



UNIVERSITI
TEKNOLOGI
MARA



Public Interest Centre
of Excellence

International Teaching Aid
Competition 2023

Reconnoitering Innovative Ideas in Postnormal Times

iTAC

2023

iTAC 2023
INTERNATIONAL TEACHING AID COMPETITION
E-PROCEEDINGS

Copyright © 2023 is held by the owner/authors(s). These papers are published in their original version without editing the content.

The views, opinions and technical recommendations expressed by the contributors are entirely their own and do not necessarily reflect the views of the editors, the Faculty or the University.

Copy Editors: *Syazliyat Ibrahim, Azni Syafena Andin Salamat, Berlian Nur Morat (Dr.), Najah Mokhtar, Noor 'Izzati Ahmad Shafiai, Muhamad Khairul Anuar Bin Zulkepli (Dr.)*

Cover Design : *Asrol Hasan*

Layout : *Nurina Anis Mohd Zamri*

eISBN : 978-967-2948-51-3

Published by : Universiti Teknologi MARA Cawangan Kedah,
08400 Merbok,
Kedah,
Malaysia.

Faisal, Nur Syafikah Binti An'na, Nurazree Mahmud

- | | | |
|------|--|-----|
| 107. | <p><i>MONEY MANAGEMENT FOR COLLEGE STUDENTS BY BUDGETBUDDY</i>
 <i>Muhammad Nasrullah Bin Abdul Aziz, Sharul Adni Bin Khairuddin
 Mohammad Farez Bin Daud, Halimahton Borhan</i></p> | 699 |
| 108. | <p><i>TRACK MYLOAN</i>
 <i>Nur Syafiqah Binti Abdul Wahab, Shahrina Emyra Binti Shahrul Nizam, Amy
 Azurin Binti Azman, Ishyka Arisya Putri Binti Noor Abd Manan, Irfah Najihah
 Binti Basir Malan</i></p> | 705 |
| 109. | <p><i>TROLLEY SUPERMARKET CALCULATOR</i>
 <i>Muhammad Rafiq Bin Papa Sule, Salheh Bajrai Binti Husein Salim, Fatin
 Nurliyana Hanis Binti Hasan Azhari</i></p> | 712 |
| 110. | <p><i>DOLLAR DASH</i>
 <i>Syafiqah binti Mohd Shazwan Sam, Risha Daleina binti Ghazali, Magdalen
 Julius, Aliah Iman binti Mohd Latiff, Amirudin Mohd Nor</i></p> | 717 |
| 111. | <p><i>ZZASS CENDOLS</i>
 <i>Nur Syahirah Binti Omar, Nur Zahirah Binti Suhami, Nor Anisah Binti Fauzi,
 Nurul Syaliza Binti Hasan, Nurul Zahira Imani Binti Mohd Mokhtar, Mazlina
 Mahdzar</i></p> | 724 |
| 112. | <p><i>TELANGCATOR 2.0 – A NATURAL ACID-BASE INDICATOR FROM BUTTERFLY PEA FLOWER</i>
 <i>Ummi Kalthum binti Mansor, Asniati binti Sabil</i></p> | 729 |
| 113. | <p><i>WANDERFUND (A PERSONALIZED TRAVEL FUND)</i>
 <i>Ardini Athirah Binti Jamaluddin,, Nabilah Izzati Binti Rahman, Nur Amiera
 Rosyada Binti Rozie, Nur Athirah Binti Habib Alnsar, Nurhaslinda Binti
 Hashim</i></p> | 737 |
| 114. | <p><i>PENSION PROs (PLANNING FOR YOUR GOLDEN YEARS)</i>
 <i>Fathimah Asyakirah binti Norhisham, Nor Ain Natasha binti Mohd Zain ,
 Nur Atiqah binti Abd Razak @ Sulimin , Siti Nur Fatma binti Mohd Zaidi
 Nurhaslinda binti Hashim</i></p> | 2 |
| 115. | <p><i>STOCKMASTER SIMULATOR</i>
 <i>Nor Hamiza Binti Mohd Noor, Nurul Farzana Binti Asbullah , Syazana
 Ezzati Binti Hairi Annuar, Anatasha Alfiera Anak Tujang, Irdina Hani Binti</i></p> | 2 |

PREFACE

iTAC or International Teaching Aid Competition 2023 was a venue for academicians, researchers, industries, junior and young inventors to showcase their innovative ideas not only in the teaching and learning sphere but also in other numerous disciplines of study. This competition was organised by the Special Interest Group, Public Interest Centre of Excellence (SIG PICE) UiTM Kedah Branch, Malaysia. Its main aim was to promote the production of innovative ideas among academicians, students and also the public at large.

In accordance with the theme "Reconnoitering Innovative Ideas in Post-normal Times", the development of novel ideas from the perspectives of interdisciplinary innovations is more compelling today, especially in the post-covid 19 times. Post-pandemic initiatives are the most relevant in the current world to adapt to new ways of doing things and all these surely require networking and collaboration. Rising to the occasion, iTAC 2023 has managed to attract more than 267 participations for all categories. The staggering number of submissions has proven the relevance of this competition to the academic world and beyond in urging the culture of innovating ideas.

iTAC 2023 committee would like to thank all creative participants for showcasing their innovative ideas with us. As expected in any competition, there will be those who win and those who lose. Congratulations to all the award recipients (Diamond, Gold, Silver and Bronze) for their winning entries. Those who did not make the cut this year can always improve and join us again later.

It is hoped that iTAC 2023 has been a worthy platform for all participating innovators who have shown ingenious efforts in their products and ideas. This compilation of extended abstracts published as iTAC 2023 E-Proceedings contains insights into what current researchers, both experienced and novice, find important and relevant in the post-normal times.

Best regards,

iTAC 2023 Committee
Special Interest Group, Public Interest Centre of Excellence (SIG PICE)
UiTM Kedah Branch
Malaysia

TROLLEY SUPERMARKET CALCULATOR

Muhammad Rafiq Bin Papa Sule
Faculty of Business and Management, UiTM Melaka
rafiqdanny0011@icloud.com

Salheh Bajrai Binti Husein Salim
Faculty of Business and Management, UiTM Melaka
2022910043@student.uitm.edu.my

Fatin Nurliyana Hanis Binti Hasan Azhari
Faculty of Business and Management, UiTM Melaka
2022909723@student.uitm.edu.my

ABSTRACT

Customers in supermarkets nowadays frequently do not consider the amount of money they are spending, which can lead to waste and financial problems in the future. We chose to develop a product called Trolley Supermarket Calculator because some customers don't even care about the total amount of items they put in their grocery cart, leading them to assume the pricing is still reasonable enough for them to pay. This trolley was created with modern technology that can count the total amount of items that users put inside their trolley. Customers can get benefits from using this product in a variety of ways, including reducing wasteful practices, making it easier for them to offer adequate money for payment, and planning to avoid the purchase of needless items. This product also has societal benefits, such as boosting community knowledge about the significance of financial control in spending. Our product comes with a variety of specialties too. We use a lightweight shopping trolley that is easier to handle and maneuver, allowing users to shop more comfortably in the supermarket. Remember that the shopping trolley follows the user from the moment they enter the supermarket until they leave. Furthermore, our products are designed for everyone. A number of clients are important, and the shopping trolley must be designed to accommodate people of various heights and ages. This can indirectly raise awareness among youngsters about the importance of smart financial planning. This trolley, also designed to be used from its four sides, allows one to make a purchase in a practical, manageable and accessible way. In addition, we would like to suggest customers to make a list of basic needs and wants before doing grocery shopping to reduce waste.

Keywords: waste, amount, financial, money, supermarket.

INTRODUCTION

The current problem revolves around the inefficient expense tracking and budget management practices within supermarkets. Shoppers often find it challenging to accurately calculate the total cost of their groceries in real-time, compare prices, and stay within their desired budget. This lack of effective expense tracking leads to the following issues. Firstly, inaccurate budgeting. Without a reliable means of tracking expenses, shoppers struggle to allocate appropriate budgets for their grocery shopping trips. This results in overspending, financial strain, and an inability to prioritize essential items within their limited budget. Secondly, time-consuming calculation. Shoppers spend considerable time manually adding up the prices of items in their carts, which can be a tedious and error-prone process. This not only hampers their shopping experience but also contributes to longer checkout times for both the customers and the supermarket staff. Lastly, inefficient budget monitoring. Shoppers struggle to monitor their overall grocery expenditure over time, making it difficult to identify trends, adjust budgets, and optimize their shopping habits. This lack of comprehensive budget management leads to a perpetual cycle of financial uncertainty and overspending.



Figure 1. Trolley Supermarket Calculator

RESEARCH OBJECTIVE

The objective of the trolley supermarket calculator is to provide shoppers with a comprehensive tool that enhances their expense tracking and budget management capabilities during supermarket shopping. The key objectives of the trolley supermarket calculator are accurate expense calculation. The calculator aims to accurately calculate and display the total cost of items in a shopper's cart in real-time. By automatically adding up prices and factoring in discounts or promotions, the calculator ensures precise expense calculation and reduces the likelihood of errors or discrepancies at checkout. Next is real-time budget monitoring. The calculator enables shoppers to set their desired budget before or during their shopping trip. It continually tracks their expenses, providing real-time updates on their spending progress compared to the budgeted amount. This feature allows shoppers to stay aware of their financial limits and make informed decisions while shopping. After that, user-friendly interface and convenience. The trolley supermarket calculator aims to be user-friendly and accessible to a wide range of shoppers. It should have an intuitive interface, making it easy to navigate and operate during the shopping process. The calculator can be integrated into the supermarket's

shopping carts or mobile applications for seamless and convenient usage. By achieving these objectives, the trolley supermarket calculator intends to enhance the overall shopping experience for consumers. It aims to empower shoppers with the necessary tools and information to track their expenses accurately, manage their budgets effectively, make informed purchasing decisions, and ultimately achieve greater financial control and satisfaction while shopping in supermarkets.

HOW TO USE IT

The Trolley Supermarket Calculator is a digital tool designed to enhance the shopping experience in supermarkets. It leverages advanced technology and features to provide real-time expense tracking, budget management, and price comparison capabilities to shoppers. This Trolley Supermarket Calculator's primary value proposition is to empower shoppers with tools to track expenses, manage budgets, and make informed purchasing decisions. It aims to enhance financial literacy, reduce financial stress, and improve the overall shopping experience for consumers. How to use trolley supermarket calculator? To use a trolley supermarket calculator, simply enter the price of each item into the calculator as you add it to your trolley. The calculator will automatically calculate the total cost. Once you have finished shopping, you can use the calculator to calculate the exact amount of money you need to pay at the checkout counters. Trolley supermarket calculators primarily target adult shoppers, ranging from young adults to middle-aged and older individuals. This demographic group represents the largest consumer base in supermarkets.

NOVELTY

The trolley supermarket calculator brings several novel features and advancements to the realm of supermarket shopping. Its uniqueness lies in the following aspects. The calculator seamlessly integrates budget management into the shopping experience. Shoppers can set their desired budget before or during their trip and receive alerts and notifications when they approach or exceed their predetermined spending limit. This integration empowers shoppers to make informed decisions and maintain financial discipline while shopping. The novelty of the trolley supermarket calculator lies in its ability to revolutionize the way shoppers track expenses, manage budgets, and make informed purchasing decisions in real-time. By integrating advanced features and providing convenience and accuracy, it offers a unique and valuable tool for enhancing the supermarket shopping experience.

COMMERCIALIZATION POTENTIALS

The trolley supermarket calculator can be integrated into existing supermarket mobile applications, loyalty programs, or payment systems. This opens up opportunities for partnerships with supermarkets, technology companies, or financial institutions to enhance their respective offerings and provide a more comprehensive shopping experience. The commercialization potential of the trolley supermarket calculator extends beyond individual supermarkets or local markets. With the right marketing and distribution strategies, the calculator can target a global audience, tapping into the widespread appeal of convenience, budget management, and personalized shopping experiences.

BENEFIT TO COMMUNITY

The trolley supermarket calculator brings several benefits to the community, positively impacting both individual shoppers and the broader society. These benefits include, improved financial literacy. The calculator promotes financial literacy by providing shoppers with real-time expense tracking and budget management tools. It helps individuals become more aware of their spending habits, make informed decisions, and develop responsible financial behaviors, leading to improved financial well-being. Next, budget control and reduced financial stress. The calculator empowers shoppers to set and monitor their budgets effectively. By providing real-time updates and alerts, it helps individuals stay within their desired spending limits, reducing financial stress and promoting healthier financial habits.

After that, smarter shopping decisions. The calculator offers intelligent price comparisons and personalized recommendations, helping shoppers make informed choices based on their budget and preferences. This encourages more mindful and value-driven shopping, avoiding unnecessary expenses and maximizing the value of their purchases. Lastly, reduction in food waste. The calculator's budget monitoring feature encourages shoppers to plan their purchases more efficiently, reducing the likelihood of overbuying or wasteful spending. This, in turn, contributes to a reduction in food waste and promotes sustainable consumption practices within the community. Overall, the trolley supermarket calculator benefits the community by promoting financial literacy, reducing financial stress, encouraging responsible spending, and fostering a more efficient and informed shopping experience. It has the potential to positively impact individuals' financial well-being while contributing to a more sustainable and economically empowered community as a whole.

FEEDBACK FROM COMMUNITY

We have collected some responses from trial customers, who are shoppers in Mydin supermarket, and below is their feedback.

Table 1. Feedback from Trial Customers

Name	Age	Occupation	Feedback
Najihah (011-69547302)	25	Student	"The Trolley Supermarket Calculator has been a game-changer for my grocery shopping. It's so convenient to track my expenses and stay within my budget in real-time!"
Zaidah (0127845856)	48	Housewife	"I recently used the Trolley Supermarket Calculator during my grocery shopping trip, and I must say it was a fantastic tool. The real-time expense tracking feature was incredibly helpful in keeping me on track with my budget. I could see the total cost of items adding up as I put them in my cart, which made me more conscious of my spending."
Kasmawati (0137523450)	54	Business women	"Trolley Supermarket Calculator has transformed the way I shop. It has made budgeting easier, helped me save money, and provided a more enjoyable and stress-free experience."

Overall, we got positive feedback from our trial customers.

CONCLUSION

Trolley supermarket calculators cater to a diverse range of shoppers who value convenience, efficiency, and cost management while shopping. The target market includes tech-savvy shoppers, time-conscious consumers, budget-conscious individuals, frequent shoppers, family shoppers, and health-conscious customers. Understanding the demographic and psychographic characteristics of this target market is essential for effectively marketing and promoting trolley supermarket calculators, ensuring their adoption and success in the competitive retail landscape.

ACKNOWLEDGEMENTS

As a way of saying thanks for all of their help and advice, we want to thank Professor Madya Dr Maheran Binti Haji Katan as our lecturer and Dr Khairunnisa Abd Samad as our advisor. It has taken us a long time and a lot of effort to do this innovation project. The task would not have been done without their help. They happily lead us and make sure that everything is in order even if we have challenges that are unrelated to the task that we are working on. We were able to execute this assignment effectively because of the inspiration, excitement, and continual assistance that they provided us with. Last but not least, we wouldn't have been able to accomplish our task within the allotted time frame if it weren't for the help of my family members and friends too.



e-proceedings

International Teaching Aid
Competition 2023
Reconnoitering Innovative Ideas in Postnormal Times

iTAC **2023**

e ISBN 978-967-2948-51-3



9 789672 948513