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From the Desk of the Editor-in-Chief

It gives me immense pleasure to present IGNITE, The Student Research Journal, a platform that showcases the intellectual curiosity, academic rigor, and innovative thinking of our students. This publication represents more than a compilation of research papers, it is a testament to the courage of young scholars who have dared to explore, question, and contribute to their respective disciplines while completing their formal academic journeys.

The research articles featured in this issue reflect an inspiring diversity of topics and approaches. From analytical reviews and empirical studies to conceptual explorations, each paper reflects a student's determination to translate classroom learning into original thought. Our young researchers have demonstrated not only academic commitment but also the spirit of inquiry that defines true scholarship.

In today age where information is abundant, but insight is rare, IGNITE stands as a beacon of the next generation of thinkers, those who will lead with evidence, innovate with empathy, and challenge the status quo with integrity. I extend my heartfelt congratulations to all the contributors and mentors who have guided them through this process of academic discovery.

May this journal serve as a spark that continues to ignite the passion for research, reflection, and lifelong learning in every student.

- Mr. Gladwyn Victor
Vice President - Strategic Projects |
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A Study on impact of Promotion of Various Events on Tourism Sector in Nepal

Author: Bishant Giri (*Department of Hospitality Management*)

Abstract:

Nepal is a popular holiday destination that is well known for its culture and scenic beauty. With lots of natural and artificial attractions, Nepal has become one of the main tourist destinations in today's world. The second highest economy is generated by the tourism industry of the country. The purpose of this research is to investigate tourism business and events in Nepal and their major influence on the flow of tourists. This research is intended to present a uniform understanding of the scenario of tourism business and event as well as tourist flow in Nepal as well as provide an option for the development of planning and operational activities regarding challenges increasing flow of the tourist. Due to covid, the tourism of the country is in the decline phase, hence author is examining how the help of events in Nepal can boost tourism and again bring it to the place where it was before.

Keywords: *Promotions, Tourism, Nepal*

Introduction

According to (Walton, 2018), **Tourism** is the act and process of spending time away from home in pursuit of recreation, relaxation, and pleasure, while making use of the commercial provision of services. Nepal, as one of the major tourist destinations, has lots of potential to attract tourists throughout the world. But, due to various factors, it has been impossible to achieve that goal. At present Nepal ranks 128th in tourism all over the world. Despite having the world's largest mountain and birthplace of lord buddha with various scenic artificial attractions we are lagging. And in the present context pandemic has made worse to the tourism situation in the country. Visit Nepal 2020 which is going to happen has been canceled, which is a major loss for the country's tourism. Though the pandemic has affected the tourism of the country it has also brought us back to the starting phase from where we can increase our tourism with effective plans and policies regarding it.

Hence, we can now go with proper planning and promote the various events to boost the tourism of the country. Coming with new fare prices, new rules regarding the arrival of tourists, development of resources in trekking areas, coming various events like cycling, Hiking and so on which may be impacted the tourism of the country and helps in the promotion of the tourism places. Various cultural events can also be promoted to spread information about the country's religious norms and values which is also key for bringing the tourist. Rather than that other factors like the promotion of natural products with various events like marketing events can also be useful. The Dubai expo 2020 is one of the prime examples of the promotion of national products showing various souvenirs that can target tourists throughout the world.

Literature Review

As explained by, Bhandari (2019) Tourism in the country may help in generating employment opportunities for the citizen. It is both a positive aspect for the citizen as well as the nation. The government should be aware of this and should develop various infrastructures in various tourist destinations. So that can be beneficial for the locals of the particular place. Government should need to promote all tourism-related activities. It is necessary to look after the quality skill of the employees and need to do some investment in it so that the people will get proper skill and

knowledge about tourism which may bring a positive outcome for tourism of the country.

As Badal (2019) explained the 'Visit Nepal 2020' is the main event of the country. In this event, the country is planning to bring 2 million tourists. This may help the economy of the country. Besides this event, there are still some places where government should need to look at it. Insufficient infrastructure, lack of proper coordination between government agencies, and lack of resources and marketing are some of the challenges the country may face during this tourism event.

Ulak (2020) discussed the tourism industry of the country after the pandemic. Its impact on the tourism industry of the nation. Lockdown rules and border close it has a negative impact on the stakeholders of the tourism industry. What type of strategy can be developed by the stakeholders to overcome this situation?

The research shows that the flow of tourists in the recent time is higher than in the past (Paudel et al., 2021) and it tries to find out the arrival of tourists until 2025. It uses various data collection tools to find out the number of tourist arrival from the year 1998 to 2018. The research also analyzes the 2 million targets of tourists within the country and how it is possible to bring. This study might be very much effective for government employees and various tourism stakeholders as well as the law person in the tourism industry.

The research carried out by Adhikari (2020) talks about homestays in the country. How it is important for the developed country as well as a developing country. The concept in developed countries is different than in developing countries. Mainly developed countries use homestays for business and entertainment purposes whereas for developing countries it is about the production of local goods and employment opportunities for the country Nepal, it is very much important for the government sector to promote various homestays of the country with proper guidelines and rules.

Research Methodology

Exploration is carried out in the context of 'Research Design' considering that this study systematically describes the main activities of tourism and tourism activities that exist today. The framework of this research paper is based on the exploratory and analytical methods of the research design. The method used is library research and field research. Researchers use facts or information obtained to identify current situations and challenges related to tourism activities and activities that affect tourist flows which are analyzed through critical evaluation through understanding perspectives related to topic problems and providing recommendations.

Primary information is gathered by direct inquiry to nearby network individuals, tourists, business entrepreneurs, local people, tourist guides, the hotel industry, and tourist information centers. The qualitative nature of data has been used as part of primary data. Though the intention was to collect data from 100 respondents, by sending the questionnaires nearly to 120 respondents it could be able to collect questionnaires from 70 respondents who are involved in the tourism field. Some of them are tourists, and some of them are tourism entrepreneurs, locals, employees of tourism information centers, hotels and tourism company respectively.

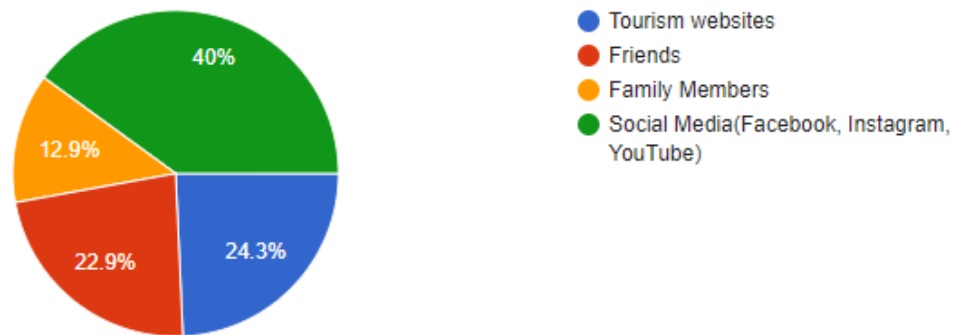
Data Analysis and Discussions

The collected data through the questionnaire survey was analyzed using the graphical analysis,

accordingly, using the graphical depiction of data with the use of charts, graphs and figures etc.

How you came to know about Nepal Tourism?

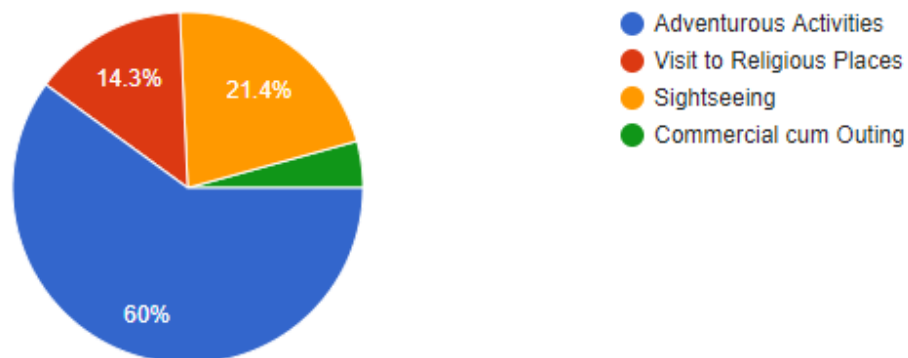
70 responses



The above chart shows that social media is the main way visitors are getting information about Nepalese tourism with 40% followed by tourism websites with 24.3% whereas 22.9% from friends and 12.9% from family members. Social media play a vital role in providing information about Nepal's tourism. As any age group people are involved in social media platforms like Facebook, Instagram and YouTube which is an easy way to get knowledge about the various places of the world.

What was the purpose of visit?

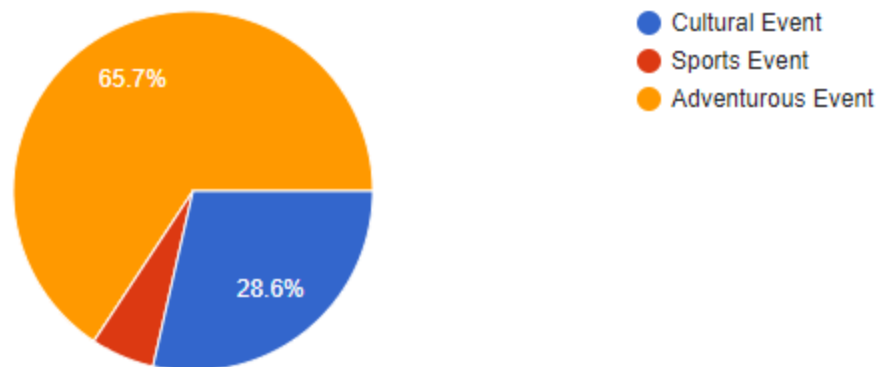
70 responses



Mainly, among the respondents, the main purpose of visit to Nepal is for doing adventurous activities with 60%. After adventurous activities, 21.4% of people visit Nepal for sightseeing. Likewise, visit religious places got 14.3% followed by commercial cum outing with 4.3%. It is good to see that adventurous activities are mostly preferred during Nepal tour as there are lots of places and natural attraction available that is responsible for these types of activities like, trekking, hiking, rafting, paragliding, canoeing, kayaking, cycling, bungee jumping, zip line and so on.

What types of event may help in boosting tourism of Nepal?

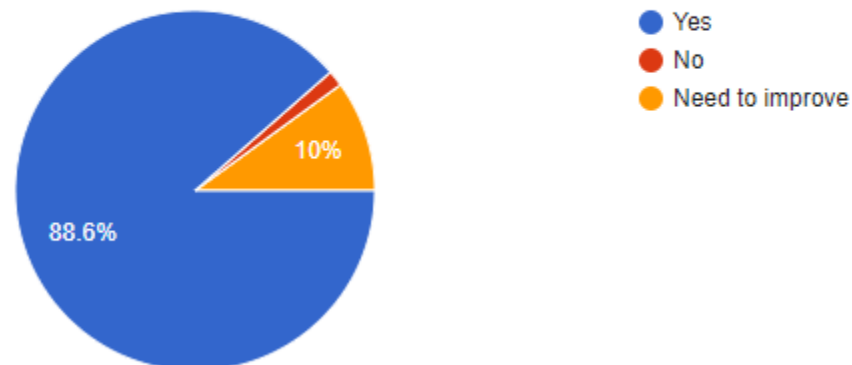
70 responses



The figures show which event can boost the tourism of the country. Among the total respondents, 65.7% of the respondents say adventurous events whereas 28.6% say cultural events followed by sports events by 5.7%. As Nepal is giving lots of things in adventurous activities, they are doing various events like hiking events, trek Nepal, Everest marathon and so on. So, it is probably the major event that can boost the flow of tourists to the country.

Do you consider Nepal as one of the important tourism destination globally?

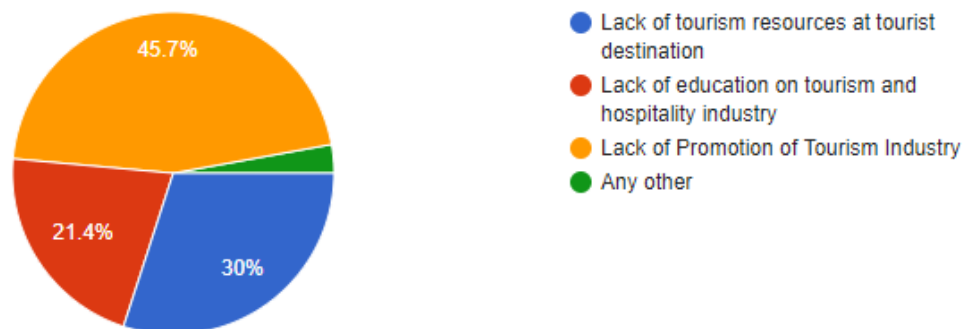
70 responses



From the given chart, 88.6% of people think Nepal is one of the important tourist destinations globally with 10% think needs to improve whereas 1.4% don't see Nepal as an important tourist destination globally. As Nepal is ranked in the 128th position among 206 countries in the tourism field which is fairly good enough. As 10% of respondents may think about the uplifting of the position may be, because having lots of resources in tourism we may do more and we may go more up in the position.

Why Nepal tourism is lagging behind inspite of its huge tourism potentialities?

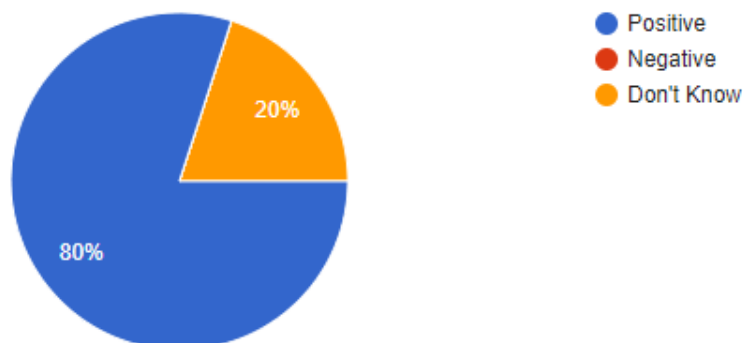
70 responses



The given chart talks about Nepal's tourism backwardness besides having lots of tourism potentialities. 45.7% say due to the lack of promotion of the tourism industry followed by lack of tourism resources at tourist destinations with 30 %, 21.4% respondents' beliefs due to the lack of education on tourism and hospitality industry where remaining goes for any other. For bringing the visitors promotion is more important and can be done in various ways, but in the context of Nepal they are not giving their best in promotion of tourism worldwide properly or it may have become difficult to reach out to the targeted customer.

As Nepal is one of the participant of Dubai expo 2020. What type of impact can it make on the tourism of Nepal?

70 responses



Among the respondent 80% of their belief that participating in this event it gives a positive impact on the tourism of the country whereas 20% don't know about it. Dubai expo 2020 is the mega event that is currently happening in Dubai. 182 countries have their pavilion at this expo where Nepal is one of them. Lots of people are visiting the expo where they may get to know about the information of Nepal can influence more customer visiting. So, it is a positive sign for the tourism of the country.

Discussions of Secondary data:

Secondary data is collected using various tourism websites, social media related to Nepalese

tourism, articles on the tourism of the country and so on for this research. It shows the actual figure for all the activities that happen regarding tourism during various years.

Total Number of Tourists Arrival

Year	2017	2018	2019
Arrival	940,218	1,173,072	1,197,191

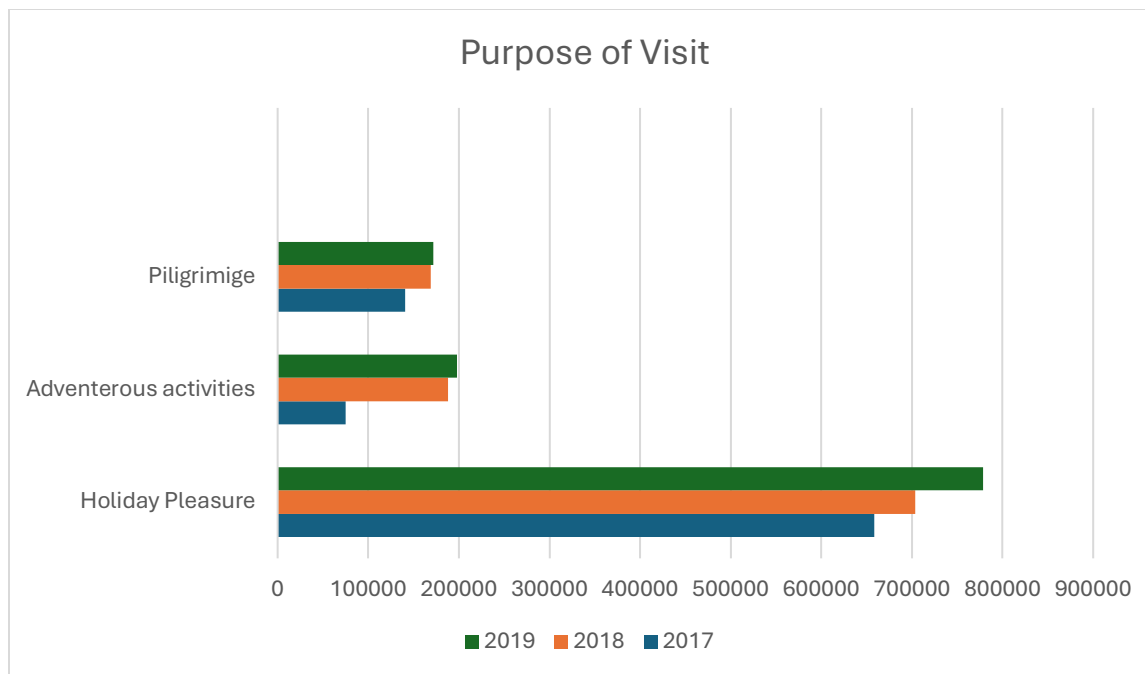
Source: Department of Immigration



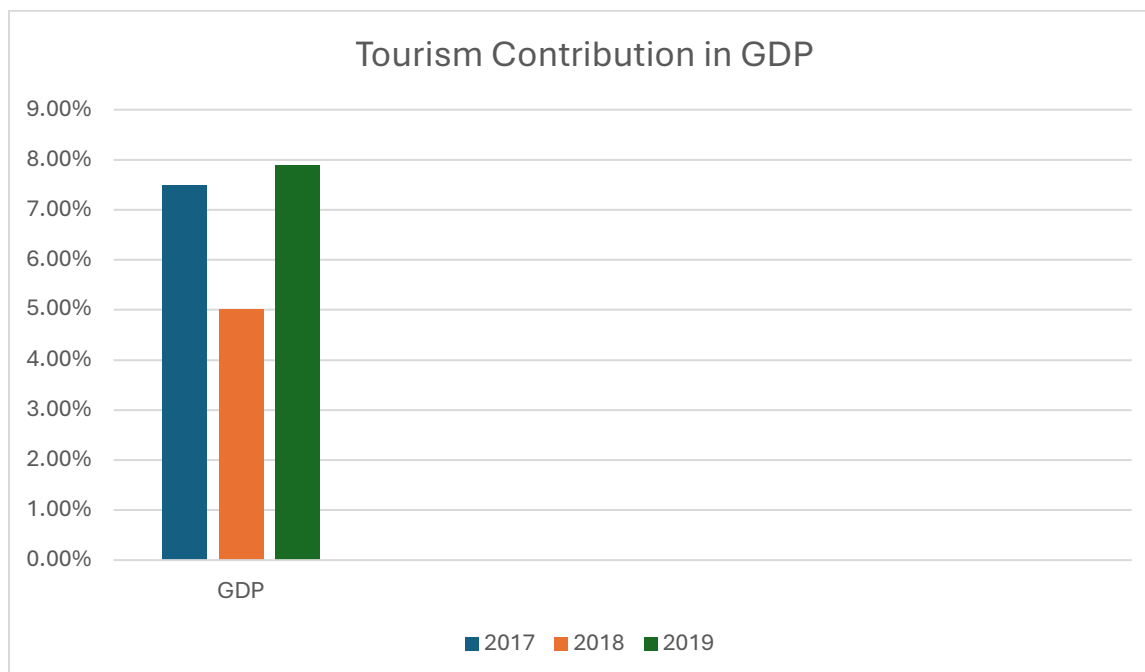
As we see in the above diagram, we can see that the flow of tourists in Nepal is increasing year after year for a given period of time. It was a great sign for country tourism. The year 2018 has a turn inflow of tourists than 2017. And there is a slight increase in the flow of tourists in the year 2019 than 2018.

Purpose of Visit

Year	2017	2018	2019
Holiday Pleasure	658,153	703,843	778,173
Adventurous activities	75,217	187,692	197,786
Pilgrimage	141,033	169,180	171,937



From the given data we can see that the number of visitors who travel to Nepal is mainly for holiday pleasure followed by adventurous activities and pilgrimage. The tourist coming for holiday pleasure is increasing year by year. Adventurous activities and pilgrimage have also increased throughout the year. This shows that visitors increased yearly in every tourism activity which was a positive sign for the tourism of Nepal.



Source: World Data Atlas

By looking at the above graph, we can see that the tourism contribution to the GDP of the country in 2017 is 7.5%, 5% in 2018 and 7.9% in 2019 respectively. There is a slight reduction in 2018 going down and again rising in 2019. This shows that the contribution of tourism to GDP fluctuates

every year. It is not a good sign, so to make it constant and increase in the upcoming year, the government should come up with better plans and policies regarding the tourism industry of the country.

Condition of Tourism Industry after Pandemic

When the Visit Nepal 2020 campaign launched in January, it was expected to attract 2 million tourists, but the campaign was canceled in the aftermath of the COVID-19 pandemic, damaging the entire hospitality and tourism-related business zone. Due to the pandemic, tourist arrivals have fallen from 70% before the COVID-19 outbreak to less than 10%. Tourism, one of the main industries, contributes about 8% to Nepal's economy. Similarly, the cancellation of all spring climbing expeditions, including Mount Everest, has resulted in the loss of jobs for approximately 23,000 tourisms, trekking and mountain guides and tourism personnel.

Conclusion

The contribution of tourism to the development of the country has been quite significant. However, the Nepalese tourism sector has not developed as expected. Tourism can become a highly productive sector to compensate for widespread and hidden unemployment in destination countries if there are not enough resources for industrial development in a scenario where the agricultural sector is less productive. Nepal as a whole can be a vehicle for the development of rural areas rich in natural and cultural resources. It has a comparative advantage over other industries such as low opportunity cost. It takes a low ripening period to pay off, can cover the bottom people in the entire ecoregion, includes women and minorities, and is directly related to all dimensions of life: cultural environment, nature and humans. action. Tourism also makes a very important contribution to GDP, foreign exchange revenues, government revenues, employment as well as indirect and induced impacts. Based on this, tourism can be a major sector of Nepal's economy and a socio-economic force. Although tourism contributes greatly to the development of the country's economy, the rural residents of Nepal have not yet been able to enjoy many benefits. The purpose of this study is to find out how we can boost tourism in the country through various events. The researcher aims to identify and explore problems and prospects in tourism development in Nepal and the impact that causes due to pandemic and what impact it has made due to the cancellation of Visit Nepal 2020. In this research, an exploratory and descriptive research design is applied to meet the above-mentioned objectives. From this research, the alternate hypothesis has been accepted whereas the null hypothesis has been rejected.

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The Downfall of Pre-matured Hotels in Dubai: Case Study of NO.57 BOUTIQUE CAFÉ

Author: Onika Gurung (Department of Hospitality Management)

Abstract

Hospitality can be defined as the art of making people happy and comfortable whereas tourism is all about exploring areas and experiencing their culture, tradition, and beauty (Lock, 2022). There are three sub-sectors of Tourism and Hospitality: Accommodation, F&B, and Travel. This case study is to analyze the reasons for the impacts of the closure of pre-matured food establishments. The study is based on NO.57 BOUTIQUE CAFÉ Dubai branch which was closed 15 months after the opening. There were two emirati influential owners: Mrs. Alamira Noor Bani Hashim who is also a famous interior designer and Mrs. Buthaina Al Mazrui the director general of Government Financial Affairs. With the minimalist earthy interior designs, NO.57 BOUTIQUE CAFE is famous among the emirates, especially for the ladies. This café used to have two branches one located in Abu Dhabi Est 2014 and the other one in Mall of Emirates, Dubai Est April 2021. The café had a Joint Venture “THAT CONCEPT” by Majid Al Futtaim which serves international cuisine and catering services as well. This report examines content includes the reasons for the closings of restaurants in Dubai and the consequences faced by employees and the company.

Keywords: NO.57 BOUTIQUE CAFÉ, Downfalls, New openings, Dubai.

Introduction

The organisational structure of No 57 BOUTIQUE CAFÉ can be identified in the figure below.

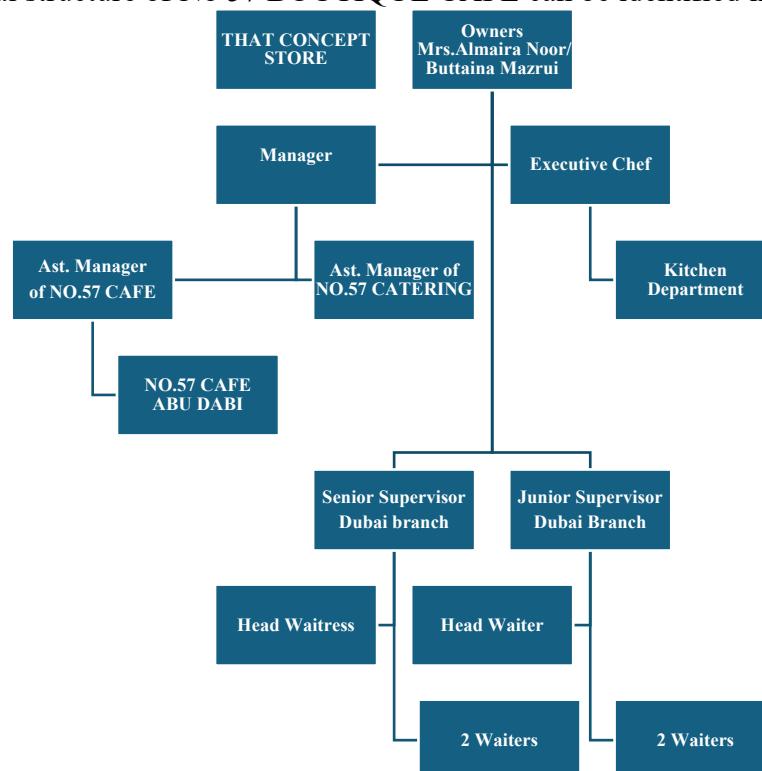


Figure 1: Organizational Structure of NO.57 BOUTIQUE CAFÉ

Problems Statement

According to Sultan Al Taher, Director of the Food Inspection Section, Dubai City Hall, Dubai had 19,259 to 20,000 F&B establishments in 2021 (Sadaqat, 2022). With the competition, Dubai opened 1,343 food outlets last year an average of 3.5 outlets per day (Ips International, 2022), and the same year 247 food outlets were closed (Ritchie, 2021). Despite having anonymous numbers of food establishments apparently, Several food establishments in Dubai are forced to close due to its merciless competition. Due to this number of employees are unemployed which leads to problems like finance, visa, and even poverty. Worse than that people are stuck in Dubai not being able to return to their homeland. (Ventura, 2022) claims UAE to be the 7th richest country based on GDP and the 2nd country in the Middle East. But why the closing rate of business in Dubai is so high? What do the employees have to face despite working for years in their company

Objectives

Critical analysis of the reasons for the downfall of NO.57 BOUTIQUE CAFÉ Dubai branch. To suggest measures for upcoming new food establishments to survive in the Dubai market.

Literature Review

Dubai have very high demands in term of food but there is a backside story that is common but unannounced in the food industry which is food establishments do not last. There are several reasons for food establishments' closures in Dubai. An article released by (CNBC, 2020) published that the most common reasons are restaurants not being able to follow strict SOPs, Off-seasons, and high expenses. This study focuses on finding the common reasons for the closings of premature food outlets and the impact that employees and NO.57 CAFÉ had to face. Dubai has 16 weeks of a longer off-season which is in the summer season which is the time when most of the restaurants do not prepare for the slowdown and fail to manage their cash flow states Abdul Kader (Saadi, 2022).

According to Harappa, (2021), a contract between the joint venture partners might not always proceed with results as expected. Disagreement can occur in the operation of the agreement. For NO.57 CAFÉ case, as the café also had a joint venture partner i.e. THAT CONCEPT STORE. The conflict started with the negotiation of the contract. As a result, when the negotiation did not go well, being prominent influencers of the Emirati community they decided to close the café.

Research Methodology

Being the ex-employee of NO.57 BOUTIQUE CAFÉ, allowed me to get inside the internal affairs of the restaurant and had experienced the effects of the closing.

Primary data have been received from the feedback and interviews with the customers, Dubai businessmen, and employees of the café. Conversations with people who faced problems after the closing of the company were also made. Online research, data, and surveys are the means used to collect **secondary data**.

Analytical Interpretation

NO.57 BOUTIQUE CAFÉ was located inside THAT CONCEPT store by Majid Al Futtaim. The contract was to pay 18% of the total sales in a month as a dividend. NO.57 BOUTIQUE CAFÉ's customers were only who were familiar with the café and used to patronise the outlet. There were very fewer numbers of walk-in guests as it was located in the corner inside the THAT CONCEPT store. Based on the online reviews (Tripadvisor, 2022), the café had the best food, service as well as interior design but the biggest hinder was the location. But things were not always difficult for the café. During its opening on April 2021, NO.57 BOUTIQUE CAFÉ was able to gain quite a big fortune as many advertisements were made and the store also helped them to get customers. But as the focus on marketing strategies was less and the store thought the customer's range was stable, the situation started to deteriorate for the café. The café was not prepared for the off-season. Normally the off-season is supposed to be in the summer but surprisingly café was able to make the biggest fortune in the opening which was known to be off-season i.e. Apr-Jun. later the customer's range started degrading. Based on the residents, people tend to go to indoor food outlets during the hot climate but as soon as the climate starts getting cooler people shift their interest to outdoor food outlets which are also one of the reasons for the sales decline in NO.57 BOUTIQUE CAFÉ.

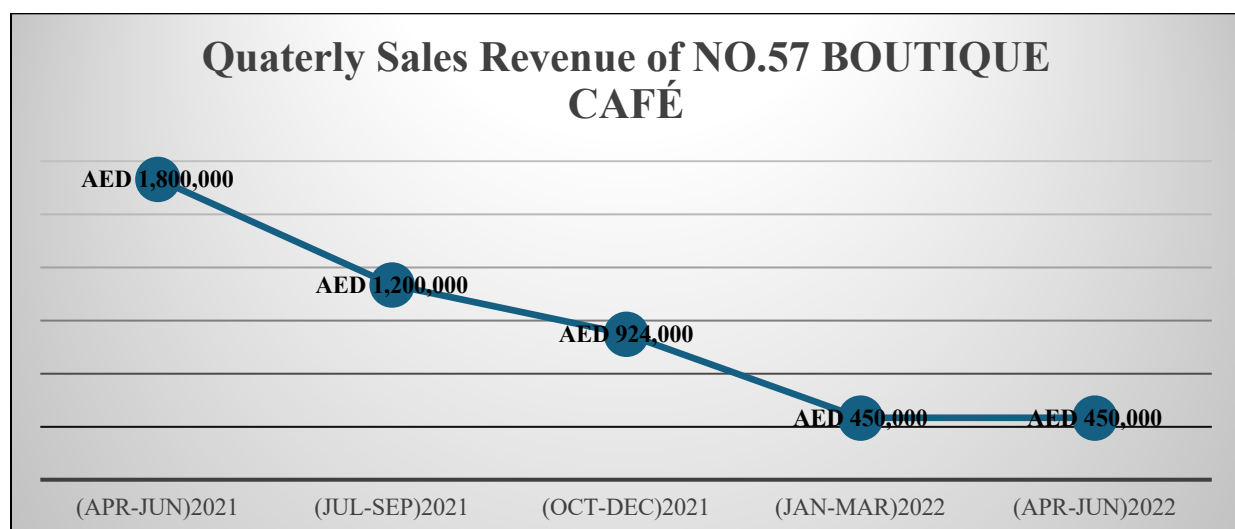


Figure 2: Sales of NO.57 BOUTIQUE CAFÉ from April 2021 to Jun 2022.

Source: Mr.Omar, Accountant of NO.57 CAFÉ.

From the above diagram, the difference in sales can be seen. NO.57 BOUTIQUE CAFÉ sales of (Apr-Jun) 2021 declined by 75% compared to the same months in 2022.

Quarter	18% dividend paid to THAT CONCEPT STORE
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(Apr-Jun)2021	AED 3,24,000
(Jul-Sep)2021	AED 2,16,000
(Oct-Dec)2021	AED 1,66,320
(Jan-Mar)2022	AED 81,000
(Apr-Jun)2022	AED 81,000
Total	AED 8,68,320

Table 1: Total Amount paid to THAT CONCEPT STORE

Source: Mr.Omar, Accountant of NO.57 CAFÉ.

The 18% from the total sales was not the only amount that NO.57 BOUTIQUE CAFÉ was paying to THAT CONCEPT STORE. The café was also offering a 50% discount on the bills of Majid board members and 20% to all staff under Majid. These are just the privileges offered to the joint venture. There were other privileges like complimentary foods and beverages, free event venues were offered to important members of THAT CONCEPT STORE. Regardless of all the offers, it was stated in the contract that the store would help the café to bring customers and contribute to the sales of the café. But as the sales degraded, there was also no help from the store as a result the CAFÉ demanded to decrease the percentage of the dividend from the start of 2022, the café was earning on average around AED 1, 23,000 in a month which was affecting the cash flow of the Café. At first, the store refused the demand of the café to bring down the percentage of the dividend, which resulted in a clash of owners' egos. This incident led to the closure of NO.57 BOUTIQUE CAFÉ in June 2022.

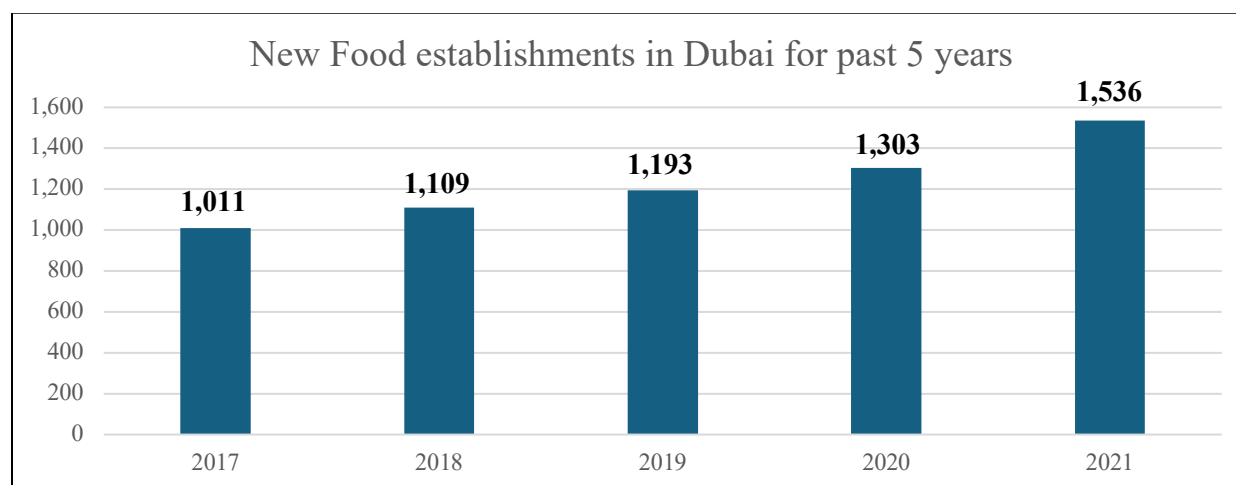


Figure 3: New food establishments in Dubai for the past 5 years.

Source: Zawya, Khaleejtimes, Timeoutdubai and Gulfnews, 2022)

DATE	2017	2018	2019	2020	2021
QUANTITY OF NEW OUTLETS	1,011	1,109	1,193	1,303	1,536

Kiltions (2022) believes that the food business is one of the top profitable businesses in Dubai which can be somehow true looking that the demands in the food industry. Timeoutdubai (2022) stated that Dubai is planning to have openings of 84 different restaurants in the coming seasonal

month of 2022. Ramzan (2022) also published that the food establishments upgraded up to 50% in 2021. The openings of the restaurants always have extravagant announcements as it contributes to the advertisement but the closings are done confidentially as it somehow hinders the brand image of the food outlet. The closing of food outlets always marks a huge question mark on the image that they worked so hard to form. It was only in 2021, that the Dubai municipality call centre received a total of 4,961 complaints which is a ratio of 13 complaints per day says (Ramzan, 2022). It indicates the harshness and attitude of the Dubai customers not taking a risk. Just in a recent interview (Saadi, 2022) said that around 360 food businesses were closed from 2021 to 2022 including Morah, China Grill in Dubai due to its strict regulations no matter how hard or long any employee or a company works they still have to return to their originality. Carter's restaurant which was able to stand its legacy decided to end its business after 24 years of business in Dubai (Khaleej Times, 2022). These restaurant shutdowns bring huge consequences, especially for the employees. In Dubai, there are numbers of people who have worked for more than 10 years in one organization but on the resignation, they do not receive the privilege of their resignation even if it's from the company side. Because of NO.57 BOUTIQUE CAFÉ closing month of the start of the off-season in Dubai, almost all the employees had to face unemployment as the timing was the worst in the context of the employment trend.

Conclusion

The main motive for this study was to identify the major issues of the closing of food outlets and how could have been possible ways to prevent such closures. There were lots of impacts due to such closing in the company's brand image as well as in employees which can lead to some serious consequences.. Overall, it is identified that food organizations should have a proper objective and a realistic situation of forecasting so that they can survive in any negative external conditions like slowdown or competition. They should have adopted effective marketing strategies to maintain their customer range and also should have special privileges for loyal customers. Realistic situations and events were detected in the process of the study which is common but not disclosed in the Dubai business lines. The primary data including the sales report were taken from NO.57 BOUTIQUE CAFÉ and interviews with the ex-employees to achieve only the facts. The conversation brought the harsh reality of the things that employees have to face abroad and the reality to sustain in the food industry.

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Challenges Of SMEs Financing for Startup Business in Nepal.

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Abstract:

This research paper explores the challenges faced by Small and Medium-sized Enterprises (SMEs) in Nepal when seeking business loans for startup ventures. The primary objectives of this study are to identify the key challenges, propose potential solutions, and promote a more conducive environment for SME growth in Nepal's startup ecosystem.

The challenges identified encompass issues such as limited access to credit, stringent collateral requirements, high interest rates, and bureaucratic red tape. Additionally, a lack of financial literacy and awareness among entrepreneurs exacerbates these challenges.

To address these issues, potential solutions include fostering collaboration between financial institutions and government agencies to streamline loan application processes, promoting financial education among SME owners, and establishing credit guarantee schemes. These measures can create a more supportive environment for SMEs, facilitating their access to crucial funding and nurturing entrepreneurship in Nepal.

Keywords: SMEs, Business Loans, Startup, Challenges, GDP, Commercial Bank, Banking loan, Nepal.

Introduction:

Micro, small, and medium-sized enterprises (MSMEs) play a pivotal role in driving economic growth and fostering employment opportunities within a nation. Globally, MSMEs account for over 50 percent of the workforce and contribute to at least 35 percent of the Gross Domestic Product (GDP). In emerging markets, SMEs are responsible for creating seven out of every ten formal jobs, a number that can surge to nine out of ten in some low-income countries. As the global economy grapples with the need to generate 600 million new jobs over the next 15 years to accommodate a burgeoning workforce and mitigate unemployment, the development of MSMEs stands as a top priority for governments in both developing and developed economies.

The government of Nepal (GoN), much like governments worldwide, acknowledges the significant role MSMEs play in the economic growth and generation of employment opportunities. Despite the Nepalese economy registering an average annual growth rate of approximately 4 percent over the past two decades, this growth has fallen short in terms of job creation, leading to a growing number of Nepalese individuals seeking employment opportunities abroad. Furthermore, Nepal's economic growth has lagged behind its South Asian counterparts, with the country's import-export ratio doubling from 2.6 to 5.2 between 2008 and 2018.

To bolster Nepal's development, the essential role of businesses as primary contributors to growth cannot be emphasized enough. To unlock the full potential of businesses and have them make a substantial contribution to the nation's overall economic growth, it is imperative to create a conducive environment for their growth. In this context, it is particularly vital to facilitate the establishment of institutions that offer affordable and well-suited financial services and products to MSMEs.

In Nepal, a considerable disparity exists between the financing needs of MSMEs and their access to credit. Both supply-side factors, resulting in an inadequate flow of financial resources from financial institutions to MSMEs, and demand-side factors, which include the limited business skills among MSME entrepreneurs, contribute to this disparity. Although the banking sector possesses untapped liquidity that could be channeled into loans for this sector, and there is a compelling rationale for scaling up the flow of credit to MSMEs, the feasibility of achieving

this goal necessitates a comprehensive analysis of the fundamental characteristics of the MSME financing market. Additionally, it is crucial to gauge the extent to which Nepal's policy and regulatory framework is conducive to the development of MSMEs, especially in terms of their access to financing.

The Objective of the Study

To find out the challenges of SME's Financing for Startup Business in Nepal

To analysis the SME's Financing present context and gap Study

Statement of the Problem:

In the realm of entrepreneurship, young individuals possess untapped potential for creating innovative and profitable businesses if they are provided with the right motivation, ideas, and opportunities. With the right support, individuals can transition from job seekers to job creators, not only improving their own lives but also contributing to economic growth. Many self-employed individuals also play a crucial role in providing financial stability for their families. However, a significant proportion of the population continues to rely on government employment rather than venturing into entrepreneurship and job creation. This reluctance to engage in entrepreneurship can be attributed to several interconnected factors, including sociocultural attitudes toward entrepreneurship, a lack of entrepreneurial training, limited access to market information, inadequate physical infrastructure and business support, challenging regulatory frameworks, and, notably, the difficulties associated with obtaining financing (Kanyenze, Bennell, & Curtain, 2000).

Entrepreneurs are universally recognized as pivotal figures in the global economy, and the success of a startup hinges on a variety of factors. These factors encompass financial, social, technological, human resources, and product development considerations. Given the stark contrast between startups that thrive and those that falter, it is imperative to identify the determinants that either facilitate or hinder their progress (Manigart, 2002).

Across the globe, the primary responsibility for fostering entrepreneurial activity among young individuals largely falls on microfinance institutions. Access to capital is a fundamental prerequisite for entrepreneurial endeavors, and thus, microfinance institutions play a vital role in nurturing entrepreneurship by providing direct lending, indirect lending, and savings services. Surprisingly, the involvement of young entrepreneurs in microfinance programs remains relatively low, with only 24% of microfinance clients under the age of 30, and they typically opt for loans more frequently than savings or insurance options (Nafukho F., 1998).

While various studies have explored the concept of entrepreneurial intention among Nepalese youths (Prajapati, 2019; Kusum and Subham, 2019; Dhruva and Nischal, 2020), there is a conspicuous gap in research focusing on the success of businesses in Nepal, particularly those initiated by young entrepreneurs.

Consequently, there is a distinct knowledge vacuum regarding the variables that influence the establishment and progress of startups in Nepal. This study aims to bridge this gap by identifying the key factors that contribute to the success of startups led by young entrepreneurs in Nepal, with a specific focus on the availability of funding, government policies, and training and education. To fulfill its objectives, this study addresses the following research questions:

- i. What are the challenges of SME's financing for entrepreneurial Business?
- ii. Do education and training programs influence the success of entrepreneurial endeavors?
- iii. To what extent do government policies and regulatory environments affect the success of SME's in Nepal?

Hypothesis

Small Medium Enterprises (SME's) is referring to a set of procedures, financing and strategy for business support financing. Small and Medium-sized Enterprises (SMEs) are businesses that typically have a limited number of employees and fall within a certain range of revenue or asset value, depending on the country and industry. SMEs are essential components of most economies and play a significant role in economic growth, job creation, and innovation. The specific criteria for categorizing a business as an SME may vary from one country or region to another, but they generally include factors such as the number of employees, annual revenue, or total assets. SMEs can encompass a wide range of businesses, from startups to well-established companies, and they are often characterized by their flexibility and adaptability.

Hypothesis I

H0: there is high significant difference in the awareness level financial literacy Information gaps between startup entrepreneurs and potential financiers, including a lack of understanding of business plans and creditworthiness, create difficulties in securing financing for SMEs.

H1: There is no significant difference between the Information gaps between startup entrepreneurs and potential financiers, including a lack of understanding of business plans and creditworthiness, create difficulties in securing financing for SMEs.

Hypothesis II

H0: There is no significant financial access to the limited availability and accessibility of financing options, such as bank loans, venture capital, and new investors, significantly impact the growth and success of startup SMEs.

H1: There is Challenging regulatory frameworks and bureaucratic hurdles, including complex business registration and licensing processes, create obstacles for startups in accessing financing and establishing their operations.

Literature Review

The determinants of success in business encompass economic factors such as financial resources, fundraising capabilities, and the ability to sustain ongoing investments. Furthermore, innovation plays a pivotal role in this equation, encompassing various elements such as the accumulation of knowledge, self-improvement, and the cultivation of entrepreneurial skills (Kim & Kim, 2018).

The COVID-19 pandemic has had a multifaceted impact on SMEs, affecting both their demand and supply sides (OECD, 2020). On the supply side, SMEs encountered difficulties such as labor shortages and a lack of essential raw materials, while simultaneously experiencing a sudden decline in demand and revenue on the demand side. In Nepal, where SMEs often operate with limited infrastructure development and face logistical challenges, meeting customer demands and maintaining supply chains became particularly daunting (Shrestha, 2020). These challenges have significant repercussions on SMEs, including disruptions in cash flow, the loss of customers and revenue, and the potential for business closures in the future. As consumer focus shifted toward primary healthcare and safety during the pandemic, confidence waned, and reduced incomes contributed to a consistent decline in consumption (IMF, 2020). Even as businesses reopened, SMEs struggled with ensuring occupational safety and health conditions, finding it challenging to adhere to social distancing and safety measures due to inadequacies in their existing business models, systems, and resources (Prasain & Pradhan, 2020).

In response to the COVID-19 pandemic, the Government of Nepal has implemented a set of

four measures, encompassing immediate relief programs, measures to mitigate the pandemic's impact, economic support initiatives, and liquidity support measures, all of which are executed through fiscal and monetary policies (World Bank, 2020). Among these measures, the government has introduced a comprehensive economic support package, which comprises strategies such as the deferral of tax payments, interest rate concessions, and relief in utility payments, amounting to approximately 5% of the country's GDP (World Bank, 2020). Overcoming financing challenges is a crucial hurdle that startups must navigate, given their significant implications for a nation's economic landscape (Hamdan & Khamis, 2019).

Around the world, there is an increasing trend toward startups, and in order to keep this trend going, entrepreneurs need to maintain and improve continual competitive growth. (Reyad, Badawi, & Hamdan, 2020) These SMEs are characterized by their relatively labor-intensive, cost-effective, low capital requirements, and a nature that allows for a favorable cost-benefit ratio. Despite the abundance of the workforce in Bangladesh, the country has not fully harnessed its potential due to several prevailing challenges. The growth and sustainability of SMEs in Bangladesh face substantial threats arising from these challenges. These challenges, as evidenced by earlier research articles, can be broadly categorized into four main groups: Legal, Regulatory, and administrative challenges; Financial and Economic challenges; Business environment challenges; and finally, Managerial, Organizational, and Human Resource-related challenges.

The literature has primarily focused on the SME sector in general. While these studies have successfully identified various challenges faced by SMEs, they have not systematically assessed the criticality of these challenges, which is essential for guiding strategic decision-making by practitioners. Remarkably, there has been a lack of specific research dedicated to footwear SMEs, despite this sector being the third-largest contributor to Bangladesh's export earnings in 2019–2020. Therefore, this study aims to pinpoint the key determinants of challenges within the footwear SME industry, quantify their significance, and provide practical managerial insights that can assist practitioners in effectively addressing and overcoming these challenges to foster business expansion.

Methodology of the Study.

This is a work area put together review which depends with respect to the technique for narrative examination of narrative sources. I utilized the material from both primary and secondary sources. The scope of the hypothesis will be in context to find out on challenges of Small Medium Enterprise's (SME's). To reach closely towards the aim of the study, it is spread out in different chapters including Introduction, Research question (Hypothesis), and Overview, second chapter consists of History and Basics policy research on (SME's) policy management and implementation in (SME's), financing for start-up business in Nepal.

The researcher chooses the quantitate methodology of the data presentation and Questionnaire was prepared using Google Form and circulated through emails. The respondents were selected using judgmental sampling criteria. The list of potential respondents was collected through Fair Trade Group Nepal, Federation of Women Entrepreneurship Nepal, and Federation of Handicraft Association of Nepal. The respondents have to be SMEs as classified in Industrial Enterprise Act 2016 (Government of Nepal, 2016) and must have been operating over 5 years. The study's data analysis relies on various statistical tests, including correlation, regression, mean, and standard deviation. The quantitative data was meticulously examined and interpreted using statistical tools such as SPSS (Statistical Package for Social Science) and Microsoft Excel. SPSS is a widely utilized software in the field and is readily available in professional settings, making it a practical choice for data analysis. Additionally, descriptive statistics, including the calculation of means, were employed to provide a comprehensive overview of

the data. A convenient sampling method was employed for data collection in this study. This approach is not only suitable but also commonly utilized for study, particularly in theory-testing research. When data needs to be gathered from a broad spectrum of respondents and the focus is on contextual validation of the relationships between variables, convenient sampling has gained significant acceptance in the field of management science.

Data Analysis and Presentation After Covid-19 Business Intelligence

First six items are related with the current business challenges faced by the SMEs in Nepal due to COVID-19. The majority of the respondents (385%) are facing the problem of loss of sales order (item 2; ranked 9; mean value 2.90). On the contrary, 56% of the respondents expressed they have less challenges of shortage of workers at the moment. Likewise, 70.70% of respondents opined that the supply chain has been disrupted (item; ranked 14; mean 2.73). There is an average effect on liquidity problems (item 1; ranked 21; mean), loss of business network (item 4; ranked 29) and not able to pay liabilities (item 6; ranked 25).

Items	Statements	Percentage of responses*				Mean (Std. Deviation)	Rank
		V. Low 1	Low 2	High 3	V. High 4		
Current business challenges							
1	Liquidity problem	12.2	31.7	41.5	14.6	2.59 (0.89)	21
2	Loss of sales order	7.3	17.1	53.7	22.0	2.90 (0.83)	9
3	Lack of staffs/workers	29.3	46.3	19.5	4.9	2.00 (0.84)	38
4	Loss of business network	22.0	29.3	41.5	7.3	2.34 (0.91)	29
5	Supply chain disruptions	9.8	19.5	58.5	12.2	2.73 (0.81)	14
6	Not able to pay liabilities (wage, interest, rent, creditors)	12.2	39.0	36.6	12.2	2.49 (0.87)	25
		Strongly Disagree	Disagree	Agree	Strongly Agree	Mean (Std. Deviation)	
Firm's respond to COVID-19							
7	We lay off staffs	41.5	26.8	24.4	7.3	1.98 (0.99)	39
8	We pay to staffs partially	17.1	19.5	41.5	22.0	2.68 (1.01)	16
9	We pay liabilities in delay	9.8	19.5	53.7	17.1	2.78 (0.85)	12
10	We reduce our business operation	7.3	34.1	46.3	12.2	2.63 (0.80)	18
11	We took bank loan	22.0	36.5	29.3	12.2	2.32 (0.96)	30
12	We clear stocks	17.1	43.9	34.1	4.9	2.27 (0.81)	32
13	We go online business	12.2	22.0	56.1	9.8	2.63 (0.83)	19

Data Source (Researcher's Own Calculation)

The given above the scenario of the table the overall responded is 385% and the liquidity problem is 0.89 standard deviation the loss of sales order is 0.89 standard deviation and lack of business network is 0.91% standard deviation and not able to pay liabilities is 0.87 % for the challenges of business operation for the SME's Financing.

Occupational and Professional Sampling

The occupational sampling and professional relational between different professionalism

Occupation				
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid		1	1.2	1.2	1.2
	AGENT	1	1.2	1.2	2.5
	BANKER	3	3.7	3.7	6.2
	BUSINESS	7	8.6	8.6	14.8
	COACH	1	1.2	1.2	16.0
	DOCTOR	2	2.5	2.5	18.5
	DOCTOR	1	1.2	1.2	19.8
	DRIVER	1	1.2	1.2	21.0
	ENGINEER	1	1.2	1.2	22.2
	ENTREPRENEUR	3	3.7	3.7	25.9
	FREELANCE	1	1.2	1.2	27.2
	GOVT EMPLOYEE	4	4.9	4.9	32.1
	GRADUATE	7	8.6	8.6	40.7
	GRAPHIC DESIGN	1	1.2	1.2	42.0
	HEALTH PROFESSIONAL	1	1.2	1.2	43.2
	INVESTOR	1	1.2	1.2	44.4
	IT	5	6.2	6.2	50.6
	LABOR	1	1.2	1.2	51.9
	MANAGER	9	11.1	11.1	63.0
	OWNER	1	1.2	1.2	64.2
	POLISH	1	1.2	1.2	65.4
	PROFESSOR	4	4.9	4.9	70.4
	PUBLIC ADMINISTRATION	1	1.2	1.2	71.6
	SELF EMPLOYED	5	6.2	6.2	77.8
	STUDENT	9	11.1	11.1	90.1
	TEACHER	2	2.5	2.5	92.6
	TRADER	6	7.4	7.4	100.0
	TOTAL	81	100.0	100.0	

Data Source (Researcher's Own Calculation)

The given calculation of entrepreneurship for the and business professionalism the highest percentage is Student and Fresh Graduate there are several professionalisms for the Professor 70.4% and Self Employed is 77.8% and lowest is the Agent and Banker.

The Major Challenges of SME's Financing these are as follows:

Problem of Financing

Legal or policy challenges

Loss or Sales Orders

Political instability

Lack of Labor/Staff
Not Able to pay abilities
Reduce to the Business Operation
Lack of Grant/Substitute
difficulties of Business Loan
Lack of clear policy and legal framework
Lack of clear policy and legal framework
Lack of Networking and business Alliance
Lack of Personal Protection Equipment
Lack of financial literacy and knowledge
Problem of Taxation
Barriers of Registration and Licensing
Lack of Collateral and Security
Problem of their Insurance
Lack of the Good Governance
Regulatory Changes
Lack of New business Opportunities
Lack of Government Support
Government Extending on repayment
Budget speech and fiscal policy
Government's Business promotions
Financial Hurdles
Problem High Bank Loan Interest Rate

Source of Data (National Statistics and ODEC Nepal)

The above table is representing the different challenges of SME's Financing in Nepal for the application of SME's loan in the financial institutions, So, OECDs and government of Nepal was working together to solve the issues for SME's Financing. The major big issues for SME's financing is lack of business Idea and problems of the High Bank Interest Rate. So, these are the major challenges of SME's financing.

Mean Values Response By Major Areas

Area	Mean
Social Response	2.73 (0.53)
Forms Response by after Covid-19	2.65 (0.34)
SME's Perceptions on Post Covid-19	2.53 (0.42)
Current Business Challenges	2.51 (0.57)
Government Respond after Covid-19	2.02 (0.64)

The above table represents the high mean value is Social response 0.53% and Forms response after covid-19 0.34% so there was a challenges are facing the people to application for the SME's Financing the low value of mean after Covid-19 in SME's financing these are 0.42% many challenges for SME's Financing for startup Business Nepal.

ANOVA Test for SME's Financing Challenges

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	9.045	1	9.045	.159	.691 ^b

Residual	4429.755	78	56.792		
Total	4438.800	79			

a. Dependent Variable: Age

b. Predictors: (Constant), Salary

(Source Researcher's own Calculation)

The given table is representing the ANOVA test for Level of Education and age for the impact of the SME's Financing Age is 9.045 and Level of Education is 56.792 mean square for the SME's Impact on Business.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Age	80	32.20	7.496	.838
salary	80	42957.5000	18887.21204	2111.65450

The one sample statistics is representing the values for Age and Salary Mean for Age is 32.20 standard Deviation is 7.496 and standard Deviation Mean is 838 and Salary is mean Value is 42957.500 and Standard deviation is 18887.21204 and standard deviation is 2111.65450. Which is represents the Age and salary is corelate the Startup Business.

Hypothesis Testing Summery

The hypothesis testing is representing level of awareness financial literacy and level of Education which are most corelate for hypothesis testing.

Hypothesis Testing Summary

Hypothesis	P –value	Result
Availability of finance	.009	Accepted
Training and education	.000	Accepted
Government policy and regulation	.000	Accepted

The above table is representing following hypothesis for availability of financing challenges .009 which is acceptance. And training and education which is .000 acceptance and Government policy and regulation .000 Acceptance so challenges of SME's Financing is acceptance for the .009 which is acceptance. Availability of financing and lack of awareness is key role play for the challenge of SME's Financing in Nepal.

Conclusions and Findings

In terms of entrepreneurial tenure, the majority of people had become entrepreneurs within the last 1-2 years, making up 22.1 percent. This was followed by those who started their entrepreneurial journey within 4-6 months, 10-12 months, and 3 years or more, constituting 19.5 percent, 17.9 percent, 14.8 percent, and 13.2 percent, respectively.

The survey results indicated that the average mean score for the availability of finance was 3.774, with a standard deviation of 0.6796, suggesting that respondents generally leaned towards agreement. This means that the respondents concurred on the notion that the availability of finance significantly impacts business success.

The average mean score for training and education was 3.95, with a standard deviation of 0.401,

indicating a similar inclination towards agreement. Respondents concurred that training and education have a noteworthy impact on business success. The average mean score for government rules and regulations was 3.95, with a standard deviation of 0.420, which reflects an agreement among respondents. They believe that government policies and regulations play a vital role in determining business success.

The overall response on the business success scale yielded an average mean score of 3.95, with a standard deviation of 0.424, indicating a general agreement among the respondents.

The findings highlight that the success of a business is positively and significantly influenced by the availability of financing, signifying that greater financial accessibility leads to greater economic success. Similarly, training and education significantly and positively impact business success, suggesting that an increase in training and education efforts correlates with increased business success.

In conclusion, government policies and regulations were found to have a significant and positive impact on business success. Favorable government policies and regulations contribute to enhanced business success. Among the three variables, which are availability of finance, training and education, and government policy and regulation, training and education emerged as the most influential, with a standardized weight of 0.363. It was followed by government policy and regulation with a standardized weight of 0.237, and availability of finance with a standardized weight of 0.117.

Implications

The Major implications for the study is suggest for the related stakeholders for the improvements of the current challenges of the SME's Financing. The results of this study hold substantial significance, primarily due to the observed substantial impact of the independent variables, namely the availability of finance, training and education, and government policy and regulation, on the dependent variable, which is the success of businesses. While some findings align with previous studies, there are notable distinctions as well. As these findings are demonstrative of their impact on business success, they carry both practical and research implications that hold relevance for entrepreneurs in practice and scholars in academia. Consequently, this study delves into the practical and research implications derived from its findings.

The findings of this study reveal a clear and positive correlation between the availability of finance, training and education, and government policy and regulation. This suggests that entrepreneurs should recognize the importance of having access to finance, receiving appropriate training and education, and adhering to governmental policies and regulations to enhance the prospects of their entrepreneurial ventures. By understanding and implementing these factors, entrepreneurs can foster conditions conducive to the growth and success of their ventures.

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Challenges of Inventory System Used in a Supermarket: A Case Study of Lulu Hypermarket

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Introduction

Lulu Hypermarket supermarket is a supermarket that manages sales, products, stock, and information about the buying and supply of commodities situated at Al Barsha. Since its inception, Lulu supermarket has been using a manual file-based information system to manage inventory stock and sales information. After the collection of data via different information gathering techniques, we found that all the data related to purchasing products, customers, suppliers, vendors, and so on are kept in books or on paper receipts. This system seemed to perform perfectly but in the current situation, as business competition increases, as well as users and vendors, are rise up, the entire system becomes slow and less efficient. Due to this inventory system, managing transaction records and data storage is going to be difficult. Management thus decided to make a change and institute a Supermarket management system that will allow easy storage and viewing of supermarket inventory stock and sales information to make timely decisions.

Problem Statement:

Currently, Lulu Supermarket fills orders manually, which has the following drawbacks: data redundancy and inconsistency, access problems, data isolation, integrity issues, atomicity issues, concurrent-access anomalies, and issues with security. This has impacted the supermarket's proper administration, oversight, and monitoring. As a result, time-consuming and expensive service delivery to the client.

Literature Review

When performing a case study is time-constrained, literature reviews are especially helpful as a quick summary or stepping stone. They provide professionals with useful reports that keep them current. Additionally, it offers a strong background for research papers. In this instance, the database system at Al Madina supermarket will let staff members (managers) input client information. The security of the system is ensured by the data records, which are timely retrieved from the system and provide instructions to users on how to utilize the database. The database system gives the user an abstract view of the system and obscures some information, such as the maintenance and storage of data. A database is made up of several integrated files that can be kept up to date very easily and are intended to archive the goals of Al Madina supermarket, according to Hutchinson (2000).

Al Madina Supermarket has similar issues with its inventory and they solve these issues by implementing the following ways:

Reduce data redundancy: Redundancy in file-based systems cannot be avoided, but since database files are integrated, this issue is resolved provided that the data administrator is aware of the data needs of both applications.

Avoid data consistency: Imagine that changing one file necessitates changing all the other files. Since the database uses a technique called propagating updates, any changes to one record are automatically made to all the others as well, preventing inconsistent data from occurring.

Maintain Data integrity: Data is handled centrally so that the data administrator can define

and the database administrator can implement, maintaining the integrity and ensuring that the data in the database is accurate.

Updating the existing software: To manage a user-friendly interface for the inventory system, and trained the staff of the supermarket about the system.

Methodology

The framework for structuring, planning, and controlling the development of an information system is known as methodology. It describes the aims of every step and the consequence needed from a phase before the next one begins. There are different types of methodologies used to analyze systems like SSADM, DSDM, Agile method and Prototype method.

Prototype Model

A prototype is produced, tested, and then modified as necessary until an acceptable result is obtained from which the full system or product can be developed. This approach is known as the prototyping model. In situations where not all of the project needs are known in detail beforehand, this model performs best. Between the engineers and the users, it is an iterative, trial-and-error process. Prototype method is used for this case study because of the following reasons:

1. Reduce the risk of failure.
2. Errors can be detected in the initial phase.
3. Increase Customer satisfaction.
4. Easy to understand and straightforward model.
5. No need for specialized experts to build the model.

Data Collection

Data collection involves gathering all the necessary information required to analyze and understand the problem/scenario at hand. There are many data collection methods available.

We used both primary and secondary methods to collect data for this study.

Primary data was gathered by physically visiting the field and using a variety of tools to gather information such as interviews, surveys, and observations.

Secondary data is obtained by studying published sources like Books and publications found online.

During the collection of information and data, among the six techniques including questionnaires, surveys, observation, interviews, brainstorming, and focus groups, I have selected three ways for information gathering i.e., questionnaires, observations, and surveys to figure out the issues inside the existing inventory and to analyze the system and how it works.

Analysis and Findings:

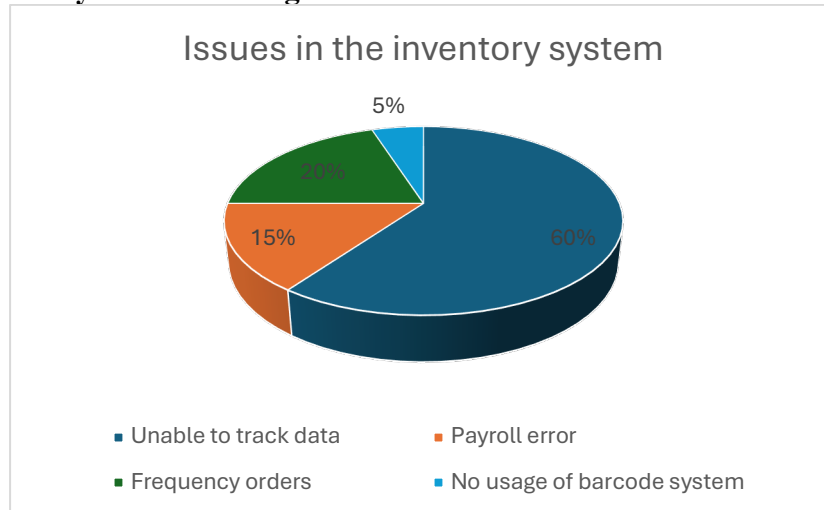


Fig1.2: Technical issues

The above pie chart shows the technical issues inside the inventory system of the hypermarket. 60% of the people said that they are unable to track the information due to bad inventory management. Similarly, 20% of the people said that they have an issue with the order placing system because they got the same order frequently. Likewise, 15% of staff said that sometimes they print the wrong price of a particular item because of default POS software. And 5% of people said that they need to install more barcode systems because it helps to track and store data and send the data to the database.

During the interviewing sessions., it was found that there were issues inside the market such as a huge crowd at the counter due to the delay of the payment system. Similarly, the customer was unable to find out their desired products because there was no good arrangement of products. Likewise, the staff was untrained in the software so the customer faced many problems regarding payroll errors, missed print receipts, and frequency of same orders. Sometimes, the barcode scanner wasn't worked properly because they used an old version. Even though there was no IT technician so they had to wait 2 to 3 days for repairing the system. They were unable to obtain daily transaction reports whether the company is in profit or loss, and unable to track sales and purchasing information in the database due to manual processes.

Survey

- Are you satisfied with the current situation of the market?
75% are Yes..... 20% are No..... 5% are Average
- Does the existing database provide correct data?
65% are Yes..... 10% are No..... 25% are Average
- Is there any issues regarding the security ?
75% are Yes..... 7% are No..... 18% are Average
- Did you get any feedback from the customers regarding payroll errors?
85% are Yes..... 5% are No..... 10% are Average
- Are the staffs able to make daily transaction reports of sales ?
95% are Yes..... 2.5% are No..... 2.5% are Average
- Is there any backup system for the data for further use ?
50% are Yes..... 25% are No..... 25% are Average
- Are all the staffable to access data easily from the database ?
45% are Yes..... 20% are No..... 35% are Average
- Is there any issues in the payment process?
75% are Yes..... 2% are No..... 23% are Average
- Does the existing inventory have enough sufficient storage for the data?
90% are Yes..... 3% are No..... 7% are Average
- Is there any IT technician to control all the systems?
75% are Yes..... 20% are No..... 5% are Average

Fig1.3: Questions for the Survey

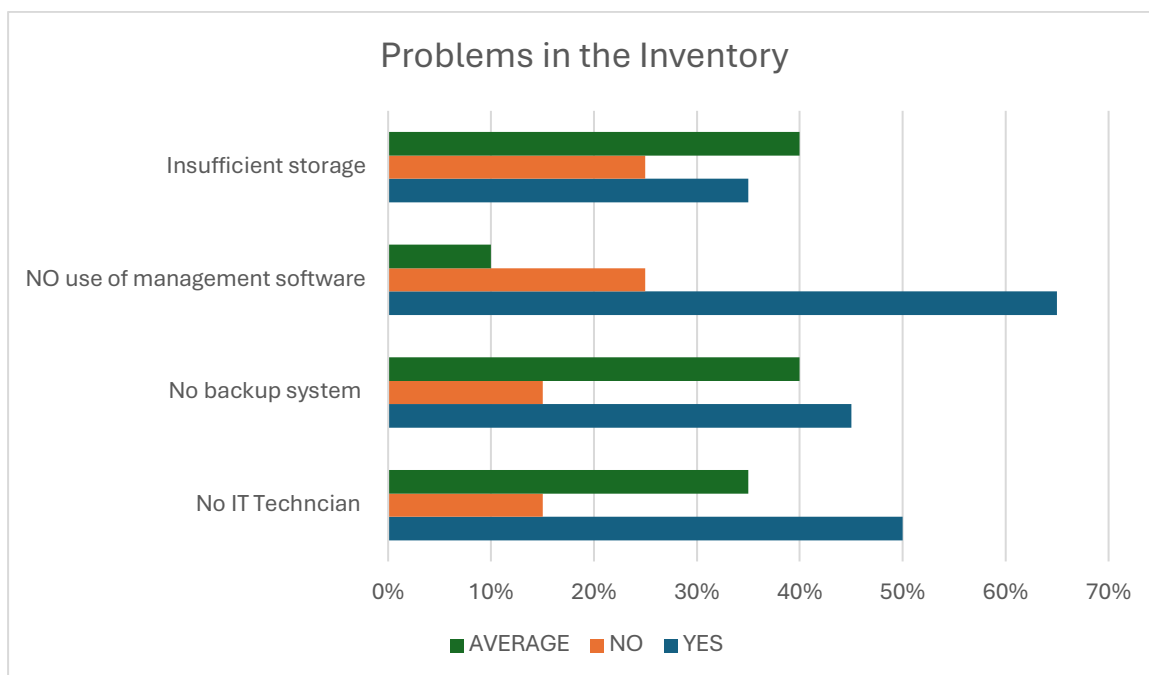


Fig1.4: Problems of the Inventor

The above diagram represents the problems of the inventory of the market. It shows that most people say, there is no backup system for data storage and most of the data is stored manually. Due to this process, sometimes it will be difficult to track the information that exactly we need. Similarly, there is no IT technician to control the overall system of the market. Likewise, they are still using the old version of the management software and most of them are willing to update the existing software. At last, there is no sufficient storage to store data so they are trying to install a new database.

Ten employees of the lulu hypermarket supermarket were interviewed, and 25 randomly chosen customers were also asked questions. The interviewees provided a variety of opinions and viewpoints, which helped us analyze the market's inventory system issues and find solutions that improved the supermarket's operations as well as the well-being of its customers and employees. It was discovered that there is no substitute for computerized methods of stock record keeping, and this was due to their improper modem usage. The supermarket is getting a computerized system (management information system). The difficulties staff had using the current system was that:

Data was difficult to access.

It the manually operated.

Problem deduced

We used three information-gathering techniques (questionnaire, interviewing, and survey) for our case study. During the gathering of information, most of the problems were related to our inventory system of the supermarket. Such as:

Unable to track sales and product data and get daily transaction reports: They used a manual procedure to keep the record of purchasing items and sales information and they used a book or receipts for data storage. So, it made it difficult for the management team to take the proper right decisions and was unable to know about what was going on in the market.

Insufficient storage for the database: In the supermarket, we need to keep each record of

items as well as daily activities. For storing more data, we need to replace the existing databases like MYSQL instead of MS Access.

The manual process to keep data of products and others. Most of the tasks were done manual process, so it made it difficult to monitor data and store it as well as led to delays in decision-making for the management of the team. We have to install a barcode system because it helps to detect every data of particular items and dispatched the data to the database.

Data redundancy: Redundancy is unavoidable in file-based systems, but with databases, files are merged and this problem is addressed as long as the data administrator is aware of the data requirements for both applications.

Tracking and auditing the payments was difficult to manage: For payment transactions, we have to link the tap machine and also link with the digital wallet to make the transactions more secure and fast. It helps to make reports and also knows whether the market is in profit or loss.

Data integrity

The payment process is delayed: To improve the payment process quickly and efficiently, we need to install a strong point of sales software.

Too many items, hard to control.

Payroll errors.

No backup system for data

Recommendations

To implement or install a strong management system using **My Structured Query Language** (MySQL), **Hypertext Pre-processor** (PHP), JavaScript, cascading style sheet, and **hypertext markup language** (HTML) for the supermarket Lulu Hypermarket.

Lulu Hypermarket supermarket should put in place an automated inventory tracking system.

System backup should be done to avoid data loss or system corruption effects.

To execute more transactions and avoid the hassle environment, Lulu hypermarket has to link with different banks.

To keep sufficient memory for improved performance, it should be updated to routinely delete useless (obsolete) records. Before entering the data into the system, staff members or any other user engaged should validate the information to maximize system dependability and precision.

Conclusion

The study determined the main issues that Lulu Supermarket LTD had with its manual Supermarket Management System and made an effort to design a computer-based Supermarket Management System with a database (MYSQL) to address those issues. The device resolves the issue that a lot of areas are needed to store box files and paper, and it takes too long to get specific by offering a user-friendly system interface that makes it simple to record and retrieve information from a database to keep the details of land sales, as well as an information interface. As a way of solving the above problems, a computerized system has been introduced where there will be easy accessibility of data, reliability, and security which makes decision-making and administrative activities simplified even with fewer employees.

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An evaluation of common ICT tools used in business

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Abstract

Over the past years, technology has created a revolution in business and commerce. It revolutionized the business by changing the entire perception of the market and expanding the business opportunities. Business tools refers to different applications and softwares which are designed to help the organizations perform their tasks very efficiently and effectively. Implementing Technology into business helps the organizations to streamline, automate and optimize the internal activities. Technology will also help the employees to communicate more effectively thereby increasing their work efficiency. Technology will help us to set the KPI's and self-objectives which will help in the growth of the company. The effective use of technology will help us to gain insight into the varying market trends, customer preferences, understanding the target market, knowing the competitors, financial matters, and the overall performance of the business. The ICT tools can help the business in many areas like design, planning, production and manufacturing, research, and development and so on. We can design different productivity apps, back up files, innovative marketing, effective use of social media and many more by incorporating different ICT tools in business. The main challenge will be the requirement of a deep analysis of the impact of information and communication technologies for growth and development. This will include the analysis of economic, financial, and technological aspects along with a wide range of other services like the online services provided by the company.

Keywords: *Information and Communication Technology, Database Management Systems, Management Information Systems, Customer Relationship Management.*

Introduction

Management of businesses is a very challenging task nowadays. The main reason for this is increase of human complexity at work. The efficiency of any management depends on the tools used. The management has the responsibility to use ICT technologies that will help to manage the activities in an efficient manner. Information Communication Technology (ICT) will include all and any type of software and other software solutions including ICT applications, ICT services, related software products and other embedded softwares. Some examples of them includes customized ICT solutions, mobile application development, website design, designing animations and so on. Broadly speaking, ICT has become an integral part of business now throughout the world. Businesses cannot survive in 21st century without using technology because every aspect of business is now controlled using different technological tools starting from connecting devices onto the network, e commerce, centralized financial management systems, different applications development and what not.

It is common knowledge that the business sector produces products and services for profit generation. Information Technology utilizes different technologies to create, analyze, process, and evaluate information which is very critical for the business performance. The process of office automation as a management tool usually decreases the number of employees required. Information optimization has reduced the overall cost of business to produce different products and service. All this led to a bring a positive effect on the financial goals of business.

The automation of different processes using technology has increased the productivity to a great extent. With the help of fewer and limited resources, the quality of products and services are improved at a low cost. Technology also makes it possible to store sensitive and confidential data in a safe way so that the chances for data breach is minimal and thus the data is not vulnerable to any threats. Information retrieval is also hassle free. This will definitely

help with decision making process.

Quality assurance and testing bring assurance that the products and services produced by a business is at par with the expected quality for the customers. Rigorous quality checking will help the business outputs to meet the required standard specifications. Different processes like marketing, accounting, customer support, product testing can make use of quality assurance standards. An efficient and effective information processing related to quality assurance goals is the key to deliver quality products and services. Various investments in IT can boost the company's operational processes in a more efficient manner and the managerial processes become much effective.

Literature Review

Krume Nikoloski (2014) mentioned that effective use of Information Technology can change the way businesses compete. Because of this, we should view information systems in a strategic way, as important as competitive networks, and should be considered as a necessary investment to do in technologies which will help the organization to achieve its objectives. The evidence he submitted also suggested that turning investment into ICT for higher productivity is not much straightforward. He also concluded that small enterprises are investing in communication and information technologies to support their strategies and to establish competitive advantages.

Sev Joseph Teryima, (2018) conducted a study on importance of computers to human development and behavior, the role of ICT in the administration of Local Government. He concluded that the major existing issues are lack of technical skills, poor technological know-how, constrained ICT development, lack of computerization, negative attitude of government and so on. As a conclusion, these benefits includes enhanced operational efficiency, improved performance, improved quality of service delivery resulting to customer satisfaction, increase in market share growth and to a greater extent will result to enhanced sustainable competitive advantage.

Adengua (2013) and Ajayi (2015) conducted separate studies and concluded that ICT have created a lot of new opportunities for employees in areas such as research and development as well as a better information system design which will improve the quality of decision-making. They also focused on achieving competitive advantages. They also suggested on using better technologies for evaluating their assets and investments. According to them, the management must focus more on the efficient utilization of the assets and investments by investing more on technology and other ICT tools. Experts must be appointed to make this job easier.

Mayette Macapagal (2020), in her study, concluded that the below mentioned principles must be observed for any ICT Project to be successful – Participation of all the people, Local ownership and capacity development, Mix of technology by choosing appropriate technologies, Multi stakeholder partnerships, alignment with larger demand driven development, institutional ownership and leadership, competitive enabling environment, financial and social sustainability, and risk considerations.

Matovu Moses (2019), did a study on the technological development in Uganda, Africa and carried out primary and secondary research to analyze the impact of ICT technologies used there. He concluded that ICT tools were not effectively used for communications, especially in schools and colleges. He also discovered that lack of adequate facilities limited the people from expanding the businesses. He also focused on the fact that effective MIS systems are not used by both large and small organizations which could help them to achieve their business goals faster. He also found out that many issues happened because the information was wrongly

entered into the system. He also suggested some methods that can be used to improve the efficiency of the ICT tools used.

Study Objectives

The main objective of this study is to study the different ICT tools used by companies to improve their business.

To understand the common ICT tools used in business.

To assess the impact of the ICT tools on business

Research Methodology

The paper aims to analyze the use of different ICT applications and technologies among business corporations and organizations. Intensive secondary research has been carried out to understand the impact of technology in different areas of business and the changes and effects of using them. Secondary data was collected from journals, books, magazines, and research monographs.

Data Analysis and Interpretation

Management Information Systems

Management Information Systems or MIS normally refers to the computer-based systems that provides the manager with different tools to organize, manage and evaluate different departments within an organization. An MIS will include softwares that will help in decision making, data resourcing such as database management systems, the various hardware resources of the system, decision support systems, different project management applications, people management tools, and all the computerized processes that can be used to run the departments efficiently. (Imeh Akpan, 2019)



Fig 1: ICT Components used in Business (Sam O'Brien, 2020)

Customer Relationship Management

Companies and organizations are using IT to improve the way of designing and managing customer relationship. A CRM system will capture all the relations a company has with a customer for a better gain in experience. For example, let's say a customer calls and files a complaint about a product he/she purchased, then the customer relationship officer can see the

items the customer has purchased, shipping information, previous responses to the issue if any and so on. (Dr. Nazrul Islam, 2018) (Syed Shah, 2019)

Business Decision Making

Business Decision making is facilitated using tools such as Enterprise Resource Planning (ERP) software and other such decision systems that will help the managers see the performance of the company in real time. Such platforms will create an online dashboard with all the information regarding the company's finances, customer details, sales, and marketing trends. Managers will then use this data to decide on product promotions, expense cutting, customer support and order placing. (Krume Nikoloski, 2020)

Cloud Computing

Cloud Computing allows for quick data access and data storage from across the world. There is easy data backup and recovery which will help the users to store the data securely. This technology is cost efficient. The use of cloud services can help to create a workspace which will help in innovation. The cloud helps in consistent innovation efforts thereby offering a strategic advantage in today's competitive world. (Taylor P, 2020)

Reduced costs and eliminate waste

The initial introduction of ICT is costly. But that must be considered as a one-time cost only. In the long term, ICT becomes cost effective when considering how well it can streamline all the processes and other management operations. The human labor can be replaced with efficient and centralized systems that will give more productive output. The streamlining of management tasks will help in reducing unnecessary costs due to mismanagement of operations. (Modimogale L,20

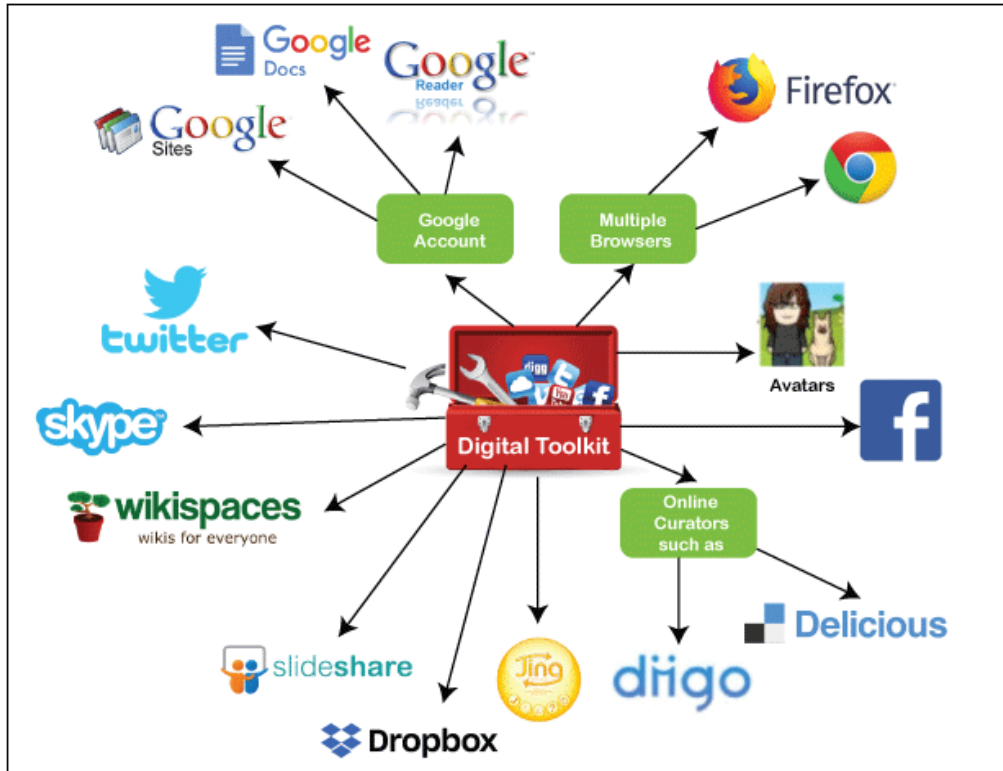


Fig 2: Communication Tools used in Business (Clare Novake, 2019)

Tools to solve the business problems

Information Technology has given business some effective tools to solve complex problems. Improved hardware with more memory, faster processors, sharper visual displays along with smarter applications have made it very easy to research data, analyze and evaluate scalability. There are many tools available to solve complex problems like task management tools, calendar scheduling tools, content management systems, Accounting softwares, social media management and so on. (O'Brien S,2019)

Results

The innovations in business and use of ICT tools have resulted in improvement in the market and in business like smarter apps, improved data storage, enhanced quality, and better productivity.

The various innovations through the ICT tools have created a radical change in the market like: The higher dependence on online shopping by customers which is considered to be more efficient than in store shopping

The use of digital marketing tools which is more efficient than the high-cost papers, television, or radio advertising.

Social networking and other networking apps are more enjoyable and efficient.

VoIP communication has proved to be better than using telephones and other devices.

Cloud Computing is better and efficient for data storage and retrieval than any private computer network. (Krume N, 2020)

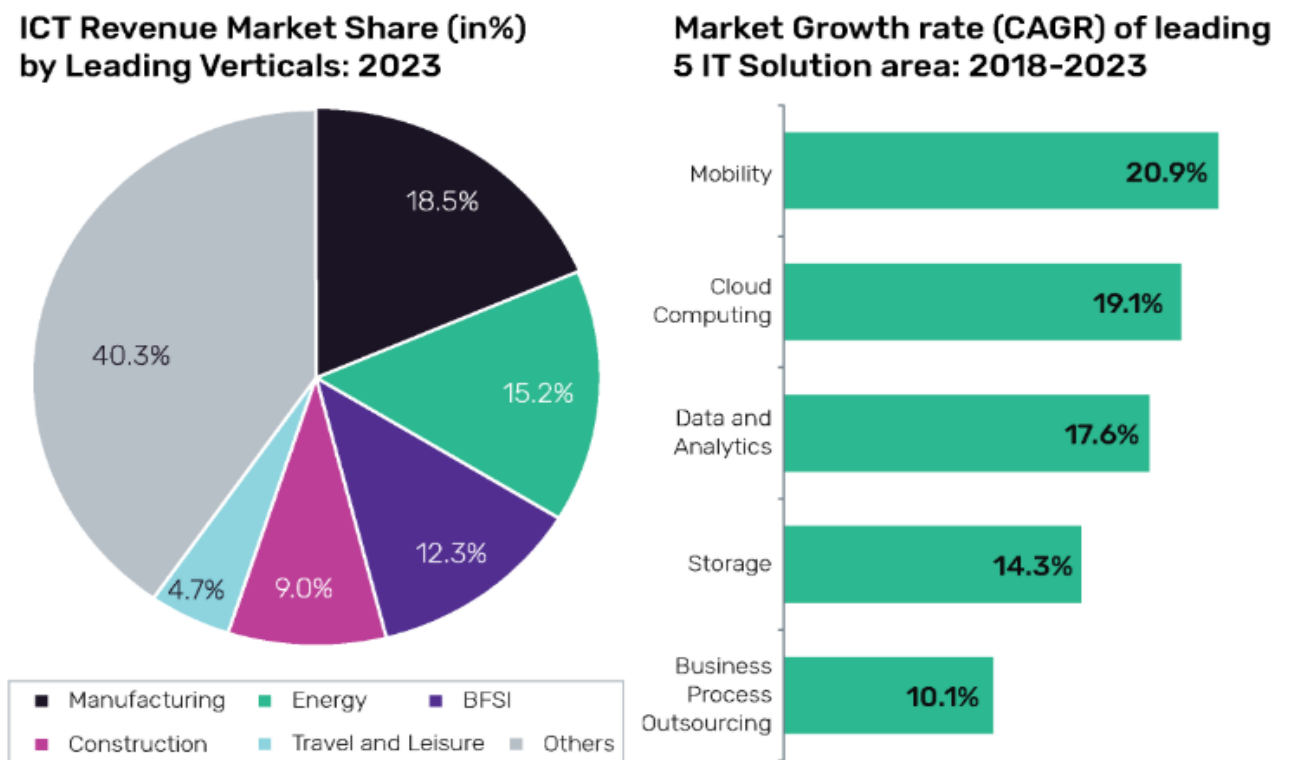


Fig 3: Global Data Market Opportunity Forecast (ITA,2021)

The businesses that have adopted using ICT tools in business tend to have these characteristics in the business:

1. More accurate business planning.

2. Marketing has become more effective.
3. The sales have increased.
4. The management of activities have become more systematic.
5. They can use real time monitoring.
6. Customer support can be better delivered by offering instant customer service.
7. Ease of solving complex problems.
8. Marketing has improved.
9. Better resource management. (Akpan, 2021)

Conclusion

Information Technology can very well change the way a business operates and competes. The information systems must be viewed strategically, and necessary investments must be made in technologies to help the organization achieve their objectives. The evidence also suggests that use of ICT for higher productivity entirely depends on the tools used and how effectively the tools are being used. Moreover, the ICT related changes are search and experimentation model where in some firms can succeed and grow while others fail and disappear. Small organizations tend to invest in information and communication technologies to support their business strategies thereby establishing a competitive advantage in the market.

The study conducted here is a literature review study. The impact of ICT varies from trade to trade. The role of ICT in organizations is not limited to managing the business but also storing and handling the data. Everything is now networked with the help of internet and web applications which makes it easy to monitor the different management operations, ICT is therefore an integral part of trendy life.

Scope For Further Research

Technology is a field that is growing on a daily basis. Keeping up to date with the new trends in technology is always a challenging one. Some areas that have to be evaluated to get a better understanding of the implementation of ICT tools in business includes areas like Virtual and Augmented Reality. The use of virtual environment can create a virtual environment for the service representatives to interact with the customers in real time as well as give the customer a real life like experience and interaction with the different products and services of the particular company. The use of cryptocurrency in business will give them advantages like more freedom, ease of transaction, and better security. Cybersecurity is also an area to be given utmost importance due to the increase in cyber attacks day by day. Some effective measures have to be implemented in order to counterattack cybercrimes. These are some areas that has to be evaluated in the future.

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Techbot- Smart Gardening Robot

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Abstract

The burgeoning field of smart agriculture demands innovative solutions that address water scarcity and labor constraints. This paper unveils the Smart Gardening Robo, a biomimetic robotic car that mimics natural water distribution systems for efficient garden maintenance. Inspired by the targeted delivery of nutrients in root zones, the robot leverages advanced sensor technology and precise water dispensing mechanisms. Utilizing Bluetooth for autonomous navigation, the Smart Gardening Robo identifies areas requiring water and delivers controlled volumes directly to plant roots, minimizing waste. A user-friendly mobile app empowers gardeners with remote monitoring and control capabilities. This research investigates the design principles, functionalities and environmental impact of the Smart Gardening Robo. We demonstrate how the robot promotes water conservation, reduces manual labor, and fosters technological integration in agriculture. By bridging the gap between nature-inspired design and cutting-edge technology, the Smart Gardening Robo represents a significant leap forward in sustainable gardening practices.

Keywords: Sensor Technology, Water Dispensing Mechanisms ,Mobile App Control, Sustainable Gardening Practices

Introduction:

As the field of smart agriculture grows, it needs new ways to deal with important problems like a lack of water and workers. This article talks about the Smart Gardening Robo, a biomimetic robotic car that is meant to change the way gardens are maintained by distributing water in a way that looks and works like natural systems. The robot uses advanced sensor technology and precise water dispensing mechanisms to make the best use of water. It was inspired by how nutrients are efficiently supplied to plant root zones.

The Smart Gardening Robo uses Bluetooth to find its way around on its own, and it can intelligently tell where water is needed and sends controlled amounts straight to the roots of plants, cutting down on waste. The mobile app for the system makes it easy to watch and control from afar, giving gardeners a useful tool for managing garden care from afar. This study looks into the robot's design principles, how it works, and how it affects the environment. It shows that the robot has the ability to help save water, cut down on manual labor, and improve the use of technology in farming. The Smart Gardening Robo is a big step forward in environmentally friendly gardening because it combines designs that are inspired by nature with cutting-edge technology.

Literature Review:

The necessity to tackle issues like water scarcity, labor constraints, and the increasing demand for sustainable practices has pushed the integration of modern technology into agriculture and gardening to the forefront in recent years. One potential way to improve efficiency, cut down on resource usage, and lessen the negative effects on the environment is smart agriculture, which makes use of cutting-edge tech like the internet of things (IoT), robotics, and artificial intelligence. The impact of these technologies on conventional farming and gardening methods is an increasingly popular topic of study, with many studies focusing on how these technologies automate labor-intensive processes and improve water management.

Smart Gardening Trends and Practices:
Parallel to developments in agriculture, smart Gardening has also gained traction, especially

among urban dwellers and small-scale farmers. Modern smart gardens often incorporate automated irrigation systems, intelligent lighting, and climate control to create optimal growing conditions (Hussain et al., 2022). These systems are designed to be user-friendly, accessible via mobile apps, and capable of integrating with smart home ecosystems (Gupta & Khan, 2023). As consumer interest in sustainable living and home Gardening grows, there is a rising demand for products that reduce manual effort while enhancing plant health and yield (Lee et al., 2022).

Challenges and Opportunities in Water Management:

Water scarcity remains one of the most pressing concerns in agriculture and Gardening. Traditional irrigation methods often lead to significant water wastage due to overwatering or inefficient delivery systems (Martinez et al., 2023). In response, researchers have developed smart irrigation systems that utilize soil moisture sensors, weather forecasts, and automated controls to optimize water usage (Nair & Verma, 2023). However, many existing solutions are either cost-prohibitive for small-scale applications or require extensive infrastructure changes, limiting their adoption (Fernandez et al., 2022).

Biomimicry in Robotic Design:

Biomimetic approaches, which draw inspiration from natural processes and organisms, are gaining prominence in robotics and smart system design. Such approaches offer innovative solutions to complex problems by mimicking the efficient mechanisms found in nature. For instance, recent developments in robotic irrigation systems have incorporated biomimetic principles to enhance water distribution, resembling the way roots transport nutrients to plants (Kim et al., 2023). This has led to the creation of more efficient, adaptable, and sustainable technologies that align closely with natural processes.

Positioning the Smart Gardening Robo within Existing Research:

The Smart Gardening Robo expands upon these developments by incorporating a biomimetic design with various components of smart agricultural and gardening technology. This robot is designed for home gardens and small-scale horticulture, offering a scalable and affordable alternative to many existing robotic systems that are primarily focused on large-scale agricultural. It takes care of water conservation and labor reduction with its Bluetooth-enabled autonomous navigation, accurate water delivery, and real-time soil moisture monitoring.

There is a need in the market for eco-friendly, user-friendly gardening tools, and the Smart Gardening Robo is a revolutionary solution that combines designs inspired by nature with state-of-the-art technology. Positioning this research within the larger framework of continuing efforts to improve agricultural and gardening techniques, this literature review emphasizes the significance of such advancements.

Methodology:

The Smart Gardening Robo is an autonomous and efficient solution for garden management that was developed using a combination of hardware and software components. The materials, tools, and methods that went into designing, building, and programming the robot are detailed in this section.

Hardware Components:

3B1 Arduino UNO R3 Microcontroller:

Operating Voltage 5V

The Arduino Uno serves as the central microcontroller responsible for processing sensor inputs and executing commands to carry out the robot's diverse range of functions. It functions as the

control unit, effectively managing communication between all hardware components.

OLatus Soil Moisture Sensor:

Communicates with the Arduino Uno in real-time and measures soil moisture in g/m³. Because of its extreme sensitivity, the sensor can quickly identify areas of dry soil.

L298N Motor Driver:

The motor driver regulates the operation of the gear DC motors, which facilitate the movement of the robot. The device takes instructions from the Arduino Uno in order to travel the garden, using soil moisture data as a basis.

HC-05 Bluetooth Module:

The Bluetooth module allows wireless communication between the robot and a mobile app. It facilitates real-time data exchange, enabling remote monitoring and control.

Gear DC Motor:

Gear DC motors are essential for the robot to move around on its own. The motors are carefully controlled by the motor driver to ensure accurate and precise movement throughout the garden.

SP Micro DC Water Pump:

The micro DC water pump efficiently delivers water directly to plant roots. It is designed to activate according to soil moisture readings, allowing it to dispense precise amounts of water for optimal hydration.

Software Components:

Programming Language and Environment:

The robot was developed in C++ using the Arduino Integrated Development Environment (IDE). The software code manages sensor data processing, controlling the motor, water the delivery process, and Bluetooth connection.

Mobile App Integration:

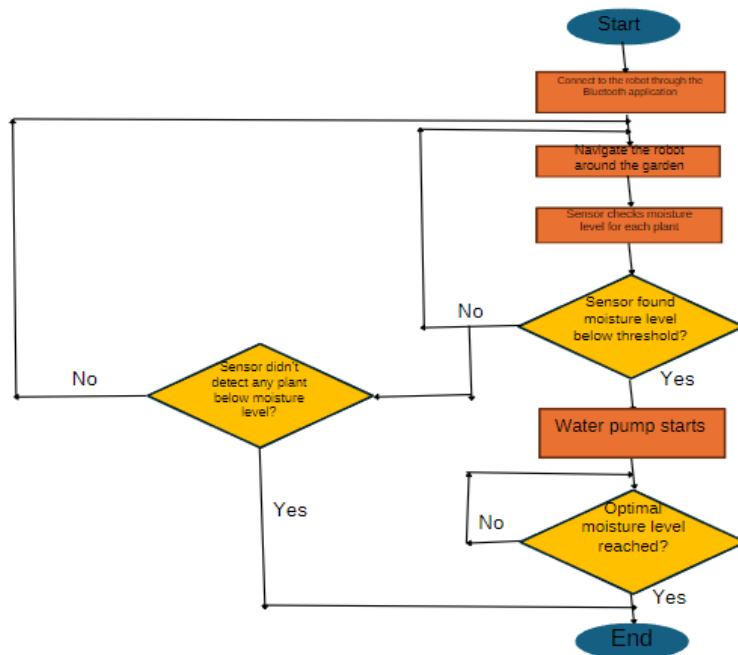
A custom mobile app was made to improve the robot's features. It gives users an easy-to-use way to control and watch the robot from afar. The app offers:

Real-Time Soil Moisture Readings: Provides real-time data from the soil moisture sensor, enabling users to promptly evaluate plant hydration requirements.

Watering Schedules and Customization: Enables users to establish irrigation timetables and personalize the volume of water released according to the individual needs of each plant.

Location and Navigation Monitoring: Offers a map interface for monitoring the robot's location and navigation path, ensuring accurate movement throughout the garden.

Project Flow Chart



System Integration and Testing:

The Arduino was programmed with the C++ code after the hardware was put together. The mobile app was then connected to the Bluetooth gadget so that it could talk to the phone. The whole system went through a lot of tests to make sure it could accurately identify soil moisture, navigate itself, and pump out water. The app's scheduling, real-time tracking, and navigation features were also checked to make sure they worked well with users.

Results

In a controlled garden setting, the Smart Gardening Robo was tested to see how well it could find wet soil in real time, navigate itself, accurately dispense water, and let users connect with it through a mobile app. The results that were seen were these:

1. Soil Moisture Detection and Watering Efficiency:

The OLatus soil moisture sensor was very good at finding the right amount of moisture in the soil in different garden plots. The robot correctly found dry spots and turned on the SP micro DC water pump to bring the right amount of water to those places. The robot was able to recognize soil moisture with an average accuracy rate of 92% over several test cycles. Compared to traditional watering methods, it also used a lot less water. Targeted supply of water directly to plant roots cut down on runoff and evaporation, which meant that about 30% less water was used.

2. Autonomous Navigation:

The Smart Gardening Robo effectively navigated across various garden configurations utilizing its gear DC motors and L298N motor driver, while adhering to predefined paths established through the Bluetooth-connected smartphone application. The robot demonstrated consistent efficacy in circumventing obstacles and traversing rough terrain. The Bluetooth module facilitated seamless contact with the app, allowing for remote adjustment of the robot's

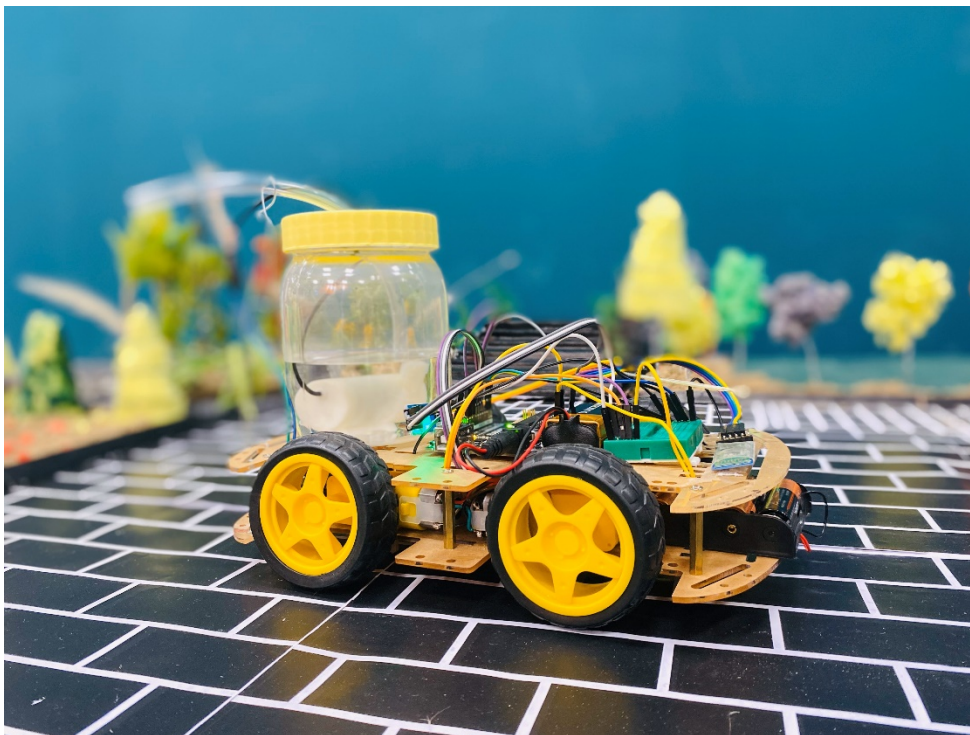
movement as needed. Throughout the trials, the robot efficiently covered an average garden area of 50 square meters in around 15 minutes, showcasing its proficiency in navigating and tending to different garden plots.

3. Mobile App Functionality and User Interaction:

The customized mobile application offered a smooth and uninterrupted user experience, enabling the live tracking of soil moisture levels, configuring watering timetables, and personalizing water quantities. Users expressed a high level of satisfaction with the app's user-friendly nature, specifically praising the straightforward UI for tracking the robot's whereabouts and navigation route. The immediate input on soil moisture levels and the capability to remotely modify irrigation parameters were emphasized as key attributes. User responses indicated that the software substantially decreased the amount of time and energy needed for garden upkeep.

4. Environmental Impact and Sustainability:

The utilization of the Smart Gardening Robo showcased significant ecological advantages. The robot's ability to accurately detect soil moisture and water plants accordingly greatly aided water conservation efforts, particularly in water-scarce countries. The robot's automated features also minimized the requirement for manual work, hence reducing the carbon footprint linked to conventional gardening procedures. Moreover, the robot's scalability enables it to be customized for gardens of different dimensions, thereby fostering sustainable gardening practices on both small and big levels.



Future Developments:

Future improvements to the Smart Gardening Robo will aim to make it even more useful and efficient by building on its success. Adding a robotic hand with a moisture monitor is a key way to make things better. By letting the robot move the sensor to different depths and angles in the earth, this addition will make soil moisture detection more accurate and flexible. This improvement should make moisture readings more accurate and improve the accuracy of

watering.

Adding artificial intelligence (AI) to the robot's system is also planned to improve its ability to work on its own. The robot will be able to look at data on the environment, learn from past irrigation trends, and make decisions in real time about how to best use water. This ability to learn on its own will make the robot better at managing water supplies and adapting to different garden conditions without any help from a person. Adding AI to the robot will also help it understand different types of plants and know how much water they need, which will make garden care even better and more environmentally friendly.

Conclusion:

A big step forward in garden maintenance technology, the Smart Gardening Robo solves important problems like saving water and making work more efficient. With its high-precision soil moisture monitor and targeted watering system, the robot makes sure that the soil has the right amount of moisture, which helps plants grow better and minimizes water waste. Utilizing Bluetooth, its seamless integration with an easy-to-use mobile app makes the technology available to users with varied levels of technical knowledge. This meets the growing need for automated, user-friendly solutions in smart agriculture. Although tests did show some things that could be better in the future, like making the robot's navigation speed faster for bigger gardens and looking into other ways to connect it, like Wi-Fi or LoRa, to increase its range and make data transmission more reliable. A robotic hand with more accurate moisture detection would make watering more precise, and advanced AI-based pathfinding tools could make it even easier to navigate.

While the Smart Gardening Robo combines nature-inspired design with cutting-edge technology, it still offers a useful and creative way to grow in a way that is good for the environment. Diversity as well as capacity to fit different garden sizes and types show that it could be widely used by both amateur and professional gardeners. The addition of AI for self-driving decision-making and better irrigation management in the future will likely make the robot even more useful, solidifying its position as the top smart gardening option. The Smart Gardening Robo creates a new standard for efficient, eco-friendly, and user-friendly yard care by combining cutting-edge technology with environmentally friendly methods. This will allow for more innovations in the future.

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Identifying the Key Determinants of Students Academic performances

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Abstract

Various factors play crucial roles in determining students' academic performance. This has been empirically tested in various context where the findings demonstrated many factors influence students' academic achievements. Among them literature has highlighted the student self-motivation, engagement and the course work relevance have positive impact towards academic performances of students. This has been tested in different geographical areas under variety of context such as science, technology, engineering, and management areas. This study aims to understand the impact of student motivation, engagement, and perceived relevance of coursework towards student grades/ performances. The study sample was drawn from the higher secondary education level in Sri Lanka depending on the self-administered questionnaire survey-based data collection technique. Collected data were analysed using statistical software SPSS. Both descriptive statistics and inferential statistics were used appropriately determine the relationships between the study variables. Study findings revealed academic performances are almost similar among students regardless the gender. depending on the student study stream their engagement has different implications whereas the study streams do not have any other differences in the context of student motivation and coursework relevance. It should make the coursework further interesting and aligned to students' future expectations to lead them for better academic performances.

Keywords: *Student motivation, Student engagement, Coursework relevance, Academic performances*

Introduction

The determinants of students' academic performance are multifaceted, encompassing demographic, psychological, social, and lifestyle factors. Research indicates that a growth mindset or motivation, determination, and academic self-efficacy significantly influence performance, highlighting the importance of non-cognitive variables in educational success (Ursachi et al., 2015). Additionally, psychosocial factors such as financial issues, peer relationships, and family dynamics play crucial roles, as evidenced by qualitative studies that reveal their impact on students' educational progress (Hatem et al., 2022). Further the broader social and economic contexts, including parental education and home environment, are critical determinants of academic success (Tebbouche, 2023). Collectively, these findings underscore the need for a holistic approach to enhance student performance, integrating academic strategies with psychological support and social engagement (Zakaria Alj and Anas Bouayad, 2024)

A range of factors have been found to significantly impact student grades. Arora and Singh (2017) identified teaching efficacy, study habits, distraction factors, and family environment as key predictors of academic performance. Research indicates that intrinsic motivation is a strong predictor of student engagement, which in turn enhances performance outcomes. For instance, Liu et al., (2024) found that both intrinsic and extrinsic motivations positively influence emotional engagement and academic performance in blended learning environments. Moreover, Afzal and Crawford (2022) emphasized that self-motivation enhances engagement, particularly in online settings, directly correlating with improved performance. Student motivation, engagement, and perceived relevance of coursework significantly impact student performance according to the study, emphasizing the importance of these factors in academic achievement (Simmons, 2014).

The impact of declining student grades can be far-reaching and multifaceted, affecting not just

individual student academic performance, nonetheless it influences broader educational outcomes, social reputation, and economic status of the institute. It can lead to decreased motivation, self-esteem issues, increased dropout rates, reduced opportunities for higher education or employment, and ultimately hinder overall societal progress and development. Understanding and addressing the implications of declining grades are crucial for implementing effective interventions and fostering a supportive learning environment for all students. Thus, this study aims at identifying the root causes of declining grades/ students' performances based on students' motivation, engagement, and relevance of coursework.

Research Objectives

- To investigate the effects of student motivation on their educational performances
- To investigate the implications of student engagement on their academic performances
- To investigate the relationship between the relevance on coursework and student grades.
- To provide an understanding of the root causes for student poor academic performances and to derive recommendations for solutions

Literature Review

Student motivation and academic performances

Student motivation, particularly intrinsic motivation, significantly impacts academic performance. Higher levels of intrinsic motivation correlate with better academic achievements among students in the study (Raysharie et al., 2023). María Cristina Cepeda-González et al. (2023) emphasized student motivation positively impacts academic performance by enhancing skills and learning. Interventions focusing on motivation can improve students' school results, as highlighted in the research. Student motivation positively impacts academic performance, as shown in the study of Muthmainnah, Yakin and Seraj (2023). It concluded the Metaverse technology which consist of virtual reality and augmented reality related interactive learning environment enhances motivation, leading to improved engagement and ultimately better academic outcomes. A study carried out by Abah, Ogugua and Okoh (2022), in Nigeria to understand the student's intrinsic motivation towards academic performances revealed intrinsic motivation positively impacts junior secondary school students' academic performance in mathematics despite family background, showcasing its significance in enhancing educational outcomes. Positive Teacher-Student Relationship (TSR) enhances student motivation, leading to improved academic performance in Pakistani students learning Chinese as a second language (Nawaz, 2023). Further, Ainurrohman and Handayani (2020), discussed Student motivation has a positive impact on academic achievement, as indicated in the study, influencing 62.3% of student academic performance at Gama English Course Sukoharjo. Students' academic performance is influenced by their intrinsic and extrinsic motivation. Positive intrinsic motivation leads to better results, while extrinsic motivation can enhance performance standards based on social norms.

In contrary Laliman and Palacio (2022) emphasized that different types of motivation, both intrinsic (goal setting, feedback, enjoyment) and extrinsic (classroom rewards, grades, incentives), were found to have no significant impact on students' academic performance in Social Studies. Correspondingly, student motivation, both intrinsic and extrinsic, negatively correlates with academic performance in mathematics, suggesting a significant influence on academic outcomes among schoolchildren in northern Colombia (Martínez-Ariza et al., 2022)

Student engagement and academic performances

Student engagement plays a crucial role in determining academic performance (Cabrejas and Mendoza, 2023). Studies highlight that students' active involvement in class discussions and self-regulated learning strategies significantly impact their academic success Chukwuemeka et al. (2023). As argued by Zeng (2023) academic self-efficacy is identified as a key factor in

preventing academic burnout and dropouts, with a strong correlation found between academic self-efficacy, academic engagement, and academic performance. Additionally, the use of predictive analytics through machine learning techniques can help identify students at risk of low performance early on, allowing for timely interventions to enhance learning outcomes. Moreover, Azzali, Mazza and Tibiletti, (2022) discussed the student engagement with learning management systems during the COVID-19 pandemic has shown a positive association with academic performance, especially in blended learning formats that incorporate synchronous online lectures and face-to-face tutorials.

Coursework relevance and academic performances

Students' course materials page views had a weak positive correlation with academic performance in online courses, showing relevance of coursework on student performances in the study of Yeung and Lee (2022), moreover it signifies the coursework design significantly impacts student performance. Various factors such as students' engagement with course materials (Al-Kindi and Al-Khanjari, 2022), the nature of the course (Tan, Gervais and Koh, 2022), and the type of class; conceptual vs. skills-based (Black, Daughtrey and Lewis, 2014) play crucial roles. Further discussed by Bekkering and Ward (2020) coursework relevance on student performance varies based on class type. Concepts classes show a positive relationship, while skills classes may have masked results due to lab work and late drops. For instance, students who engage more with e-textbooks tend to perform better, indicating a positive correlation. Additionally, the study found that students in introductory blended courses outperformed those in face-to-face courses, emphasizing the importance of course structure. Moreover, the type of course design (experiential, participative, traditional) influences student perceptions and performance on assessments

Research Design

Research design basically concerned on research philosophy, research approach, methodological choice, research strategy and time horizon that have been employed in the study. This study which explores the relationship between student motivation, engagement, coursework relevance and student academic performances following positivistic research philosophy focusing highly structured design with large samples from objective perspective. The study is in deductive approach initiated based on gathered theoretical underpinnings followed by a literature review. Thus, followed by mono method quantitative research as the methodological choice, the study comprises a single data collection technique i.e questionnaire survey. Further, due to time constraint the study is conducted as a cross sectional research.

3.2 Conceptual Framework and Hypotheses Development

The conceptual framework for the study is developed based on developed theoretical background and student motivation, engagement, and coursework relevance are considered to be study independent variable whereas the student academic performance is considered as the dependent variable.

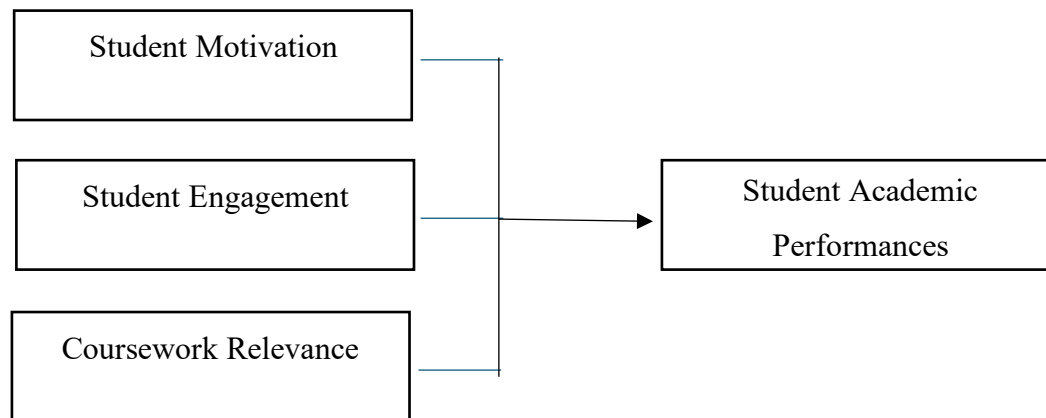


Figure 3: Conceptual Framework

The study hypotheses are,

H1₀: There is no relationship between student motivation and academic performances.

H1_a: There is a relationship between student motivation and academic performances.

H2₀: There is no relationship between student engagement and academic performances.

H2_a: There is a relationship between student engagement and academic performances.

H3₀: There is no relationship between coursework relevance and academic performances.

H3_a: There is a relationship between coursework relevance and academic performances.

3.3 Population and Sampling

The study sample was drawn from the higher secondary education level from high schools in Sri Lanka, depending on the self-administered questionnaire survey-based data collection technique. It focuses on the higher secondary education (advanced level) three (03) streams of education, mathematics, commerce, and arts.

Students from higher secondary educations were specifically targeted as the sample, as the data were collected using a self-administered questionnaire. This level students represent an age range of 16 to 18 years considering both male and female students from all the three streams. Hence, the questionnaire is developed in a google form and shared among the students via email using convenience sampling technique.

Questionnaire was developed based on existing literature. Mainly the questionnaire includes two sections. Section one includes the student's demographic data; gender, study stream, etc and the section two includes likert scale questions covering three independent variables and one dependent variable. Collected data were analysed using statistical software SPSS. Both descriptive statistics and inferential statistics were used appropriately determine the relationships between the study variables.

Data Analysis and Findings

Sample Description

The sample represents a proportionate combination of both male and female students, as the analyses were carried out considering 47.54% female students and 52.46% male students. Further, the study focused on the stream of the students' study areas, and represented commerce, arts and mathematics streams; 39.34% represented commerce, 29.51% represented 29.51% and 31.15% was represented the mathematics stream. (see Appendix 2 for student demographic charts).

Reliability Analysis

The internal consistency of the study was performed using a reliability test, and by applying Cronbach's Alpha test the study confirmed the degree of internal consistency of the items tested. As the Cronbach Alpha value of the study is 0.729, this indicates an acceptable level of reliability (Ursachi, Horodnic and Zait, 2015).

Reliability Statistics	
Cronbach's Alpha	N of Items
.729	17

Table 2: Reliability Test - Cronbach Alpha

Accordingly, the study internal consistency was proved to be reliable and the analyses was continued with the operationalized items.

Normality Test

The normality assumptions of the collected data were tested using standard skewness and standard kurtosis values. Hatem et al. (2022) mentioned the data are normally distributed when the skewness value is -1 to +1 and a Kurtosis value lie is -3 to +3, thus the study data are normally distributed as the skewness and kurtosis values are within the required range.

Multicollinearity Test

Multicollinearity test was carried out to determine whether there is a similarity between the study independent variables. Multicollinearity occurs when two or more variables of the study correlated and provide redundant information about the responses. This was tested using Variance Inflation Factor (VIF) and Tolerance statistics.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.685	.627		4.282	.000		
	SM	.043	.122	.050	.351	.727	.736	1.359
	SE	-.195	.126	-.218	-1.543	.128	.740	1.351
	CR	.370	.136	.332	2.716	.009	.991	1.009

Table 3: Multicollinearity Test Statistics

Multicollinearity issues exist if VIF values exceed 4.0 and TOL is less than 0.2 (Hair et al. 2010), nonetheless the study proved the non-existence of multicollinearity.

Mean Comparison

Mean comparison was carried out to investigate the varied responses between different demographic group, hence the study has gathered student gender and study stream, the mean comparisons were carried out using one-way ANOVA.

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
SM	Male	32	3.2500	.57851	.10227	3.0414	3.4586
	Female	29	3.0862	.45452	.08440	2.9133	3.2591
	Total	61	3.1721	.52548	.06728	3.0376	3.3067

SE	Male	32	3.8281	.48125	.08507	3.6546	4.0016
	Female	29	3.8448	.53625	.09958	3.6408	4.0488
	Total	61	3.8361	.50391	.06452	3.7070	3.9651
CR	Male	32	3.0625	.41640	.07361	2.9124	3.2126
	Female	29	2.9569	.38999	.07242	2.8086	3.1052
	Total	61	3.0123	.40421	.05175	2.9088	3.1158
AP	Male	32	3.2438	.44209	.07815	3.0844	3.4031
	Female	29	3.1241	.45799	.08505	2.9499	3.2983
	Total	61	3.1869	.44999	.05762	3.0716	3.3021

ANOVA							
		Sum of Squares	df	Mean Square	F	Sig.	
SM	Between Groups	.408	1	.408	1.490	.227	
	Within Groups	16.159	59	.274			
	Total	16.568	60				
SE	Between Groups	.004	1	.004	.016	.898	
	Within Groups	15.231	59	.258			
	Total	15.236	60				
CR	Between Groups	.170	1	.170	1.039	.312	
	Within Groups	9.634	59	.163			
	Total	9.803	60				
AP	Between Groups	.218	1	.218	1.076	.304	
	Within Groups	11.932	59	.202			
	Total	12.150	60				

Table 4: Mean Comparison – Gender

Student motivation, coursework relevance and student academic performances mean values were recorded around 3, however for student engagement a higher mean value for both male and female students was indicated i.e 4 (approximately). According to the one-way ANOVA results the F statistic shows the differences between male and female for their responses for all the variables, nonetheless as the significance value is greater than 5% confidence level any of those differences are not statistically significant.

One-way ANOVA was used to investigate any difference among students in different study streams in their responses.

				Std.		95% Confidence Interval for Mean	
		N	Mean	Deviation	Std. Error	Lower Bound	Upper Bound
SM	Commerce	24	3.2917	.51955	.10605	3.0723	3.5111
	Arts	18	3.0278	.51370	.12108	2.7723	3.2832
	Mathematics	19	3.1579	.53496	.12273	2.9001	3.4157
	Total	61	3.1721	.52548	.06728	3.0376	3.3067
SE	Commerce	24	4.0417	.47012	.09596	3.8432	4.2402
	Arts	18	3.5278	.40118	.09456	3.3283	3.7273
	Mathematics	19	3.8684	.50941	.11687	3.6229	4.1140
	Total	61	3.8361	.50391	.06452	3.7070	3.9651
CR	Commerce	24	3.0104	.40700	.08308	2.8386	3.1823

AP	Arts	18	3.0139	.30283	.07138	2.8633	3.1645
	Mathematics	19	3.0132	.49633	.11387	2.7739	3.2524
	Total	61	3.0123	.40421	.05175	2.9088	3.1158
	Commerce	24	3.2250	.43062	.08790	3.0432	3.4068
	Arts	18	3.2778	.44531	.10496	3.0563	3.4992
	Mathematics	19	3.0526	.47066	.10798	2.8258	3.2795
	Total	61	3.1869	.44999	.05762	3.0716	3.3021

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
SM	Between Groups	.722	2	.361	1.321	.275
	Within Groups	15.846	58	.273		
	Total	16.568	60			
SE	Between Groups	2.745	2	1.373	6.374	.003
	Within Groups	12.490	58	.215		
	Total	15.236	60			
CR	Between Groups	.000	2	.000	.000	1.000
	Within Groups	9.803	58	.169		
	Total	9.803	60			
AP	Between Groups	.526	2	.263	1.312	.277
	Within Groups	11.623	58	.200		
	Total	12.150	60			

Table 5: Mean Comparison - Study Stream

The mean values for the responses of students based on their study stream also recorded mean values around 3 for all the variables except student engagement as it recorded a mean value of 4 approximately. However, the one-way ANOVA results indicated significant differences among the responses of students of commerce, arts and mathematics students as the F statistic is 6.374 with a significance value of 0.003 which is less than 0.05.

Correlation Analysis

Correlations					
		SM	SE	CR	AP
SM	Pearson Correlation	1	.510**	-.094	-.092
	Sig. (2-tailed)		.000	.474	.478
	N	61	61	61	61
SE	Pearson Correlation	.510**	1	-.056	-.212
	Sig. (2-tailed)	.000		.666	.101
	N	61	61	61	61
CR	Pearson Correlation	-.094	-.056	1	.340**
	Sig. (2-tailed)	.474	.666		.007
	N	61	61	61	61
AP	Pearson Correlation	-.092	-.212	.340**	1
	Sig. (2-tailed)	.478	.101	.007	
	N	61	61	61	61

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6: Correlation Table

Correlation analysis was carried out to investigate the association between independent and dependent variables. Both student motivation and student engagement showed a weak negative association with student academic performances, however those associations were not statistically significant as the P values are higher than 0.05 (at 95% confidence level). The association between coursework relevance and student academic performances proved to be moderate positive with a R value of 0.340 and the association is statistically significant at 99% confidence level ($P = 0.007 < 0.05$).

Regression Analysis :

Hypotheses of the study were tested primarily using regression analyses. The resulted statistics indicated an insignificant relationship between student motivation and their academic performances.

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change in R Square	F Change	df1	df2	Sig. Change
1	.092 ^a	.009	-.008	.45184	.009	.509	1	59	.478
a. Predictors: (Constant), SM									
b. Dependent Variable: AP									

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.104	1	.104	.509	.478 ^b
	Residual	12.046	59	.204		
	Total	12.150	60			
a. Dependent Variable: AP						
b. Predictors: (Constant), SM						

Table 7: Regression Analysis

Student Motivation and Student Academic Performances

Indicated R square value of 0.009 indicates that student motivation impacts on student academic performances by 0.9%, however this relationship does not statistically significant as the significance value is not accepted under 95% confidence level ($p=0.478 > 0.05$). Thus, the H_1 was rejected at 5% confidence level.

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change in R Square	F Change	df1	df2	Sig. Change
1	.212 ^a	.045	.029	.44350	.045	2.770	1	59	.101
a. Predictors: (Constant), SE									
b. Dependent Variable: AP									

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.545	1	.545	2.770	.101 ^b
	Residual	11.605	59	.197		
	Total	12.150	60			
a. Dependent Variable: AP						
b. Predictors: (Constant), SE						

Table 8: Regression Analysis

Student Engagement and Student Academic Performances

Impact of student engagement on student academic performance also does not show a statistically significant relationship, though it has an R square value of 4.5% impact, however the sig. value indicated as $0.101 > 0.05$ at a 95% confidence level. The H_2 was rejected as no significant relationship is recorded in the analysis.

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.340 ^a	.116	.101	.42677	.116	7.708	1	59	.007
a. Predictors: (Constant), CR									
b. Dependent Variable: AP									

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.404	1	1.404	7.708	.007 ^b
	Residual	10.746	59	.182		
	Total	12.150	60			
a. Dependent Variable: AP						
b. Predictors: (Constant), CR						

Table 9: Regression Analysis

Coursework Relevance and Student Academic Performances

The coursework relevance showed a statistically significant impact of 11.6% on student academic performances, the relationship is significant at 99% confidence level as the P value is 0.007 which is less than 0.01. H_3 which was about the relationship between coursework relevance and student academic performance was accepted at 99% confidence level.

Overall hypotheses testing carried out for three independent variables were resulted accepting only one hypothesis, that is the relationship between coursework relevance and student academic performances, whereas other two hypotheses; student motivation and engagement were accepted as statistically insignificant.

Hypotheses	Relationship	Status	Accepted/ Rejected
H ₁	Student motivation → Student Academic Performances	Not significant	Rejected
H ₂	Student engagement→ Student Academic Performances	Not significant	Rejected
H ₃	Coursework relevance→ Student Academic Performances	Significant	Accepted

Table 10 Summary of Hypotheses Testing:

Conclusions

It was framed under some determinants identified in the literature review, student motivation, student engagement, and coursework relevance on their academic performance. As per the study findings there are no significant changes among both male and female students between the determinants of students' academic performances, which means student motivation, engagement, coursework relevance, and academic performances are almost similar among students regardless the gender. However, depending on the student study stream their engagement has different implications whereas the study streams do not have any other differences in the context of student motivation and coursework relevance. Thus, when student engagement is concerned higher educational institutes need to concern about student separately for commerce, arts, and mathematics. Contrary to Raysharie et al. (2023); Muthmainnah, Yakin and Seraj (2023) it was concluded that there are no any associations between student motivation and their academic performances, while the coursework relevance proved to be positively associated with student academic performance this finding was similar to Chen et al. (2016).

Consequently, the study investigated the impact of the determinants of student academic performance, and in accordance with Laliman and Palacio (2022) student motivation and engagement do not have any significant impact over student academic performance at higher educational institutes, while coursework relevance has 11.6% positive impact over student academic performances. Therefore, the institute should make the coursework further interesting and aligned to students' future expectations to lead them for better academic performances. However, considering student motivation and engagement, it should be addressed focusing more innovative and creative approaches to enhance their contribution to higher educational concerns. These concerns might have indicated absence of relationships or an impact due to lack of sufficient or exciting motivational and engagement efforts in the college, thus it should be immediately addressed with corrective actions.

Limitations of the study

The study focused only on the Advanced Level students considering the capacity of the students to fill a self – administrated questionnaire. Therefore, it could not understand the underline causes for declining grades among students in primary school. Therefore, future studies can be arranged focusing both quantitative as well as qualitative data collection methods such as interviews or focus group discussions. Further, data was collected from a sample of 61 students even though it was planned to collect data from 150 students due to the time constraint. Thus, future research should focus on more respondents for more generalizable results.

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Online Shopping vs In-store Shopping of Clothes: A comparison in DubaiMarket

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Abstract

The core idea of conducting this research was to understand the changing perception of people toward the idea of shopping. With the era of digitalization, even the shopping experience has changed and shifted towards the channels of E-commerce. People are becoming more and more reliant on technology and E-channels for the purchase of goods and services. Various research studies have been conducted on a similar background to compare the online shopping experience with that of traditional in-store shopping. Each has its pros and cons. However, when it comes to shopping for clothes, the studies are not restricted to this one good. Therefore, this study is conducted to focus only on the choice of people about medium to shop clothes. This study has been conducted on people in Dubai by using a questionnaire as a tool. Out of the 30 distributed questionnaires only 23 were returned and were taken as a sample of the study. The findings were interesting and highlighted that mindset of people is shifting toward E-shopping even in the purchase of clothes. The study is restrictive with a small number of respondents but revealed interesting findings that can be used as a base for future research.

Keywords: Online Shopping, In-Store Shopping, Clothes, Experience, Dubai

Introduction

The basic activity of spending money in exchange for goods or services is known as shopping. It is not just a physical activity that individuals generally do to satisfy their needs and wants but is also an experience that brings a change in the lives of individuals.

For some people, shopping is a way to stay in the trend, for some it serves as a therapy that gives them a break from their routine life, and for some, it is a medium to get the things that they require in day-to-day life. It is an unavoidable task that is a major part of every individual's life. There have been various blogs that suggest that shopping is an activity that is highly preferred by girls. It has been suggested that girls take shopping as a major stress reliever (Novacov, 2016).

The perception of people differs not only for shopping but also in the way they shop and the places where they prefer to shop from. Various factors are associated with shopping. Different types of commodities can be shopped in different ways. The invention of technology has changed the way shopping is perceived and chosen by people. The use of technology to buy and sell goods has got into a new dimension. With one click people can shop for whatever they want. The whole shopping mall is available at their fingertips.

There has been an ongoing debate about the preference of people on shopping online or going to stores or malls for shopping. A lot of people believe that online shopping options have made their lives easy, especially after the Covid-19 pandemic. A lot of companies also have benefited from using the online store over the in-store. The statistics declare that online shopping is a preferred mode for people around the world (Watson, 2020). However, it is still a questionable and researchable subject to understand which of the commodities are the ones that people prefer to buy online and which would be the ones that they are wanting to buy from the stores.

Research Objectives

To study the concept of online shopping and in-store shopping.

To evaluate the advantages and disadvantages of online shopping and in-store shopping.

To analyse the difference in the experience between online shopping and in-store shopping for clothes.

To understand the choice of medium of shopping of customers in Dubai especially for

buying clothes.

Literature Review

According to the study conducted by Aryani et al. in 2021 on the consumers of two different nations which is Malaysia and India, it is noted that online shopping methods can never completely replace the traditional methods of shopping. The main data of this study has been collected from a random sample of 200 respondents who are from two different nationalities, the data set revealed that people are opting for a mixed model of shopping. The main reason that came to light for choosing the traditional shopping method over online was the physical examination of the product before making a final purchase. A common problem that the respondents said they face while shopping is the mode of payment. The methods of transactions are risky especially with the increasing use of cards for purchases. It was concluded by the researchers that the Covid-19 Pandemic has led to a rise in the use of online shopping methods, but people still prefer in-store shopping because of the delivery time, and quality factors.

In the views of Agbonifoh and Odia (2020), there is a mixed pleasant and unpleasant feeling amongst the people in Nigeria with both online and traditional shopping. The research that has been conducted on 423 people of Benin Metropolis revealed that the people who prefer the traditional method of in-store shopping are pleased by the courtesy and services they receive from the representatives in the stores. As opposed to this, the most negative factor that turns down the experience of in-store shopping is getting substandard products and fake hopes from the representatives. It has also been noted in the study that the discount offers and promotions available on the online options attract the buyers towards it, but the delay in the delivery and gap in expectation and reality makes the experience upsetting. A recommendation is provided by the researchers that there should be a scrutiny of the goods being delivered online to gain more popularity in the region.

As studied by Kumar and Khurana (2019), the trend of online shopping has been increasing mainly because it saves time for the consumers, availability of the payment option, and variety that a consumer can get in one place. This study was conducted in the Haryana region in India because the trend is that going to the store and shopping can be more satisfying than being in one place and spending hours on a screen. The study conducted in this region highlighted that people prefer online shopping sometimes only. Even though the government of the nation is promoting digitalization, the responses highlighted the fact that checking the quality of products, buying from local stores, and going out are some key reasons that still make in-store traditional shopping more attractive to people.

Research Methodology

A blueprint of the work and way to look forward in the research is the core understanding of research methodology. Every research follows some steps of this methodology to give research a good outlook and a better shape for the readers to understand the idea in the mind of the researcher. This is an exploratory and descriptive study. As opposed to exploring new information, the research that helps in confirming the facts by determination of the frequency of occurrence of events or the relationship that two or more variables have is known as a descriptive study (Shukla, 2010). This is more related to describing concepts. Since there is not enough data about the perception of people about shopping for clothes online v/s in-store this research is added to the literature and hence is exploratory in nature.

Data Collection Methods

The data of this study has been collected from both primary and secondary sources. Primary sources of data collection are the sources from which the individual attains first-hand and raw

information that has not been used in the past. Secondary as the name suggests is second-hand information that has been reported in the past and is being reused to understand concepts or give a base to the study (Streefkerk, 2019). The primary data for this study was gathered using a survey questionnaire and the secondary data was gathered with the help of books and different research articles on a similar subject. This study uses a small sample of 30 respondents. When the final data was received through google forms, it was seen that only 23 responses were filled and were good to consider for the analysis.

Analysis and Interpretation:

Gender

Gender	Responses
Male	11
Female	12

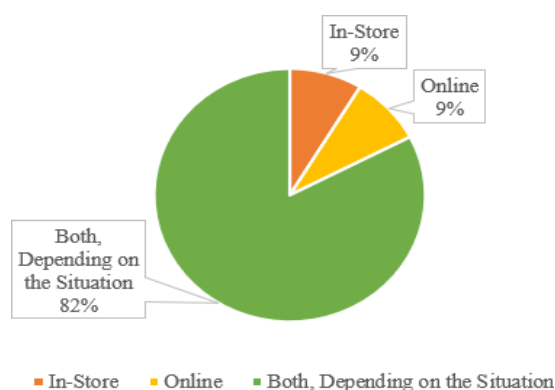
It is noted from the table that more than half of the responses were received from females (52%) and the remaining from males (48%). Out of 23 responses, 12 were female and 11 were male.

Age

Age	Responses
Below 21	4
21-30	11
31-40	7
41 and Above	1

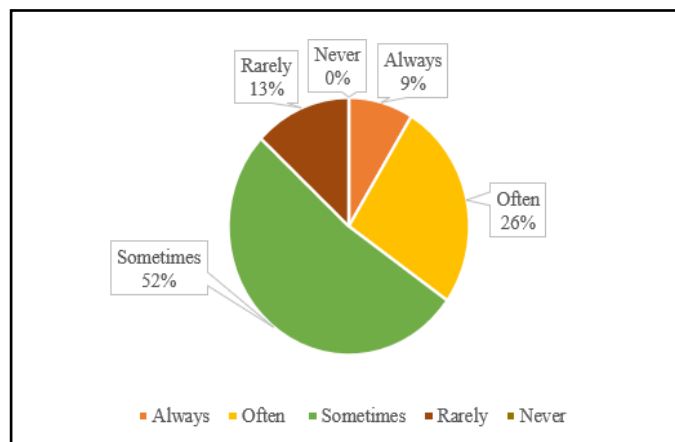
The age group of many respondents, which is 48% is in the range of 21-30. Only one response was received from the range of 41 and above. The responses from the range of 31-40 were 7 and 4 respondents are in the age group of below 21.

Medium of shopping preferred when buying clothes:

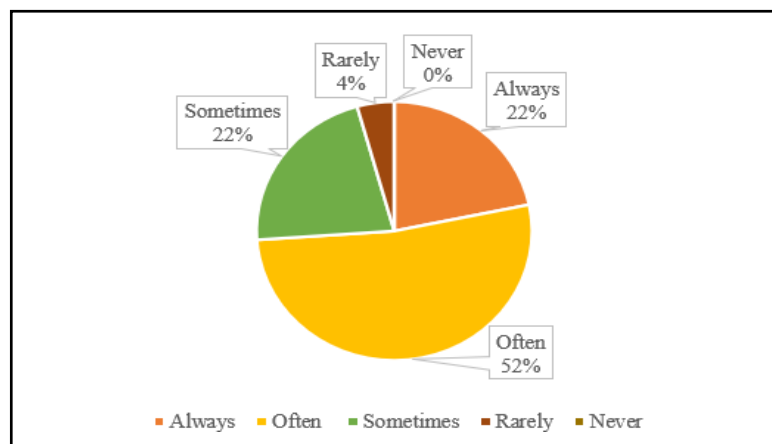


Most respondents which are 19 of 23 reported that the mode of buying clothes depends on the situation and they would use either online or in-store based on the situation. 2 respondents reported that they prefer buying clothes online and 2 respondents reported that they prefer

buying clothes in-store.
Frequency of buying Online:



As shown in the pie chart, most respondents which is 52% (12) stated that they sometimes buy clothes online. 6 out of 23 said they often purchase clothes online, only 2 said that they always buy clothes online. It was noted that none of the respondents have ever bought clothes online, while 3 people rarely choose the online medium to buy the clothes. Satisfaction with the variety and options of clothes available online:



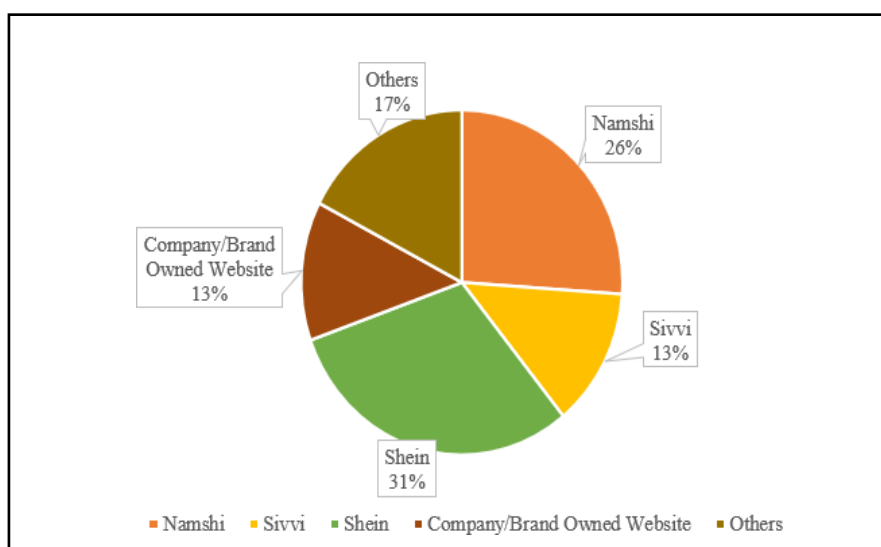
It is found that a maximum number of respondents which is 12 of 23 said that they are often happy with the variety and options of the clothes that are available online. Only 1 respondent marked to be rarely happy with the variety and options of clothes available online. 5 respondents are always, and 5 respondents are sometimes happy with the variety and options of clothes.

Quality of clothes differs when purchased online v/s in-store:

Difference in the quality of clothes online v/s in-store	Responses
Always	2
Often	7
Sometimes	9
Rarely	3
Never	2

A mixed set of responses were received when discussing the quality aspect of clothes purchased online. It is noticeable through the table and the pie chart that 9 of 23 respondents believe that the quality of clothes sometimes differs when purchased online versus when purchased in-store. A high number which is 7 on 23 has reported the quality to be different often. Only 2 respondents said it never differs and 3 said it rarely differs when purchased online versus in-store. 2 respondents were firm that the quality of clothes always differs when purchased online versus buying it in-store.

Most trusted or most used website for buying clothes:



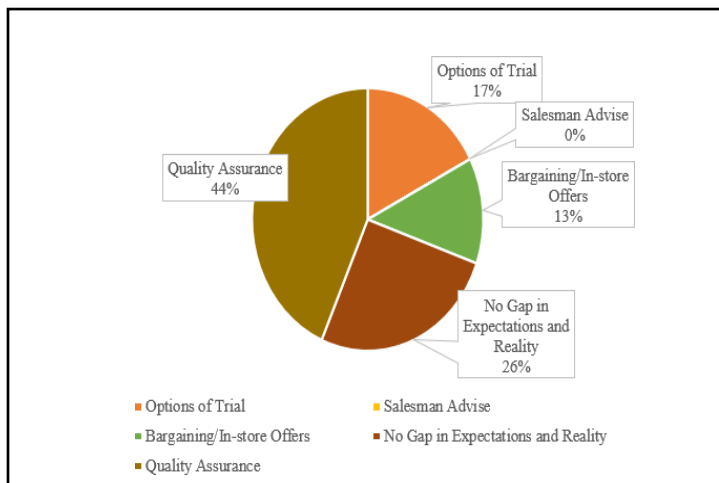
The pie chart depicts that majority of respondents, which is 31% (7) said that Shein is the most trusted and most used website for buying clothes online. Following by this were the responses for Namshi which were 20% of the total. 3 respondents chose Sivvi and 3 chose company or brand own website as the most trusted or most used for buying clothes. The remaining 4 respondents chose aggregating websites like Amazon or Alibaba as the option for the most used or most trusted website for the purchase of clothes online.

Important factors of consideration when buying clothes online:

The most important factor of consideration when buying clothes online.	Responses
Time-Saving	6
Customer Reviews	3
Pricing and Return Policy	7
Availability of options in one place	3
Quality Description	4

The most important factor of consideration when buying clothes online for maximum respondents, which are 7 on 23 is the pricing and return policy. 6 people believe that online shopping for clothes is timesaving which is the next important factor of consideration. 4 people said that the description of the quality of clothes is an important factor of consideration, while 3 people said that customer reviews and 3 said availability of options in one place is the factor of consideration when choosing online methods of shopping for clothes.

Most important factor of consideration when buying clothes in-store:



Quality assurance is the most important factor of consideration when buying clothes in-store for most respondents which is 44% (10). 6 respondents believe that no gap between expectations and reality is the most important factor. Options of trials are considered as an important factor of consideration by 4 respondents, and 3 respondents believe that bargaining or in-store offers are an important factor of consideration when buying clothes in-store. Interestingly, none of the respondents feel that salesman advice is an important factor when buying clothes in-store.

Opinion about online shopping for clothes:

Core opinion about online shopping for clothes	Responses
It's Easy and Secure!	5
Can be used whenever needed	8
Can be preferable Sometimes	8
It's Complicated and Confusing!!	2
Tedious and Unsafe from all aspects	0

The above-given table and pie chart highlight the core opinion of respondents about online shopping for clothes. 8 out of 23 respondents are of an opinion of using it as an option as and when needed. 8 respondents reported that it is a preferable mode of shopping for clothes sometimes. 5 respondents supported online shopping for clothes by choosing the opinion of it being easy and secure. However, 2 respondents are of an opinion that online shopping for clothes can be complicated and confusing. No respondents have an opinion that this method of shopping is tedious and unsafe.

Findings of the Study

A mixed view of online and in-store shopping has been found through the survey. From the analysis of the data, it is found that:

Consumers in UAE are happy with having the option of both online and in-store shopping when it comes to clothes. They keep both options open and choose one as per the need of the hour.

A maximum number of respondents in this study reported that they are often happy with the variety and options of clothes available online, which means that it is a good factor to attract customers to online shopping clothes.

The question about the difference in the quality of clothes when purchased online versus when purchased in-store showed various opinions, however through analysis it was found that the quality of clothes does differ when bought online in comparison to buying it in-store.

For the customers in Dubai, the most trusted and most used website to buy clothes online is Shein, as a lot of customers are posting pictures of the clothes received. Also, there are good offers and rewards on the website for customers. Namshi is also gaining an increasing number of customers and is gaining a name in the online shopping of clothes. Not many customers are preferring Amazon or other aggregators to buy clothes online.

When it comes to online shopping of clothes, the pricing and returns policy and it being time-saving method are the most crucial factors of consideration for the customers in Dubai.

A maximum number of customers in Dubai are of the thought that quality assurance and no gaps in expectation and reality of the products are the important factors of consideration when buying clothes in-store.

The core opinion about online shopping of clothes of consumers in Dubai is that it can be preferred sometimes and should be an option as and when needed.

Conclusion

With the increasing dependence of people on the digital world, E-commerce is an experience that cannot be avoided. The model of online shopping has impacted on various individuals across the globe. The experience of this method has changed consumer behavior and has helped

companies also as now people are at ease and do not have to give a lot of effort when purchasing commodities. This experience however differs from commodity to commodity. There are certain goods and products that people prefer buying manually after checking various aspects of it. One such product includes clothes. The results of this study helped in understanding that people in Dubai are slowly shifting to the option of online shopping for clothes. This is happening mainly because in online purchases they are getting good return options also which gives them the option of trying and then deciding on buying the clothes. The overall results of the study highlight that consumers residing in Dubai prefer to have both online and in-store an option for buying clothes that they can use as per their ease, requirements, and situations.

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Study of Environmental Protection Through Sustainable Logistics Practices: Case of DHL and UPS

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Abstract

As the world faces increasingly pressing environmental challenges, the logistics industry stands at the intersection of economic growth and ecological responsibility. This research project, titled "Study of Environmental Protection Through Sustainable Logistics Practices: Case of DHL and UPS" endeavors to comprehensively analyze the environmental impacts of two global logistics giants, DHL and UPS. Through a multidimensional assessment encompassing carbon and greenhouse gases (GHG) emissions, and fossil energy consumption, this study aims to shed light on the extent of their contributions to environmental pollution. The study begins by quantifying the environmental footprint of DHL and UPS, providing a detailed examination of their carbon emissions and fossil energy consumption patterns. These metrics serve as a foundation for understanding the environmental consequences of their operations. Subsequently, a critical evaluation of the sustainability programs implemented by DHL and UPS is conducted. This analysis delves into the initiatives and strategies employed by these companies to mitigate their environmental impact, highlighting their commitment to sustainable logistics practices. In the final phase of the study, alternative approaches and strategic plans are proposed to reduce environmental harm while preserving the efficiency and effectiveness of their supply chains. These recommendations draw from best practices in sustainability, innovation in logistics technology, and green energy adoption, offering a roadmap for both companies to navigate the complex landscape of environmental protection and logistics performance. The findings and recommendations presented in this study have the potential to drive positive change, demonstrating that a greener logistics sector is not only feasible but also essential for a sustainable global economy.

Key words: Carbon footprint, Environmental Protection, Fossil energy, Sustainable Logistics practices

Introduction

The logistics sector, a cornerstone of global economic activity, occupies a key intersection where the demands of ecological responsibility and economic expansion collide. Logistics makes it easier to move goods and services around the world, fostering prosperity in a time of urgent environmental issues. However, this crucial industry also makes a major contribution to the environmental problems facing the world.

In this study, the environmental impact caused by two major international logistics companies, DHL and UPS, is thoroughly examined. These market leaders not only represent the enormous scope of logistics operations, but also the significant environmental effects of this business. Our study takes a holistic approach, including the CO₂ emissions, the greenhouse gases emissions, and use of fossil fuels of these massive corporations. Our understanding of the environmental consequences inherent in their operations is based on these measurements.

The sustainability initiatives launched by DHL and UPS are also critically analyzed, highlighting their commitment to environmentally friendly logistics methods and creative approaches to reducing environmental effect. Additionally, we provide tactical suggestions for balancing environmental responsibility and supply chain effectiveness. This report serves as a call to action for a more sustainable logistics industry by highlighting its viability and necessity in promoting a sustainable global economy.

Literature review

Carbon footprint

In recent years, the expression "carbon footprint" has grown in popularity and is now frequently used in the media, business, and government. Further research reveals that this phrase has not been clearly defined in scholarly literature despite being widely used in the public realm. Since there are so many ways to define this term. Despite its lack of scientific backing, the term "carbon footprint" has quickly gained acceptance as a "buzz word" that can be used to describe any interpretation of greenhouse gas measurement and reduction, from the most limited to the most expansive, in order to increase consumers' growing concern for issues related to climate change. Units of measurement and scope of measurement are generally the two main topics on which distinctions in the literature are mostly concentrated. (John and Growcom, 2008). *"The term carbon footprint is commonly used to describe the total amount of CO₂ and other greenhouse gas (GHG) emissions for which an individual or organization is responsible. Footprints can also be calculated for events or products"* (Carbon trust 2008).

Environmental protection

One of the most significant and pressing issues of our time that is getting worse every year is the condition of the environment in which the transportation system is enclosed and run. And in order to address it, strategies for reducing negative effects must be developed. Environmental protection should be a system of actions planned and put into practice at every business, including the transportation industry, in order to ensure the safety and favorable circumstances for the environment and human life. In the modern world, one of each form of transportation's key competitive advantages is the environmental safety it offers. (Vasilenko et al., 2021). Economic structural changes raise demand for all forms of transportation services and necessitate the improvement of transportation infrastructure. The protection of both human health and the environment is the primary objective of every transportation company in the realm of ecology. The great popularity and volume of transportation contribute to its significant environmental impact. (Vasilenko et al., 2021). Environmental safety is a collection of conditions, procedures, and behaviors that guarantee ecological balance and prevent serious harm to both the environment and people. It is also the process of securing the defense of the fundamental interests of the person, society, nature, the state, and all of humanity against actual or potential threats brought on by human activity or natural environmental effects. (Vasilenko et al., 2021).

Greenhouse effect

Burning fossil fuels for energy generation and consumption, in particular, is the main cause of greenhouse gas emissions (GHGs), particularly the most erratic concentration of carbon dioxide (Siddik et al., 2021). Without the greenhouse effect, the earth would be too cold to support life. The greenhouse effect is the capacity of some gases, such as carbon dioxide and water vapor, to efficiently trap some of the reemission of solar energy by the globe. However, since human activity is boosting the concentration of carbon dioxide and other greenhouse gases, there are worries that the world will warm by 1 to 5°C during the next century. The most recent increases in the previous ten years in the global average temperature already seem to be outside the typical range of temperature variations (Wuebbles and Jain, 2001). We have gone through 14 of the warmest years in the past 15 years since 2000, which is a result of global warming brought on by a rise in greenhouse gases. Global CO₂ concentration is predicted to reach 1,000 parts per million by the end of the twenty-first century (Siddik et al., 2021). The burning of fossil fuels has been identified as a key contributor to the historical increase in carbon dioxide concentrations by computer-based simulations of the intricate mechanisms controlling the carbon cycle. These models also imply that future CO₂ concentrations will continue to rise mostly as a result of the combustion of fossil fuels in the absence of significant

policy or technological reforms (Wuebbles and Jain, 2001).

Fossil energy

Fossil fuels, often known as conventional or non-renewable energy, are types of organic carbon that originated deep inside the earth's crust as a result of extreme heat and pressure. These fuels come from old plants and other organisms, and their anaerobic degradation takes thousands of years. These non-renewable energy sources provide between 70 and 80 percent of the world's energy. Together, they all supply transportation, transportation fuel, transportation, heating, and power on a global scale (Siddik et al., 2021). Since they are exposed to sunlight throughout their lives, they might be thought of as "stored solar energy." Carbon dioxide, nitrogen oxides, carbon monoxide, arsenic, mercury, volatile organic compounds, particulate pollution, and heavy metals are all evidently increased by the use of fossil fuels, which ultimately contribute to climate change. Coal, oil, and natural gas are the most readily available and simple to utilize fossil fuels. From 7106.1 million tons of oil equivalent (Mtoe) in 1990 to 11899.4 Mtoe in 2019, the production of these fossil fuels surged by almost 67.5% on a global scale. On the other hand, similar production reflecting an increase of more than 64% was produced within historical trends of consumption scenarios.

Sustainable logistics

Through the elimination of unnecessary operations, sustainable logistics techniques encompass the capacity to conserve resources, eliminate waste, and improve operational efficiency (Chhabra, Garg and Singh, 2017). The interconnected relationship between sustainable supply chain measures, eco-friendly manufacturing processes, and sustainable logistics practices has become increasingly prominent, particularly in the worldwide push for sustainability. Consequently, the logistics and manufacturing sectors have incorporated eco-conscious strategies into their operational frameworks with the aim of safeguarding the environment, appealing to environmentally aware stakeholders, and averting legal actions and penalties. (Baah et al., 2021) The primary contributor to the environmental issue is the transportation system: the exhaustion of natural resources (hydrocarbons, metals, and metal ores);

Methodology

The primary players in the logistics sector, DHL and UPS, are thoroughly assessed in this study along with their sustainability initiatives using a structured and methodical process. The study starts with a thorough data collection phase that takes 2020, 2021, and 2022 into account. The information is gathered from DHL and UPS and includes information on their fleet, energy use, and carbon emissions. Using information on emissions from shipping, warehousing, and other logistical operations during the chosen years, a thorough Carbon and Greenhouse Gases emissions analysis is carried out. This analysis determines the entire amount of carbon and other greenhouse gases (GHG) emissions that DHL and UPS produced during this time period, illuminating their environmental impact. Analysis of Types and Quantities of Fossil Fuels Used in Operations in 2020, 2021, and 2022. The study quantifies the consumption of fossil energy by the two companies for the relevant years. This offers information on the operations' energy effectiveness and environmental effects at this time. The 2020, 2021, and 2022 DHL and UPS sustainability programs are rigorously assessed, looking closely at their programs' initiatives, guidelines, and plans for lessening their environmental effect. This report evaluates the strength and extent of their dedication to environmentally friendly logistics techniques over these years.

Results and analysis

The carbon emission

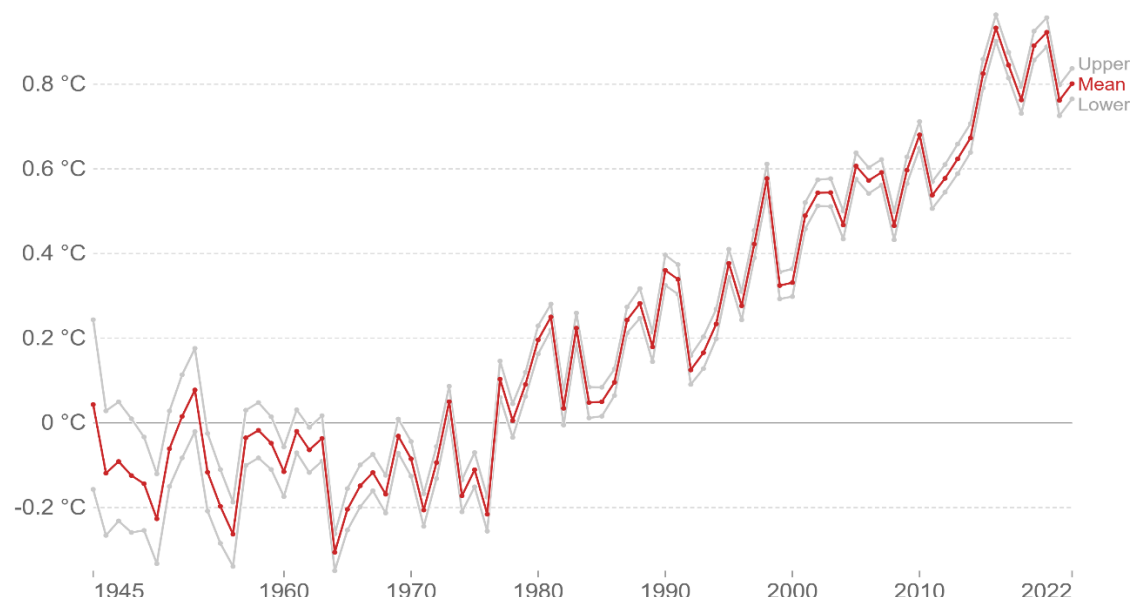
The carbon dioxide, CO₂, is one of the major greenhouse gases and the main cause of climate

change and global warming nowadays. This is the reason in many studies about environmental impact of gases, carbon dioxide is having his own study apart from the others. Data has shown that from 1945 to 2022, the carbon emissions of global industries due to human action has been multiplied by 35 (Figure 1). After taking a look at the global carbon emissions evolution. We will analyze further the carbon emission of DHL and UPS.

Average temperature anomaly, Global

Global average land-sea temperature anomaly relative to the 1961-1990 average temperature.

Our World
in Data



Data source: Met Office Hadley Centre (HadCRUT5)

OurWorldInData.org/co2-and-greenhouse-gas-emissions | CC BY

Note: The gray lines represent the upper and lower bounds of the 95% confidence intervals.

(figure 1: impact of carbon emissions on global warming from 1995 to 202)

Understanding how carbon emissions have changed over time and how they relate to global temperature anomalies can help us understand how human activity has an impact on the environment. While there have been occasional swings and accelerations at various times, overall, carbon emissions have increased over time. The data reveals a considerable rise in emissions in the latter half of the 20th century, particularly from the 1950s onward, pointing to a time of fast industrialization and rising energy consumption. Additionally, there is a very strong positive association between carbon emissions and abnormalities in the earth's temperature. Temperatures tend to rise in conjunction with rising emissions, and vice versa. It also shows that, the rise in carbon emissions has accelerated global warming.

Scope 1 : Direct emissions from sources that a company owns or controls are referred to as scope 1 emissions. These emissions, which are typically a result of an organization's operations, include:

fossil fuels are burned in company-owned vehicles and machinery.

emissions produced by on-site power and heating systems, frequently powered by natural gas or diesel generators.

emissions that are caused by industrial activities or chemical reactions.

Scope 2 : Indirect emissions that are related to the production of the power, heating, or cooling that a company uses are known as scope 2 emissions. Although these pollutants are produced off-site, they are connected to the operations of the company. They can be divided into two categories:

emissions produced by electricity-generating facilities that the organization has purchased. Emissions related to the generation of heat or steam that the organization has purchased and utilized.

Scope 3 : Scope 3 emissions are indirect emissions that result from an organization's operations but come from sources that the business does not directly own or control. Scope 3 emissions can cover a wide range of processes and activities, making them often the most extensive and difficult to assess.

Emissions from upstream activities including the mining, manufacture, and transportation of the organization's raw materials and fuels are among them.

downstream operations, such as trash production, product usage, and transportation and distribution.

Transportation costs for personnel, business trips, and other operations-related tasks.

UPS carbon emission

Global CO ₂ emission (in metric tons Mt)				
	2022	2021	% of change (2021/2022)	2020
Scope 1	15 845	15 668	1.1 %	15 088
scope 2 (market based)	632	654	3.4%	728
Gross scope 1&2	16 477	16 322	0.9%	15 816
Scope 3	16 862	19 846	13.5%	18 595
Gross scope 1,2&3	33 339	35 808	6.9%	34 411
total voluntary carbon offset	337	298	13.1%	273
Net Global CO ₂ emissions	33 002	35 510	7.1%	34 138

(Table 1: UPS's CO₂ emissions on 2020-2022 period; source: UPS annual reports 20-22)

Scope 1, 2, and 3 emissions combined resulted in 33,339,000 t (33.34 Mt) of total global CO₂ emissions in 2022. They weighed 35,808,000 t (35.81 Mt) in 2021. This outcome demonstrates a significant decline in the company's two-year carbon dioxide emissions. They seem to be effective methods for lowering carbon emissions worldwide. UPS generated around 0.0001% of the world's CO₂ emissions in 2022 (33,002 t / 33,339,000 t). It was almost 0.0001% in 2021 (35,510 t / 35,808,000 t). which, for a single operator, is a significant contribution. Between 2021 and 2022, global emissions decreased by 6.9%, while UPS's emissions decreased by 7.1%. This shows that UPS did better than the global average in reducing emissions, which is admirable. In order to combat climate change, carbon emissions must be reduced. CO₂ and other greenhouse gas emissions contribute to global warming and its side effects, including extreme weather, rising sea levels, and ecosystem damage. UPS is supporting international efforts to mitigate climate change, which is crucial to limiting global temperature increases and lowering the hazards they entail.

UPS greenhouse gases emissions (GHG)

Emissions by Greenhouse Gas Scope & Type (in Mt metric tons)									
Greenhouse Gas Type	Scope 1			Scope 2			Scope 3		
	2022	2021	Base Year 2020	2022	2021	Base Year 2020	2022	2021	Base Year 2020
Carbon Dioxide (C02)	15,657.30	15,478.00	14,913.40	628.9	650.9	723.5	16,795.00	19,396.40	18,509.70
Methane (in C02e)	47.1	45.5	39.7	1.3	1.4	1.8	7.6	10.1	10.2
Methane (CH4)	1.7	1.6	1.4	0	0.1	0.1	0.3	0.4	0.4
Nitrous Oxide (in C02e)	140.8	138.3	128.7	1.8	2	2.4	59	79.6	74.8
Nitrous Oxide (NO)	0.5	0.5	0.5	0	0	0	0.2	0.3	0.3

(Table 2: Greenhouse gases emissions of UPS in the 2020-2022 period; source: UPS annual reports 20-22)

Greenhouse Gas Type	Totals in metric tons		
	2022	2021	Base Year 2020
Carbon Dioxide (C02)	33,081.20	35,526.50	34,148.10
Methane (in C02e)	56.1	57.1	51.7
Methane (CH4)	2	2	1.8
Nitrous Oxide (in C02e)	201.7	219.8	205.9
Nitrous Oxide (N20)	0.8	0.8	0.8

(Table 3: total GHG emissions of UPS on 2020-2023 period; source: UPS annual reports 20-22)

The combined Scope 1, 2, and 3 emissions for UPS in 2022 were 33,081.20 Mt of CO₂, which was less than the combined Scope 1 and Scope 2 emissions of 35,526.50 Mt and 34,148.10 Mt in 2021 and 2020, respectively. Positively, UPS has reduced its overall greenhouse gas emissions (CO₂) between 2020 and 2022, particularly in Scope 2 and Scope 3 emissions. To further cut emissions and help slow down the effects of climate change, UPS must nevertheless keep up these efforts. In order to prevent climate change and its effects, emissions must be reduced, especially those of strong greenhouse gases like nitrous oxide and methane.

The information provided by UPS sheds light on their environmental performance and dedication to sustainability, and it is consistent with international initiatives to cut emissions and slow the rise in global temperatures, which is part of the UN 17 sustainability goals.

DHL Carbon and Greenhouse gases emissions

	Metric tons CO ₂ emission				
	2020	2021	2022	% of change	Totals over 2020-2022 period

				2020/2022	
Scope 1	6,59	7,3	8,3	13,70%	22,19
Scope 2 (market based method, relevant method for our calculation)	0,19	0,2	0,07	-65,00%	0,46
Scope 2 (location based method, for information only)	0,78	0,77	0,69	-10,40%	2,24
Scope 3 (logistics-related)	26,86	31,86	28,09	-11,80%	86,81
GHG emissions total	33,64	39,36	36,46	-7,40%	109,46

(Table 4: CO2 emissions of DHL over 2020-2022 period; source: DHL)

The total GHG emissions from DHL in 2020 were 33.64 metric tons.

Emissions rose to 39.36 metric tons in 2021.

Emissions fell to 36.46 metric tons in 2022.

Between 2020 and 2022, the global GHG emissions declined by 7.40%.

109.46 metric tons of GHG emissions were produced throughout the course of the three years.

Over the past three years, DHL has observed variations in emissions across a range of scopes and methodologies. Over the course of the three years, DHL was able to reduce its overall GHG emissions by 7.40%, which is a testament to its dedication to sustainability. These carbon reductions support international efforts to slow down climate change and represent a step in the right direction toward environmental sustainability. DHL must keep up these initiatives and look for new ways to lessen its carbon footprint.

Fossil energy consumption at UPS

UPS's operations are heavily reliant on direct energy usage, mostly in the form of jet fuel and gasoline. The majority of the energy used by the company comes from these sources. The rise in direct energy use, especially for aviation fuel, points to expanding transportation activities and perhaps rising demand for logistical services, which reflects the company's position in international supply chains. UPS's efforts to lessen its carbon footprint are showing significant results by using biomass as a direct energy source. However, there is still opportunity for growth in terms of utilizing more renewable energy sources.

Energy Consumption by Source				
Global Energy (in Giga Joules GJ)	2022	% to Total Energy 2022	2021	Base Year 2020
Direct Energy				
Airline Fuel	146,119	63.60%	144,179	137,555
Conventional	146,119	63.60%	144,179	137,539
Renewable	0	0.00%	0	16
Ground Vehicle Fuel	69,471	30.30%	69,055	66,684
Diesel	32,371	14.10%	33,300	33,372
Gasoline	24,939	10.90%	23,720	21,957
CNG	4,637	2.00%	4,478	4,497
Propane/LPG	664	0.30%	795	797
LNG	985	0.40%	1,330	1,892
Renewable Fuel (Biomass)	5,875	2.60%	5,432	4,169
Facility Heat	6,857	3.00%	5,425	5,244
Natural Gas	6,511	2.80%	5,275	5,076

Heating Oil	22	0.00%	27	49
Propane	324	0.10%	123	119
Direct Energy Subtotal	222,447	96.90%	218,659	209,483
Indirect Energy				
Electricity	6,660	2.90%	6,577	6,412
Renewable Electricity	546	0.20%	308	527
Indirect Energy Subtotal	7,206	3.10%	6,885	6,939
Total Energy	229,653	100.00%	225,544	216,422

(Table 5: fossil energy consumption of UPS in Gigajoules; source UPS annual reports 20-22)

Year	Gigajoules (GJ)	In Million Kilowatt-hours (kWh)
2022	229,653	63,865,769
2021	225,544	62,662,909
2020	216,422	60,146,655

(Table 7: fossil energy consumption of UPS in million kWh; source UPS annual reports 20-22)

UPS is attempting to use renewable electricity sources to lower its indirect energy use. This is a significant step in the direction of sustainability and lowering the carbon footprint of their activities and facilities. Overall, UPS's statistics on energy use sheds light on the energy sources they depend on and emphasizes the need for ongoing efforts to switch to cleaner, more sustainable energy sources in order to meet environmental and sustainability objectives.

Fossil energy consumption at DHL

Energy consumption	Million kWh			
	2020	2021	2022	% of change 2020-2022
Air fleet (kerosene)	19 622	22 484	26 649	18,5%
Road fleet total	4 711	4 486	4 237	-5,6%
Gasoline	808	723	572	-20,9%
Diesel	3 860	3 715	3 619	-2,6%
Other fuels/gas (LPG, LNG, CNG)	43	48	46	-4,2%
Buildings	1 454	1 690	1 341	-20,7%
Electricity	247	239	115	-51,9%
Natural gas	936	943	915	-3,0%
Heating oil ¹	197	188	158	-16,0%
District heating/cooling	n/d	240	90	-62,5%
Other fuels/gas (LPG, LNG)	74	80	63	-21,3%
Fossil energy consumption	24 336	28 660	32 227	12,4%

(Table 6: fossil energy consumption of DHL; source DHL annual reports 20-22)

The amount of fossil energy consumed by DHL in 2020 was 24,336 million kWh. It grew to 28,660 million kWh in 2021. It went grown further more in 2022, reaching 32,227 million kWh. Between 2020 and 2022, the usage of fossil fuels rose by 12.4%. Overall, DHL's use of

fossil fuels increased from 2020 to 2022 by 12.4%. From a sustainability standpoint, this rise is alarming, and it implies that DHL needs to be more aggressive in cutting back on its use of fossil fuels. Kerosene for use in aircraft and gasoline, diesel, and other fuels for use in vehicles both showed mixed developments. The use of kerosene by the air fleet increased dramatically, perhaps as a result of increased transportation activity, whilst the consumption by the road fleet fell. DHL should concentrate on increasing the effectiveness of their air and road fleets, switching to alternative fuels, and putting energy-saving measures in place in their facilities if they want to meet their sustainability and energy consumption reduction goals. They can also lessen their dependency on fossil fuels and their carbon footprint by using more renewable energy sources.

Sustainability program at DHL:

2030 Emission Reduction Target: DHL aims to reduce its Scope 1, 2, and transport-related Scope 3 greenhouse gas emissions to below 29 million tons CO₂e by 2030.

Science-Based Targets: DHL's sub-targets for Scopes 1 & 2 aim to reduce emissions by 42% by 2030, aligning with limiting global warming to below 1.5 degrees Celsius.

Sustainable Aviation: Focus on Sustainable Aviation Fuels (SAF) blending with a target of >30% SAF blending for air transport by 2030.

Sustainable Ocean Freight: Targeting >30% Sustainable Marine Fuel (SMF) blending for ocean freight by 2030, aiming for collaboration with carriers.

Last-Mile Delivery Electrification: Electrify 60% of last-mile delivery vehicles by 2030.

Carbon Neutral Buildings: Application of carbon-neutral design to new buildings and sustainable heating measures.

Green Packaging: Focus on green packaging materials, including recycled and renewable components.

Collaboration Across the Value Chain: Collaborating with transport partners, suppliers, technology providers, and customers to achieve sustainability goals.

ESG Reporting and Controlling: Accurate measurement and reporting of greenhouse gas emissions using recognized standards and methodologies.

Sustainability program at UPS:

Carbon Neutrality by 2050: UPS aims for carbon neutrality by 2050 across Scope 1, 2, and 3 emissions, with a focus on sustainability in air and ground operations.

Efficiency and Innovation: Focus on reducing emissions through innovation, such as electric vehicles, and network efficiencies, including the ORION platform.

Renewable Energy Transition: Procurement of renewable electricity for facilities and commitment to increasing the share of green energy sources.

Fuel Optimization: Efforts to improve flight operations efficiency and fuel consumption.

Alternative Fuel Usage: Investment in alternative fuel vehicles, with 26.5% of ground fuel usage coming from alternative fuels in 2022.

Collaboration with Transport Partners: Green Carrier Certification scheme and subcontractor management to reduce emissions.

Green Products and Optimization Initiatives: Offering green alternatives for core products and services, alongside targeted optimization measures.

Carbon Neutral Buildings: Focus on carbon-neutral design for new buildings and use of green electricity and sustainable heating.

Collaboration with Industry Initiatives & Policy Makers: Engaging with industry initiatives and political stakeholders for environmental advocacy.

With respect to the Science-Based Targets project, DHL has established challenging emission reduction goals. With a heavy emphasis on sustainable aviation fuels (SAF), sustainable maritime freight, green packaging, and electrification of their last-mile delivery trucks, their approach is to reduce Scope 1, 2, and 3 greenhouse gas emissions. Their dedication to long-term sustainability is evidenced by their long-term goal of achieving net-zero emissions by 2050. DHL also understands the benefits of cooperation among suppliers, technology providers, and clients along the entire value chain.

UPS, on the other hand, has a unique sustainability plan with high standards for cutting carbon emissions. They have set explicit goals for decreasing emissions from their air and ground fleets and are making significant investments in alternative fuels and renewable energy sources. Additionally, UPS' emphasis on energy-saving technology and innovation, including its ORION platform, is essential for reducing emissions.

Conclusion

Total carbon emissions for DHL are far higher than those reported for UPS when converted to kWh. This means that DHL's operations use substantially more energy and emit significantly more carbon dioxide. Additionally, DHL uses a lot more energy than UPS, which results in larger carbon emissions. However, without complete emissions data from both companies, a direct comparison of GHG emissions is difficult. As part of their environmental objectives, UPS and DHL most likely will concentrate on sustainability and emissions reduction. In order to compare the use of fossil fuels by UPS and DHL, we can concentrate on the most recent year for which data are available, which is 2022. Both businesses report their energy usage in million kWh. In 2022, DHL's total fossil energy usage is much larger (61,792,500 million kWh) than UPS's (32,227 million kWh). DHL's operations are more extensive and use a significant amount of fossil fuels. Similar kerosene usage is reported by both firms for their air fleets (26,649 million kWh). This shows that in this regard, the two businesses are somewhat equivalent. Same for their road fleets, both businesses report using almost the same amount of energy (4,237 million kWh). When compared to UPS, DHL's building energy consumption is much larger (1,341 million kWh), but UPS lacks the information on the precise breakdown of energy sources.

Both businesses are actively addressing environmental issues, but DHL stands out because of its emphasis on SAF and green packaging as well as its dedication to lowering Scope 3 emissions. The work UPS has done to electrify vehicles and improve energy efficiency is admirable. A critical analysis, however, contends that UPS' innovation in land operations and last-mile delivery is noteworthy, while DHL's focus on aircraft and ocean freight emissions is more thorough. Both businesses are making admirable efforts toward sustainability in a world where environmental concerns are growing, helping to create a greener logistics sector.

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Personalization in hospitality: Leveraging Technology for Enhanced Guest Experience- A case study of a private tea house in Dubai

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Abstract

The hospitality industry (authentic gastronomy) in Dubai has undergone a significant transformation in recent years due to advancements in technology and evolving consumer preferences, leading to increased personalization. Data analytics, artificial intelligence, and the integration of smart devices have played crucial roles in improving the guest experience within hotels. A comprehensive study has been conducted to analyze how personalization impacts guest treatment in the hotel industry that are specialized in authentic gastronomy. As customer demands become more specialized, technology has emerged as a powerful tool to cater to their needs and provide exceptional experiences.

This study focuses on examining customer satisfaction and loyalty in Dubai's hospitality sector. Through literature reviews, case studies, and expert interviews, the research explores various strategies, challenges, and opportunities for implementing personalization in Dubai's hospitality industry. The study also addresses ethical and privacy concerns related to guest data collection and utilization, emphasizing the importance of balancing personalization and privacy. By offering insights and recommendations, this research aims to guide the industry towards a harmonious integration of technology and human touch, resulting in remarkable customer growth in Dubai's dynamic hospitality sector.

Keywords: Technology, hospitality, personalization, guest experience, authentic gastronomy

Introduction

Dubai's hospitality industry is renowned for its innovation and luxury, catering to a diverse international clientele. The industry has evolved significantly, becoming more advanced with human success and achievements. The sector encompasses lodging, food and drink, travel and tourism, entertainment, event planning, and customer service. It prioritizes providing visitors with satisfying and enjoyable experiences, focusing on good service and specific requirements. Guest experience is crucial for building customer loyalty, positive word of mouth, and a strong brand image, directly influencing revenue growth, employee morale, and the ability to adapt to changing customer needs. Prioritizing guest experience leads to repeat business, referrals, and overall business success.

To what extent do the expectations of contemporary tourists influence Dubai's hospitality sector, particularly about local cuisine?

Which technological advancements improve individualized guest experiences the most?

What opportunities and obstacles are there for introducing customization in the hospitality industry in Dubai?

In what way can the sector reconcile privacy issues and ethical considerations with personalization?

Statement of the problem

The hospitality industry (authentic gastronomy) in Dubai has recognized challenges in keeping pace with the tailored demands of modern tourists using traditional hospitality strategies. To enhance overall visitor satisfaction, the aim is to effectively leverage technology and provide unique and memorable experiences for each guest. However, due to the limited availability of technology, many tourists find it difficult to adapt to the ambience of hospitality industry (authentic gastronomy). For example, the rise of tech-savvy tourists has led to a demand for real-time, customized experiences, yet many establishments still rely on outdated systems.

Research Purpose

The purpose of this research is to address the crucial issues at the intersection of personalization, technology, and visitor experiences in the context of the Dubai hospitality industry that emerged in heritage dining experience. This research addresses the crucial issues at the intersection of personalization, technology, and visitor experiences in Dubai's hospitality industry, specifically in heritage dining experiences.

Objectives

To evaluate technological solutions using case studies and expert analysis.

To identify challenges and opportunities via literature review and stakeholder consultations.

Literature Review

According to (Popat, 2021), in 1984 Teledex produced the first telephones developed particularly for the hotel business. These phones are still among the most popular gadgets in hospitality today. Anyone who is the first step-in to take on new innovations and technologies is the one to retain the number of guests in the premise. Likewise in the article of (Lawson, 2023), visitors today expect instantaneous, customized experiences made possible by mobile devices and smart technologies. Real-time technologies, contactless interactions, data-security, sustainability, and the incorporation of AR\VR technologies are all part of the progression. Personalization refers to the process of adapting material, messaging, offers, and services to a visitor's lifestyle, tastes, and needs. It seeks to improve customer experience and establish a lasting, significant connection between the customer and the business (Konduforov, 2023). (Chen, 2020) state" personalization in the hospitality sector has been greatly facilitated by technology. These sectors may provide their visitors individualized experiences at scale by utilizing data analytics and marketing automation. Data analytics is among the most effective techniques for personalization.

Technology-Driven Personalization

Technology-driven personalization has brought about significant advancements in enhancing the guest experience within the authentic gastronomy hospitality industry in Dubai. By leveraging cutting-edge technologies, such as mobile applications, the internet of things (IoT), and artificial intelligence (AI) algorithms, restaurants are able to tailor their services to meet the unique preferences of each visitor (Josifovsk, 2023). This has resulted in a more seamless and personalized dining experience for guests.

Mobile applications enable real-time communication, individualized booking processes, and the ability to customize table preferences. Additionally, IoT devices contribute to adaptive table surroundings, further enhancing the overall ambiance and atmosphere. AI algorithms analyze guest data to provide personalized recommendations, ensuring that each visitor receives tailored suggestions and choices.

The adoption of these technologies in the authentic gastronomy specialized hospitality industry, while still preserving its cultural essence, demonstrates the commitment to providing exceptional services exceeding those of other restaurants. By incorporating these innovative technologies, the hospitality industry will be able to not only increase customer satisfaction but also showcase how the authentic gastronomy hospitality industry is evolving in the digital era. Ali Al Rais founder of famous authentic gastronomy (Arabian Tea House) said "I made one of great choices to involve these strange technologies to be part of my resources and hence it's given me a good margin profit and guests are all feeling more easy and satisfied. "

Challenges and Barriers

Despite the new promising future of technology-driven customization in the restaurant

industry, there are several challenges and barriers that need to be addressed. Hospitality management professionals specialized in authentic gastronomy face unique obstacles in implementing personalized experiences.

Firstly, the collection and utilization of guest data for customized services raise ethical concerns regarding data security and privacy. It is crucial to ensure that the gathering of personal information is conducted responsibly, with proper consent and protection measures in place.

Secondly, as medium-sized businesses with limited resources, integrating and sustaining advanced technology infrastructure can be complex and costly. Coordinating various technological elements to deliver a consistent and seamless tailored experience throughout the customer journey requires careful consideration and investment.

In addition, the adoption of customized technology solutions may face resistance from both employees and visitors. Some individuals may be hesitant to embrace change, and there might be gaps in technological literacy that need to be addressed through training and education initiatives.

To overcome these obstacles, successful adoption of customized technology solutions in authentic gastronomy relies on effective navigation and problem-solving. Hospitality management professionals must carefully balance the benefits of personalization with the need for data protection and privacy. Investing in technology infrastructure should be done strategically, considering long-term sustainability and scalability. Moreover, addressing employee and visitor resistance to change requires clear communication and training programs that emphasize the advantage of technology-enabled customization. Bridging the gaps in technological literacy can also be accomplished through targeted educational initiatives and user-friendly interfaces. By proactively addressing these challenges and barriers, hospitality management professionals specialized in authentic gastronomy can pave the way of successful implementation of customizable technology solutions, enhancing the overall guest experience while respecting privacy and data security considerations.

Strategies for Effective Implementation



(Pandey, 2019)

Fig 1: Tech use in Private Tea House

Strategic implementation of technology personalization in the hospitality industry, specifically in the realm of authentic gastronomy, is crucial for success. Here are key initiatives led by

hospitality management of Dubai who specialized in authentic gastronomy.

Establish Transparent Communication: Open lines of communication with visitors are essential. Obtain informed consent from guests and clearly communicate how their data will be used to enhance their experience. Building trust through transparent communication addresses privacy concerns and fosters a stronger connection with guests.

Prioritize Cybersecurity: Invest equally in effective cybersecurity measures to safeguard guest data. By implementing robust security protocols, the authentic gastronomy hospitality industry demonstrates its commitment to protecting sensitive information. This emphasis on cybersecurity helps maintain trust and reinforces the importance of data protection.

Educate and Train Staff: Provide thorough training programs to educate and empower staff members in the use and management of the implemented technology solutions. Enhancing their technological literacy and capacity for system adaptation enables them to deliver a flawless customer experience, aligning with the values of authentic gastronomy.

Phased Implementation: Ease the transition by implementing a phased approach. Conduct pilot programs in specific sectors or services before full-scale deployment. This allows for the identification and resolution of any potential issues, ensuring a smoother integration of technology while minimizing disruptions.

Continuous Feedback Loop: Establish a feedback mechanism that encourages regular input from both guests and employees. By consistently reviewing this feedback, the authentic gastronomy hospitality industry gains insights into the effectiveness of tailored services and identifies areas for improvement. This continuous improvement process drives the refinement of personalized experiences.

Foster Collaboration: Foster collaborations with technology providers to develop specialized solutions tailored to unique operational requirements. By working together, the hospitality industry that specializes in authentic gastronomy can position itself at the forefront of technology advancements, ensuring its personalized services exceed guest expectations. Innovations that improve the experience of total personalization may result from this collaboration (Stevens, 2021).

Stay ahead of Technology and Market Trends: It is crucial for the authentic gastronomy hospitality industry to remain proactive in keeping up with emerging technologies and market trends. This constant vigilance ensures that the systems in place remain cutting-edge and aligned with changing customer expectations.

By implementing these strategic initiatives, hospitality management professionals specialized in authentic gastronomy can effectively utilize technology to enhance the visitor experience through personalized services. These efforts promote the core values of authentic gastronomy and contribute to the long-term success in the dynamic hospitality industry. Successful implementations of technology from other regions or industries that can serve as a model for Dubai:

1. Singapore's Smart Nation Initiative: Integrates advanced data analytics and IoT across sectors to enhance personalized guest experiences.
2. Japan's Robot Hotels: Utilizes robots and AI for personalized services, reducing costs and improving guest satisfaction.
3. New York's Data-Driven Marketing: Uses advanced data analytics for tailored

marketing campaigns, leading to higher guest engagement and repeat bookings.

Enhancing guest experience for better future outcomes.

The application of technology-driven personalization in the hospitality industry has the potential to revolutionize the way guests are treated and shape future developments. Restaurants can greatly enhance customer satisfaction by using technology such as mobile applications, IoT devices, and AI algorithms to tailor their services to individual preferences. By leveraging these technological advancements, restaurants can offer personalized recommendations based on customer preferences, dietary restrictions, and past orders. This level of personalization not only improves customer happiness but also increases the likelihood of repeat business and customer loyalty. Satisfied customers are more likely to leave positive online reviews, further bolstering the restaurant's brand perception and attracting new customers.



(House, 2021)

Fig 2: Happy loyal customer from Private Tea House

Furthermore, the adoption of cutting-edge personalization techniques in the hospitality sector opens up opportunities for additional revenue streams and operational efficiency. For example, restaurants can use data collected from customer interactions to enhance their marketing strategies and target specific customer segments effectively. By understanding customer preferences and behaviors, restaurants can optimize their menu offerings, promotions, and pricing.

In a rapidly changing hospitality industry, technology-enabled personalization can provide a competitive edge. By staying ahead of the curve and continually adapting to evolving customer expectations, restaurants can position themselves as leaders in the market. This proactive approach not only fosters immediate positive outcomes but also ensures the long-term success and growth of hospitality businesses.

In conclusion, the effective utilization of technology to create personalized guest experiences not only enhances customer satisfaction and retention but also leads to improved brand perception and profitability. By embracing technology-driven personalization, the authentic gastronomy based hospitality industry can achieve transformative results and unlock new opportunities for success.

Future Trend and Outlook

In the authentic gastronomy hospitality industry, the future trend and outlook indicate a continuous drive towards innovation and change. There are several anticipated developments that are expected to shape the industry in the near future. These include the advancement of AI algorithms for hyper-personalization, the integration of virtual and augmented reality to create immersive guest experiences, and the increased use of biometrics for frictionless and secure interactions.

The adoption of more advanced AI algorithms will enable restaurants in the authentic gastronomy sector to provide highly personalized experiences for their guests. By leveraging data on individual preferences, cultural backgrounds, and culinary interests, these algorithms can tailor recommendations and offerings to create truly unique dining experiences.

The combination of virtual and augmented reality holds great potential in the authentic gastronomy industry. By using these technologies, restaurants can transport guests to different culinary destinations, allowing them to explore various cuisines and cultural experiences without leaving their seats. This immersive approach enhances guest engagement and provides a more genuine and enriching dining experience.

Methodology

The research adopts a case study methodology, as the analysis was based on the secondary data used from a private café (Tea House) in Dubai. Secondary literatures were used to enhance the understanding of application of technology in enhancing customer services and business performance.

Data Results and Analysis of Authentic Gastronomy Based Industry- Private Tea House

As per private Tea House, Statistical data on sales (1997-2020), operating with minimum technology like debit\credit card payment, simple seat booking through website, one side manual order taking etc.

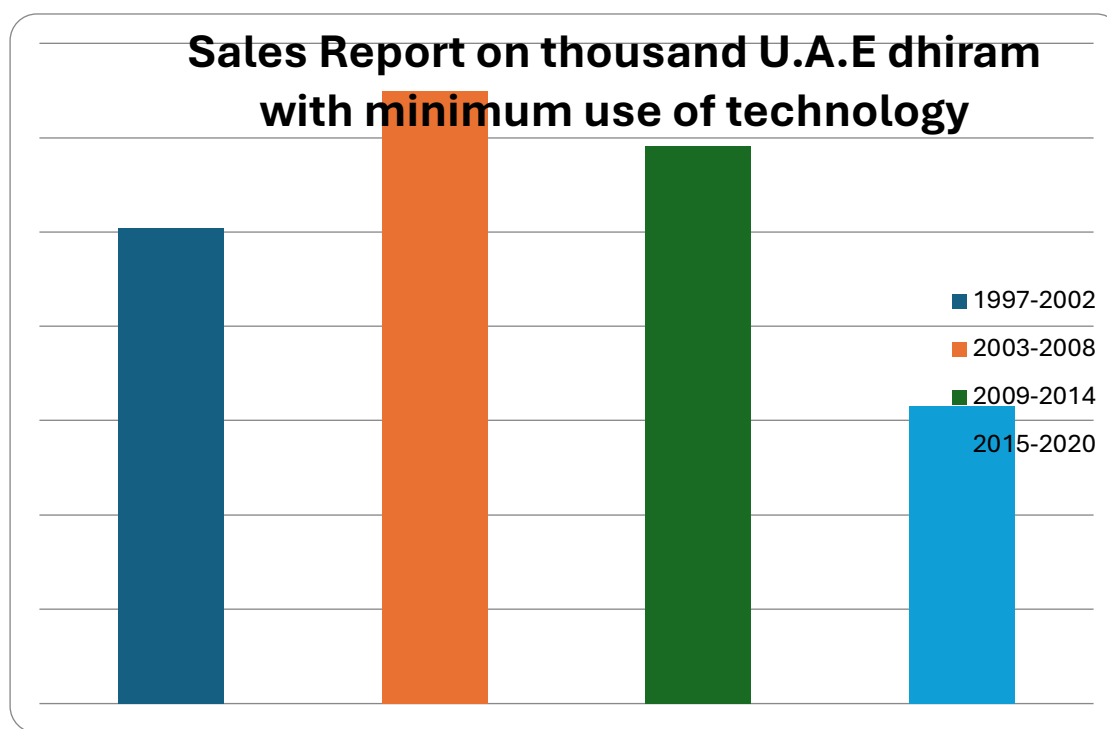


Fig 3: Sales of Private Tea House from 1997-2020 with minimum use of technology.

Above graph is the reflection of sales throughout the year between 1977 -2022. As the

restaurant is considered to be the lake of Emirati culture, it promises to preserve and deliver a fresh memory of old traditional days. Due to which people would come often to Private Tea House to have the food every once in a while as this restaurant was the only authentic emirati restaurant around. They made very good sales throughout the first 6 years by a total of 25, 20,000dhm. The restaurant was still popular with a cash payment system and walk-in reservation.

The restaurant was doing so well being the first authentic restaurant that the next 6 years, they made sales of 32, 47,000dhm. The restaurant had only been popular with taking the credit/debit card payment system. Dubai was growing so fast in the development process that much infrastructure, business was established so people would start to reserve their seats beforehand and enjoy the traditional ambience.

The restaurant concept of preserving and delivering the cultural way of serving the food and drinks was so popular that many others started to copy the same style of business which led to the competition in the market. Though the copied business was not as good as the Arabian Tea House, it did affect the overall business sales and the business made a total of 29,53,000dhm.

The restaurant owner wasn't very interested in adopting the new technology for preparation of food so as to deliver the traditional taste, but it often used to take a long time to get the food on the table and the food would be very satisfying that guest would neglect the waiting timing and on top of it, the pandemic result the greatest low sales ever in the history of Private Tea House with the total sales of 15, 79,000dhm.

The new era was starting not just to the restaurant but as well to the whole world. I.e. **Era of Technology**

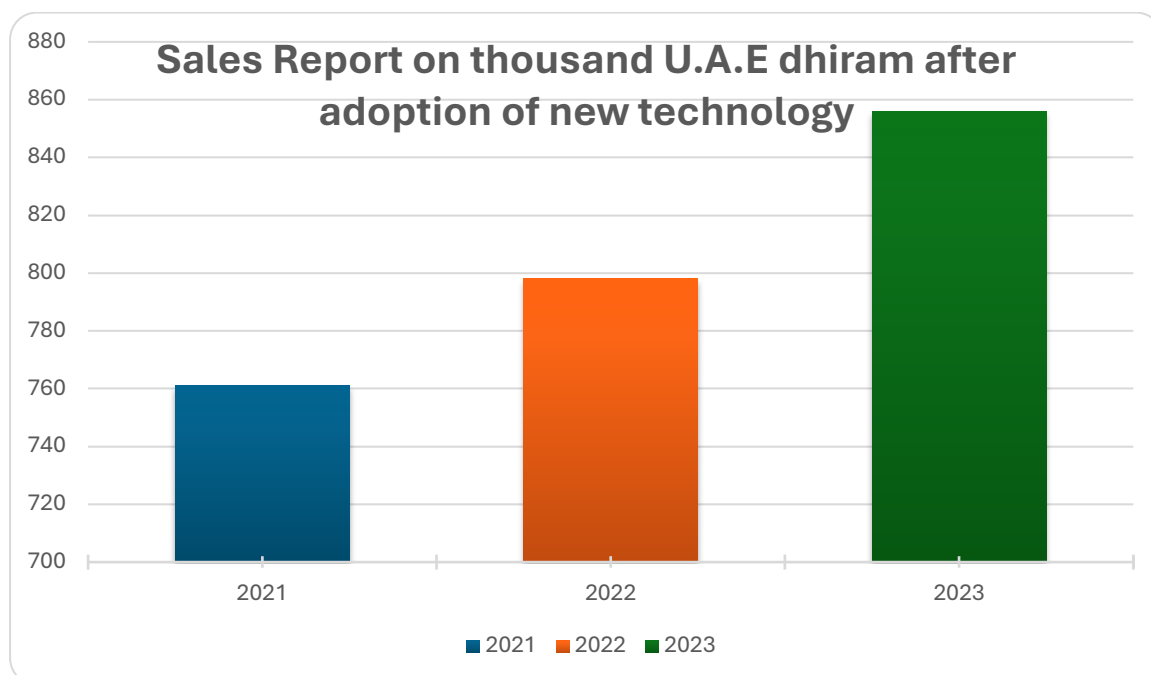


Fig 4: Sales of Private Tea House from 2021-2023 after use of new technology.

Shouldering the new technology challenges, market competitor, guest ultimate preferences, Private Tea House continues to set the charm among the people's heart. Savoring the worst experience due to the pandemic, the restaurant continues to move on, accepting the leveraging technology to provide the whole other worldly experience. They made a dash fresh start with the sales of 761,000dhm within the year month. Their motive to preserve and deliver the traditional cultural food not just was limited within the restaurant but was to the guest sweet

home as well. The restaurant totally changes the WebPages flexibility into surfing and reserving the personalized table and food items. They even allow making the payment of the table and the food beforehand through the website. Within the area, Arabian Tea House was the first and fast one to establish a traffic free zone space which allows guests to enjoy the ambience without any other guest involvement. They introduced the sanitizing gadget within the premises. Private Tea House made sales of 798,000dhm in 2022 and 856,000dhm to be by the end of the year 2023.

Despite all the challenges, increasing competition, it has not stopped and is moving to the bright future of successful business and soon targeted to be the top 10 traditional serving listed restaurant in the whole world. Within the 3 years after the pandemic hit, it has hugged the following trending technology for enhancing the personalized guest experience.

Contactless payments (New apps like tabby enable guest to pay accordingly)

Guest data (Uses of POS system to insight the guest personalization)

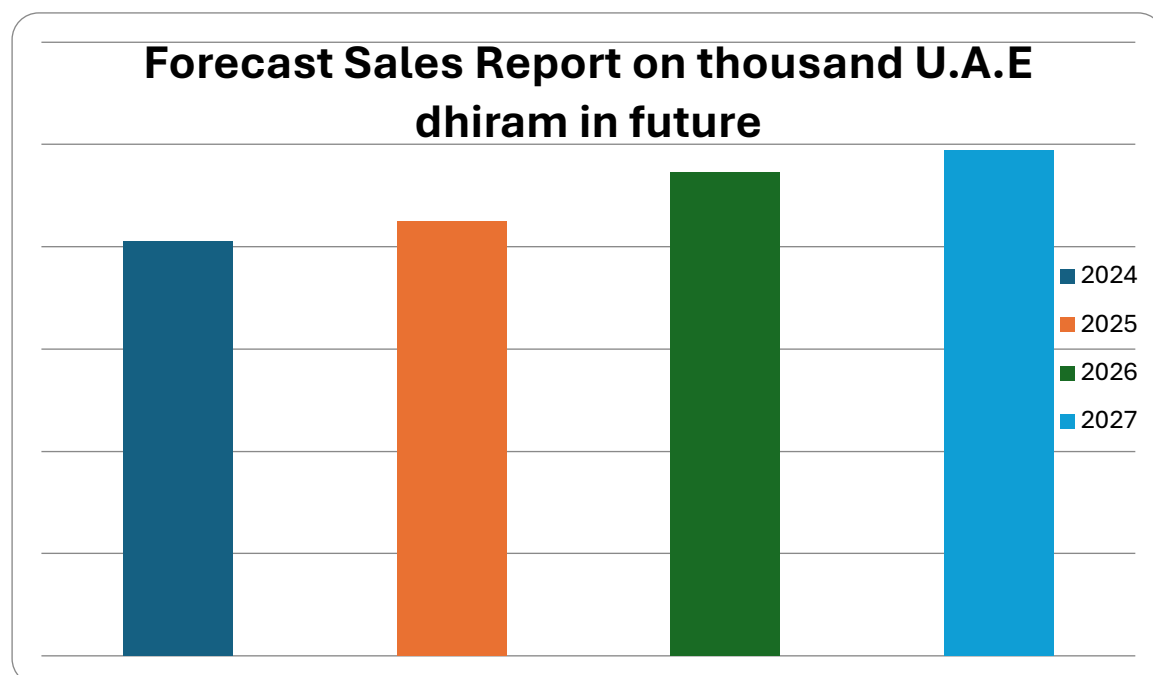
Online booking system

Mobile-friendly website (Allow guest to request desired seating and setting beforehand)

Photography in WebPages (According to aUS-based marketing firm, more than 40% of diners make booking selections based on photographs they find on the internet. More booking equate to better photos (2021))

Take-away

Kitchen-cloud printing



With the promising future, Private Tea House has planned to adopt the new tech soon and to be put in action for better personalized guest satisfaction. The above forecast was done by Arabian Tea House based on previous and present sales and on what they will be newly adopting technology in near future.

Meal-kits and meal prep-at-home

Web shop selling restaurant merchandise

Install a self ordering kiosk.

Installation of loyalty points

3D printing

Drones services
Smart App with voice recognition

Recommendations

Based on the research findings, several recommendations can enhance the implementation of personalization in Private Tea House and all other authentic gastronomy based hospitality industries through technology for an enhanced guest experience.

Comprehensive Staff Training

To ensure that staff members are adept at using and managing the integrated technical solutions, implement through training programs for them, improving overall efficiency.

Guest Feedback

Create systems for ongoing visitor feedback to comprehend changing expectations and preferences, enabling iterative advances in customization.

Pilot Programs

Prior to full-scale implementation, implement pilot programs to identify potential issues, address them, and improve personalization tactics for maximum efficiency.

Flexibility for Guest Freedom

Give visitors the choice to decline using specific personalization features, respecting their individual tastes and preserving the harmony between customization and autonomy.

Monitoring Emerging Technologies

Keep up with industry trends and new developments to proactively implement innovations that might further improve individualized visitor experiences.

Collaboration with Technology Providers:

Encourage collaboration with technology providers to customize solutions to particular operational demands, making sure that customization technologies are perfectly compatible with the hospitality industry.

These suggestions can help Private Tea House and all the other authentic gastronomy based hospitality industries overcome obstacles and reap the rewards of utilizing technology to improve the visitor experience through individualized services.

Conclusion

This study highlights how technology will drastically impact not only the Private Tea House but also all the authentic gastronomy based hospitality industry, and how people connect with one another in the future. The restaurant can offer highly customized and seamless visitor experiences through combining cutting-edge technologies like mobile applications, IoT gadgets, and AI algorithms. In addition to enhancing the immediate table booking, the beneficial relationship between technology-driven personalization and guest happiness also has an impact on long-term outcomes, such as enhancing customer loyalty and favorable brand perception. Data privacy and algorithmic fairness must continue to be top ethical priorities as the sector navigates these technical breakthroughs. The future holds even more advanced and deep personalization techniques, solidifying technology's position as a key factor in improving the overall visitor experience within the ever-changing hospitality industry.

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