labels and guidelines for adopting a low-carbohydrate lifestyle.

iv. Design and Visual Development

We developed engaging infographics and illustrations to complement the text and aid in the reader's understanding of low-carbohydrate concepts. We designed the book's layout to ensure a visually appealing and user-friendly experience, incorporating elements that facilitate easy navigation and readability.

v. Expert Evaluation and Validation

We identified experts in the field of low carbohydrate, comprising medical professionals, nutritionists, endocrinologists, and Primary Care Specialists. We sent the book to these experts to validate its content and ensure its scientific accuracy and credibility. Face validity by the target audience to ensure understandability and clarity of the content is in progress. We revised the drafts and incorporated expert feedback, making necessary adjustments to enhance the book's relevance, accuracy, and usability.

vi. Finalisation, Publishing, and Distribution

We conducted proofreading and editing to ensure the final manuscript was free from errors and inconsistencies. We will make the book available through various channels to effectively reach the intended audience, which includes clinic patients and the community.

B. Additional Program Components

- i. Online platform: We will provide personalised coaching and counselling services to enable patients with T2DM to successfully execute the low-carbohydrate diet. This will entail regular check-ins, troubleshooting, and continuous support to guarantee long-term compliance and excellent health outcomes.
- ii. Establishing partnerships with healthcare providers and community organisations: To ensure widespread adoption and execution of the low-carb intervention, we will work with key stakeholders such as healthcare practitioners, community centres, and state health governments. These collaborations will allow the low-carbohydrate program

to be delivered through a variety of channels, assuring accessibility and reach for the Malaysian populace.

C. Projected Savings

Our approach employs cost-benefit analysis and financial forecasting to estimate potential savings and revenue generation from implementing a low-carb dietary intervention for T2DM management.

i. Medication Cost Forecasting:

- a. Projected Savings: By analysing past data, such as Unwin's (2020) estimate, and adjusting it to the Malaysian context, we can forecast future savings per patient. Unwin (2020) noted that the following:

No. on diabetes registry = 870 and patients adopting a low-carb approach = 17% (150 people)

Patients achieving drug-free remission = 21% (32 people), clinic savings was £57,000.

Medication cost savings per patient = £1,781 (RM6,768, exchange rate was 5.38 in 2018)

- b. Population-Based Estimation: Using population data of 34,308,525 and T2DM prevalence rate of 15.6% or 5,352,130 people (NHMS, 2023). The estimates for Malaysia used conservative numbers, shown as follows:

Assuming that patients adopting a low-carb approach = 5% (267,606 people)

Assuming that patients achieving drug-free remission = 5% (13,380 people)

Medication cost savings per patient = 90% below cost in the U.K. = RM677

Medication cost savings for 13,380 achieving remission = RM9,058,260 per year.

- ii. **Sensitivity Analysis (Implicit):** This method made adjustments for local context and adapts figures from the U.K. to Malaysia, making assumptions about the percentages of the population adopting the intervention and those achieving drug-free remission and local drug cost differences. Assuming drug costs are 90% lower in Malaysia, this equates to savings of RM677 per patient.

iii. Revenue Generation

The model has potential additional revenue streams such as book sales, online components, and strategic partnerships with healthcare providers and organizations.

3. RESULTS AND DISCUSSION

Our book features a comprehensive low-carbohydrate dietary guide tailored to the unique needs and preferences of the Malaysian population. It provides an in-depth understanding of how a low-carbohydrate diet can manage T2DM and support better blood sugar control. The plan aligns with traditional Malaysian dietary habits, enabling individuals to adopt this lifestyle without sacrificing familiar flavors, making the transition more accessible and sustainable.

Grounded in current scientific research, the book offers an evidence-based approach to managing T2DM through dietary intervention. It incorporates insights from global success stories of low-carbohydrate diets while adapting these principles to the Malaysian context, ensuring credibility for healthcare providers and patients. Clear, step-by-step guidelines help beginners easily implement the diet, accommodating various lifestyles and dietary preferences.

The book's educational resources empower individuals with the knowledge and tools needed to manage their diabetes effectively, covering topics like understanding macronutrients, meal preparation, and dining out tips. Visually appealing infographics and illustrations demystify complex nutritional concepts, helping readers grasp key ideas at a glance. Real-life testimonials and case studies inspire and motivate, showcasing the positive outcomes of those who have successfully managed their diabetes through a low-carbohydrate diet.

Written in simple, easy-to-understand language, the book is accessible to a broad audience, including those without a medical background. This empowers individuals to take charge of their health and make informed dietary choices. By providing this comprehensive resource, we aim to help individuals with T2DM in Malaysia adopt a healthier lifestyle, reduce reliance on medications, and achieve significant cost savings and improved health outcomes. Pending adequate funding, we would like to digitalise the program including our validated book, online consultations and apps to track patient's progress.

4. CONCLUSIONS

The scalable model of our program, combined with its online and community-based approach, allows for easy adaptability across various regions and populations, making it highly suitable for commercialization. Experts have validated and endorsed it, perfectly aligning it to reduce healthcare costs. Preparing the program for market entry is essential to effectively meet demand and drive meaningful impact. Our comprehensive approach positions our business idea as a unique and innovative solution to the challenges of managing T2DM in Malaysia with significant potential for impact and scalability, leading to substantial cost savings. Through strategic partnerships and evidence-based practices, we envision a future where low-carbohydrate dietary intervention becomes a mainstream option, offering both economic and health benefits.

5. ACKNOWLEDGEMENT

We express our gratitude to the university for the CE-SIR grant (RD/92/007/2023) supporting the project "Community Intervention Trial on Therapeutic Carbohydrate Restriction in T2DM Patients." We also thank graphic artists Mr. Mohd Yusrizal Yaacob and Mr. Mohd Ridzuan Hussin for their invaluable assistance in completing this project.

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