

Task 2 – Week 5

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Literary Criticism 1



(MGM813)



Article

Integrated Approach to Achieve a Sustainable Organic Waste Management System in Saudi Arabia

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Abstract: Organic waste management (OWM) has always been a fundamental aspect of human populations. Approaches to OWM must be matched to the characteristics of a certain population. In this consideration, the Kingdom of Saudi Arabia (KSA) is no exception. Organizations are being aligned to focus on sustainability matters sharing significant features with universal trends, especially the integration of 3Rs (reducing waste, reusing, and recycling resources). However, the degree and nature of advancement in the direction of sustainability vary depending on the economic level of a state. High-income economies can afford to pay a higher price to integrate 3Rs technologies. Most recent endeavors have focused on achieving 'Zero Waste', which is costly for low-income developing countries. The expectations of OWM systems in KSA must be estimated. In this work, the situations in KSA and other countries are analyzed, and pertinent aspects are explored. Matters relating to the sustainability of OWM are conceptually assessed. This study proposes an integrated method for an organic waste management system to achieve sustainable OWM in the context of state policy and appropriate frameworks, suitable technology, institutional order, operational and monetary administration, and people consciousness and involvement. A genetic-based waste collection transportation algorithm that enhances the efficiency of waste collection truck management is presented in line with this technology. The selected routes based on the R_p and IP_p are the most efficient among those available for the examined smart bin destinations. The minimum R_p of selected routes is less than the maximum R_p of available routes by 2.63%. Also, the minimum IP_p of selected routes is less than the maximum IP_p of available routes by 27.08%. The proposed integrated approach, including the waste collection transportation algorithm, would be beneficial across a variety of country-specific layouts.

Keywords: genetic-based waste collection; IoT; truck waste collection management; Zero Waste

1. Introduction

Millions of Muslims visit the Kingdom of Saudi Arabia (KSA) every year to do Pilgrimage (Hajj) and Umrah. Muslims visit holy areas of worship, such as the holy mosques al Haramayn (Makkah and Medina) and Al-Masha'ir (Arafat, Mina and Muzdalifah) [1]. The number of pilgrims arriving in KSA for Hajj (the 12th month of the Islamic lunar calendar) and Umrah has significantly increased in recent decades due to the ongoing expansion of the holy mosques, enhanced transportation services and safety, and decreased aggregate cost and time, with an annual increase of 1.15% from 1993 to 2014 [1–3]. The KSA

الورقة البحثية

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- Research Title :**
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مصطلحات الدراسة والدراسات السابقة

عنوان الورقة البحثية : النهج المتكامل لتحقيق نظام إدارة النفايات العضوية المستدام في المملكة العربية السعودية.

مصطلحات البحث العلمي هي "مجموعة من الكلمات المفردة أو الجُمْل المُركَّبة، التي تُعبّر عن مفاهيم مُعيَّنة، ووفقًا لتوجُّهات الباحث، ومن المهم وضع تعريفات واضحة لها قبل الشروع في إجراءات البحث.

الدراسات السابقة تعرف بأنها مجموعة الأبحاث والدراسات التي تناولت أحد مواضيع البحث وقامت بتقديم معلومات ساهمت في تطوير البحث العلمي وتقديمه، فهي التي تعطي الباحث فكرة كافية ووافية عن بحثه ، وتؤمن له المعلومات من مصادر موثوقة بحيث يصبح الباحث مطلعاً على كافة الأمور المتعلقة بالبحث الذي يقوم بدراسته. وكما يجب على الباحث أن يستمد مصادر دراسته السابقة من مصادر أولية ويبتعد عن المصادر الثانوية والتي لا تقدم معلومات موثوقة للبحث العلمي.

مصطلحات الدراسة

الموضوع

01

استخدم الباحث 5 مصطلحات للدراسة وتم وضعها في موقعها الصحيح بعد
فقرة المستخلص وكانت جميعها تدل على عنوان البحث وقضية الدراسة.

Keywords: genetic-based waste collection; IoT; truck waste collection management; Zero Waste

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الدراسات السابقة

الموضوع

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استخدم الباحث 42 مرجع من الدراسات السابقة وتنوعت جميعها في مواضيع لها علاقة مباشرة لعنوان البحث، تناولت مواضيع في الاقتصاد، إدارة النفايات، أنواع النفايات، احصائيات الحج والعمرة في السعودية، التقنيات الحديثة، انترنت الأشياء، اهداف التنمية المستدامة، رؤية المملكة العربية السعودية 2030، التنمية المستدامة، إدارة البيئة، إعادة التدوير، وغيرها.

كما استخدم الباحث الرموز الدالة للمراجع والتزم بمواقع الاقتباس في جميع مواضيعها خلال صفحات البحث.

والجدير بالذكر ان علاقة مصطلحات الدراسة هي المفتاح للبحث لتحديد الدراسات السابقة والتي يتم الاعتماد عليها من خلال اعداد البحث العلمي.

- ذكر الباحث بعد فقرة المستخلص الكلمات الدالة أو مصطلحات الدراسة العلمية والتي ساهمت في تحديد قضية البحث، وأهمية البحث، كما أنها تساهم في تحديد مواضيع الدراسات السابقة المناسبة لقضية البحث. ومع ذلك كان بالإمكان للباحث زيادة مصطلحات الدراسة لوجود مواضيع عديدة وهامة في البحث لم تكن أحد مفاتيحها موجودة في الكلمات الدالة خصوصا فيما يتعلق بمنطقة حدود الدراسة.
- استخدم الباحث الدراسات السابقة لتحديد الفجوات في البحث، كما تم تطوير أسئلة البحث من خلال المقارنة بين المعلومات المقتبسة من الدراسات السابقة، ساهمت الدراسات السابقة في تطوير هذا البحث والوصول إلى نتائجه وتوصياته بشكل دقيق.



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