



"Enhancing the Quality of Life through Innovative Strategies for Sustainable Development"

1ST INTERNATIONAL CONFERENCE ON SOCIAL SCIENCES AND LANGUAGES

ICSSL 2023

11TH AND 12TH JANUARY 2023

Conference Proceedings **Extended Abstracts**



**FACULTY OF SOCIAL SCIENCES AND LANGUAGES
SABARAGAMUWA UNIVERSITY OF SRI LANKA**



**1ST INTERNATIONAL CONFERENCE ON SOCIAL
SCIENCES AND LANGUAGES**

(ICSSL - 2023)

*Enhancing the Quality of Life through Innovative Strategies for
Sustainable Development*



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Message from Guest of honors

H.E. Gopal Baglay

Indian High Commissioner to Sri Lanka



I am happy to note that the Faculty of Social Sciences and Languages of Sabaragamuwa University of Sri Lanka is organizing the International Conference on Social Sciences and Languages (ICSSL) on 11 January 2023 on a very relevant theme, “Enhancing the Quality of Life through Innovative Strategies for Sustainable Development”.

The theme underpins the interconnectedness between human wellbeing and environmental wellbeing in a fast-changing world. The conference would provide a platform for dialogue and exchange of ideas among various stakeholders towards creating a wider awareness of this vital link between our planet and our species.

India’s commitment to sustainable Development Goals set by the United Nations is reflected in India’s motto of *Sabka Saath Sabka Viksaas* (Collective Efforts for inclusive Growth). Besides, India is on track to exceed its commitments and targets under Paris Agreement on Climate Change. Further, in keeping with ancient India’s vision of ‘Vasudhaiva Kutumbakam’ – the whole world is but one family, India has historically incorporated sustainable development in its partnerships with developing countries, including Sri Lanka. Initiatives such as International Solar Alliance, assistance in development of renewable energy projects. Etc. are part of endeavor

In this context. To enhance the quality of life with sustainable development, Prime Minister of India Shri Narendra Modi at the 2021 UN Climate Change Conference (COP 26 summit) announced ‘Mission LiFE’ (Lifestyle for Environment), a global initiative by India to bring in a mass movement of environmental conscious lifestyle with emphasis on energy production, energy conservation and sustainable living. This initiative was jointly launched by Prime Minister Shri Narendra Modi and U.N Secretary-General H.E Mr. Antonio Guterres on October 2022 at Gujarat. In addition, under its G20 Presidency since December 2022, India Strives to find pragmatic global solutions for the wellbeing of whole humanity in multiple sectors, including sustainable development, climate change and renewable energy.

I wish the Conference participants stimulating interaction for productive exchange of ideas about innovation strategies for sustainable development and enhancing quality of life.

Gopal Baglay

Message from the Vice Chancellor

Sabaragamuwa University of Sri Lanka

The First International Conference on "Enhancing the Quality of Life through Innovative Strategies for Sustainable Development" of the Faculty of Social Sciences and Languages would become a tradition of the faculty and it gives me great pleasure to write this message to mark the occasion.



I extend a special welcome to our Chief Guest HE Gopal Baglay, High Commissioner of India and the Assistant High Commissioner of India. It is always a great pleasure to have you amongst us, as your presence represents your government's firm commitment to making higher education accessible to all young people as well as your personal interest in higher education and the University. The Sabaragamuwa University of Sri Lanka is guided on its path to excellence by our Strategic Management Plan and sets an excellent target for our staff and students in our respective areas which should help us realize our goal of being recognized internationally as the region's knowledge hub.

As I know, the key objective of this research session is to enhance the Quality of Life through Innovative Strategies for Sustainable Development. This scholarly discussion will help all undergraduate and postgraduate students, who would play innovative roles, to uplift the social status in this country.

This is a giant step forward, taken by the Faculty of Social Sciences and Languages for the identification of skills and knowledge of young graduates. Achieving progress in quality of life through sustainable development, particularly at the city level, requires careful planning that is both place and culture specific and that involves community and citizen input. Improving quality of life and meeting the needs of the present through sustainable development will help ensure greater likelihood of likewise accommodating the needs of future generations.

I also extend a warm welcome to our sponsors as well and I would like to commend and thank you for your support to higher education in the region and your continuous support to the University. In conclusion, let me wish you success. I hope the outcome of this event would lead to sustainable development of the society and the academic community.

I wish to thank the Dean, Heads of the Departments, Chairperson, Secretary and the members of the Organizing Committee who contributed to the success of ICSSL 2023.

Senior Professor R.M.U.S.K. Rathnayaka

Vice Chancellor

Message from the Chairman

International Conference on Social Sciences and Languages (ICSSL - 2023)

In a background where countries all over the world are confronted with multifarious challenges and issues that warrant more concerted efforts in bridging multidisciplinary research in Social Sciences and Humanities, the 01st International Conference on Social Sciences and Languages (ICSSL) 2023 of Sabaragamuwa University of Sri Lanka is held under the theme “*Enhancing the Quality of Life through Innovative Strategies for Sustainable Development*”.



The Conference emphasizes the need for more innovative strategies for sustainable development, and thereby recognizes both modern scientific knowledge and traditional knowledge for enhancing the quality of life. The conference comprises keynote and plenary speeches from eminent scholars, oral presentations and pre-conference workshops. It serves as a platform that brings together a vast array of stakeholders from a wide spectrum of disciplines towards achieving workable solutions for present-day challenges by promoting scientific discussion. The conference consists of six tracks; Economics and Management for Development; Statistics and Information Technology; Geography and Environmental Management; Society, State and Politics; Language, Literature and Media Studies and; English Language Teaching and Innovative Education Practices.

It is a great honour for us to have the Indian Higher commissioner; HE Gopal Baglay with us as the chief guest of the inaugural session of ICSSL 2023. The presence of Dr. Kishu Gomas; Group Managing Director & CEO of Dreamron Group of Companies, as the key note speaker and Prof. Sandagomi Coparahewa; Professor in the Department of Sinhala, University of Colombo as the guest speaker adds great value to the event.

Each conference track comprises of a plenary speech by a prominent scholar in the respective discipline. Six eminent scholars; Dr. Chandranath Amarasekara, Alternate Executive Director. International Monetary Fund (IMF); Prof. Roshan Darshana Yapa, Professor in Statistics and Computer Sciences, University of Peradeniya; Prof. Tilak Hewawasam, Professor in Geology, university of Peradeniya; Dr. Jehan Perera, Executive Director, National Peace Council of Sri Lanka; Dr. Mashubhashini Ratnayake, University of Sri Jayewardenepura and; Prof. Patrick Dougherty, Akita

International University, Japan, will join us as plenary speakers with timely topics to initiate the intellectual discussions of each track.

ICSSL 2023 received a total of 104 submissions and 61 extended abstracts were selected for the conference following a rigorous double blind peer review process established to ensure the quality of conference proceedings. The excellent contribution of all authors and reviewers of the extended abstracts is commendable.

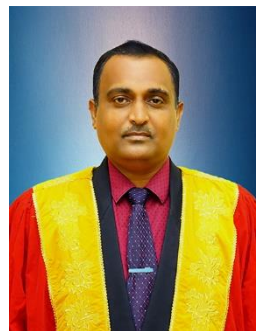
I take this opportunity to thank the vice-Chancellor of Sabaragamuwa University of Sri Lanka, the Dean of the Faculty of Social Sciences and Languages, all members of the advisory panel, the organizing committee including conference co-chairs and secretaries, chairs and co-chairs of all supportive committees, board of language editors, and the technical programme committee including all track chairs and co-chairs. Your great commitment towards the success of the event is acknowledged with much gratitude.

On behalf of the Conference Organizing Committee,
Dr. G.R.S.R.C. Samaraweera
Conference Chair- ICSSL 2023

Message from the Dean

Faculty of Social Sciences and Languages

Sabaragamuwa University of Sri Lanka.



It is with great pleasure that I write this congratulatory message to the first International Conference on Social Sciences and Languages (ICSSL 2023), organized by the Faculty of Social Sciences and Languages, Sabaragamuwa University of Sri Lanka in 2023.

International Conference on Social Sciences and Languages of Sabaragamuwa University of Sri Lanka is a landmark event of the Faculty of Social Science and Languages as it marks a great success of research and publications of its students as well as the faculty. As it is a core obligation of any higher education research institution to initiate and conduct research studies addressing the contemporary issues in the society. The responsibility of a researcher is to contribute to the current body of knowledge by introducing new ways to uplift the standard of human lives while preserving resources for future use as well. Therefore, the first ICSSL has selected its theme as “Enhancing the Quality of Life through Innovative Strategies for Sustainable Development” which is, timely, particularly with regard to the current situation of Sri Lanka. As a faculty dedicated to humanities and social sciences discipline, the level of success that has been achieved by the Faculty of Social Sciences and Languages, Sabaragamuwa University of Sri Lanka within its short history of 27 years is significant, and the ICSSL 2023 is live evidence for it. In the most recent academic programmes’ quality evaluation conducted by the Quality Assurance Council of the University Grants Commission, the faculty was ranked at an ‘A’ grade amongst the faculties of the same category in Sri Lankan universities. As research and development is a crucial component of a university’s quality, this event therefore, will certainly contribute to increasing the value of the Faculty of Social Sciences and Languages, Sabaragamuwa University of Sri Lanka.

I would like to express my sincere gratitude to Dr. G.R.S.R.C. Samaraweera, the Chairperson of the ICSSL 2023, Dr. R.A.H.M. Rupasingha, the Secretary, and the organizing committee as a whole for their continuous hard work and dedication towards successful organising of this symposium. I also appreciate all the Heads of Departments, the academic, administrative and non-academic staff members and students for the various contributions made to make this event a reality.

I wish all the best for all the presenters and the academic staff members who supported our young researchers to flourish in their initial research efforts in an international academic forum.

Thank you.

Dr. Sampath Fernando

Dean
Faculty of Social Sciences and Languages
Sabaragamuwa University of Sri Lanka

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Summary of the Keynote Speech

The Economic Crisis in SL – Challenges to the Business World and its Strategic Response

Dr. Kishu Gomes

Group Managing Director & CEO of Dreamron Group of Companies



An economy struck down by one of its worst crises since independence presents a unique opportunity for the country to deliver on much needed reforms. Sri Lanka should take advantage of the prevailing economic crisis to do fundamental corrections that it could never attempt before such as; dependence on imports for basic needs, regressive subsidies that are grossly misused by the politicians, restructuring loss making state-owned enterprises and tax reforms etc. As the economy teeters on the brink, navigating the crisis will require long overdue extensive tough economic reforms, which could very well be the silver lining to Sri Lanka's economic recession. Not long ago; past several months have seen extreme fuel and gas shortages, currency depreciation leading to near hyperinflation, shortage of medicines, and long power cuts largely due to a shortage of foreign exchange. While things are a bit stable now as compared to the beginning of 2022, Sri Lanka still has a long way to go to come out of this crisis, which has been a long time in the making. Decades of fiscal deficits, current account deficits, a bloated public sector, diminishing tax revenue, and subsidized prices have led to this pathetic state. One of the international sovereign bond holders taking the Sri Lankan government to courts sets a dangerous precedent for the country. Restructuring of loans has hit loggerhead contrary to the initial expectations delaying the IMF bailout package.

The tax cuts given in 2019, when Sri Lanka was already seeing low tax revenues, led to larger fiscal deficits, resulting in international ratings agencies downgrading Sri Lanka, effectively shutting the country out of international capital markets. The COVID-19 pandemic, which led to a fall in tourists and in remittance sent home by Sri Lankans working abroad, further exacerbated the situation. The chemical fertilizer ban was another mistake, which led to agricultural output decreasing significantly. Fixing the currency exchange rate at 203 Sri Lankan rupees to the U.S. dollar by using up foreign reserves and deferring engagement with the IMF led the economic crisis to spiral out of control.

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Strategic options to revive the local economy

The solution is fairly clear in terms of strategic direction to revive the economy.

Strong political leadership and attitude of people towards politics to stabilize the political scenario for hard but forward-looking decision making in the parliament.

Support the growth of agro-industry to be self-sufficient on basic food and expand the export income of export of crops. While promoting organic farming, continue to use chemical fertilizer to increase crop

Tourism industry friendly eco-system to raise foreign revenue up to USD 10 billion in 4 years

Promote the exportation of intellectuals vs unskilled labor to double the expatriate remittances over the next 3 years (from USD 7 billion to 14 billion)

Bring about reforms in the energy sector to make investors inspired to invest in green energy and thereby reduce import bill of fuel by 50%.

Encourage FDIs with investor friendly efficient facilitation process and consistent regulatory and policy environment.

Restructure the SOEs to minimize the burden on public funds generated thru taxes and duties. Government to move away from managing commercial entities.

Minimize the expenditure on public sector employees (1.4 million) thru productivity enhancement

Educate the public on the importance of buying Sri-Lankan products & services to substitute the usage of imported alternatives. The environment created by default is the best platform for people to understand the fundamental importance of maintaining a stable local currency vs USD.

Use the country's human capital strategically and within that the total workforce of 8+ million with more aligned demanded knowledge with high commercial value to generate real income.

Build brands as opposed to selling generic products and services to fetch the right margins given that Sri-Lanka has no economies of scale to have an edge over larger geographies that are competing against SL.

The success of business will solely depend on the success of the above. We will discuss these strategic options when we meet up on the 11th of Jan 2023.

Looking forward to a meaningful discussion.

Dr. Kishu Gomes

Summary of the Invited Speech

Language Planning for Sustainable Development: Problems and Prospects in Sri Lanka

Prof. Sandagomi Coperaheewa

Senior Professor (Chair) and Head / Department of Sinhala, University of Colombo



Language is fundamental to the ethnic identity of each community and is intimately bound up with the community's distinctive culture and way of life. It is the main factor in the formation of groups as well as a major barrier between groups. Differences in the social and political relationship between languages relate to the nature of the society and the country's political structure. Most nations in the world are multilingual, and disputes over language policy are part of the political life of communities around the world. It is a well-known fact that 'developing nations' show a wide range of complex language problems in almost all spheres of national and social activities (Fishman, Ferguson & Das Gupta, 1968). In the post-colonial world, language plays a role in the economic, social and cultural transformation of societies embarking on policies of national development.

As a medium of communication, language is considered as a "societal resource" which should be put to maximum use, and its allocation has to be planned for sustainable development. At the present time, there are instances in which, language has been systematized and planned for specific purposes. Generally speaking, language planning is a "decision-making" process seeking to solve "language problems, typically at the national level" (Fishman, 1974). The field of language planning emerged in response to the perceived language problems facing multilingual nations that became independent in the 1950s, 1960s and 1970s. Language planning involves purposeful actions to choose, codify and promote the use of languages in selected domains – education, administration, business etc (Kaplan & Baldauf, 1997). All language planning activities occur in a political and socio-economic situation and therefore language planning decisions have a direct impact on people's access to information, learning and employment opportunities (Taylor-Leech & Benson, 2017).

Language and communication are crucial enabling factors, helping societies grow, collaborate and become more inclusive. In the discourse of sustainable development, issues related to language and culture have traditionally

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attracted less attention than economic and social concerns. Such issues frequently play an important role in the domestic political climate of developing countries. When the Sustainable Development Goals (SDGs) were announced, there was widespread disappointment that there was no mention of language and languages are invisible in the SDGs. Two years after the announcement of SDGs, the 12th Language and Development Conference held in Senegal in 2017, the scholars pointed out this fact and reminded that ‘there is no development without communication’ (Philip Harding-Esch & Hywel Coleman 2021). This lecture provides insight into the debate on the interplay between language and development, particularly with respect to the implementation of the SDGs with a focus on Sri Lankan situation from a language planning perspective. It highlights the critical role language plays in human development in a multilingual setting and the importance of language in development agendas.

In a multilingual society such as Sri Lanka, the role of each language is parallel to the importance of the community that speaks it; any change in power relations between groups is linked to modifications in the status of their language. Therefore, Sri Lanka provides a typical example of a situation wherein the different types of language planning are combined (Coperahewa 2009). Language plays a key role in the country’s development process. However, language has largely been relegated to the periphery of the development decision-making process in Sri Lanka. The absence of language in development discourse has constituted a significant obstacle to progress.

Furthermore, there is an urgent need for both clearly stated goals and a detailed long-term plan for the effective implementation of the country’s official language policy. Hence, language policy and planning in a multilingual country like Sri Lanka constitutes a sensitive and complex process. However, we find that language planning maintains a low profile in human development documents in Sri Lanka and less attention has been given to language’s role in development goals.

This lecture provides an opportunity for policymakers to reflect on the relationships between language and development in the context of SDGs. In Sri Lanka, there is a need for a suitable language planning program to develop national languages in order to keep pace with the country’s development. Such a program should pay special attention to empowering local languages in education, communication and economic development. Language is the basis of the skills, communication and participation through which populations can play an active role in socio-economic development. Examining the colonial and post-colonial language planning situation in Sri

Lanka, this lecture attempt to assess the language-related problems that occurred in the social, economic and political life of the Sri Lankan people.

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Track 01

**ECONOMICS AND MANAGEMENT FOR
DEVELOPMENT**

Summary of the Plenary Speech

Understanding Sri Lanka's Economic Challenges and Solutions

Dr. Chandranath Amarasekara

Alternate Executive Director, International Monetary Fund (IMF)



Sri Lanka faced an unprecedented social, political and economic crisis in 2022. While some stability on these three fronts can be observed at present, normalcy is yet to be restored in full. The crisis was a culmination of the country's long-standing structural vulnerabilities, amplified by external shocks and domestic policy missteps. In summary, these long-standing structural vulnerabilities include unsustainably high fiscal deficits, persistent external trade and current account deficits, and weak institutions. Within this summary view, prominent weaknesses could be observed in relation to low tax revenues, rigid structure of government expenditure, a bloated public sector including a large state-owned enterprise (SOE) sector, unsustainably subsidized universal education and health provision, inefficient social safety nets, unsustainable debt trends, stagnant exports, rising import expenditure, inefficiencies in product and factor markets, and negligible improvements in overall productivity of the economy, especially compared to those of Sri Lanka's historical peers. The crisis in 2022 has deepened the public understanding of these weaknesses and the need to address them decisively to enable future Sri Lankans to enjoy sustained prosperity.

Solutions to the economic crisis comprise near-term stabilization measures as well as longer-term growth supportive reforms. On long-term reforms, although there is broader consensus on required solutions, implementation is frequently postponed and, at times, reversed. Recent debates involving politicians, academics, social activists and policymakers have shown that near-term stabilization measures are perhaps more controversial and unpopular. Therefore, this paper aims to provide a better understanding of three such solutions that policymakers are in the process of implementing to stabilize the economy, amidst severe public criticism. Namely, these measures are a) fuel and electricity price adjustments and reforming SOEs, b) tax hikes aimed at fiscal consolidation, and c) monetary policy tightening through interest rate adjustments. This paper seeks to discuss these measures, the expected outcomes, and the adverse spillover effects of the implementation and non-implementation of these measures.

First, with regard to fuel and electricity price adjustments and reforming SOEs, the government is in the process of implementing cost-reflective price adjustments for petroleum products and electricity, while reviewing the performance of SOEs and taking steps to identify future action on these SOEs. There is resistance for such reforms, and the common arguments include that increasing fuel and electricity prices will increase the cost of living and the cost of production and that national assets must be preserved. Sadly, it is not well understood that Sri Lanka mostly depends on petroleum products to fulfil most of its energy needs. When domestic prices are not allowed to reflect global prices movements, the relevant SOEs accumulate losses, which must be subsidized by the government, and ultimately, the users and non-users alike. Mispricing of these energy products also leads to inefficient usage, which unduly increases the burden on the balance of payments. Due to such reasons, other countries allow frequent repricing of domestic petroleum and electricity supplies, while promoting low cost and more sustainable sources of energy within a competitive environment. Governments play a facilitative role than being a market player in such efficient economies. Not only the SOEs in the petroleum and electricity sectors, but also many others are often being used by political authorities to provide secure employment to their supporters, thereby contributing to public sector inefficiencies and burdening the general public further. Therefore, well-crafted reforms to streamline the government's role in relation to SOEs are desirable in protecting true public interests.

Secondly, it is well known that Sri Lanka has one of the lowest revenue-to-GDP ratios in the world. On the other hand, historically, the country has been recognized for its welfarism. Therein lies the paradox facing Sri Lanka today. The government has taken steps to increase tax revenues while curtailing expenditure through various means. Enhancing tax revenue must priorities direct tax collection and tapping the informal economy, as high indirect taxes will burden the poor disproportionately. Once again, these measures have faced criticism and resistance, even from those who can afford to pay higher taxes. However, it must be understood that, inefficiencies apart, without enhancing revenues, the country can no longer afford to maintain the welfare measures that the general public has taken for granted. The rigid expenditure structure on salaries and pensions, including spending on education, health, defense and the maintenance of physical infrastructure, cannot be sustained without revenue enhancement measures. Unless revenues are increased, large fiscal deficits and high debt levels will continue. Repercussions will be severe if revenue enhancement and fiscal consolidation are not carried out urgently, particularly as Sri Lanka's deficit financing sources have been mostly reduced to inflationary financing by the Central Bank.

Finally, on monetary policy tightening through interest rate adjustments, central banks across the global often come under criticism for increasing interest rates and tightening liquidity conditions, as such action would have an impact on borrowers, including businesses and households. It is essential to understand that monetary policy is tightened mainly to control inflation. While central banks are well poised to manage demand-driven inflation, persistent high inflation, whether caused by demand- or supply-side factors, must be promptly addressed, as such inflation is more harmful to the economy than any adverse consequences of brief periods of higher interest rates. With historically high levels of inflation, the Central Bank of Sri Lanka is pursuing a tight monetary policy stance at present, which would aid in bringing inflation back to single digit levels in the period ahead. Simultaneously, institutional reforms are essential to ensure that the Central Bank is empowered and held accountable to maintain a more conducive inflation outcome in future on a sustainable basis.

Analyzing the three aforementioned policy solutions, this paper delivers a singular key message: Implementing unpopular policy measures is difficult, but these measures are essential to stabilise the economy in the short run and place it on a stronger footing. Despite the tendency of various pressure groups to highlight only some aspects to suit their own agendas, these solutions need to be understood holistically.

SUSTAINABLE DEVELOPMENT THROUGH THE USAGE OF LOCAL INGREDIENTS IN BISCUIT PRODUCTION IN SRI LANKA: A CASE OF MAKING COOKIES WITH CASSAVA AND GREEN GRAM FLOUR

T.L.A.D.S. Hansani^{1*}, S.H.P. Malkanthi²

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Abstract

Cookies, otherwise known as biscuits, are a popular cereal food. Wheat flour is the main ingredient in making cookies which is mainly imported by Sri Lanka. Hence, this study focused on developing a value-added cookie using composite flour of cassava and green gram, instead of wheat flour to encourage utilization of local inputs and reduce importation, which leads to the sustainable development in the country. Cookies were made with a composite flour of wheat, cassava, and green gram using different ratios as 120:30:0, 150:0:0, 0:150:0, 45:75:30, 75:60:15, and 0:120:30. The best combination was determined by sensory scores. Results have shown that the 75:60:15 ratio gave the highest scores. The selected sample was subjected to proximate analysis and results revealed that moisture, ash, fat, protein, carbohydrates, and energy were 2.8%, 1.3%, 17.0%, 5.0%, 73.9%, and 468.6 kcal/100g respectively. Thus, the best formulation of the composite flour mixture for cookies is 75:60:15.

Keywords: *Cassava, Green gram, Composite flour, Value added cookie, Sustainable development.*

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Introduction

Cookies, otherwise known as biscuits, are popular cereal foods, commonly consumed by the populace as a ready-to-eat food item (Adekunle & Marya, 2014). It is one of many baked products often made with wheat flour. (Soedirga et al., 2021). However, the consumption of wheat flour is not very healthy (Chakrabarti et al., 2017).

Further, wheat flour is the main ingredient for cookies which is mainly imported to Sri Lanka. Approximately \$250 million in wheat have imported by Sri Lanka in 2020 (Sri Lanka Country Commercial Guide, 2021). Therefore, composite flour which is produced by using locally grown crops and high protein seeds like cassava (Nilusha et al., 2019) and green gram (Wijesinghe, 2015) totally or partially replaced with wheat flour is decreasing sole dependency on wheat flour and give the solution for foreign reserve burden in the country.

Hence, there is a huge opportunity to give a better market for local products by preparing a value-added cookie and reducing the importation of wheat flour for a sustainable Balance of Payment to accomplish sustainable development in the country. Therefore, as it is difficult to find relevant literature, studying the possibility of developing a cookie using composite flour from cassava and green gram flour and also the best ratio of these ingredients are timely important.

Material and Methods

Table 1:

Experimental plan of different ratios

Types	Sample % (150*)	WF(g)	CF(g)	GF(g)
01	4:1:0	120	30	00
02	1:0:0	150	00	00
03	0:1:0	00	150	00
04	3:5:2	45	75	30

05	5:4:1	75	60	15
06	0:4:1	00	120	30

Note. Different ratios of wheat flour, cassava flour, and green gram flour were used for the preparation of cookie samples Table 1.

Conducting the sensory evaluation

Sample Size: 30 Panel members and 70 other respondents.

Data Collection Method: Using a seven-point hedonic scale.

Sampling Technique: Simple random sampling

Data Analysis Methods: Analysis of Variance and Duncan Post Hoc Analysis

Results and Discussion

Table 2:

Mean scores for sensory evaluation

	Ap pe ara nc e	Taste	Arom a	Color	Mout h feel	Textu re	Overall Acceptabi lity
Type 1	3.27 ±1.7	2.58± 1.6	2.79± 2.0	3.21± 1.6	2.62± 1.4	2.48± 1.6	2.63±1.4
Type 2	4.11 ±2.0	3.71± 1.5	3.26± 1.4	3.61± 1.7	3.65± 1.8	3.75± 2.0	3.41±1.4
Type 3	2.94	3.78± 1.4	3.21± 1.7	3.79± 1.8	3.63± 1.5	3.96± 1.7	3.78±1.7

		± 1 .7					
Type 4	3. 96 ± 1 .5	3.46 \pm 1.5	4.62 \pm 1.4	4.79 \pm 1.3	3.55 \pm 1.5	3.80 \pm 1.5	4.21 \pm 1.3
Type 5	4. 66 ± 1 .8	5.11 \pm 2.0	4.33 \pm 1.8	4.46 \pm 1.7	5.35 \pm 1.5	4.52 \pm 1.5	5.62 \pm 1.9
Type 6	2. 74 ± 1 .5	2.64 \pm 1.7	3.54 \pm 2.0	2.59 \pm 1.2	2.48 \pm 1.5	2.64 \pm 1.4	2.18 \pm 1.3

Note. Results of the sensory evaluation are presented in table 2.

^aType 5 (75/60/15) sample shows higher scores for appearance, taste, mouth feel, texture, and overall acceptability among other types.

^bHence, there is a significant difference between sensory attributes and cookie samples, and also all the variables are significant at ($p < 0.05$) level.

Table 3:

Post Hoc Analysis Tukey HSD

Dependent Variable: Overall acceptability

(I) Type of cookie	(J) Type of cookie	Mean difference (I-J)	Std. error	Sig.
Type 5	Type 6	3.440*	.214	.000
	Type 3	1.840*	.214	.000
	Type 2	2.210*	.214	.000

Type 4	1.410*	.214	.000
Type 1	2.990*	.214	.000

Note. Duncan's Post hoc test result for pairwise comparison is shown in Table 3.

^aThe effect of cookie type on the overall acceptability by concerning two cookie types at once.

^bThe mean difference of overall acceptability between type 5 (75/60/15) and all other cookie types is significant at 0.05 level.

Table 4:

Proximate Analysis Results

Tests	Result	Acceptability
Moisture	2.8%	All these values are in line with the Olapade et al.,2014, Soedirga et al., 2021 and Chakrabarti.T et al., 2017 and www.malibangroup.com , www.cbllk.com and www.cargillsceylon.com ,
Ash	1.3%	
Fat	17.0%	
Protein	5.0%	
Carbohydrate	73.9%	
Energy (as kcal/100g)	468.6kcal/100g	

Source: IDB-SGS FOOD LABORATORY- Sri Lanka and websites of Manchee, Maliban, and Kist

Note. Proximate analysis results and acceptability of the selected cookie sample are shown in Table 4.

Conclusion and Recommendations

The findings revealed that the most preferred sample is the Type 5 cookie sample (75:60:15) of wheat, cassava, and green gram flour. Considering sensory evaluation, most of the consumers have given high scores for Type 5 cookie samples regarding appearance, taste, mouth feel, texture, and overall acceptability. Hence, it was concluded as the most preferred sample is Type 5 (75:60:15). Further, proximate results of the selected cookie sample revealed that Moisture, Ash, Fat, Protein, Carbohydrate, and Energy tests values are at

suitable levels. Hence, a composite flour ratio of 75/60/15 is the best formulation to make cookies and it can support the sustainable development of the country up to a significant level by using locally grown crops of cassava and green gram instead of sole dependency on imported wheat flour.

To attain the sustainable development of the country, government sectors, as well as private sector focus, should be given to produce composite flour using cookies like widely consumed value-added products at the commercial level according to consumer expectations. It helps to gain sustainable development mainly in three ways. While it can reduce wheat flour importation, saving lots of foreign exchange, it can support local farmers to get a better income for their cassava and green gram. Moreover, it can support the value addition of two agricultural products and some job opportunities for local people creating some rural businesses. Also, consumers should be acknowledged the advantages of value-added products which are prepared with locally available ingredients and the importance of consumption of those products.

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SOCIO-ECONOMIC IMPORTANCE OF INLAND FISHERY: A CASE OF FISHERMEN OF UDAWALawe RESERVOIR, SRI LANKA

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Abstract

Inland fishery plays a significant role in improving the food security and livelihood of developing nations in the world. However, there is a lack of scientific studies conducted about the socio-economic importance of inland fishery in Sri Lanka. Thus, this study was conducted to identify the socio-economic importance of inland fishery in the Udawalawe reservoir. A sample of 45 fishermen was selected from the fishermen who practice fishing in the study area by simple random sampling technique. A questionnaire survey and focus group discussions were conducted as the primary data collection methods from January to March 2022. Descriptive statistics were used for the data analysis. As per the findings, job opportunities, affordability to expand the production of inland fish and its based products and ability to access and utilize of inland fish and its based products for fishermen households as a nutritive source of food consider the key dimensions that show economic important of the inland fishery. While the buildup of strong linkage between fishermen acts as the key dimension of the social importance of inland fishery.

Keywords: *Inland fishery, Socio-economic importance, Sri Lanka, Udawalawe reservoir.*

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Introduction

Inland fishery sector plays a major role in the socio-economic development of a country (Somashekar & Majagi, 2020). However, literature findings have noted evidence regarding the contribution of the inland fishery is fewer than marine fisheries in a wide variety of aspects: nutritive value and the economic contribution to the national economy under the global-level comparisons of fish production all over the world (Smith & Bennett, 2019).

In the Sri Lankan context, 0.9 percent of the share of contribution from inland fishery and 318 USD dollar million of the export value obtained from fish and fishery-based products and the production of 90,340 metric tons occurred in the inland fishery sector (Department of Fisheries, 2020). Thus, this situation emphasizes the significance of the identification of the socio-economic importance of fishermen in the inland fishery to expand the extent of inland fish production furthermore.

Udawalawe reservoir which is located in Udawalawe national park is a very important inland fishing place in Sri Lanka. It provides natural spawning grounds for the fishing species that are cultured in this reservoir. Moreover, this reservoir is considered a successful natural breeding and spawning ground for Indian carp varieties, Tilapia varieties and freshwater prawn species which are cultivated in Sri Lanka (Deepananda et al., 2014). Since there is a lack of scientific studies conducted about the socio-economic importance of inland fishery in the Udawalawe reservoir in Sri Lanka, this study will generate a considerable impact to fulfil that knowledge gap. Therefore, it is a timely important requirement to identify the socio-economic importance of the inland fishery to expand inland fish production furthermore for sustainable development in Sri Lanka. Thus, the aim of this research was to identify the socio-economic importance of inland fishery in this area.

Research Methodology

Udawalawe reservoir is situated in Ratnapura district in Sabaragamuwa province of Sri Lanka and the extent of this reservoir is 3,399 ha. Inland fish farming activities are a prominent feature of it. Also, this reservoir is considered the higher productive natural breeding and spawning ground for Indian carp varieties Catla, Rohu and Mrigal, Tilapia varieties (Gift Tilapia) and freshwater prawn species cultivated in Sri Lanka.

Based on the National Aquaculture Development Authority of Sri Lanka [NAQDA] (2022), 250 of the active fishermen's population occurred in Udawalawe reservoir. Among them, a sample of 45 fishermen was selected using a simple random sampling technique, from the fishermen who practice

fishing in Udawalawe reservoir. After a pilot study, primary data was collected using a questionnaire survey and focus group discussions conducted from January to March 2022. Descriptive statistics were used in data analysis. Descriptive analysis was used to identify the socio-economic profile of the respondents as well as to identify the socio-economic importance of inland fishery in the Udawalawe reservoir.

Age, marital status, level of education, fishing experience and monthly income were used as the selected variables to identify the socio-economic profile of the respondents in the study area. The socio-economic importance of inland fishery was considered in two aspects. Such as; economic importance and social importance. Economic importance elaborating dimensions are; job opportunities, affordability to expand the production of inland fish it's based products, ability to access and utilize inland fish and it's based products for fishermen households as a nutritive source of food, a good source of protein, possibility to do savings, the possibility of getting loan/credit and product development and value addition. Empowerment of fishermen's livelihoods, the buildup of strong linkage between fishermen, increase awareness regarding inland fishing practices between fishermen and upgrading the living standards of the fishermen were used as social importance representing dimensions of the study.

Results and Discussion

Socio-economic profile of the respondents

As per the results, 73.3% of respondents belonged to the age category of 40 - 59 years. 71.1% of respondents were married and 53.3% of them had received education up to Junior Secondary level (GCE Ordinary level). The family size of the majority of them was 4-5 and their average fishing experience was 7 years. While 82.2% of fishermen showed LKR 20,001 – 40,000 as their monthly income, 24.4% of them reported that it is below LKR 20,000.

Socio-economic importance of inland fishery in Udawalawe reservoir

Socio-economic importance of inland fishing has been presented in table 1.

Table 1:

Socio-economic importance

Economic importance	Frequency	Percentage (%)
Job opportunities	44	97.8

Affordability to expand the production of inland fish and it's based products	43	95.6
Ability to access and utilize of inland fish and it's based products for fishermen households as a nutritive source of food	42	93.3
Good source of protein	40	88.9
Possibility to do savings	36	80.0
Possibility of getting loan/credit	32	71.1
Product development and value addition	38	84.4
Social importance		
Empowerment of fishermen's livelihoods	33	73.3
Buildup strong linkage between fishermen	36	80.0
Increase awareness regarding inland fishing practices between fishermen	32	71.1
Upgrade the living standards of the fishermen	28	62.2

According to table 1, there were seven dimensions for the elaboration of economic importance of inland fishing as job opportunities (97.8%), affordability to expand the production of inland fish and it's based products (95.6%), ability to access and utilize of inland fish and it's based products for fishermen households as a nutritive source of food (93.3%), good source of protein (88.9%), possibility to do savings (80%), possibility of getting loan/credit (71.1%) and product development and value addition (84.4%). Thus, the majority of the respondents were shown job opportunities, affordability to expand the production of inland fish and its based products and the ability to access and utilize inland fish and its based products for fishermen households as a nutritive source of food considered as major dimensions of illustrating factor of economic important perspective. Therefore, it can create a valuable economic opportunity for the fishermen in this area.

With regard to social development, the inland fishery has been able to improve very important three social aspects. They are empowerment of fishermen's livelihoods (73.3%), the buildup of strong linkage between fishermen (80.0%), increasing awareness regarding inland fishing practices between fishermen (71.1%) and upgrading the living standards of the fishermen (62.2%). Based on the findings, the buildup of strong linkage between fishermen is reported as a highly important dimension that shows the social aspect of the inland fishery. This is a very important situation to enhance the social situation of the area. Hence, inland fishery is playing an important role in the socio-economic development of most developing countries. According to the literature as well, the inland fishery sector supports social and economic development in rural livelihoods (Paul-Sanon et al., 2021; Smith & Bennett, 2019; Paul & Chakraborty, 2016).

Conclusion and Recommendation

According to the findings, most of the respondents are married, studied up to junior secondary level and have a considerable level of farming experience. The socio-economic importance of inland fishing was noted as job opportunities, affordability to expand the production of inland fish and its based products and ability to access and utilize of inland fish and its based products for fishermen households as a nutritive source of food considered as the major dimensions of illustrating factors of economic important perspective of the inland fishery. Based on the findings, the buildup of strong linkage between fishermen is reported as a highly important dimension that shows the social importance aspect of the inland fishery.

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FACTORS AFFECTING THE CUSTOMER SATISFACTION OF INTERNET BANKING SERVICE USERS (BASED ON TWO LICENSED COMMERCIAL BANKS OF KALUTHARA DISTRICT, ALUTHGAMA AREA)

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Abstract

Internet banking service can be called a major electronic service introduced by the banking sector to facilitate the daily work of customers. Accordingly, the main objective of this study was to study the factors affecting customer satisfaction of internet banking service users. To carry out this study, 267 customers who use the internet banking service of two licensed commercial banks in the Aluthgama area of Kaluthara district were selected as a sample and the sample units were selected using the convenient sampling method. A structured questionnaire was prepared and thereby a quantitative survey was conducted using the primary data obtained from that. To analyze the data SMART PLS and SPSS Software have been used and the PLS-SEM and Linear Multiple Regression Model have been used for regression. The study tested 11 hypotheses and among the service quality factors efficiency, fulfillment, privacy, and responsiveness have a significant impact on customer satisfaction while contact and ease of use did not have a significant effect on the level of customer satisfaction. Among the demographic factors, education level and internet experience have a significant impact on customer satisfaction while age, gender, and marital status did not have a significant effect on the level of customer satisfaction. Accordingly, the study recommended the factors which impact internet banking services and to improve these factors to enhance the service.

Keywords: *Customer satisfaction, Demographic Factors, Internet banking Service, Internet banking Service Quality Factors*

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Introduction

In the last few decades, the development of information and communication technology has strongly affected banking customer services in the financial sector. The change in this new technology has affected the banking industry more than the change in any other field (Kirakosyan & Danaiaata, 2014). With the advancement of technology, more people are resorting to doing their daily activities online and the banking sector has also integrated with the internet and enhanced its ability to provide its services in an electronic environment. (Raza, Jawaid, & Hassan, 2015) With the advancement of technology, the Internet banking service can be called a tool for customers who are continuously using the banking service and as a basis to attract new customers (Gkoutzinis, 2009). As compared to traditional banking, Internet banking enables customers to conduct a wide range of electronic transactions through the respective banks' websites from anywhere at any time fastly and with low expenses (krauter & Faullant, 2008). Internet banking provides flexible, convenient, and low-cost integrated services for customers including online checking and savings accounts, money market accounts, certificates of deposit, home equity loans, and a host of other financial services (Bhattacharjee, 2001). However, compared to the increasing number of people using the Internet, the use of Internet banking in Sri Lanka is still at a low level. Although internet banking in Sri Lanka started several years ago, there is a lack of use of internet banking services in Sri Lanka when compared with other countries (Weerasekara & Abeygunawardhana, 2011).

We will be able to see the importance of that service well with the spread of the Corona pandemic that occurred in the last period and with man's busy work life. With the corona pandemic, internet banking service plays a unique role in reducing the crowding of people in banking institutions. With the corona epidemic, a certain group of customers was seen turning to internet banking services. Customer satisfaction is an integral part of maintaining the customer base. When banking institutions that provide internet banking services fail to meet customer expectations, customers tend to leave them. Therefore, it is crucial that the banking institutions that provide internet banking services should perform the relevant service to satisfy their customers.

Accordingly, customer satisfaction in internet banking is extremely important to attract more customers as well as to maintain existing customers. Sri Lanka is a developing country. As a developing country, the development of the banking sector is very important. And policymakers have paid very little attention to internet banking. It is very important to study what factors affect customer satisfaction with internet banking to expand banking activities and facilities.

Through this study, three specific objectives will be achieved. Firstly, the researcher aims to identify how each of the service quality factors of the internet banking service affect customer satisfaction, secondly, the researcher will determine the effect of each demographic factor of the users of the internet banking service on customer satisfaction, and thirdly, the researcher will identify the strengths, weaknesses, opportunities, and threats of the people using the internet banking service.

Material and Methods

Sampling process and data collection

This study was mainly conducted in association with established licensed commercial banks in the Aluthgama area of the Kalutara district in the western province. The total number of people using internet banking services of licensed commercial banks in the Aluthgama area was considered as the survey population. As shown in the Central Bank report (2020), there are 12 licensed commercial banks in the Kalutara district, out of which there are only 11 licensed commercial banks in Aluthgama. Two licensed commercial banks were selected through the lottery system to represent 20% of the existing licensed commercial banks in Aluthgama. The total number of people using the internet banking service of the two licensed commercial banks is 1430 and it was taken as the sample frame and put into the RAOSOFT software, and the sample was selected as 282. This study mainly focuses on the collection of primary data to a sample through a structured questionnaire.

Calculation of sample size

The sample was selected as 282 using the RAOSOFT software based on the survey population. But here only 267 Responses were given.

Table 1:

Calculation of sample size

Bank	Total People using internet banking service	The number selected for the sample
Licensed Commercial Bank 01	650	$\frac{282}{1430} \times 650 = 128$
Licensed Commercial Bank 02	780	$\frac{282}{1430} \times 780 = 154$
Total	1430	282

Source: Develop by Researcher, 2022

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Table 2:*Sample profile*

Sample description		Quantity	Percentage
Licensed Bank 01	Commercial	128	45
Licensed Bank 02	Commercial	154	55
Expected sample size		282	100%
Licensed Bank 01	Commercial	123	46
Licensed Bank 02	Commercial	144	54
Number of respondents		267	95%

Source: Develop by Researcher, 2022

*Measured item of variable***Table 3:***Measured item of variable*

Measured item of variable
Dependent Variable- Customer Satisfaction
Customer Satisfaction
My expectations before the use of Internet banking have been met with this current experience
I find the internet banking application quite pleasant
I am completely satisfied with the internet banking application
Independent Variable – Service Quality Factors
2. Contact
The bank's website provides a telephone number to reach branches
The bank's website has customer service representatives available online as a helpdesk
The bank's website facilitates speaking and clarifying problems with an official
Ease of Use
1. Internet banking is complicated to use

-
2. The wording of Internet banking is unclear
 3. Internet banking does not demand a lot of effort
-

Efficiency

The bank's website makes it easy to find what the user needs
 The bank's website makes it easy to get anywhere
 The bank's website enables one to complete a transaction quickly
 Information on the bank's website is well organized
 The bank's website loads its page fast
 The bank's website is simple to use
 The bank's website enables the user to get on to it quickly
 The bank's website is well organized

Fulfillment

The bank's website delivers services when promised
 Records on the bank's website are always accurate
 Bank's website makes accurate promises about the delivery of service
 Bank's website promptly informs about important situations (Payment, balance, etc.)

Privacy

The bank protects information about the web shopping behaviour
 The bank does not share personal information with other sites
 4. The bank's website protects information about the credit card

Responsiveness

The bank's website promptly responds to the request and questions made by emails or other channels
 The bank's website tells what to do if the transaction is not processed
 Web site takes care of customer's problems promptly

Source: Survey data, 2022

Data analysis methods and Models of specific objectives

Table 4:

Data analysis methods and Models of specific objectives

Objective	Data analysis Methodology			Model
Specific Objective 01	Partial Structural (PLS-SEM)	Least Square Equation	Square Model	$\hat{Y}_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon_i$

Specific Objective 02	Linear Multiple Regression model	$\hat{Y}_i = \beta_0 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \varepsilon_i$
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Source: Develop by Researcher, 2022

Results and Discussion

Data analysis Related to Specific objective 01

The outer model is the part of the model that describes the relationship among variables and their indicators. First, the outer model was tested for the construct reliability and validity of the measurement model.

Table 5:

Analyze the Reliability and validity of independent Variable

Construct	Indicator Reliability		Internal Reliability	Consistency	Convergent Validity
	Loading	t-statistics	Composite Reliability	Cronbach's α	AVE
Dependent variable					
1 Contact					
CONT1	0.820	23.572	0.876	0.790	0.703
CONT2	0.839	28.416			
CONT3	0.856	31.121			
2 Ease of Use					
EASE1	0.903	58.095	0.917	0.866	0.787
EASE2	0.853	32.422			
EASE3	0.905	58.08			
3 Efficiency					
EFI1	0.777	25.001	0.869	0.802	0.625
EFI5	0.810	24.657			
EFI6	0.792	22.098			
EFI7	0.782	24.922			
4 Fulfillment					

FUL1	0.707	13.76	0.863	0.789	0.613
FUL2	0.778	23.5			
FUL3	0.810	30.63			
FUL4	0.830	39.957			
5 Privacy					
PRI1	0.785	21.256	0.864	0.763	0.679
PRI2	0.838	39.693			
PRI3	0.847	36.703			
6 Responsiveness					
RES1	0.854	43.302	0.895	0.825	0.740
RES2	0.865	38.686			
RES3	0.862	46.811			
Dependent variable					
7 Customer Satisfaction					
SATI1	0.878	59.525	0.877	0.789	0.704
SATI2	0.811	34.42			
SATI3	0.826	39.795			

Source: Survey data, 2022

The study omitted some questions which were in less than 0.7 Values considering outer loading values, because those questions were not reliable under survey data.

Path coefficient and significance among constructs

Table 6:

Path coefficient and significance among constructs

Variable	T-statistics	Coefficient	Result
Contact	1.241	0.037	Not Supported
Ease of Use	1.326	0.047	Not Supported

Efficiency	5.767	0.221	Supported
Fulfillment	6.699	0.321	Supported
Privacy	6.422	0.307	Supported
Responsiveness	6.445	0.225	Supported

Source: Survey data, 2022

The study found that Efficiency, Fulfillment, Privacy, and Responsiveness have a significant positive impact on customer satisfaction. Moreover, according to the result of the study Contact, Ease of Use does not affect customer satisfaction because the t-value is not statistically significant.

Coefficient of Determination

Table 7 shows the R-square and adjusted R- square of the model. According to that, the R-square value is 0.813 and it has a high effect. If further explained, it reflects that selected independent variables in the model explain 81.30% of the variation in the dependent variable of this study. Also, the adjusted R-square of the model shows 0.808, which means 80.8%.

Table 7:

Coefficient of Determination

Variable	R Square	R Square Adjusted
Customer Satisfaction	0.813	0.808

Source: Survey data, 2022

Data analysis Related to Specific objective 02

Examination of Coefficient

The study found that Education level and Internet experience have a positive impact on customer satisfaction. Moreover, according to the result of the study age, gender, and status does not affect customer satisfaction because the t-value is not statistically significant.

Table 8:

Regression result

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		

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(Constant)	1.537	0.138		11.172	0.000
Age	0.016	0.026	0.024	0.623	0.534
Edu	0.470	0.034	0.569	13.911	0.000
Gender	-0.087	0.053	-0.074	-1.651	0.100
Int	0.526	0.062	0.379	8.537	0.000
Status	0.054	0.057	0.044	0.938	0.349

Source: Survey data, 2022

Coefficient of Determination

Table 9 shows the R-square and adjusted R- square of the model. According to that, the R-square value is 0.622 and it has a moderate effect. If further explained, it reflects that selected independent variables in the model explain 62.20% of the variation in the dependent variable of this study. Also, the adjusted R- square of the model shows 0.615, which means 61.5%.

Table 9:

Coefficient of Determination

R	R ²	Adjusted R ²
0.789	0.622	0.615

Source: Survey data, 2022

Data analysis Related to Specific objective 03

Among the users of internet banking service, most of the selected respondent indicated the convenience of internet banking service as the strength of using internet banking service, Access is indicated as the weakness, profitability is indicated as the opportunity and technical problem of internet banking service is mentioned as the threat.

Conclusion and Recommendations

The main aim of this study was to investigate the factors influencing customer satisfaction of internet banking service users. The study tested 11 hypotheses and the result revealed that among the service quality factors efficiency, fulfillment, privacy, and responsiveness have a significant impact on customer satisfaction while contact and ease of use did not have a significant effect on the level of customer satisfaction. Among the demographic factors, education level and internet experience have a significant impact on customer satisfaction while age, gender, and marital status did not have a significant effect on the level of customer satisfaction. Among the users of internet banking service, most of the selected respondents indicated the convenience of internet banking service as the strength of using internet banking service.

Access is indicated as a weakness. Also, the opportunity to use the internet banking service is the profitability of the internet banking service. The technical problem of internet banking service is mentioned as a threat.

Even in developing countries like Sri Lanka, there is very little research done on the factors influencing the customer satisfaction of internet banking service users. This has been identified as a gap in the world of research and this research will help to fill that gap a little. Also, there is no single theory that can explain the factors influencing customer satisfaction of internet banking service users and this research helps to fill this gap. In addition, this research will enable to find out how internet banking in the field of information technology affects customer satisfaction in the field of economics. In studying the factors that affect the customer satisfaction of internet banking service users, in this research, both the variables of the quality of the internet banking service and the demographic factors are studied to determine the effect on customer satisfaction. The research was done using both of those variables in the world. Even though there is a lack of research in this area of study, this research is more useful to fill that knowledge gap.

The following measures can be taken to further enhance customer satisfaction regarding internet banking services.

To further develop efficiency, discuss with internet service providers and arrange to provide those facilities to areas with low signal facilities promptly. Further, taking the step to install the best user-friendly interface to attract many customers.

The bank may appoint a separate board of officers to update and correctly maintain the information related to the accounts of the customers who are using the internet banking service facilities under the fulfillment and monitor whether the officers are performing their duties well.

Strong security system should be established to protect privacy by introducing two-step verification and face recognition facility.

Hiring skilled software engineers to restore the website in the event of a crash. Banks should try to encourage fewer literate people to use internet banking services and educate them about this.

Promote step-by-step procedures for the facilities available through internet banking services through visual media and also within the premises of licensed commercial banks.

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ECONOMIC CONSEQUENCES OF NEW FERTILIZER POLICY IN SRI LANKA

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Abstract

Agriculture is one of the main sources of income in Asian countries, of which agriculture in Sri Lanka is the main source of food. There is widespread concern among the Sri Lankan farming community, industry associations, professionals and agronomists that the Sri Lankan government is restricting and banning the import of fertilizers and agrochemicals as part of a newly announced fertilizer policy. The research hopes to reveal the impact of the new fertilizer policy proposal on farmers' economy and paddy production with special reference to 145 rice farmers in *Rathnapura* district. The usage of organic and chemical fertilizers are major independent variables that affect the production of paddy. Furthermore, the log equation identified after the derived Cobb Douglas production function, depicts that all the variables except the cost of the agricultural machinery used by the farmer have a positive correlation with the farmer's paddy production. The most important finding is that overall paddy production was declined due to the new fertilizer policy. When chemical and organic fertilizers are increased by one unit the yield of the paddy was increased by 0.95 kg and 0.895 kg respectively. The final suggestion of this research is that organic manure should be given to the farmer along with chemical fertilizers until the paddy cultivation is accustomed to organic fertilizer.

Keywords: - *Chemical Fertilizer, Organic Fertilizer, Other variable, Paddy farming production*

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Introduction

Agriculture is one of the main sources of income in Asian countries, of which agriculture in Sri Lanka is the main source of food. In Sri Lanka, rice accounts for 25% of total cultivable land and more than two million families are engaged in farming as their main occupation (CBSL, 2019). The new fertilizer policy proposed in Sri Lanka has a direct impact on rice farmers due to the fact that fertilizers are the major ingredient in rice farmers. Also, the extent sown under different water sources and crop failure have been identified as dependent factors affecting the productivity of paddy cultivation. (Razmy & Ahmed, 2005). This study revealed the impact of the new fertilizer policy proposal on paddy farmers' income and productivity with special reference to *Rathnapura* district. Through the survey of literature, the researcher identified six key factors that affect the paddy culture: use of organic & chemical fertilizers, cost of labor, agrochemical expenditure, and land area. The study used the Cobb-Douglas production function to measure the farmer's production under different fertilizer applications. Fertilizer imbalance is one of the major problems in South Asia. With India, Sri Lanka, Bangladesh, and Nepal promoting unbalanced fertilizer application, it has become an environmental problem. The main reason for this is the ignorance of the farmers about the main components required for fertilizer. Moreover, the farmers are not interested in looking into the matter as the government regularly subsidizes fertilizers. (Kishore, Alvi, & Krupnik, 2021). Furthermore, although the government has banned the import of chemical fertilizers, the government has not yet taken appropriate action regarding the production and distribution of organic fertilizers. Nevertheless, Economic authorities discovered that although organic fertilizer is good for the environment and human life, it has a direct impact on rice yields (Shantha, 2011). The end result is a reduction in the contribution of agriculture to GDP, export earnings, import expenditure and food security. The effects of the newly proposed fertilizer policy have not been studied pertaining to *Ratnapura* District, therefore, the main objective of this research was to study the economic consequences of newly proposed fertilizer policy in *Ratnapura* District and thereby fill that research gap.

Materials and Methods

The end result of conducting research depends on the methodology by which the research is implemented. The aim of this research is to analyse the relationship between newly proposed fertilizer policy and paddy farming production in *Rathnapura* district, Sri Lanka. The conceptual Framework indicates the relationship between usage of chemical fertilizers, usage of organic Fertilizer, extend cultivated area, expenditure on chemical, labour

usage and also the technology usage for the paddy farming production on farmers. The data required for this analysis was obtained by conducting a field survey using a structured questionnaire and face to face interviews among 145 rain-fed farmers. The total number of farmers residing in the selected Divisional Secretariats of Ratnapura District; Embilipitiya, Balangoda, Imbulpe, Kuruwita and Weligepola Divisional Secretariats was 14448 (Census, 2013/2014). Based on this, 10% of the farmers were selected from each Divisional Secretariat and the researcher used two stage cluster sampling to select farmers; the identified population was divided into groups and the researcher randomly selected farmers from clusters. The researcher used Cobb-Douglas production function and regression analysis through case study to examine the main objective of the research. Many researchers use the Cobb Douglas production function to measure the productivity of a country's manufacturing sector and supply chain (Haijkova & Hurmic , 2007).

Results and Discussions

The data analysis primarily focuses on the Cobb Douglas production function and case study to identify how the newly proposed fertilizer policy will affect the Sri Lankan economy, which is the main objective of the study. The researcher developed two production functions as before the policy implementation and after the implementation of fertilizer policy. The Cobb Douglas production function selected by the researcher measures the farmer's average annual yield. Variables include the use of organic and chemical fertilizers, labor costs, cultivated land area, agricultural chemical expenditure and machinery costs.

Before Implementation of the New Fertilizer Policy

$$Y1 = \beta_0 X1^{\beta_1} X3^{\beta_3} X4^{\beta_4} X5^{\beta_5} X6^{\beta_6} \quad Y1 = 8.647 X1^{0.099} X3^{0.062} X4^{0.251} X5^{0.132} X6^{0.614}$$

The efficiency parameter of the equation developed by the researcher is 8.647, which is greater than one, therefore the selected variables reflect a positive effect on the paddy production.

$$\begin{aligned} \ln Y1 &= \ln \beta_0 + \beta_1 \ln X1 + \beta_3 \ln X3 + \beta_4 \ln X4 + \beta_5 \ln X5 + \beta_6 \ln X6 \\ \ln Y1 &= 8.64 \ln + 0.099(0.19) \ln X1 \\ &\quad + 0.062(0.20) \ln X3 - 0.251(0.38) \ln X4 \\ &\quad + 0.132(0.37) \ln X5 + 0.614(0.52) \ln X6 \end{aligned}$$

After Implementation of the New Fertilizer Policy

Second Cobb Douglas production function is as follows;

$$Y1 = \beta_0 X2^{\beta_2} X3^{\beta_3} X4^{\beta_4} X5^{\beta_5} X6^{\beta_6}$$

$$Y1 = 4.81X2^{0.163}X3^{0.029}X4^{-0.088}X5^{0.224}X6^{0.839}$$

The efficiency parameter of the equation developed by the researcher is 4.810, which is greater than one, therefore the selected variables reflect a positive effect on the paddy production

$$\begin{aligned}\ln Y2 &= \ln \beta_0 + \beta_2 \ln X2 + \beta_3 \ln X3 + \beta_4 \ln X4 + \beta_5 \ln X5 + \beta_6 \ln X6 \\ \ln Y1 &= 4.81 \ln + 0.163(0.13) \ln X2 \\ &\quad + 0.029(0.05) \ln X3 - 0.088(0.09) \ln X4 \\ &\quad + 0.224(0.29) \ln X5 + 0.839(0.07) \ln X6\end{aligned}$$

According to the above equation, β_0 depicts constant value of the function. That is, when all other factors are remaining constant, average paddy yield is 4.810. Chemical fertilizer usage (Ln X1), labour cost (Ln X3), agriculture chemical expenditure (Ln X5), and cultivated land area (Ln X6) depict positive relationships for paddy productivity and the machinery cost (Ln X4) represents a negative relationship for paddy yield (kg per acre).

The findings of the case study by the researcher are as follows. Farmers have no knowledge of organic fertilizer production due to the newly proposed Fertilizer Policy. Farmers have not been given adequate knowledge on how to process organic manure by the government, but the farmers have received organic manure provided by the government. It took three and a half months for farmers to prepare organic fertilizer at an average cost of Rs. 2080.00. The newly proposed fertilizer policy has not reduced the amount of land cultivated by farmers but farmers expect their average annual yield and their income to definitely decrease.

Conclusion and Recommendation

Based on the variables selected by the researcher and the primary objective developed by the researcher, the main finding is that the newly proposed fertilizer policy will have a severe impact on the income of the farmers and the annual production of the farmers. The research also concludes that chemical fertilizers can yield much higher yields and incomes, which results in a slight reduction in the yield obtained by using organic fertilizers in the same lands, thereby reducing the income of farmers.

The researcher made the following findings in comparison to the basic assumptions and conclusions were made by the researcher. It was found that the labor used by the farmer contributes significantly to the yield of the farmer. Thus, considering the technology used by the farmer and its cost, it also makes a significant contribution to the average production of the farmer. The researcher found that the farmer's average production increased relative to the agrochemicals used, as well as their income and annual production increased

relative to the amount of land the farmer produced. New technologies can be substituted for paddy cultivation to make the country self-sufficient in paddy cultivation in order to achieve high economic growth. With the new Agent Fertilizer Policy Problems, the researcher's suggestions in determining the appropriate course of action are as follows: instead of accustoming farmers to the use of organic fertilizers all at once, they should gradually become accustomed to organic fertilizers by applying organic fertilizers gradually along with chemical fertilizers.

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FACTORS INFLUENCING CUSTOMER SATISFACTION OF FUND MANAGEMENT COMPANIES IN SRI LANKA

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Abstract

Over the past decades, customer satisfaction has become a powerful factor in determining the survival of businesses. It is clear that the fund management companies in Sri Lanka also now paying close attention to their customer satisfaction. Therefore, this study mainly aims to examine the factors that influence customer satisfaction in fund management companies. The study obtained data through a structured questionnaire to select the sample and 300 customer responses were received under the multistage sampling method. PLS-SEM was used as a data analysis tool and all tests were done using Minitab-17 and Smart PLS 3 statistical software. The results show that both reliability and responsiveness have a significant influence on customer satisfaction of fund management companies in Sri Lanka. Besides that, convenience and empathy have no significant effect on customer satisfaction in fund management companies. At last, the study concludes that the reliability factor makes a tremendous impact on customer satisfaction of fund management companies rather than other variables. In addition to the results, the study recommended to the government stabilize the financial market for the encouragement of both fund management companies and their customers.

Keywords: *Convenience, Customer satisfaction, Empathy, Reliability, Responsiveness*

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Introduction

Over the past decades, customers have become a major driving force for businesses and customer satisfaction has become a powerful factor in determining the survival of businesses. Therefore, many businesses make great efforts to retain customers within their organizations. From the customer's point of view, they continue to transact with companies that provide the high level of satisfaction that they expect from the product they receive. That is why businesses focus on providing greater satisfaction to their customers through their products. In that sense, the term "customer satisfaction" has a direct bearing on today's business world. As a result, many businesses are more inclined towards their customers' expectations and businesses are becoming accustomed to ensuring customer satisfaction with the products they offer from a customer perspective, seeking to gain a competitive advantage within the business world. "*The higher customer satisfaction level leads to a higher market share*" (Reddy & Reddy, 2018, p.461). That is, businesses depend on their customers just as customers depend on businesses. Therefore, nowadays customer satisfaction has become a formidable business challenge for each and every type of business without any hesitation (Alafi & Al Sufy, 2012). Then it is a fact that any business entity has a strong interest in their customers and in recent times people in the financial sector are also showing a greater inclination towards their customers. This is because; unlike in the past, most consumers are willing to use different financial tools today, and fund management also takes precedence in the financial activities of the people.

Therefore, fund management companies around the world have sprung up because of the desire of people to manage their funds. Fund management companies take the financial assets of both people and organizations and invest those funds in a variety of investment avenues where the maximum returns can be obtained. Literally, these fund management companies prefer to invest their clients' funds in diversified portfolios such as stocks and bonds to reduce their investment risk. Also, fund management companies are responsible not only for providing high returns on customers' investments but also for maintaining customer reliability, providing them with the necessary knowledge and quality information regarding to fund management, setting a milieu for customers to interact with their companies in a convenient manner, etc. By providing such a wide range of services to their customers, fund management companies seek to maintain the highest level of customer satisfaction with their companies and this is because, if customers are not satisfied with their fund management companies, it will be a big hindrance to the survival of those companies. Hence, the purpose of this study is mainly to

identify the significant factors that may influence customer satisfaction of fund management companies in Sri Lanka.

Materials and Methods

The purpose of this study is to identify the factors that influence customers' satisfaction with fund management companies in Sri Lanka. Therefore, the philosophy of this study is positivism. At the same time, the researcher has utilized a deductive approach to test concepts and patterns known from theory. This study provides an opportunity to design research to test hypotheses by formulating hypotheses based on existing literature. Therefore, the researcher has the ability to determine the link between variables; reliability, responsiveness, convenience, and empathy in customer satisfaction of fund management companies in Sri Lanka.

To test the hypotheses, the study used a survey method to gather data from four companies that were holding fund management for their customers. Therefore, the population will be the customers holding funds in these four companies, which is 2365. The sample size was determined by using the "Krejcie and Morgan Table" and it is 300. Then the data was collected by making the questionnaire through Google form and making it available to the customers online. It includes three main parts A, B and C consisting of the demographic characteristics of the customers, multiple choice for customers' patterns of investment fund management, and 5-point Likert scale questions. These 5-point Likert scale questions were used to determine the significance of independent variables on the dependent variables. With the responses from 300 customers, Structural Equation Modeling (SEM) was used as the data analysis tool and all the hypotheses have been tested under the 95% significant level using Minitab -17 and SmartPLS3 Statistical Packages.

Results and Discussion

Through this study, a comprehensive investigation into the factors that influence customer satisfaction in fund management companies has been addressed. With the support of the empirical studies done by previous scholars, the researcher has mainly focused on four factors; reliability, responsiveness, convenience, and empathy, which are more likely to influence customer satisfaction. The current findings obtained from the data analysis reflect that both reliability (+0.324) and responsiveness (+0.208) factors positively influence customers' satisfaction with fund management companies Shanka, (2012). There, the reliability factor was highlighted while having higher influence on customer satisfaction. However, according to the responses received by customers, convenience (+0.427) and empathy (+0.098) factors have shown a positive insignificant influence on customer satisfaction

of fund management companies. Hence, hypothesis constructed based on both conceptual framework and the empirical studies, both H1 (reliability) and H2 (responsiveness) are supported in the study. Besides that, both H3 (convenience) and H4 (empathy) are not supported with empirical studies. However, finally, the researcher has identified that each and every factor has a positive relationship with customer satisfaction; even convenience and empathy have been insignificant. Also, among all factors, the reliability of the fund management company creates a tremendous impact on their customers' satisfaction of fund management companies in Sri Lanka.

Conclusion and Recommendation

At present, Sri Lankans are lining up eager to manage their funds with the cooperation of fund management companies. They are still recognizing the value of managing their funds, which is very suitable for their future investments. With increasing customers, competition among fund management companies also tends to increase. Therefore, fund management companies always try to retain their customers with the company while providing exemplary service to their customers. For that, it is very much essential to understand their fund management customers. Hence, the researcher conducts this study with the objective of identifying the factors that influence customer satisfaction of fund management companies in Sri Lanka and further identifying the relationship of factors with customer satisfaction and what kind of influence they make on customer satisfaction regarding fund management companies.

As previously mentioned, with the expansion of the financial industry in Sri Lanka, most Sri Lankans are now moving to manage their funds with the help of fund management companies. Therefore, the parties who are involved in the fund management industry need to pay close attention while taking proper actions for the progress of the industry as well as fund management companies. Hence, the study has mentioned both implications and recommendations to the relevant parties. Since social knowledge about fund management and fund management companies is minimal, a methodology should be developed to make people aware of fund management. Therefore, government has a huge role to play in this fund management field. It is needed that the government should take the lead in the financial industry and encourage existing fund management companies while paying constant attention and supporting other companies to move towards fund management. At the same time, the government needs to formulate new policies for managing funds like stabilizing interest rate, proper cash management while encouraging both fund management companies and customers. Also, emphasis on customers' behaviour and knowledge of fund management in

order to uplift the level of managing funds and launching research and development activities required to fund the management industry in Sri Lanka must be needed.

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IRRIGATION EFFICIENCY IN THE DRY ZONE IN SRI LANKA

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Abstract

Water resource economists and policy makers have suggested that by 2030 one third of the world population will be based along river basins and the scarcity of the water for agriculture will have a tremendous impact on their livelihood. In many parts of the country, productivity of paddy is below the potential level due to insufficient irrigation water and in the *Yala* season (Dry season) only 30 percent of cultivable irrigated paddy land could be used for growing due to lack of water. This study attempts to determine the actual usage of irrigation water at different water risk in the dry and wet seasons in large scale irrigation schemes in the dry-zone of Sri Lanka. Primary data were obtained from 360 paddy farm plots from *Rajanganaya*, *Nachchaduwa* and *Huruluwewa* irrigation schemes covering upstream and downstream farmers. Daily actual water usage at plot level measured by volumetric method. Under this method water is collected in a container of known volume and the time taken to fill the container is recorded. According to our study, on average, in the wet (*Maha*) season upstream farmers of *Rajanganaya* have used 4.8-acre feet (5921 cubic meter) and *Huruluwewa* upstream farmers 4.2-acre feet (5181 cubic meter) for paddy farming. Though water usage of *Rajanganaya* farmers were 14% higher than that of *Huruluwewa* farmers in the wet season, the productivity variation was insignificant between two farmer groups. However, the downstream disparity of water usage in the dry season (*Yala* season) is much higher than the wet season. In the dry season, downstream farmers of *Rajanganaya* have recorded 5.7-acre feet and *Huruluwewa* downstream farmers have managed with 3.2-acre feet due to scarcity of water in the dry season. The present study suggests that collectivism is the most suitable way of common pool resource management rather than individualism, which is incorporated with the market mechanism.

Keywords: *Irrigation, Water Management, Paddy, Dry-Zone, Common Pool Resources*

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Introduction

In Sri Lanka, around two million farmer families are engaged in paddy farming island-wide as their main occupation. High water-intensive paddy is grown as 34% of total cultivated area and consume more than 70 % of total water allocation for food production in the country (Shantha & Alli, 2014). Irrigated agriculture, mainly paddy production used 96 percent water withdrawals in the drier areas. Around 44 percent paddy is cultivated under major irrigation schemes and another 24 percent is cultivated under minor irrigation schemes. More than 70 percent irrigated paddy land are belonging to the Dry-zone. Further, about 70 percent of paddy output drawn by small paddy farmers who own less than one hectare of land (Bandara & Weeraheewa 2003). As many as 314,000 farmers are tenant cultivators and nearly 50 percent of these tenants grow paddy on holding smaller than 0.4 ha. Monthly average consumption of rice is around 200,000 metric tons and annual additional demand is around 60,000 metric tons and that additional amount will be totally irrigation – based (Wanninayaka & Shantha 2014).

In many parts of the country, productivity is below the potential level due to insufficient irrigation water and in the *Yala* season (Dry season) only 30 percent of cultivable irrigated paddy land could be used for growing due to lack of water. In Sri Lanka, Dry-Zone is the main paddy zone and some part of this area will face an absolute scarcity of water by 2025 (Shantha & Alli 2011). Paddy farming is an exceptionally heavy consumer of water up to 3,000 liters on average used to produced one kg of rice and sixty percent of the water pumped into paddy farms goes waste.

Besides, several research studies have suggested that climate change would further aggravate water scarcity issues in irrigation system of Sri Lanka. This climate change will lead to an increase in the *Maha* (wet) season irrigation water requirement for paddy by 13-23 percent by 2050 compared to that of 1961-1990. The climate change map indicates that typical farming district under Dry-Zone are more sensitive to climate change than the rest of the country due to their heavy reliance on primary agriculture. According to the water vision 2025, IWMI indicator of water scarcity in 2025 shows absolute water scarcity in the dry zone, if the irrigation sector efficiency is not doubled by 2025. The past, present and future predictions on rainfall indicate that there will be drastic reductions in rain fall during *Maha* and *Yala* seasons and therefore, additional irrigation water must be developed for sustainable paddy and other cash crop cultivation in the dry zone. Reduction in rainfall in the Dry-Zone would significantly impact on livelihood implication of Dry-Zone paddy farming households.

Farmers in Sri Lanka generally enjoy free-of-charge irrigation facilities that are often provided by the government at zero -price mainly for water intensive paddy production. These free-of-charge water, eventually combine with subsidized fertilizer and land for cultivating paddy. Hence, practically it is impossible to expect economically efficient way of factor usage among paddy cultivation and this zero-price policy leads to uneconomic use of irrigation water, water inequality and mismanagement of water. In the country, there are more than 20 Acts and Ordinances and other form of Enactment for water allocation, regulation, usage and management of water resource. Many of them are either outdated or far too limited to address the issues and problem in the current context of the irrigation sector in Sri Lanka.

Material and Methods

This study attempts to determine the actual usage of irrigation water at different water risk in the dry and wet seasons in large scale irrigation schemes in the dry-zone of Sri Lanka. Primary data were obtained from 360 paddy farm plots from *Rajanganaya*, *Nachchaduwa* and *Huruluwewa* irrigation schemes covering upstream and downstream farmers. The study applied multistage sampling procedure for selecting the sample. Daily actual water usage at plot level measured by volumetric method. Under this method water is collected in a container of known volume and the time taken to fill the container is recorded.

Results and Discussion

It is evident that the present water use of the dry-zone farmers is not in an efficient manner resulting it is wasteful. Inter disparity (between the tanks) and intra disparity (Within the tank) of water usage are significantly high. According to our study, on average, in the wet (*Maha*) season upstream farmers of *Rajanganaya* have used 4.8-acre feet (5921 cubic meter) and *Huruluwewa* upstream farmers 4.2-acre feet (5181 cubic meter) for paddy farming. Though water usage of *Rajanganaya* farmers were 14% higher than that of *Huruluwewa* farmers in the wet season, the productivity variation was insignificant between two farmer groups. However, the downstream disparity of water usage in the dry season (*Yala* season) is much higher than the wet season. In the dry season, downstream farmers of *Rajanganaya* have recorded 5.7 acre feet and *Huruluwewa* downstream farmers have managed with 3.2 acre feet due to scarcity of water in the dry season. Even though water usage of *Rajanganaya* farmers were 78% higher than that of the *Huruluwewa* farmers, the productivity of paddy in *Rajanganaya* farmers were only 20%

higher than the *Huruluwewa* farmers in the dry season. In the dry season, *Rajanganaya* farmers and *Huruluwewa* farmers have used 2950 liters and 2485 liters respectively for producing one kg of paddy. It is very clear that free provision of irrigation water leads to over exploitation and irrigation scarcity leads to efficient utilization of irrigation water.

Conclusions and Recommendations

Much economic literature has treated irrigation water as an economic good and that should be allocated through a competitive market price. However, some have treated irrigation water as sociological aspect that should be largely exempted from competitive pricing and allocation. This study concluded that irrigation water should be treated as a common pool resource under the economic good category. Substantial literature has proposed market mechanism to better allocate irrigation water. Water is no longer a ubiquitous commodity; it is fast becoming a scarce resource even in the more humid regions. Hence, first of all, farmers have to pay adequately for its use, which would sufficiently motivate them to conserve it. However, the study questioned the notion that market forces can guide common pool resources. In the Sri Lankan context, market forces may be an inappropriate mechanism for irrigation management because most Sri Lankan farmers believe that it is the responsibility of the government to provide water to irrigable land. On the other hand, classical economist has looked at ways of common pool resource optimization. The present study as suggested that the collectivism is the most suitable way of common pool resource management rather than individualism, which is incorporated with the market mechanism.

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SOCIO-ECONOMIC WELLBEING, MENTAL HEALTH, AND EMPLOYMENT PERFORMANCE: A CASE OF WOMEN EMPLOYEES IN THE APPAREL INDUSTRY IN SRI LANKA

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Abstract

The study makes an effort to look at how economic and social well-being affects mental health and the performance of women employees in Sri Lanka's apparel industry. This study employs a quantitative method and the primary data were collected from 275 women employees in the apparel industry in Seethawaka Industrial Zone, Sri Lanka. The data were analyzed employing a partial least square structural equation model through SmartPLS. The study revealed that social and economic well-being have a positive effect on the mental health of women employees and their performance. The mental health of women employees has been associated negatively with their employee performance. The study further revealed that mental health has no mediator role in the relationship between the socioeconomic well-being of employees and performance. Thus, the study provides important empirical evidence that socioeconomic well-being affects the mental health of women employees and their employee performance.

Keywords: *Apparel Industry, Economic Wellbeing, Employment Performance, Mental Health, Social Wellbeing.*

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Introduction

Due to a variety of factors and possibilities, women's participation in the workforce has significantly expanded nowadays and thousands of low-income women, their families, and communities are impacted. In Sri Lankan context, women's social circles appear to be ignorant of the impact that their hardworking and determined hands have made-parents, siblings, husbands, and significant others (Lankeshwara, 2016). The economic and social well-being of women is crucial for their ability to perform effectively at work, since it both provides guidance and, most importantly, rewards them for doing so (Suresha, 2020). Financial stability, therefore, ensures both present and future financial security. Most female apparel employees must deal with this strain between work and home; as a result, they lose out on some of their most important family time. Additionally, female apparel employees must deal with pressure at work, finish their jobs within the allotted time frames, follow objectives, work overtime, and take precautions to minimize mistakes and damages. These are the conditions that they must adhere to, they work under pressure, which causes issues with their mental health including stress, anxiety, or even depression. As a result, it affects both their job performance and their well-being (Motowidlo, 2003). Therefore, the study attempts to investigate the impact of economic and social well-being on women's mental health and the employment performance of women employed in the apparel industries in Sri Lanka.

Material and Methods

The study's population is female apparel workers at the Seethawaka Export Processing Zone (EPZ). Utilizing a questionnaire survey as a key data collection tool, the study strategy is quantitative. The researchers used multistage cluster sampling in their research to collect the data. The sample size was 275 which was determined using the sample size determination formula. Multi-stage cluster sampling method was used for the sample selection. There are 11 garment industries located in the Seethawaka EPZ. Each of the eleven clusters that make up these 11 factories has both male and female employees. The lottery method is used in the first phase to select five apparel factories at random from among the 11 clusters. The second step is to choose females from that five clusters. Then took 55 females as an equal sample size from each cluster because equal sample size allows to reduce the bias in data collection and analysis. The collected data were imported into the smartPLS and analyzed with the support of Partial Least Square Structural Equation Modeling (PLS-SEM) using two steps. First, the measurement of variables was evaluated using reliability and validity tests and then, the structural model was measured.

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Results and Discussion

The study first evaluated the reliability and validity of reflective variables of the outer model and it came out that all the indicators have indicators reliable since outer loadings values are above 0.7. Composite reliability of reflective variables is established since Cronbach alpha is higher than 0.7. The convergent validity of all the variables is up to the standard level (AVE value is above 0.5). Also based on the Fornell-Larcker Criterion Analysis results showed that discriminant validity is established in the variables. After that inner model was evaluated using VIF, path coefficient, and their significance. Table 1 shows the significance of the structural model.

Table 1:

The significance of the structural model

Hypotheses	Relationship	Path Coefficient	P Values	Decision
H1	EW -> EP	0.233*	0.050	Accepted
H2	EW -> MH	-0.222***	0.001	Accepted
H3	MH -> EP	-0.114*	0.042	Accepted
H4	SW -> EP	0.473***	0.000	Accepted
H5	SW -> MH	-0.392***	0.000	Accepted
H5	SW -> MH -> EP	0.045*	0.043	Accepted
H6	EW -> MH -> EP	0.025	0.115	Not Accepted

Source: survey data, 2022.

PLS-SEM results show that economic well-being has a significant positive effect on employee performance ($\beta = 0.233$ and $p\text{-value} = 0.05$) (see table 1). Thus, the hypothetical relationship of H1 is supported by the empirical results. Further economic well-being shows a significant negative direct impact on mental health ($\beta = -0.222$ and $p\text{-value} = 0.01$) confirming that there is a significant negative relationship between economic well-being and mental health. Thus, the hypothetical relationship of H2 is supported by the empirical results. The regression results shown in table 1, indicate that mental health has an influence on employee performance. Mental health has a significant negative path coefficient ($\beta = -0.114$ and $p\text{-value} = 0.04$). The results have

answered hypothesis H3. Social well-being has a powerful impact on mental health and employee performance. Table 1 further shows that social well-being and employee performance have a strong relationship ($\beta = 0.473$ and $p\text{-value} = 0.00$) and the result accepted hypothesis H4. Similarly, social well-being has a significant negative relationship with mental health confirming the hypothesis H5 ($\beta = -0.392$ and $p\text{-value} = 0.00$). The results displayed in table 1, indicate that mental health has a lesser mediator impact on the relationship between socioeconomic well-being and employee performance of women employees in apparel industries in Sri Lanka. Based on the results this study is similar with the previous researchers (Harshitha & Arul, 2021), (Mahlagha & Faizan, 2020) and (Randolph, 1992).

Conclusions and Recommendation

The results confirmed that socioeconomic well-being has a positive effect on the mental health of women employees and the performance of women employees in apparel industries in Sri Lanka. Thus, the study provides empirical evidence to the literature by testing the model developed by combining three theoretical concepts empirically. To integrate work and family life without experiencing significant challenges or high levels of stress, it is advised that employees be provided flexible shift schedules and additional hours. Here it found that social wellbeing has a relationship between employment performance, to build social sustainability of female workers it suggests flexible shift timetables on work and extra hours in order to balance work and family life without severe difficulties and stress levels which is implemented in the working hour policy. And study found that mental health has significance with social wellbeing to the performance, so to imply punitive measures against guilty supervisors for their misbehavior at work in order to improve the work environment. Skills development is essential to prepare women for the future apparel industry. This involves technical and vocational education and training. Need to implement, holiday compensation policy and importantly anti-discrimination policy to secure the work life of female workers.

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FACTORS INFLUENCING CONSUMER BEHAVIOUR TOWARDS ONLINE SHOPPING AMONG UNIVERSITY STUDENTS: WITH SPECIAL REFERENCE TO SABARAGAMUWA UNIVERSITY OF SRI LANKA

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Abstract

Online shopping has become an increasing concern among university students in Sri Lanka. Hence, it is very important to identify and understand online shopping behaviour among university students. Therefore, this research aims at identifying the factors which influence consumer behaviour towards online shopping among university students at Sabaragamuwa University of Sri Lanka. The sample size was 250 students and primary data were collected through a structured questionnaire and analyzed with the help of Partial Least Square Structural Equation Modeling (PLS-SEM). The study revealed that perceived usefulness, perceived ease of use, perceived risk and subjective norms are significant while trust is not significant in predicting online shopping behaviour. Also, online purchase intention acted as a mediator for independent variables (trust, perceived usefulness and perceived ease of use). Finally, this study provides a better understanding to E-marketers and shopping website developers about the online shopping behaviour among university students in Sri Lanka empirically.

Keywords: *Online shopping behaviour, Online shopping intention, Structural Equation Modeling, University students.*

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Introduction

With technological advancement and the pandemic situation, most people have become used to online shopping. According to Sirimane (2016), Sri Lanka can be identified as a country with the fastest-growing online shopping market. Especially, online shopping has become an increasing concern among university students in Sri Lanka. That means, online shopping has largely influenced the preferences and buying patterns of consumers. Researchers have identified the university age as the most common age for internet use and online shopping. According to datareportal.com reports, the number of internet users had increased to 11.34 million in Sri Lanka in 2022 and according to its analysis, internet users had increased by 4.9% between 2021 and 2022. Also, confidence in products and online payment methods have increased. Finally, the online shopping industry shows rapid growth in Sri Lanka. Hence, it is very important for many parties to identify and understand the most important factors that influence online shopping behaviour among university students including e-sellers and university students because online shopping is different from physical market shopping. Hence, this research aims at identifying the factors which influence consumer behaviour toward online shopping among university students concerning Sabaragamuwa University of Sri Lanka.

Materials and Methods

For the current study research philosophy was positivism. The quantitative research approach incorporated into this research by distributing an online structured questionnaire to university students at Sabaragamuwa University of Sri Lanka. The questionnaire included closed-ended questions. The total population was considered to be all the students of the University and the amount was 6250. The sample size was taken as 250 and it was taken by referring to the table developed by Krejcie and Morgan (1970). The sample was selected using the simple random sampling technique as there were only a few responses from some faculties. PLS Structural Equation Modeling technique used as the analyzing technique. Hence, the researcher used SmartPLS 3 software for analysis. First, after estimating the structural model, reliability and validity were checked and after that collinearity of the inner model, the significance of the structural model, and the relevance of path coefficients were assessed.

Results and Discussion

The researcher assessed the path coefficients and t-values from the PLS algorithm and bootstrapping procedure to identify the significance of hypothesized impacts of the variables.

Table 1:

Path Coefficients and Significant among Constructs

Hypothesis	Relationship	B	t-statistics	Results
H1a	Trust ->OSB	0.020	0.344	Not Supported
H1b	Trust -> OSI	0.229	2.497***	Supported
H1c	PU -> OSB	0.420	6.456***	Supported
H1d	PU -> OSI	0.284	3.209***	Supported
H1e	PEOU -> OSB	0.163	2.607***	Supported
H1f	PEOU -> OSI	0.201	1.959**	Supported
H1g	PR -> OSB	0.328	7.115***	Supported
H1h	PR -> OSI	-0.143	1.663*	Supported
H1i	SN -> OSB	0.089	1.757*	Supported
H1j	SN -> OSI	-.0.093	1.288	Not Supported
H1k	OSI -> OSB	0.207	4.351***	Supported

Source: Sample Survey of factors influencing consumer behaviour towards online shopping among university students in Sabaragamuwa University of Sri Lanka 2022. (Note ^a: *=p<0.1 **=p<0.05 ***=p<0.01)

The researcher developed and then tested 11 hypotheses intending to analyze the impact of influencing variables. As shown in Table 1, 9 hypotheses were supported in predicting the university students' online shopping behaviour and intention. Hence, only 2 hypotheses were rejected (H1a and H1j). The findings of the research have found that perceived usefulness, perceived ease of use, perceived risk, and subjective norms are significant to predict online shopping

behaviour among university students while trust is not significant in predicting online shopping behaviour. Finally, this study provides a better understanding to E-marketers and shopping website developers about online shopping behaviour among university students in Sri Lanka.

For the study, online shopping intention was identified as a mediator variable. Hence, the mediator or indirect effect of online shopping intention was examined using 5 hypotheses and three hypotheses were accepted. The results regarding the mediating effect have been explained below in Table 2.

Table 2:

Path Coefficient and Significance of mediating variables

Hypothesis	Relationship	B	t-statistics	Results
H2a	PEOU -> OSI -> OSB	0.042	1.775***	Supported
H2b	PU -> OSI -> OSB	0.059	2.504**	Supported
H2c	SN -> OSI -> OS	-0.019	1.184	Not Supported
H2d	Trust -> OSI -> OSB	0.047	1.969**	Supported
H2e	PR -> OSI -> OSB	-0.029	1.411	Not Supported

Source: Sample Survey of factors influencing consumer behaviour towards online shopping among university students in Sabaragamuwa University of Sri Lanka 2022 (Note ^b: **= $P < 0.05$ ***= $P < 0.10$)

It could be concluded that online purchase intention acted as a mediator for independent variables (trust, perceived usefulness, and perceived ease of use). That means, trust, perceived usefulness, perceived ease of use, and perceived risk are significant while subjective norms are not significant in predicting online shopping intention. According to the conceptual model, online shopping intention was a mediator variable and online purchase intention acted as a mediator for independent variables (trust, perceived usefulness, and perceived ease of use).

Conclusion and Recommendations

The researcher tested the total of 16 hypotheses for examining the impact of all identified factors on online shopping behaviour and mediating effect of online shopping intention. According to the results, consumers' trust in better customer services and brands impacts on online shopping intentions of university students. Also, positive use performance of online shopping websites and stores impacts online shopping behaviour of university students. Further, consumers consider the perception of minimum effort to engage in online shopping. Moreover, the degree of risk felt by the consumer while the shopping process can be identified as a constraint to purchase intention, and perceived social pressure has a low impact on online shopping. Finally, by referring to this research, the researcher recommends that e-marketers and online sellers can improve their performance of online stores and websites by removing the factors which can be a cause to reduce the feeling of trust regarding their shopping websites. Also, the researcher recommends that the government implement strict policies to protect the privacy and safety of online shopping platforms.

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AN INVESTIGATION OF THE RELATIONSHIP BETWEEN EXCHANGE RATE VOLATILITY AND VOLUME OF TEA EXPORT IN SRI LANKA

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Abstract

Tea is an important agricultural commodity grown in Sri Lanka. It generates a significant amount of foreign exchange. This study was conducted to investigate the relationship between exchange rate volatility and the volume of tea exports in Sri Lanka during 2011-2021. Secondary data related to the volume of tea export, exchange rate, tea prices, inflation rate, and volume of tea production in Sri Lanka from 2011 to 2021 on a monthly basis were used. Regression analysis was used for data analyses. According to the result, there was a negative relationship between exchange rate volatility and the volume of tea export. The inflation rate was a significant factor that affected tea export volume. According to the findings, updating relevant monetary and tea production-related policies by the government are important to increase tea exports from Sri Lanka in the future.

Keywords: *Tea production, Tea export, Exchange rate volatility, Tea prices, Sri Lanka.*

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Introduction

Tea is an important cash crop in Sri Lanka. It can generate a significant amount of foreign exchange. Sri Lanka's total agricultural exports merchandise earnings were 1986.7 US \$ mn and tea exports merchandise earnings were 986.6 US \$ mn from January to September 2021 (Central Bank of Sri Lanka, 2021). According to this information, tea export contributes a high percentage of export earnings in the country. Ceylon tea contribution percentage to total merchandise has been very low in the last few decades (Export Development Board, 2021).

The exchange rate was the value of one currency in terms of the currency of another nation. Exchange rate volatility means risk associated with unexpected movement in the country's exchange rate (Schmitz, 2012). Therefore, exchange rate prediction is very difficult from time to time for the country and it makes difficulties for the country, businesses, and foreign investors in their decision process. (Schmitz, 2012).

However, unfortunately now tea export volume of Sri Lanka does not show a constant pattern from the last few decades while the exchange rate is volatilizing rapidly in the country. (Sri Lanka Export Development Board, 2021). If there is better knowledge about the relationship between exchange rate volatility and the volume of tea export, it will help to boost the tea export volume in Sri Lanka.

Materials and Methods

In this research, 11 years of secondary data about exchange rates as well as the volume of tea export, tea prices, inflation rate, and volume of tea production from Sri Lanka during 2011-2021 (on monthly basis) were used. Data were collected from Export Development Board, Forbes & Walker Tea Brokers (Pvt) Ltd, and Central Bank rates and indicators. Data analysis methods were descriptive statistics and regression analysis. All variables were converted to log values for analysis purposes.

Dependent variable : Volume of tea export

Independent variable : Exchange rate volatility volume

Control variable : Tea prices, Inflation rate & Volume of tea production

Results and Discussion

The main findings are presented in this section.

Table 01:

Correlation Analysis

	Tea Export Volume	Exchange Rate Volatility	Tea Auction Price	Inflation Rate	Tea Production Volume
Tea Export Volume	1.000				
Exchange Rate Volatility	-.024	1.000			
Tea Auction Price	.130	-.161	1.000		
Inflation Rate	-.274	-.014	-.017	1.000	
Tea P.Volume	.032	.015	-.248	-.082	1.000

Note. Correlations between variables shown in this table

There was a negative correlation between exchange rate volatility and tea export volume. It describes that there was a negative relationship between exchange rate volatility and the volume of tea export in Sri Lanka from 2011 to 2021. According to Wanjothi, (2016) there was a positive correlation between exchange rate volatility and tea export volume in Kenya as well.

Table 2:

Coefficient correlation of multiple determinations (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.305	.093	.064	1.013546

Note. This table shows R and R^2 values.

There was a medium level of relationship between the exchange rate volatility and the volume of tea exports during 2011-2021. (Coefficient of correlation was 30.5 %.) Similarly, according to Omondi, (2017) there was a medium relationship between exchange rate volatility and the volume of tea exports in Kenya because the study coefficient of correlation was 38.6%.

Table 3:*Coefficients*

Model	Unstandardized Coefficients		Standard ized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	7.711	11.468		-.672	.503	-30.40	14.982
Exchange Rate Volatility	-.023	.309	-.007	-.076	.940	-.634	.587
Tea Auction Price	1.607	1.049	.135	1.531	.128	-.469	3.683
Inflation Rate	-.947	.299	-.269	-3.16	.002	-1.540	-.355
Tea Production Volume	.673	1.352	.044	.497	.620	-2.004	3.349

Note. This table shows coefficients and B values for variables.

The equation model for this relationship is as below.

$$Y = 7.711 - 0.023 X_1 + 1.607 X_2 - 0.947 X_3 + 0.673 X_4 + e$$

According to the coefficient significance value inflation rate *p*-value was less than 0.05. Therefore, the inflation rate was statistically significant to predict the volume of tea exported monthly in Sri Lanka.

P values of exchange rate volatility, monthly tea auction price, and monthly tea production were greater than 0.05. Therefore, exchange rate volatility, monthly tea auction price, and monthly tea production are statistically insignificant for predicting the volume of tea exported monthly in Sri Lanka during 2011-2021.

Because Sri Lanka's export volumes contain both re-export and produced export volumes, tea prices contain only tea auction prices; other private sales prices were not contained. Tea companies mainly produce black tea and weekly sales in the auction and export black tea in bulk quantities without considering the exchange rate. Similarly, according to Omondi, (2017)

exchange rate volatility and tea prices were insignificant factors for predicting Kenya's volume of tea export.

Conclusion and Recommendations

According to the findings, there was a negative relationship between exchange rate volatility and the volume of tea export in Sri Lanka during the year 2011-2021 periods. The inflation rate was a significant factor affecting the tea export volume. Tea prices, the volume of tea production, and exchange rate volatility factors were not significantly affected by the tea export volume in Sri Lanka from 2011 to 2021.

Update the monetary, export, and tea related policies by the government, according to the country's current economic condition.

Export base tea producers should expand the tea production lines focusing on the export market.

Tea exports should update their marketing plans to organize the campaigns in the current market and foreign new market segments.

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WHAT DO EMPLOYERS SEEK? DETERMINANTS OF LABOUR DEMAND FOR PROFESSIONAL JOB VACANCIES IN SRI LANKA (WITH SPECIAL REFERENCE TO LINKEDIN NETWORK)

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Abstract

This study seeks the factors associated with the demand for professional occupations made by different employers through their vacancies published in the LinkedIn professional network for recruiting professionals. Primary data of 1,000 professional job vacancies selected through the systematic random sampling method was used by this study. Multinomial logistic regression model was used for the study. The study found that education, training, both soft and hard skills as the key variable demanded by the labour market. The skills and requirements needed for different occupation segments are different while most of the education qualifications are needed for Accountancy/Audit/Analysts/Research and manufacturing sector professionals. Soft skills are mainly required by marketing and HR professionals. The importance of education reforms, and the ways of bridging the mismatches of vacancies and the potential labour force were highlighted in the policy aspects as the final contribution of the study.

Keywords: *Education, Job Vacancies, Labour Demand, Professional Employment, Skills*

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Introduction

Labour demand is recognized as one of the serious concerns in the highly competitive job market. It consists of the academic inflation which is defined as the devaluation of academic qualifications over time, thus leading to the reduction in expected advantages of available academic qualifications in the job market. The values given by the employers in the professional job market to the degree, other professional qualifications, training and skills etc. directly and implicitly appeared in the job vacancies (Messum et al., 2016). Increasing the credential inflation makes the level of mismatches of educated job seekers severe and to experience the outcome of long unemployment duration (Sevilla et al., 2020; Wiedner, 2021). These mismatches have been growing for the academic qualifications of the candidates without any specific job focus in their degree programmes such as law, medicine and surveying. Educated youth in the disciplines of arts and management face the issues with specific job roles in the professional job market and hence they are highly vulnerable to academic inflation. Analyzing job vacancies will help to identify the diversification of the job market for professionals in the related disciplines.

More controversies are seen on declaring the highest significant factors in the labour demand for professionals. Literature reveals that the variables such as professional qualifications (Nikulcheva et al., 2017), geographical location (ZHOU, 2001), degree availability (Mariani et al., 2020; Lovaglio et al., 2017), knowledge on information technology (Maciej et al., 2019), and English proficiency (Mariani et al., 2020) are highly significant in determining the demand for jobs. Moreover, studies by Mariani et al. (2020), Maciej et al. (2019) and Lovaglio et al. (2017) have proved that soft skills play a vital role in the job market while the core soft skills such as communication skills, leadership, team work, stress management, flexibility, problem solving, creative thinking and time management are highlighted more.

The LinkedIn Network platform is the largest professional job network source while it also functions as a highly influential social media network. Nowadays, professional job seekers respond more on this platform rather than to paper-based advertisements. However, the employers are also advertising their vacancies in LinkedIn where a broader classification and wider information can be seen. The objective of the study is to examine the factors associated with the labour demand for the most targeted professional jobs in the disciplines of arts, management, information technology and engineering in Sri Lanka referring to the LinkedIn Network platform.

Materials and Methods

This study used primary data collected from vacancies advertised on LinkedIn during the period of January 2022 - February 2022. The total sample size is 1,000 vacancies representing the professionals of marketing, human resource management, accountancy, audit, analysts, research, finance, business development, manufacturing, IT and engineering. Two stage sampling method was adopted for the study. The first stage was purposive sampling method based on the above-mentioned categories and the systematic random sampling method was used to select the vacancies from the LinkedIn network at the final stage.

According to Long (1997), 500 observations are sufficient for any situation of logit regression. Since the study uses five categories in the dependent variable of the multinomial logit model, the sample size was doubled as 1000 to cover a sufficient number of cases for each category. All selected employment opportunities were limited to the Sri Lankan context. Two Multinomial logistic regression models were used for the analysis using the dependent variable with the following five categories. The first category was used as the base category.

- Marketing and Human Resource professionals
- Accountancy/Audit/Analysts/Research
- Finance and Business Development
- Manufacturing
- Information Technology and Engineering

Independent variables of the first model are possessing work experiences, specific geographical location, possessing a degree, possessing knowledge on information technology, English proficiency, possessing professional qualifications and possessing soft skills. The second model further elaborates on soft skills by incorporating independent variables for demanding communication skills, leadership, team work, stress management, flexibility, problem solving, creative thinking and time management.

Results and Discussion

The study found that 76.6 percent of vacancies required experiences and 68 percent of them required work experiences of 1-4 years, while 60.5 percent of vacancies on the LinkedIn professional network requires a degree and the highest demanded degree was Bachelor of Science, amounting to 46.5 percent. Nearly one-third of the vacancies required professional qualifications with a degree as a key requirement. While 79.4 percent of the vacancies required soft skills, the most demanded soft skills are communication skills, teamwork and

analytical skills. English proficiency was required from 37.9 percent of workers. Nearly half of the vacancies have mentioned specific locations for employment and among them the majority (94.5 percent) was located in the Western Province. Popularity of the online and hybrid working cultures that emerged with the Covid 19 pandemic continues even after the pandemic due to several reasons and 14.8 percent of vacancies allowed online working while 21.15 percent allowed the hybrid working environment. According to the first multinomial logistic regression model, possessing working experience is highly significant for employments in the field of Accountancy, Audit, Analysts and Research. Geographical location of employment is highly important for the occupations in the fields of Marketing and HR professionals, manufacturing, IT and Engineering. A degree is a mandatory requirement for most of the vacancies in the fields of Accountancy/Audit/Analysts/Research and Manufacturing. IT knowledge is very significant for IT professionals while proficiency in English is highly significant for Marketing and HR professionals and professionals in Finance and Business development. Professional English is not required as a key requirement by the manufacturing sector and for IT professionals. Professional qualifications and soft skills are mainly required in the fields of marketing and HR professionals. Among the soft skills, communication skill is highly important for marketing work and human resource professionals while Accountancy/Audit/Analysts/Research and IT related employments do not require this particular skill a lot. Leadership skill is also a key skill for marketing, HR professionals and manufacturing professionals. Stress management was demanded by the vacancies for Marketing and HR professionals and manufacturing while flexibility is also a key requirement for employment in the marketing and HR fields. Problem solving capacities are demanded by employments in the manufacturing sector, IT and Engineering. There is a significant role for creative thinking within the marketing and human resource fields.

Conclusions and Recommendations

The study concludes that the majority of vacancies seeks for education and training including a degree, IT knowledge, professional qualifications and proficiency in English and also work experiences. Educational qualifications were given higher priority in the fields of Accountancy, Audit, Analysts, Research and Manufacturing. Soft skills were given high importance for the vacancies in marketing and human resource development, specifically communication skills, creative thinking, leadership, stress management and flexibility. Requirements for problem solving capacities are relatively high for professionals in the manufacturing sector, IT and engineering, Accountancy/Audit/Analysts/Research with reference to the base category of

marketing professionals. In Sri Lanka, only 57 percent of the graduates (Gunarathna *et al*, 2018) undergo internship training while there is no system for bridging the gap between the labour market and the school leavers. Lack of training is a huge issue in professional employments. Professional qualifications were important for some sectors and nearly one-third of the vacancies required such qualifications. But this type of portfolio investments may sometimes lead to inefficient outcomes. Soft skills were required mainly for the marketing and HR related employments and these should be streamlined with all course units of degree Programmes rather than having separate course units to improve this. English language proficiency should also be targeted at different scales from primary to tertiary education levels.

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Track 02
STATISTICS AND INFORMATION
TECHNOLOGY

Summary of the Plenary Speech

Data-Driven Decision-Making for Business Development

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Introduction

Today we are living in a world where we are inundated with data. With the improvement of computer processing power while the unit cost of data storage decreased and data transfer speed the volume of data in the world continued to grow exponentially during the past three decades. A report published by Cisco Systems indicated that the world reached the “Zettabyte Era” or “Zettabyte Zone” in 2016, as the global IP traffic (amount of global data travel through public networks such as the internet) was estimated to have reached 1.2 zettabytes (2017). Also, **all forms of digital data** in the world have exceed one zettabyte in 2012 (2014). One zettabyte (ZB) is equivalent to 10^{21} (1,000,000,000,000,000,000,000) bytes. As of the report published by IDC overall global datasphere reached 64 ZB in 2020. Cloud-based data storage methods, IoT technologies, and sensor networks are the major contributors to the exponential growth in data.

With the wealth of digital data, business organizations have started a culture of Data-Driven Decision Making (DDDM). The data Data-Driven Decision Making is an approach to making decisions based on the insights gained from available data and carefully identified alternative actions to achieve the desired objectives. The data used are from internal as well as external sources, and external data will minimize biases in the decisions made. The advantage of DDDM is, it uses the power of verified data and analyzed information to improve the trust and transparency among the stakeholders regarding the decisions made.

In general business, decisions are made to achieve pre-identified objectives and it will be a selection of the most suitable actions among competing sets of alternative actions. Each of the competing actions may anticipate many consequences related to business outcomes. The challenge is to make the optimum decisions that maximize positive consequences while minimizing negative consequences. But theoretically, it is not possible to recognize all possible alternative actions and their consequences in advance. Further, all these actions and their consequences are associated with uncertainty. Here,

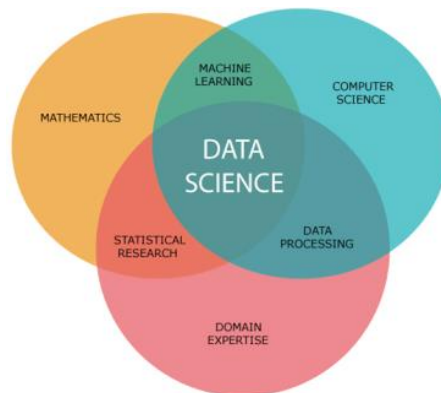
Artificial Intelligence / Machine Learning are important tools commonly used with extremely large data sources to identify alternative actions and quantify the associated uncertainty based on historical information.

But the development of “Business Intelligence” tools was able to minimize the requirement for expert technical knowledge to analyze, visualize and produce reports, and identify trends that facilitate drawing conclusions. Business Intelligence or BI tools are a type of software tools that gather, process, analyze and visualize large volumes of past, current, and future data in order to generate actionable insights, create interactive reports, create dashboards, and simplify the decision-making process (2023).

With the wide development of these software tools and techniques in support of data gathering, preprocessing, analysis, and visualization of “Big Data” a new field of research “Data Science” was born. Data Science is a highly active research area and becoming a unique field of study with the contribution of multiple fields such as Statistics, Mathematics, Computer Science, Machine Learning, Data Processing, and Data Management along with domain knowledge in the specific field of application (Figure 1).

Figure 1:

Multiple fields of studies contributing to data science



1. *Why Data-Driven Decision Making Is Important?*

The use of proper software tools and especially dashboard visualization will support businesses in making real-time predictions and process improvements for the optimization of performances. These tools will provide capabilities to managers and employees to test the success of different strategies and make informed decisions for the sustainable development of the business. A study conducted by Andrew McAfee and Erik Brynjolfsson has identified that the companies that are practicing DDDM have shown a 4% improvement in productivity and a 6% increment in profits (2011).

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It has identified there are many advantages over DDDM and it has been recommended that every growing company should place the DDDM at the heart of their decision-making culture. Following is some of the advantages of using DDDM.

- i) Continual organizational growth
- ii) Knowledge and Innovation
- iii) New business opportunities
- iv) Better communication
- v) Unparallel adaptability

2. *Examples of Data-Driven Decision Making*

The leading and largest business organizations around the globe are being used DDDM in all their high-impact business decisions for their success. Exploring the following success stories of the world's most leading organizations will provide examples of how to incorporate data analytics in any organization's decision-making process (2023).

i) Leadership Development at Google

Google maintains a heavy focus on what it refers to as “people analytics.” As part of one of its well-known people analytics initiatives, Project Oxygen, Google mined data from more than 10,000 performance reviews and compared the data with employee retention rates. Google used the information to identify common behaviors of high-performing managers and created training programs to develop these competencies. These efforts boosted median favorability scores for managers from 83 percent to 88 percent.

ii) Real Estate Decisions at Starbucks

After hundreds of Starbucks locations were closed in 2008, then-CEO Howard Schultz promised that the company would take a more analytical approach to identify future store locations.

Starbucks now partners with a location-analytics company to pinpoint ideal store locations using data like demographics and traffic patterns. The organization also considers input from its regional teams before making decisions. Starbucks uses this data to determine the likelihood of success for a particular location before taking on a new investment.

iii) Driving Sales at Amazon

Amazon uses data to decide which products they should recommend to customers based on their prior purchases and patterns in search behavior. Rather than blindly suggesting a product, Amazon uses data analytics and

machine learning to drive its recommendation engine. McKinsey estimated that, in 2017, 35 percent of Amazon's consumer purchases could be tied back to the company's recommendation system.

3. *How to Enhance Data-Driven Strategy?*

If you have decided to become more data-driven in your decision-making process there are many steps to be taken to reach your goal with an analytical mindset (2023).

- i) Look for patterns everywhere
- ii) Tie every decision back to the data
- iii) Visualize the meaning behind the data
- iv) Consider continuous professional development

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KNOWLEDGE, ATTITUDE AND PRACTICES OF ROAD RULES AND REGULATIONS (WITH SPECIAL REFERENCE TO GALLE DISTRICT)

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Abstract

Knowledge, attitude and practices of road rules and regulations are more important to maintain a safe transportation system especially in developing countries. According to the study, knowledge, attitude and practices analysis based on the experience of driving and age of the driver. Multiple linear regression is utilized for the sample selection. Multistage cluster sampling was used throughout the questionnaire and also used 22 independent variables. Data were collected through a questionnaire. According to the study, conviction about high speed, attitude of alcohol usage while driving, observed speed limits and looking in the mirror before overtake have positive relationships with the experience of driving and also age of the driver. Waiting for the vehicle while driving and stopping zebra crossing until crossing have a negative relationship with experience of driving. Looking at road signs when driving has a negative relationship with both experience of driving and age of the driver. Mainly practice elements depend on both experience of driving and age of the driver.

Keywords: *Attitude, Knowledge, Practices, Road Accidents*

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Introduction

Road accidents, in Sri Lanka and abroad, are a serious problem that has a direct impact on public health and well-being by causing numerous impairments and a significant loss of life each year. As a result, road accidents have become a huge social issue that has to be addressed. According to the study, KAP Analysis of road rules and regulations identified as a major determinant for accidents which was not recorded in secondary data but influenced accidents. According to the study, the researcher identified how knowledge, attitude and practices influence the road accidents and the relationship between KAP Analysis and both age of the driver and experience of driving in terms of number of years.

Materials and Methods

This is a study conducted under a quantitative approach and also this study can be presented as explanatory research because it aims to enhance the existing theories about determinants of road traffic accidents. This is a social science research and belongs to deductive research. According to the study, a questionnaire that showed knowledge, attitude and practices of road traffic rules and regulations was used to collect primary data. For the analysis, multiple linear regression was used. According to the study, the population is based on the people who are above the age 20 years and live in Galle district. Sample size was selected based on a prior sample size calculator for multiple linear regression. According to that, if the number of people in the population is 713533, then 163 people should be included in the sample based on the calculator. However, this study invited 250 people relevant to the proportion and could take only 209 people as an accepted sample. Sampling technique was the multi stage cluster sampling. Knowledge, attitude and practices of the road rules and regulations measured by age of the driver and experience of driving in terms of number of years. For the analysis, SPSS software and stepwise regression method were used.

Results and Discussion

According to the study, multiple linear regression and simple linear regression were utilized to interpret the results. Models as follows,

KAP Analysis of road rules and regulations on experience of driving.

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Table 1:*Final model of regression*

Model	Coefficient	P-Value	VIF
Attitude of convincing about high speed	2.895	0.001	1.070
Attitude of alcohol usage comfortable while driving	2.294	0.001	1.887
Observed speed limits as a practice	3.189	0.005	1.069
Waiting for the vehicle in circle pass as a practice	-2.518	0.001	1.163
Looking mirror before overtake as a practice	3.379	0.001	1.042
Looking road signs when driving as a practice	-4.364	0.001	1.065
Practice of stopping zebra crossing until crossing	-2.435	0.010	1.329

Source: Sample Survey 2022

According to the above table, all the VIF values have no multicollinearity. According to the study, the experience of driving is measured by the number of years. When considering the attitudes, convincing about high speed increased by one unit, the experience of driving increased by 2.895. If attitude of alcohol usage comfortable while driving increased by one unit experience of driving increased by 2.294. Observed speed limits as a practice increased by one unit experience of driving increased by 3.189. If waiting for the circle pass increased by one unit experience of driving decreased by 2.518. If looking in the mirror before overtaking as a practice increased by one unit, the experience of driving increased by 3.379. When looking at road signs when driving and practice of zebra crossing until crossing the road increased by one unit, the experience of driving decreased by 4.364 and 2.435 respectively.

KAP Analysis of road rules and regulations on age of the driver

Table 3:*Final model of Regression*

Model	Coefficient	P-Value	VIF
Attitude of alcohol usage comfortable while driving	3.423	0.015	1.887
Observed speed limits as a practice	3.775	0.020	1.066
Convincing about high speed	2.779	0.045	1.137
Looking mirror before overtake as a practice	3.448	0.013	1.040
Looking road signs when driving as a practice	-3.950	0.008	1.044

Source: Sample Survey 2022

According to the above table, all the VIF values have no multicollinearity. When considering the attitude of comfortable alcohol usage while driving increased by one unit, the age of the driver increased by 3.423. If observed speed limits as a practice increased by one unit, the age of the driver increased by 3.775. When convincing about high speed increased by one unit, the age of the driver increased by 2.779. If looking in the mirror before an overtake as a practice increased by one unit, the age of the driver increased by 3.448. When looking at road signs when driving as a practice increased by one unit, the age of the driver decreased by 3.950.

Conclusion and Recommendations

There is a positive relationship have a convincing about high speed with experience of driving and age of the driver. When increasing the experience of driving they are concerned about high speed because it is a major reason for the accidents. There is a positive relationship between the attitude of comfortable alcohol consumption while driving with both experience of driving and age of the driver. According to the study, the majority of the respondents are male and majority of them are consuming alcohol. When the experience increases driver skills and control of the vehicle increase due to the reason, they feel alcohol usage comfortable. There is a positive moderate relationship with an observed speed limit as a practice with both experience

of driving and age of the driver. There is an inverse relationship between waiting for the vehicle in circle pass and experience of driving. It is not only dependent only on the experience of driving but also the driver's behavior. Looking in the mirror before an overtake has a positive moderate relationship with both experience of driving and age of the driver. It is a very important factor when driving a vehicle because it is the only way to pay attention and the only factor that can be considered is that there is a vehicle behind. There is an inverse moderate relationship between looking at road signs when driving and both experience of driving and age of the driver. New drivers consider all the rules and regulations but when the experience of driving increases the majority of them use their practice. Practice of stopping zebra crossing until crossing the road has a moderate inverse relationship with experience of driving but it is not dependent on experience of driving but also the driver's behavior.

According to the study, practices of road rules and regulations have more impact with both experience of driving and age of the driver than knowledge and attitude of road rules and regulations.

Government must create a comprehensive national traffic safety model that involves education, health, and police departments, to increase knowledge, attitude and practices of road rules and regulations.

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DETERMINANTS OF FAST-FOOD CONSUMPTION AMONG TEENAGERS (A STUDY BASED ON ADVANCED LEVEL STUDENTS IN COLOMBO DISTRICT)

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Abstract

In today's world of urbanization, modern concepts, technological advancements, and changing lifestyles, fast food consumption is increasing at an alarming rate. In such kind of situation, the primary objective of this study is to determine the factors influencing the consumption of fast food among Advanced Level students in the Colombo district. By using the structured questionnaire, primary data were gathered from 240 students chosen from Colombo district which has the highest representation of Advance Level students. The two-stage cluster sampling method was utilized as the sampling technique. To achieve the research objectives, data were analyzed using descriptive analysis and binary logistic regression. According to descriptive analysis, 59% of students belonged to the high fast food consumption level and the remaining 41% belonged to less fast food consumption level. The Binary Logistic Regression emphasized that employment of parents, advertising motivation, type of fast-food outlet, and the effect of tuition classes were significant variables for fast food consumption among students.

Keywords: *Advanced Level Students, Advertising Motivation, Binary Logistic Regression, Fast Food Consumption, Parents' Employment*

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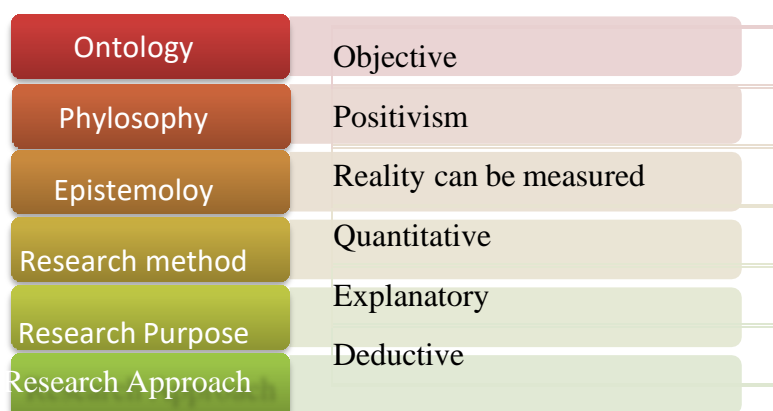
Introduction

Food that people intend to consume quickly and easily is typically referred to as "fast food" (Huzar, 2021). The concept of fast food consumption was first popular in Western countries, but it has since spread to Asian countries such as Sri Lanka. In today, there are various negative attitudes towards excessive fast food consumption, leading to health imbalances and non-communicable diseases. Considering the Colombo District of Sri Lanka, the food landscape has gradually diversified with time and the people living in Colombo have a wide range to choose cuisines because there are many types of restaurants and outlets on every street (Pinnagoda, et al., 2017) hence this study is based on the Colombo district. Another basic fact is that most fast-food industries have been concentrating on the youth community intending to develop long-term clients by promoting fast food consumption at a young age. Within such kind of situation, the research problem of this study is determining the factors that contribute to fast food consumption among teenagers in Colombo district.

Materials and Methods

Figure 1:

Research Design



Source: Sample Survey 2022

According to this study, the population has included all A/L students from government schools in the Colombo district and it represents 44,974 students (Statistic Branch of Ministry of Education, 2020). Using the two-stage cluster sampling method, the Colombo district was divided into educational zones and divisions. The prior sample size calculator was used to decide the sample size and 240 students were selected as a sample. This study was mainly based on primary data collection methods and required data obtained through a

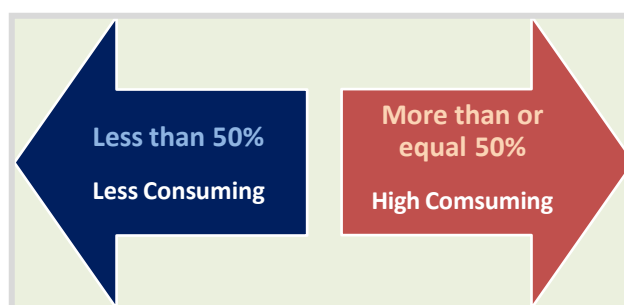
structured questionnaire. According to this study, descriptive analysis, chisquared analysis, one-way ANOVA, and binary logistic regression were used as the data analysis techniques by using SPSS software.

In this study, the independent variables were identified into five categories. As demographic factors gender, grade, and residential area, as social factors peer influence, employment of parents, trends and tuition classes, as behavioral factors amount of pocket money, type of fast food, type of fast food outlet, amount spends on fast food consumption, as marketing strategies advertising motivation, promotions and discounts, as an attitude toward fast food taste, quality, brand image, cleanliness of outlet, appearance or the interior design of outlet and convenience identified as dimensions coming under the independent variables.

The dependent variable was consisted with binary responses and it measured by using the 0-100 scale which represents the percentage of fast-food consumption. Students who mention more than or equal to 50% level of consumption were considered high-consuming, and students who mention less than 50% level of consumption were considered less-consuming.

Figure 2:

Way of Measuring Dependent Variable



Source: Sample Survey 2022

Results and Discussion

According to descriptive analysis, among the students who participated in the study, the highest percentage of 58% was represented by females and 42% was represented by males. Considering the living area of the students, the highest percentage of 62% of students participated from urban areas. 59% of students have indicated their fast-food consumption level as 50% or more than 50% and only 41% of students have indicated that their consumption level is less

than 50%.

After identifying the association between dependent and independent variables by using chi-square analysis and one-way ANOVA and after checking the multicollinearity, the researcher has selected five variables to fit the model but in the best model only four variables remain. Based on the results obtained through best fitted binary logistic regression, parents' employment, type of fast-food outlet, advertising motivation, and the effect of tuition were significant on fast food consumption. The best-fitted model was given below.

Table 1:

Final Binary Logistic Regression Model

Parameter	B	S.E.	Wald	Df	Sig.	Exp(B)	Refer.
Employment of Parents			38.459	4	0.000		Strongly Disagree
Strongly Agree (1)	2.069	1.008	4.211	1	0.04	7.916	
Somewhat Agree (2)	1.319	1	1.739	1	0.187	3.74	
Moderate (3)	-0.588	1.008	0.34	1	0.56	0.555	
Somewhat Disagree (4)	-1.197	1.016	1.388	1	0.239	0.302	
Type of Fast-Food Outlet			17.995	2	0.000		School Canteen
Local Outlet (1)	2.35	0.586	16.065	1	0.000	10.49	
Foreign Outlet (2)	1.73	0.499	12.019	1	0.001	5.638	
Advertising Motivation			18.045	4	0.001		Strongly Disagree
Strongly Agree (1)	2.094	1.015	4.253	1	0.039	8.115	
Somewhat Agree (2)	2.006	0.979	4.197	1	0.041	7.435	
Moderate (3)	1.513	0.987	2.351	1	0.125	4.539	
Somewhat Disagree (4)	-0.2	1.051	0.036	1	0.849	0.819	
Effect of Tuition			10.791	4	0.029		Strongly Disagree
Strongly Agree (1)	0.699	0.717	0.951	1	0.330	2.013	
Somewhat Agree (2)	0.863	0.716	1.453	1	0.228	2.369	
Moderate (3)	-0.617	0.865	0.509	1	0.476	0.54	
Somewhat Disagree (4)	-0.957	0.903	1.124	1	0.289	0.384	
Constant	-3.602	1.514	5.659	1	0.017	0.027	

Source: Sample Survey 2022

The findings of the best fitted model as follows.

- When all other determinants were constant, students who strongly agree, somewhat agree, moderate and somewhat disagree with the statement that working parents encourage fast food consumption have respectively **17.8%, 9.2%, 1.5%** and **0.8%** chance of falling into the high fast food

consumption level compared to students who strongly disagree with the statement.

- When all other determinants were constant, students who visit local outlets and foreign outlet for fast food consumption have respectively **22.2%** and **13.3%** chance of falling into a high level of fast-food consumption level compared to students who visit the school canteen for fast food consumption.
- When all other determinants are constant, students who strongly agree somewhat agree, moderate and somewhat disagree that fast food consumption is influenced by advertising have respectively **18.1%, 16.9%, 11% and 2.2%** chance of falling into a high level of fast-food consumption compared to students who strongly disagree that fast food consumption is influenced by advertising.
- When all other determinants are constant, students who strongly agree that attending tutoring classes influences the consumption of fast food have respectively **5.2%, 6.1%, 1.5% and 1.1%** chance of falling into the high fast food consumption level compared to students who strongly disagree that attending tutoring classes influences the consumption of fast food.

Conclusions and Recommendations

Achieving the primary objective of the study, parent's employment, type of fast-food outlet, advertising motivation, and the effect of tuition were determined as the factors affecting fast food consumption. Furthermore, when considering the percentage of falling into high fast food consumption level was increased when the level of agreement that employment of parents, advertising motivation, and attending tuition classes influence fast food consumption was increased. Another finding was that, students visiting local outlets for fast food consumption leads to high fast food consumption level than students visiting foreign outlets for fast food consumption.

As the recommendations, parents can prepare nutritious meals for their children whenever possible even if parents are employed. Furthermore, parents can prevent students to consume fast food while attending tuition classes.

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ONLINE PREGGERS SYSTEM TO ASSESS THE IMPACT OF THE ECONOMIC AND POLITICAL CRISIS IN SRI LANKA TO THE PREGNANT WOMEN IN THE IMBULPE MOH OFFICE

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Abstract

Quality of life is an essential factor for each individual, and it includes healthy, comfortable, and enjoyable life events. However, due to the recent economic and political crisis in Sri Lanka, people have faced many difficulties while receiving services from the health sector. It is needed to give priority to pregnant women because they are in a high-risk situation. According to the observations, reaching the hospital safely is a major issue due to the country's situation, such as a lack of fuel and barriers to taking fuel. This type of issue may come up in the future as well, and thus, a proper vehicle booking system is necessary to address these types of issues. There are existing systems that are running in urban areas. But they did not give priority to pregnant women. Hence, the significance of the research is giving priority to booking vehicles for pregnant women in rural areas, and the proposed online system will provide solutions to address the above gaps. This study was carried out using a convenience sampling technique with registered pregnant women in the Imbulpe MOH office.

Keywords: *Economic and political crisis, Pregnant Women, Vehicle booking system*

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Introduction

According to the World Health Organization definition, "quality of life" can be defined as "an individual's perceptions of their position in the life context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns." Thus, quality of life can include physical and mental health, education, employment, environment, social belongings, religious beliefs, safety, security etc.

Considering the economic and political crisis in Sri Lanka (Illangasinghe, 2012), it has affected the health sector in significant ways, including pregnant women (UNFPA, 2022). Because pregnancy is a very crucial stage, it demands extra care and concern. In the last two to three months, pregnant women and their families were facing many difficulties due to the above situations in the country, such as a lack of nutritious foods (Masih et al., 2022) and medicines and their high prices, high doctor charges and testing reports, a lack of services from clinic centers, and transportation problems. The main issue was transportation due to a lack of fuel and long lines to fill up. As a result, they faced transportation issues such as traveling to the nearest hospital if they were in a high-risk situation, receiving additional treatment when necessary, or delivering at the last minute.

If the responsible authorities or government are informed to keep enough fuel on hand in case of a critical situation, it is impossible to take enough diesel or petrol from the filling stations due to a large queue, which takes more time. Now it has been solved at some level by applying the QR method. However, since the government and relevant authorities are still working to resolve the country's economic crisis, this issue may arise in the near future as well. Hence, this problem should be addressed by giving a solution to get to the hospital as soon as possible. The government has already encouraged people to use the "Suwa Sariya" service. Furthermore, people who have vehicle facilities and enough fuel can be helped by pregnant women according to their requirements because there are many systems for booking transportation vehicles (Sagar et al., 2017). But existing systems do not have the facility to give priority to pregnant women. Hence, the significance of this research is giving priority to pregnant women and implementing a system for rural areas to address the travel problem.

This proposed system is an online solution that can search and book vehicles to bring pregnant women to the nearest hospital in the closest available vehicle. In this case, it can be combined with an app that provides vehicle information and prioritizes pregnant women. Hence, this proposed web-based system will be further developed to give priority to pregnant women's

requirements in rural areas.

Materials and Methods

Proposed Online System

According to the proposed Preggers system depicted in Figure 1, there are several stakeholders who collaborate to solve the problem of pregnant women traveling in critical situations throughout the country. Pregnant women should first register with this system according to their clinic card information. One MOH office has many PHM officers who are giving services to pregnant women. Then, a PHM officer will verify and confirm the information of pregnant women one by one for the registration because this system gives services only to pregnant women.

In addition, vehicle owners should register with the Preggers system, providing their vehicle information and personal information, including contact numbers. It is needed to register vehicles from surrounding areas to give rapid and effective services, and the system prioritizes these types of vehicles. Moreover, it connects with existing vehicle booking platforms, such as Suwasariya service to provide better service. Finally, a person who needs this service can make a booking with their location.

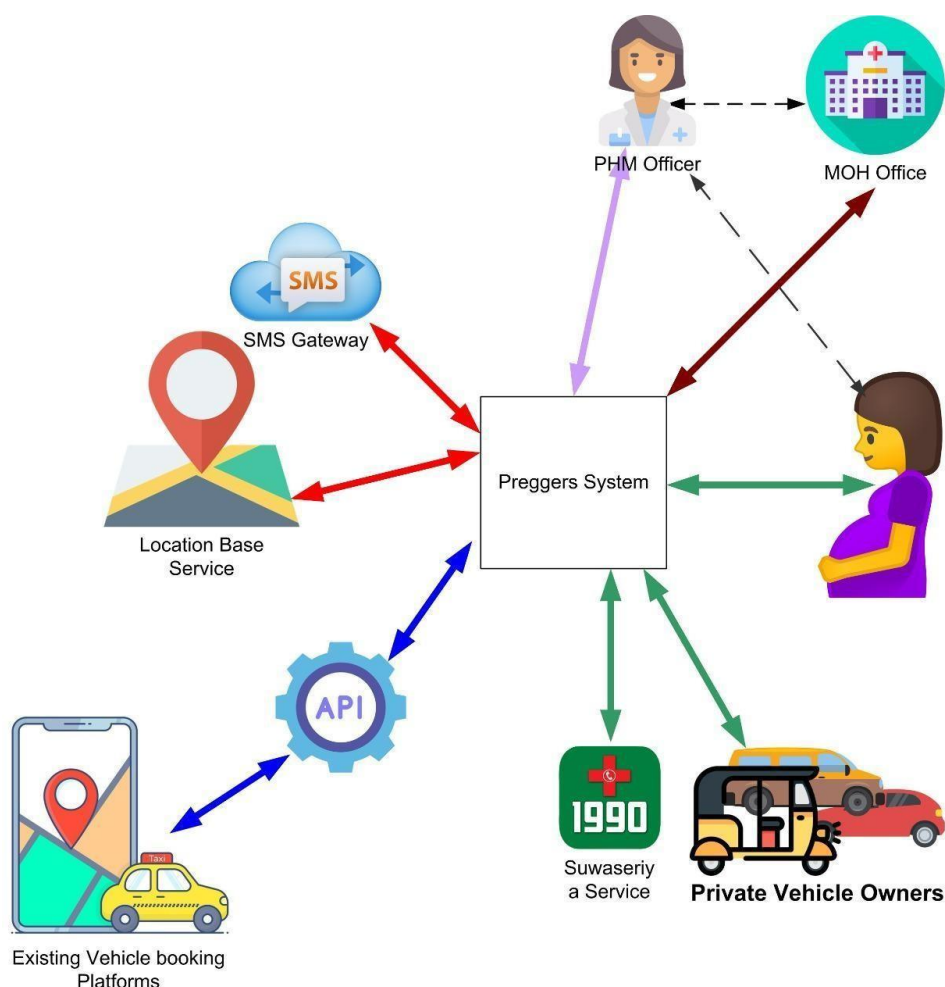
Research Methodology

This research was conducted using a qualitative research technique called observational research. This study looked at pregnant women's ongoing behavior as they dealt with the prospect of being admitted to the hospital. In addition, news and information related to the economic and political crises of the country have been referred to in order to identify the gap.

Population and Sample - The research has selected "Imbulpe" MOH office in Balangoda as the main population from which to select the samples. After reviewing the details, the researcher selected two PHM offices, "Kumbalgama" and "Ihalagama," for the sample. The sample size of this study was 20 pregnant women in the selected PHM offices.

Figure 1:

Proposed Preggers System



Results and Discussion

According to the observation and informal interview conducted, it could be identified that more than 85% of pregnant women faced travel issues because they didn't have their own vehicle facility, and 10% of pregnant women faced the problem due to inadequate fuel even if they had a vehicle.

As a result of this information, the Preggers online system has been suggested, and it can be accessed using a desktop or mobile device. Stakeholders can register and integrate with their own mobile number due to this system integrated through a centralized management system with the verification of

PHM officers in a particular area. This system gives pregnant women or their family members the facility to search available vehicles by selecting the vehicle type for the location. Then, the system will look for the nearest available vehicles under the relevant PHM officer area by sending an SMS. Then the system provides an acceptance notification to the user (a pregnant woman) with driver and vehicle information after a particular driver accepts the request. Otherwise, the system will send an SMS to drivers who are in the nearest areas if the acceptance is not received or vehicles are not available in the current PHM area after some period of time. Finally, ambulance services, Suwaseriya, and relevant vehicle booking platforms will integrate via API if they cannot find a vehicle in the relevant MOH area.

Conclusions and Recommendations

To sum up, it is a mandatory requirement to improve the services of the health sector to maintain the quality of people's lives. Pregnancy is an important period, and pregnant women need to get ready to be admitted to the hospital in various situations as soon as possible. Thus, they should have a proper solution to travel to the hospital while suffering from diverse economic and political crises in the country, such as a lack of fuel and difficulty taking fuel due to the huge queue. Online Preggers System is a proposed model and better solution to overcome the above issue, and it is implemented to search vehicles while giving priority to pregnant women, especially in rural areas where it is combined with the existing vehicle booking platform. This proposed system is willing to pilot for "Imbulpe" MOH office in Balangoda area. As future work, this system can be connected to hospitals to inform about critical cases of pregnant women while they are reaching the hospital.

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IMPACT OF TOURISM DEVELOPMENT PROJECTS ON SUSTAINABLE TOURISM IN RURAL VILLAGES (WITH REFERENCE TO MATARA AND GALLE DISTRICTS OF SRI LANKA)

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Abstract

Tourism is the world's most popular and fastest-growing industry. Encourage community members to visit untouched areas in many countries. The main objective was to study the impact of tourism development projects on sustainable community tourism. Quantitative research methods were used for this study. Using the multi-stage cluster sampling method, 250 sample people from Kanneliya and Mederipitiya tourism villages in the southern province of Sri Lanka were selected as the research site using a structured questionnaire. Multiple regression analysis was used as an analysis tool. The results have revealed that financial assistance, capacity development, network building, and infrastructure development have both positive and negative relationships with economic, social, cultural, and environmental sustainability. The research findings assist policymakers and community members in identifying the project's pluses and minuses, and making necessary improvements in the future. In the future, researchers could identify further gaps relating to such community empowerment projects.

Keywords: *Community Based Tourism, Community Empowerment, Community Tourism Sustainability, Southern Province, Tourism Development Projects.*

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Introduction

Based on this critical importance in the tourism industry, Sri Lanka, like other developing countries, initiates several tourism development projects, with a particular emphasis on rural communities living in rural tourism destinations. Generally, such rural destinations have been identified as untouched areas, and there are enormous opportunities to introduce amazing tourism activities by collaborating with community members. Due to the high potential business opportunities of the industry, Sri Lanka is likewise working hard to expand its tourism business through a variety of development programs. (SLTDA, 2022).

Materials and Methods

Quantitative approach was selected to build up this hypothetico-deductive research to identify impact of tourism development projects on sustainable community tourism. Primary data were collected using a structured questionnaire and used five-point likert scale questions. Both direct and indirect, in the tourism sector can be estimated as 402,607 as population and sample is 250. Multi- multi-stage cluster sampling method was utilized to cover the whole population. After gathering the data, Factor Analysis is used for dependent variables. Four assumptions were checked as the dependent variable is normally distributed, multicollinearity, homoscedasticity and autocorrelation. The correlation between dependent and independent variables was checked after using the spearman correlation coefficient. Finally, Multiple regression was used to analyze and check normality.

Results and Discussion

In this study, demographic factors include age, gender, ethnicity, marital status, educational qualifications, previous employment and main income source which are presented using a bar graph and also pie chart.

Sustainability was checked with three main models. In order to obtain a categorical form of scores for the dependent variables coming in the study, the Factor Analysis was employed for those dependent variables from the KMO test. The four assumptions of both variables were checked after using the spearman correlation coefficient, correlating independent variables with each economic, social and environmental sustainability models. After the data collection, researchers wanted to analyze that data with appropriate hypothesis tests. Example: ANOVA, t test. Then used stepwise multiple regression methods to run the three models through SPSS statistics 26. One of the most common requirements for hypothesis testing is that the data used must be normally distributed. Data were normally distributed if the frequency

distribution of the data had a bell curve.

1ST MODEL

Table 1:

1ST model regression model

Independent variable	P-value	Coefficients	VIF
Revolving fund to pay loans (FA 04)	0.022	.091	1.122
Training for improving multi-language skills (CD 01)	0.000	.226	1.073
Training on technical skills (CD 05)	0.000	.285	1.015
Linkages with input suppliers (NB 03)	0.000	.467	1.110
Link with financial institutions (NB 05)	0.005	.338	1.079

Source: Sample Survey 2022

According to the above table all the VIF values have no multicollinearity. All independent variables have a positive relationship between economic sustainability and R squared value got 0.690.

2ND MODEL

Table 2:

2ND model regression model

Independent variable	coefficient	P-value	VIF
Capital for starting the business (FA 01)	-0.262	0.011	1.281
Create a fund for village level tourism basic requirements (FA 06)	-0.118	0.002	1.049
Training on business management (CD 02)	0.159	0.039	1.037

Training book keeping and cash management (CD 03)	0.184	0.000	1.064
Training on personality development (CD 04)	0.123	0.048	1.071
Linkages with foreign tour operations (NB 01)	-0.449	0.001	1.228
Access diverse markets (NB 04)	-0.203	0.039	1.148
create a fund for village level tourism infrastructure development (ID 01)	-0.128	0.010	1.065

Source: Sample Survey 2022

According to the above table all the VIF values have no multicollinearity. CD 02, CD03 and CD04 have positive relationship and other 5 independent variables have negative relationship between social sustainability and R squared value got 0.430.

3RD MODEL

Table 3:

3RD model regression model

Independent variable	Coefficient	P-value	VIF
Seed capital from the RTB project. (FA 03)	-0.150	0.021	1.243
Encouraged for retained earnings for business expansions (FA 05)	0.110	0.043	1.009
Create a fund for village level tourism basic requirements (FA 06)	-0.121	0.023	1.010
Training for improving multi-language skills (CD 01)	0.486	0.000	1.214

Linkages with foreign tour operations (NB 01)	-0.218	0.013	1.085
Link with financial institutions (NB 05)	0.245	0.001	1.015

Source: Sample Survey 2022

According to the above table all the VIF values have no multicollinearity. FA 05, CD01 and NB05 have positive relationship and other 3 independent variables have negative relationship between environmental sustainability and R squared value got 0.526.

Conclusion and Recommendations

In the first model, network building and capacity development contribute more to economic sustainability that all variables have a moderate positive relationship. According to this sample area most people gave their attention to the financial side. In the second model, capacity development is mostly dedicated and there are higher negative relationships and few positive relationships (capacity development) with social and cultural sustainability. In the tourism community even if the existing businesses are doing well, they are reluctant to start new businesses. In the third model, financial assistance gave more contribution for environmental sustainability. Same amount of negative relationships and positive relationships got this model. Here community people are not most engaged with environmental sustainability. It is evident from all the above summary that the Ruhunu Tourism Bureau gave more attention to financial assistance and capacity development to community people in Kanneliya and Mederipitiya. The lowest attention is given to the infrastructure development side.

This research covers only the impact of tourism development projects on sustainable community tourism in rural villages of southern province. Mainly three types of support: financial assistance, capacity development, network building and infrastructure development were taken into account in this study. Also this research was limited only to the two villages from the southern province. Therefore, future researchers could explore the field further by covering many tourism destinations in other provinces also.

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USE OF P-CHART IN TEACHING AND LEARNING FOR QUALITY IMPROVEMENT

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Abstract

Quality assurance in higher education greatly involves enhancing teaching and learning (TL) processes with the ultimate target of improving educational outcomes to the expected quality level. However, quality enhancement through a statistical process control (SPC) technique has not been deeply applied in educational institutes. Therefore, this study aims at developing a control chart for the proportion of "failed students" in the most critical course module in the curriculum. This analysis considered data relevant to the specific course module from the 2001 batch to the 2020 batch. The control limits of the p-chart developed using the controlled data points were used to monitor the TL process of the particular course and identify any significant deviation from the "in control" situation. Hence, the developed control chart can be used as an on-going process monitoring technique to modify and enhance the TL process of this course in order to meet the expected requirements.

Keywords: *Control Limits, p-chart, Quality Assurance, Statistical Process Control, Teaching and Learning*

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Introduction

In order to maintain and enhance the quality, equity, and efficiency of higher educational programs and processes, quality assurance involves a systematic review. (Perera & Hettiarachchi, 2014). Therefore, higher educational institutes are expected to establish and execute a proper quality management tool for continuous process monitoring. Various activities in teaching and learning (TL) such as peer reviewing, program reviewing, feedback evaluation, accreditation, and standardization are common practices to maintain the expected quality level of the process. Savic (2006) has indicated that the use of statistical control charts is a well-known and effective technique that has a role in the social sciences, particularly in the quality assurance of educational systems. Usually, a quality control chart is used in scientific research project management as well as in the management of products with a high level of quality. It allows for easy control analysis, identification of root causes, and management improvement. (Ying, 2015). However, educational institutes have scarcely applied the statistical process control (SPC) technique in this regard. (Hanna, Raichura, & Bernardes, 2012). Therefore, the main objective of this study is to construct a quality tool to enhance the TL process of a particular course module by considering the failure rate of batches that followed the module as critical to quality in the respective TL process.

Material and Methods

The most critical course module that greatly influences students' graduation was found by conducting a survey among the final year students in the faculty. The data from batch 2001 to batch 2020 were used in this study. Proportions of the 'failed students' of each batch were used to calculate the control limits of the control chart (P-Chart). Since the batch sizes were different, control limits vary by batch. Developing control charts was done using Minitab 17 and Microsoft Excel. After developing appropriate control limits (CLs), the presence of some special causes (which seriously affected students' performance) on the control charts could be identified by the data points that were beyond the control limits. Then the root causes of those points were investigated, and necessary action was taken to rectify the process. After repeating the same steps with the data, in which true unusual data points are excluded, the control limits of the p-chart were developed again. Until there are no data points plotted beyond the control limits, this process was repeated several times. Finally, the control chart with reliable control limits was developed and used for current TL process monitoring.

The effectiveness of the method was evaluated through ARL (Average Run

Length) curves. ARL measures the expected number of samples that should be taken before the out-of-control signal. (Montgomery, 2005). Since there is no option to draw ARL curves in Minitab, the respective ARL curve was developed using R statistical software.

Results and Discussion

The relevant outcome of the analysis was presented in this section.

Figure 1 shows the proportion of 'failed students' in the course. The highest proportion of failed students (5%) was indicated in the 7th and 11th batches (2007 and 2011). The one-sided p-chart developed for the original dataset is shown in Figure 2, and Figure 3 shows the control chart that was developed after removing the out-of-control data points. As indicated by Figure 1, the p-chart in Figure 2 shows out-of-control data points for the 7th and 11th batches.

Before developing the control chart indicated in Figure 3, an investigation was conducted for the 7th and 11th groups to find out the assignable causes. Poor student attendance at lectures and a lack of practical sessions were identified as reasons for this out of control process. Hence, 80% student attendance was made mandatory, and practical sessions for students were increased as solutions.

Figure 1:

Bar chart of proportion of 'failed students'

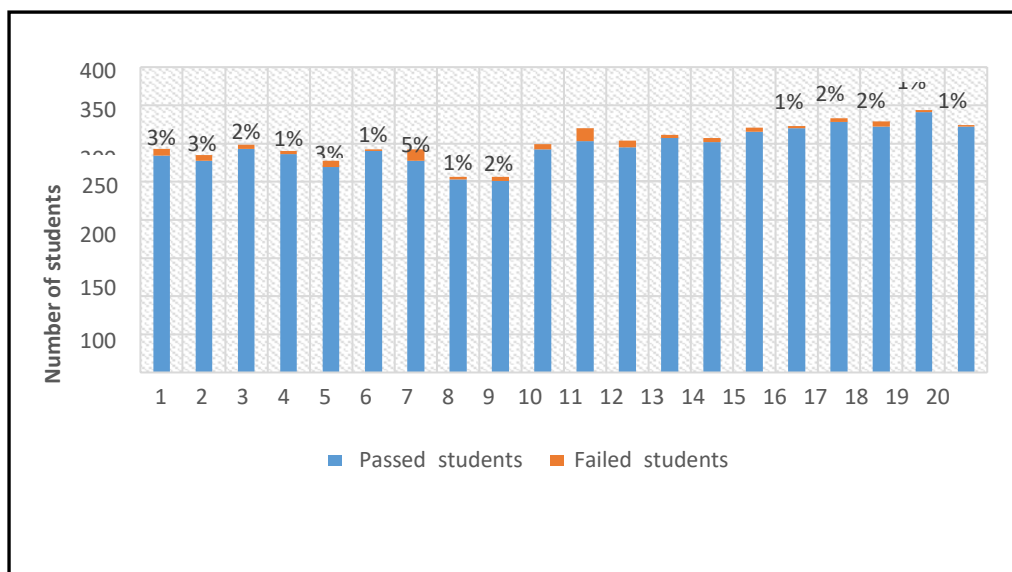
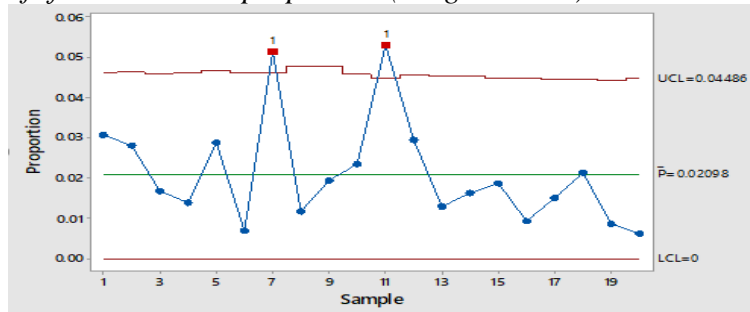
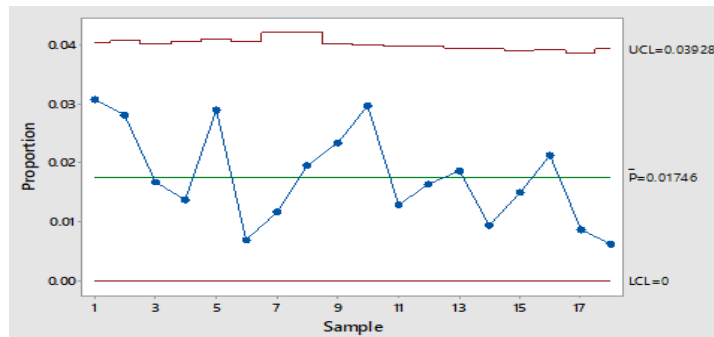
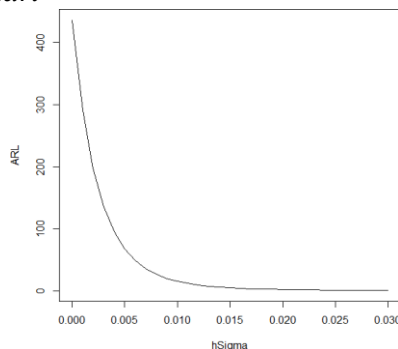


Figure 2:*P-chart of 'failed student' proportion (Original data)***Figure 3:***P-chart of 'failed student' proportion (with reliable control limits)*

Reliable control limits, which were developed after removing the out-of-control data points were shown in Figure 3 and the control limits are varying and are based on the number of registered students (number of each sample size). Central Line (CL) is .017746 (1.77%) which means that on average, 1.77% of students failed.

The p-value for the proportion of failed students is 0.503 according to the Anderson-Darling Normality Test results. Therefore, it can be concluded that the proportion of failed students is normally distributed at a 5% level of significance. It secured the normality assumption that should be followed by the data used for the p-chart.

Figure 4 shows the ARL curve, generated to evaluate the statistical performance of the developed p control chart. It shows the ARL values in relation to different shifts (hsigma) of the process mean. Table 1 shows the ARL values for the control chart when an out-of-control signal is received at different shifts of the process mean.

Figure 4:*ARL curve of p-chart*

According to Figure 4 and Table 1, when the process is in control ($h\sigma = 0$), the expected number of samples (436) before getting the first out-of-control signal is very high. As a result, ARL values are significantly large for small shifts in the process mean. In contrast, ARL values get smaller when there are considerably large shifts. Therefore, it shows that the performance of the developed p-chart is highly reliable in detecting out-of-control situations.

Table 1:*ARL values of p-chart with respect to different shifts of the process mean*

Size of shift	0 (No shift)	.002	.004	.006	.008	.01	.02	.03	.04
ARL	436	197	95	49	27	16	2	1	1

Conclusion and Recommendations

This article shows how we can use control charting techniques in the education sector to monitor and control TL activities. Further, it shows how a P chart as an effective SPC tool can be used as a continuous process monitoring technique to sustain an effective teaching and learning process for quality enhancement. However, since this study is simply an application of the p-chart to the education sector, it has limited the theoretical contribution, but as a practical implementation, this can be considered a remarkable solution to improve TL activities in educational institutes, which facilitates continuous process monitoring. The same procedure suggested in this study can be applied to the whole curriculum in order to implement the continuous enhancement of the academic performance of the institute.

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HUMAN PERSONALITY CLASSIFICATION USING SUPERVISED MACHINE LEARNING ALGORITHMS

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Abstract

According to certain definitions, "personality" refers to a person's distinctive ways of thinking, feeling, and behaving in a variety of situations. The personality can be used to identify the behavior patterns of a human. The goal of this research is to categorize human personalities based on their behaviors. This study used data that was collected as secondary data targeting the main five personality types considering behavioral tendencies, namely the supervisor, the commander, the inspector, the doer, and the idealist. After the pre-processing, six classification algorithms were used: Support Vector Machine (SVM), Random Forest, Naïve Bayes, Logistic regression, Multilayer Perception (MLP), and Decision Tree. The result was validated using 10-fold cross-validation. Based on the result, the highest accuracy is obtained in SVM with an accuracy value of 88.5%. The highest precision, recall, f-measure, and lower error rates are obtained by comparing the above six supervised machine learning algorithms.

Keywords: *Personality, Classification, Machine Learning*

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Introduction

People's consistent traits, attitudes, feelings, and behaviors are referred to as their personalities (Song et al., 2021). A person's personality will naturally develop based on their activities, thoughts, feelings, and overall behavior under different conditions (R, 2021). From a computational perspective, developments in the Natural Language Processing and Machine Learning (ML) domains have produced a wide variety of automated methods for the identification of personality traits in the text (dos Santos et al., 2019).

It may be difficult for a person to accurately classify a personality from a text, as there are so many different factors at play. Therefore, our research aims to classify personality traits automatically based on their behaviors, using five personality types, namely the supervisor, the commander, the inspector, the doer, and the idealist which is possible because the behaviors of the people are different. The main purpose of this research approach is creating a model to automatically identify the conventional personality type of the person based on their behaviors.

Although there has been recent research on a range of personality classification, the same classification algorithms are not used in earlier studies. Some are compared only the two or three classification algorithms or used very little data and the majority of personality study relied on observations like social media usage and handwriting patterns. Our data set was gathered from the questionnaire's replies (Ong et al., 2017). But our study mainly increased the number of data and increased the number of different ML algorithms until six to achieve better comparison and better results.

Material and Methods

Following Figure 1 show the proposed approach

Data collection

The secondary data set was used for this and the data set was obtained from Kaggle website (Kaggle, 2022). In this research we selected 1000 data from the secondary data set. Following Figure 2 show the five personality types we used and Figure 3 show the some of the attributes we used.

Data Preprocessing

We used the Waikato Environment for Knowledge Analysis (WEKA) data mining tool for data pre-processing. The data set contained 62 attributes and 16 personality types. After ranking the attributes by the information gain ranking algorithm, the top 34 attributes are selected. Furthermore, the types of personality were reduced to 5 types based on their personality qualities.

Faculty of Social Sciences and Languages

Figure 1:

Proposed Approach

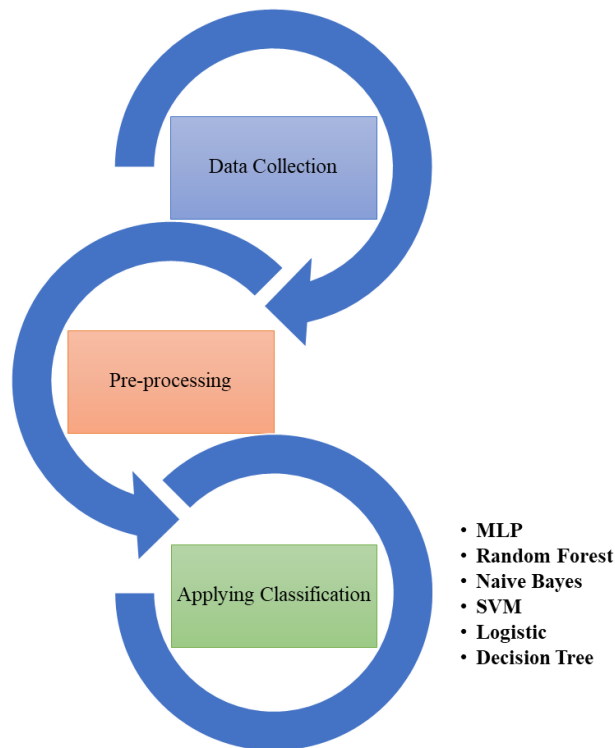


Figure 2:

Types of Personality



Figure 3:

Sample of Attributes



Classification

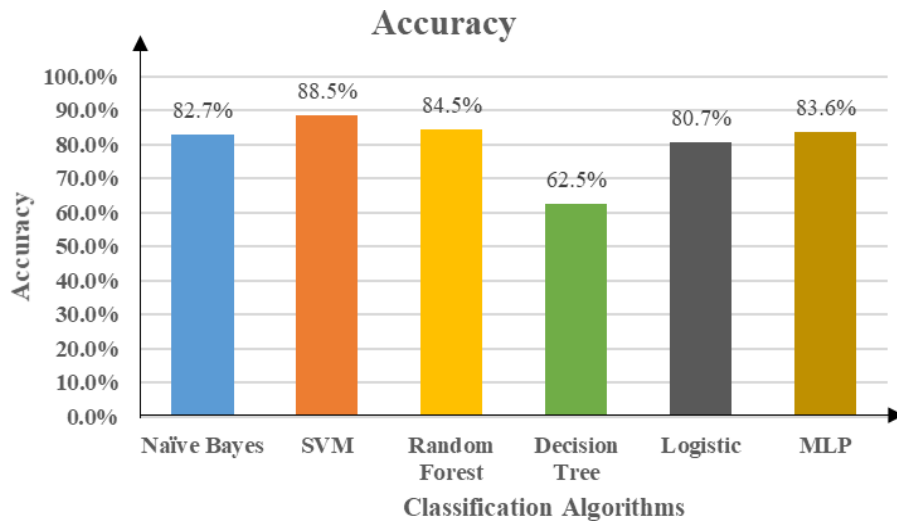
The preprocessed data set is used for applying the classification process using the WEKA data mining tool. The prediction model is built up to identify the personality qualities. The data set was applied to the Random Forest, Naïve Bayes, Decision Tree (J48), Logistic, SVM, and MLP algorithms.

Results and Discussion

Microsoft Windows 10 on PC with Processor Intel@ Core i5, RAM 4.0GB has been used to obtain these comparative results. And the WEKA 3.8.5 tool is used for the data mining process.

Accuracy of the classification algorithm

The result with respect to accuracy was compared for the six machine learning algorithms. Figure 4 shows that the SVM has the highest accuracy among these six algorithms.

Figure 4:*Accuracy of algorithms****Results of precision, recall and f-measure***

Following are the results of recall, precision, and f-measure obtained according to the equations given in (1), (2), and (3). Here, P_s , P_x , P_{stx} denotes the number of all relevant members included in a specific cluster, the number of all members in a specific cluster, and the number of all relevant specified-cluster members in the corpus respectively.

$$Precision = \frac{P_s}{P_x} \quad (1)$$

$$Recall = \frac{P_s}{P_{stx}} \quad (2)$$

$$F_measure = \frac{2 * Precision * Recall}{Precision + Recall} \quad (3)$$

According to the Table 1, the highest values were achieved by the SVM, which also achieved the highest accuracy.

Table 1:*Precision, recall & F-measure values*

Algorithm	Precision	Recall	F-measure
SVM	0.885	0.885	0.885
Random Forest	0.846	0.845	0.845
MLP	0.836	0.836	0.836
Naïve Bayes	0.830	0.827	0.827
Logistics	0.807	0.807	0.807
Decision Tree	0.626	0.625	0.625

Table 2:*Class wise f-measure values in SVM algorithms*

Class	F-measure Value
The Inspector (ISTJ)	0.874
The Supervisor (ESTJ)	0.894
The Doer (ESTP)	0.875
The Commander (ENTJ)	0.903
The Idealist (INFP)	0.878

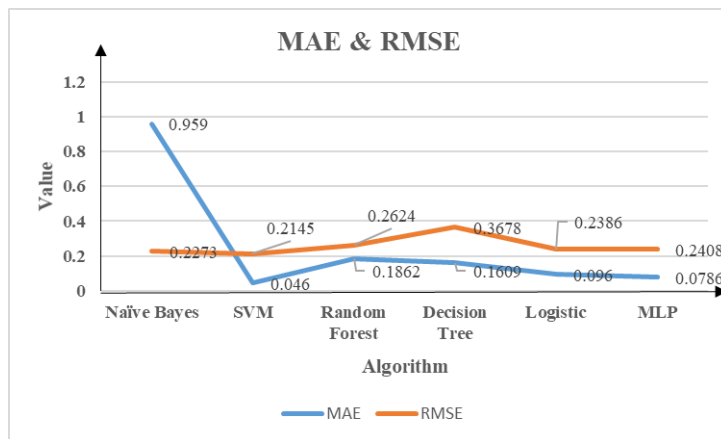
Results of MAE and RMSE

We then calculated the Mean Absolute Error (MAE) and Root Mean Squared Error (RMSE) for all six algorithms, according to the following Eq. (4) and (5). Here T is the number of predicted values, Pvx represents the existing labeled value based on the outcomes, and Mvx represents the predicted result. Figure 5 gives the MAE and RMSE results.

$$MAE = \frac{1}{T} \sum_{x=1}^T |p_{vx} - M_{vx}| \quad (7)$$

$$RMSE = \sqrt{\frac{1}{T} \sum_{x=1}^T (p_{vx} - M_{vx})^2} \quad (8)$$

Figure 5, the MAE and RMSE results were lowest for the SVM algorithm.

Figure 5:*MAE & RMSE results****5-fold cross-validation vs 10-fold cross-validation***

Our research experiments used both 5-fold cross-validation and 10-fold cross-validation, with 10-fold cross-validation it obtaining better accuracy as shown in Table 2.

Table 3:*5-fold cross validation vs 10-fold cross validation*

Fold	SVM		Accuracy
	Test Data	Training Data	
5	20%	80%	83.5%
10	10%	90%	88.5%

Conclusion and Recommendations

The main purpose of this is to identify the personality qualities of people in various fields and classify them. This enabled to build a system that can classify personality types considering characteristics of human behavior. After pre-processing the collected data, compared six classification algorithms. Among these algorithms, the SVM algorithm gave the most accurate result obtaining 88.5%. And also Random Forest 84.5%, MLP 83.6%, Naïve Bayes 82.7%, Logistics 80.7%, and Decision Tree 62.5% were obtained as the accuracy results. In summary, the SVM algorithm was found to be the best of six individual algorithms with the highest accuracy, highest values for precision, recall, and f-measure and it also obtained the lowest

error rate. In the comparison of 5-fold with 10-fold cross-validation, 10-fold obtained the highest accuracy.

In future work, we intend to increase the size of the data and plan to investigate the Ensemble Learning algorithm (Vote) combining above six classification algorithms to further increase the accuracy of the classification process.

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IMAGE TEXT TRANSLATION INTO BRITISH SIGN LANGUAGE

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Abstract

Information is an asset. Information can be conveyed verbally or in written form. Conveying that information, a line of communication. Nowadays, online communication has become vital to everyone's life. People share information through notices, observe product details through online catalogs, and even convey wishes through e-cards. Though these things are feasible for normal humans, differently abled people miss these opportunities. The primary goal of this research is to remove the barriers that prevent hearing-impaired people, them, and average people from sharing information. We have addressed this issue by developing a system to extract image text and translate it to British sign language, which is particularly well-liked by the deaf community. The system is a success, and the accuracy of the system mainly depends on the text extraction methods. The accuracy of the extraction method varies depending on core technology and computational power. Improving the functionality will increase the accuracy of the system.

Keywords: *British Sign Language, Image processing, Image Text Translation, Natural Language Processing, Text Segmentation.*

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Introduction

The majority of current research for hearing impaired people focuses on text translation and text input using a sign language keyboard. Some of the research is regarding converting sign language performed by a hearing-impaired person into images that will be converted to a preferred language using various technologies. Translating texts embedded in images to sign language is not taken into consideration, but much research has been done to identify and translate those texts in images to normal languages. This approach and text translation together can be used to create a new system for hearing – impaired people to translate image text into sign language.

In research conducted by Tariq Jamil (2020), the Java programming language and ScreenBuilder, an application for building user interfaces, screen buttons, and text fields, were used to develop our entire system. For efficient and precise processing of Arabic text, the Qatar Computing Research Institute (QCRI) developed the "Farasa" toolbox. According to Shubham Nagmoti (2014), the image processing library OpenCV and the tesseract package from Python are used to implement the project. Google Trans (formerly known as GoogleTrans) is used for language translation.

A study conducted by Kamrul Hasan (2021), shows that the process of extracting text from an image is sequential. Their approach divides word extraction from an image into three steps: input pre-processing, marking each text location on the image. Then the text extraction method. Next, the input for the suggested technique is a visual in color.

The majority of current research has concentrated on text extraction for use in translation into various languages spoken by ordinary folks. Despite the fact that numerous translation systems have been created for the deaf community, they have not taken into account the translation of image text into sign languages, which would allow those who are hard of hearing to access information conveyed through image embedded text. Due to the pandemic, many people turned to online platforms where information was shared in electronic form. For instance, greetings sent via electronic cards, the sharing of product information to enable online shopping, the delivery of notices on several commercial websites, and the inclusion of imagery in announcements of offers. However, a deaf person cannot access any of this information, creating inequality in society. The research on image text extraction and translation into sign language was primarily driven by this.

The main goal of the research was to reduce the disparity between the deaf and hearing communities by giving the deaf population access to information conveyed through text-embedded images, which none of the existing

translation systems had focused on. By turning on the capability, the deaf community will be able to translate electronic wishes, electronic notices, and information provided in graphic forms into British Sign Language. The method was primarily centered on British Sign Language because it is the second language learned by the majority of deaf people worldwide.

Material and Methods

The proposed system's main users will be the hearing-impaired people who have learned British sign language. The web application can be used to translated image embedded text, normal text translation into British sign language

Image Text Translation into British Sign Language

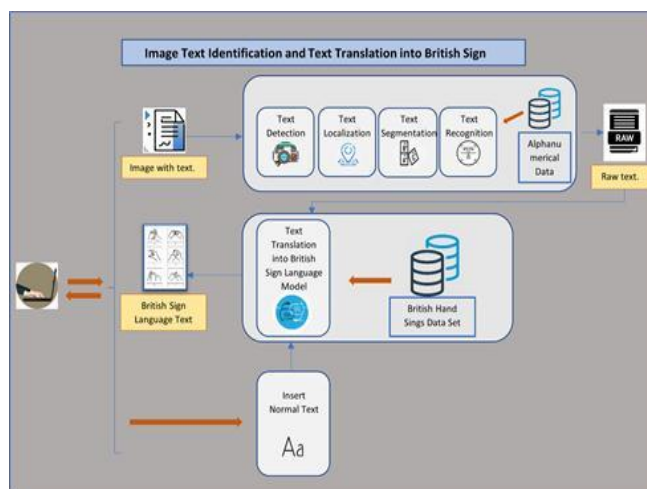
Identification of the image text and translation into the British sign language component can be mainly divided into two sections. Mainly,

1. Image Text Processing
2. Text Translation into British Sign Language.
3. Download PFD version with translation.

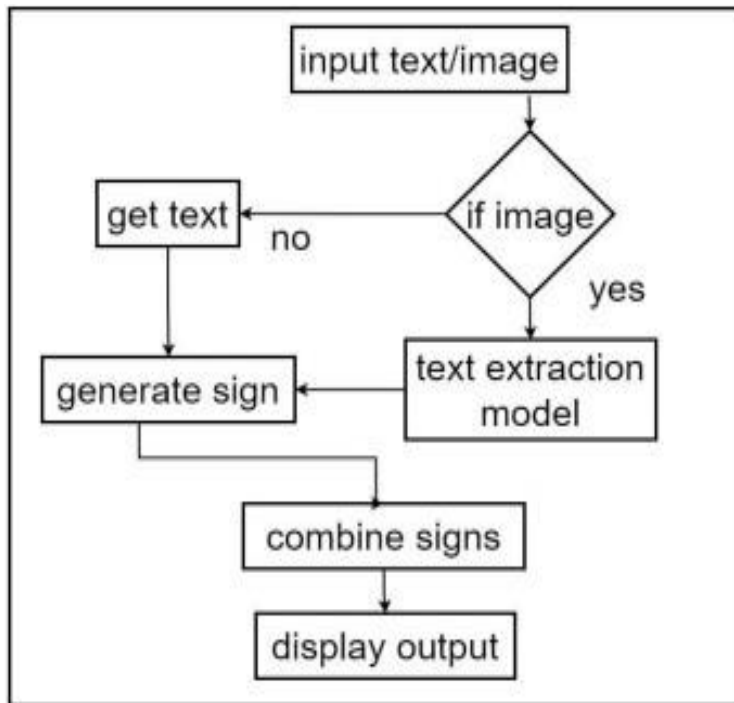
An overview of Image Text Translation into British Sign Language is shown in figure 2.

Figure 2:

Overview Diagram of Image Text Translation into British Sign Language



Flow of Image Text Translation into British Sign Language is shown in figure 3.

Figure 3:*Flow Diagram of Image Text Translation into British Sign Language*

Using image processing techniques in Open CV the uploaded image will be stored as a 2D array. Then the further processing happens as follows.

1. Image Text Processing

Image text processing includes,

- a) Text Identification.
- b) Text extraction
- c) Text segmentation

Text identification and text extraction are done by using an optical character recognition (OCR) tool in Python. Python-Tesseract is a wrapper for Google's Tesseract-OCR Engine. Following text extraction, the text will be segmented using a Python algorithm with a full word meaning. Figure 4 shows the algorithm. The extracted text will be saved in a finalized list once it has been extracted. The list consists of sub-lists in which the words with single signs and the words with no single signs are separated and saved. Using a for loop, those sub-lists will be taken into the image mapping algorithm shown below. The pseudocode of the algorithm is shown in figure 5.

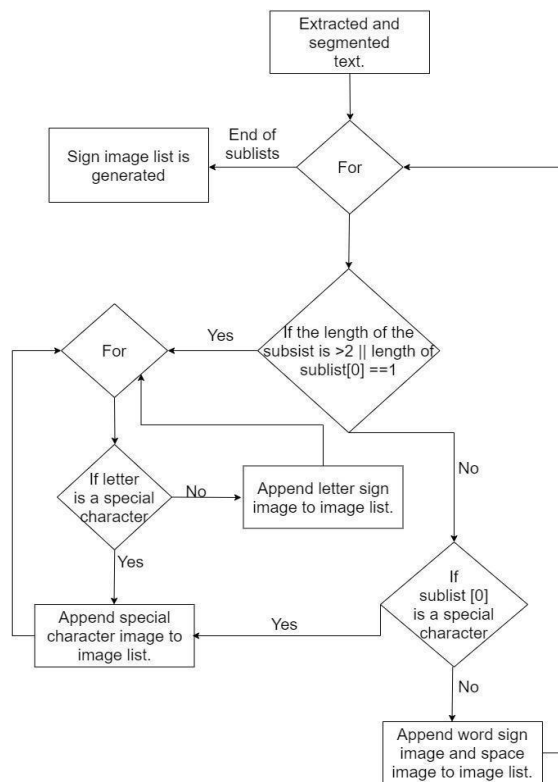
Figure 4:

Algorithm created using python to segment the text into meaning full words.

```
def findWordMatching(finalized_list):
    imagelist=[]
    characters=[' ','-','_','.',',',':',';','|','"',"'",',','(',')','@','$','%','&','&','%','+']
    for single_list in finalized_list:
        print(single_list)
        if(len(single_list)>2 or len(single_list[0])==1):
            print("len >1")
            for letter in single_list:
                if(letter in characters):
                    path="/media/Special_Characters/"+letter+".jpg"
                    imagelist.append(path)
                else:
                    path="/media/letters/"+letter+".png"
                    imagelist.append(path)
            else:
                if(single_list[0] in characters):
                    path="/media/Special_Characters/"+single_list[0]+".jpg"
                    imagelist.append(path)
                else:
                    path="/media/words/"+single_list[0]+".jpg"
                    imagelist.append(path)
                    path="/media/words/"+single_list[1]+".jpg"
                    imagelist.append(path)
    return imagelist
```

Figure 5:

The pseudo code of the algorithm.



For the identification of the meaningful text segments, a Python-based Natural Language Toolkit is used for the processing. It is a collection of Python-coded libraries and tools for symbolic and statistical natural language processing of English.

Those identified and segmented texts will be saved in a computer readable file, which will be accessed for further processing. The system allows you to enter text through a text field, and those texts will also be saved in a file, just like the extracted text. Then the process will be moved to the next stage.

2. Text Translation into British Sign Language.

In British Sign Language, there are single signs for individual words as well as other words that can be spelled using finger spelling. Image data sets of signs used in British Sign Language and alphanumeric values and special characters are created and retrieved through an algorithm as required.

In the first place, the saved text file is accessed and read by lines to identify the words, and running through the algorithm will identify whether there will be a sign for the word. If the word does not have a sign, then the letters will be retrieved from the finger spelling images and displayed as a word. Accordingly, the algorithm will run until the text file ends. The output will be displayed using retrieved images of sign language.

3. Download PDF version of translation.

Using basic Java Script, the set of retrieved images will be converted to a PDF file, enabling the user to download the file.

Results and Discussion

The goal of this research is to bridge the gap between hearing impaired and normal people. Such that the hearing-impaired person will be able to grab information, which is displayed in images, text formats, and download that information in their own sign language and share information with their society. Enable the hearing-impaired people to convert their ideas to words and share them with normal people. Let them entertain themselves by watching the videos translated to their own language, further educate themselves and their loved ones with sign language.

Image Text Translation into British Sign Language

Results of image text translation revealed that the accuracy of the text identification will have an impact on text translation. The accuracy of identifying special characters and the alphanumeric characters is above 90%. Degression of identification happens due to multiple text fonts, noise of the image, blurred effects of the image, sudden changes in multiple text fonts etc.

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Table 1:

Result of Character Identification and Translation

Characters	Identification	Translation
Text	98%	100%
Numbers	95%	100%
Special Characters	90%	98%

Figure 6:

The Input Image



Figure 7:

The output result of the translation.



When compared to the functionalities and results of the available systems, sign language translation systems do not cater image text translation into sign language functionality, which is the primary focus of the research. Through the study, we have identified that image text identification systems and test translation systems have issues due to various fonts and a lack of image clarity, text identification is less accurate, there is no way to convert image text into British sign language. Through our proposed system, we have addressed the

above gaps and implemented error correction mechanisms to improve text extraction accuracy and an image text translation algorithm to cater to the need for text translation into British sign language. Figure 8 shows the comparison of the available systems and the proposed system.

Figure 8:

Comparison of existing systems and the proposed system.

	WeCapable	Fun Translations	Hand Talk Translator	SignAll	Proposed System
Supports British Sign Language Translation	✓	✗	✓	✗	✓
Supports sign language text translation	✓	✓	✗	✓	✓
Supports image text translation to sign language.	✗	✗	✗	✗	✓

Conclusion and Recommendations

Finally, a system was developed to reduce the gap between hearing impaired people and normal people, and the system was capable of image recognition and translating text into sign language.

Implementation and results show how web application is developed to provide better user experience with accurate and fast results

In the future, the system can be developed into a mobile application for image detection and translation, which will enable the hearing impaired to grab and share information easily.

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FACTORS AFFECTING THE PERCEPTION TOWARDS THE RETIREMENT AGE: A CASE OF PUBLIC SECTOR EMPLOYEES IN WESTERN PROVINCE, SRI LANKA

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Abstract

The Budget of the Sri Lankan government for the year 2022 proposed to increase the minimum retirement age of public sector employees up to 65 years in November 2021. The main objective of this study is to detect the factors affecting the perception of extending the retirement age of public sector employees except in the education sector. The sample unit of this research is the public sector employees in the Western province. Primary data were utilized for this study and collected through a structured questionnaire. A sample of 350 was selected using the stratified random sampling technique. Structural Equation Modeling was employed to analyze the data. It was suggested Job Satisfaction and Health Status can positively impact family affiliations and financial stability and can negatively impact the perception of extending the retirement age of public sector employees.

Keywords: *Employees' Perception, Minimum Retirement Age, Public Sector*

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Introduction

The aging of the population in Sri Lanka in recent years has been the subject of much discussion. By 2050, Sri Lanka will be an aging economy, with a significant adult population still economically active, contributing to their household economy and the economy of the nation. In comparison to earlier statistics, the variations and uncertainty in life expectancy demolish pension plan projections. Employees in the official sector must retire at age 60 or older in other South Asian nations. In Sri Lanka, the government applied some changes in the minimum retirement age of the public sector employees depending on various facts they have explained.

The government published an extraordinary gazette paper (Ref. 2263/5) informing related to the public sector employees. On the 20th Thursday of January 2022 announcing the mandatory retirement age of public sector employees at 65 years of age. The 2022 budget proposal emphasizes raising the retirement age as one of his proposals to increase the efficiency of the public sector. According to the bulletin notification, the retirement age for public sector employees has been raised to 65 years old and it affects the current employees from January 1, 2022. It establishes that public sector employees have the option to retire after age 55 and that retirement at age 65 is mandatory. (Thennakoon, 2022).

By this research, researcher expect to determine what are the factors that affecting to their perception and the perception of the government employees regarding their minimum retirement age

Materials and Methods

Even though perception is an attribute variable, it is numerically measured using statistical analysis. Therefore, this research is quantitative. The mode of thinking used in this research is deductive. To find an appropriate solution, this study measures the behavior of a group of people on a socially influenced matter. Therefore, this is social science research. According to this study, the expected alternative hypotheses are as follows.

H₁: There is an influence of family affiliation on the perception of extending the retirement age of government sector employees.

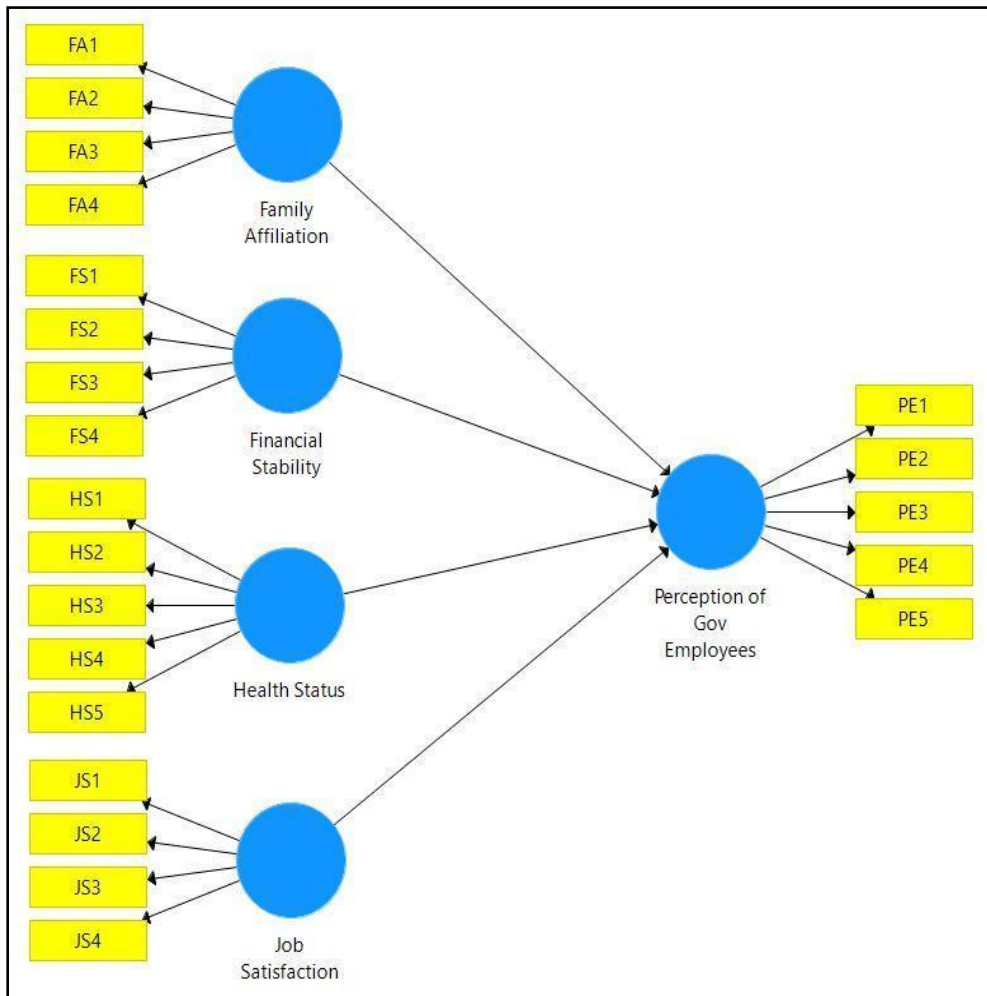
H₂: There is an influence of financial Stability on the perception of extending the retirement age of government sector employees.

H₃: There is an influence of health status on the perception of extending the retirement age of government sector employees.

H₄: There is an influence of job satisfaction on the perception of extending the retirement age of government sector employees.

Figure 1:

Proposed Conceptual Framework

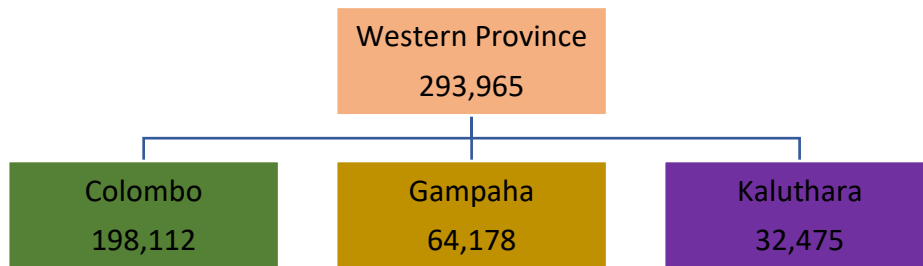


(Research Survey Data 2022)

The researcher followed a survey method to collect the primary data from the respondents. The population size is 293,965 people, including government employees who are not employed in the educational sector. To identify the appropriate sample, the researcher followed a probability sampling technique called stratified sampling. The following figures indicate the sampling procedure and the stratum of the population.

Figure 2:

Strata of Population



(Source: Census of Public and Semi Government Employees, Census Department, 2016)

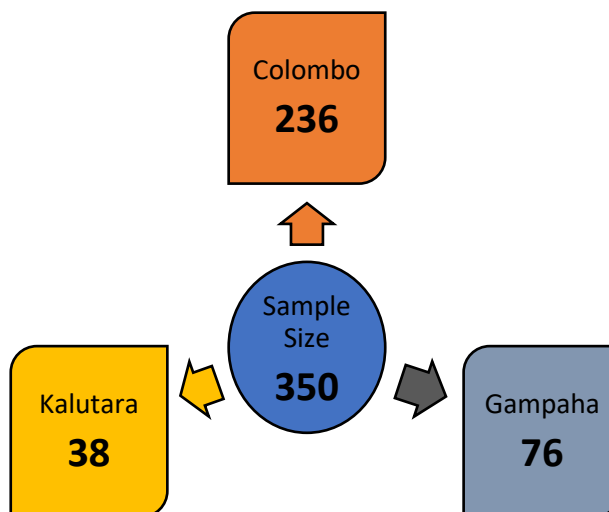
Equation 1:

Equation of Sample Size of Stratum

$$\begin{aligned} \text{Sample size of each Strata } (n_h) \\ = \frac{\text{Population of each strata } (N_h)}{\text{Total Population } (N)} \times \text{sample size } (n) \end{aligned}$$

Figure 3:

Proportional sample size for each district



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The three proportions are Colombo, Gampaha, and Kalutara. Sample size is decided as the 350 sample units by referring to ‘free statistic sample size calculator v 4.0’, it suggested that 226 sample units was minimum significant for the 20 predictors. However, considering the population size, the researcher took 350 observations to prevent the

Before conducting a main survey, the researcher conducts a pilot survey using 20 questionnaires. It was suggested that some questions were not understandable to the respondents, and those questions were changed literally without changing their meaning. In this research, the main analytical tool employed was structural equation modeling using SmartPLS 3.0 software because the questions in the questionnaire were developed as latent constructs. The questionnaire will include 32 items, the majority of which will be graded on a scale of 1 to 9. The questionnaire was divided into four sections. As shown in Figure 1, four independent variables and one dependent variable were evaluated.

Results and Discussion

Based on the descriptive results, most employees support raising the minimum retirement age. It was confirmed by the fact that the mean value of the dependent variable scored more than six out of nine (1 to 9 Likert scale).

According to the results obtained through the data analysis, the outer model has been evaluated by the reliability test (Indicator reliability and internal consistency) and validity test (Convergent validity). Accordingly, the obtained results passed the cut-off values. Following Table 1 is the results of reliability and validity tests.

Table 1:

Validity and Reliability Constructs of Analysis

Construct	Indicator Reliability		Internal Consistency		Convergent
			Reliability		validity
	<i>Loading</i>	<i>t-statistics</i>	<i>Composite Reliability</i>	<i>Cronbach's α</i>	<i>AVE</i>
1 Perception (PE)			0.910	0.875	0.671
PE1	0.881	64.703			
PE2	0.869	65.177			

	PE3	0.778	25.886			
	PE4	0.846	41.875			
	PE5	0.709	14.445			
2	Job Satisfaction (JS)			0.892	0.838	0.763
	JS1	0.791	27.158			
	JS2	0.817	29.234			
	JS3	0.830	45.633			
	JS4	0.842	49.409			
3	Financial Stability (FS)			0.924	0.891	0.753
	FS1	0.862	45.330			
	FS2	0.864	49.224			
	FS3	0.866	49.658			
	FS4	0.879	54.948			
4	Health Status (HS)			0.934	0.912	0.740
	HS1	0.799	23.660			
	HS2	0.876	51.990			
	HS3	0.866	48.240			
	HS4	0.895	75.960			
	HS5	0.863	48.454			
5	Family Affiliation (FA)			0.953	0.934	0.834
	FA1	0.909	92.505			

FA2	0.909	76.706
FA3	0.923	88.764
FA4	0.912	79.622

Therefore, the outer model is identified as significant. When it comes to the inner model, it is evaluated in steps according to. All the VIF values are less than 0.5, all the structural model relationships were significant, coefficient of determination scored 0.761, F^2 were sufficient and Q^2 was significant.

Table 2:

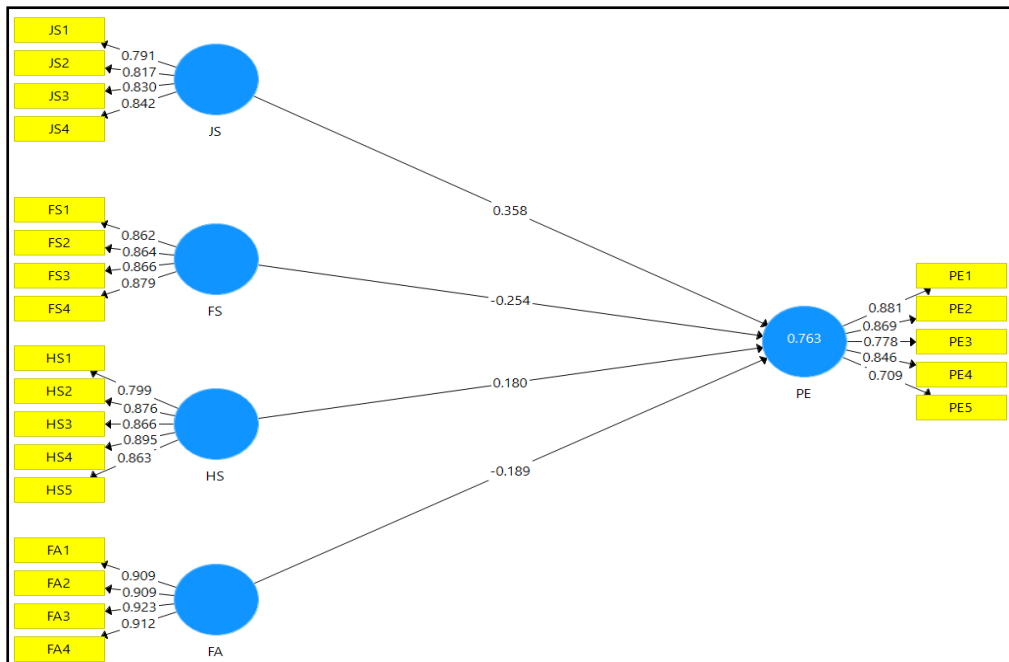
Path coefficients and significance among constructs

	Hypothesis	Relationship	Coefficient	P Values	Result
Family Affiliation	H ₁	FA -> PE	-0.189	0.014	Accepted
Financial Stability	H ₂	FS -> PE	-0.254	0.000	Accepted
Health Status	H ₃	HS -> PE	0.180	0.001	Accepted
Job Satisfaction	H ₄	JS -> PE	0.358	0.000	Accepted

(Research Survey Data 2022)

Both job satisfaction (0.358), health status (0.180) was constructing a positive relationship, and both financial status (-0.254), family affiliations (-0.189) built a negative relationship with the perception of extending the retirement age of the public sector employees.

Therefore, expected alternative hypotheses by the researcher were accepted through this model. And all the variables were significant in this model.

Figure 4:*Figure of Inner and Outer Model*

(Research Survey Data 2022)

Conclusion and Recommendations

According to the researcher's objective, job satisfaction, financial stability, health status, and family affiliations are influenced by the perception of extending the retirement age of public sector employees. The maximum relationship obtained was 0.384, and the lowest relationship was built by the health status at 0.18.

Due to the lack of knowledge and literature in the world regarding this study, it generates new knowledge and new relationships with the discussed dependent variable. As a future research direction, there could be an opportunity to conduct such research by covering the whole provinces in Sri Lanka. Someone could conduct research on this topic with the entire government workforce to get a comprehensive picture of their attitudes toward the retirement age increase.

As the recommendations state, the government can focus on these variables, relationships, and adjust their decisions based on the employee's perception due to their policy change. And also, they can improve the facilities based on the employees' preferences by considering these variables.

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FACTORS AFFECTING MATHEMATICS ANXIETY OF SOCIAL SCIENCES AND HUMANITY UNDERGRADUATES IN SRI LANKA (WITH SPECIAL REFERENCE TO GOVERNMENT UNIVERSITIES)

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Abstract

The term "math anxiety" refers to a state of stress and dread that impairs one's capacity to perform mathematical computations, manipulate numbers, and solve mathematical problems in a range of real-world and academic environments. The main objective of this study is to explore the factors that mainly affect math anxiety among Social Sciences and Humanity undergraduates in Sri Lanka. Stratified random sampling was used to choose a sample size of 265. Structural equation modelling method was used to analyse the collected data. Five factors were tested with the math anxiety. They are; student attitude, role of lecturers, emotions, skills, and influence of peers and parents. It was discovered that students' negative attitudes and emotions have a positive effect on math anxiety. The roles of lecturer and parents and peer influence have a negative relationship with math anxiety. Finally, skills have no relationship with math anxiety.

Keywords: *Mathematics Anxiety, Policy Decision, Social Sciences and Humanity, Structural Equation Model*

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Introduction

Math anxiety is an emotional problem that shows a reluctance and fear to solve math problems. It is also the stress that is felt in everyday life in matters related to mathematics. Math anxiety plays a pivotal role in the academic life of students. When students have math anxiety, any math related problem brings them stress and tension. This can lead to problems with their memory and ability to think properly. The main purpose of this study is to identify the factors that affect the math anxiety of Social Sciences and Humanity undergraduates in Sri Lanka. According to the previous researchers, math anxiety is an emotional issue that occurs at childhood and it develops with age.

Researchers have found that about 20% of population suffers from math anxiety. It is an emotional problem that is prevalent all over the world and affects people of all ages. By some estimates, nearly 1 in 5 US adults report severe math anxiety. Studies state that 93% of adults living in the United States suffer from some form of math anxiety. (Luttenberger, Wimmer, & Paechter, 2018) It is estimated that about 17% of American population has high levels of math anxiety. Approximately 30% of adolescent in the study had high levels of math anxiety and 18% had low levels of math anxiety. (Ashcraft & Moore, 2009)

Materials ad Methods

This study used a quantitative approach to explore the research problem. Because this study follows positivism and it is the most suitable method for this study. This study provides more explanations and details about key variables based on existing theories. So, this study has explanatory design. This study re-tests an existing theory. Therefore, this research used deductive approach as the research method.

The present study includes use of both qualitative and quantitative data and both primary data and secondary data. The total population for the study is 23542. From that, a total sample size of 265 was selected to represent the entire population by using Stratified Sampling method.

In this study, the researcher used Structural Equation Modelling as the data analysis technique. Furthermore, descriptive statistics, confirmatory factor analysis, validity, reliability and path analysis are used in data analysis.

Results and Discussions

In this study, a total of 36 items, which were identified from previous literature, were used in the CFA. According to the first run of the CFA model, it was revealed that the model is not successful. Therefore, the existing model

needed be improved. Some indicators had to be removed from the initial measurement model for the sample since they had significant covariance and also had large regression weight, ensuring a great fit model.

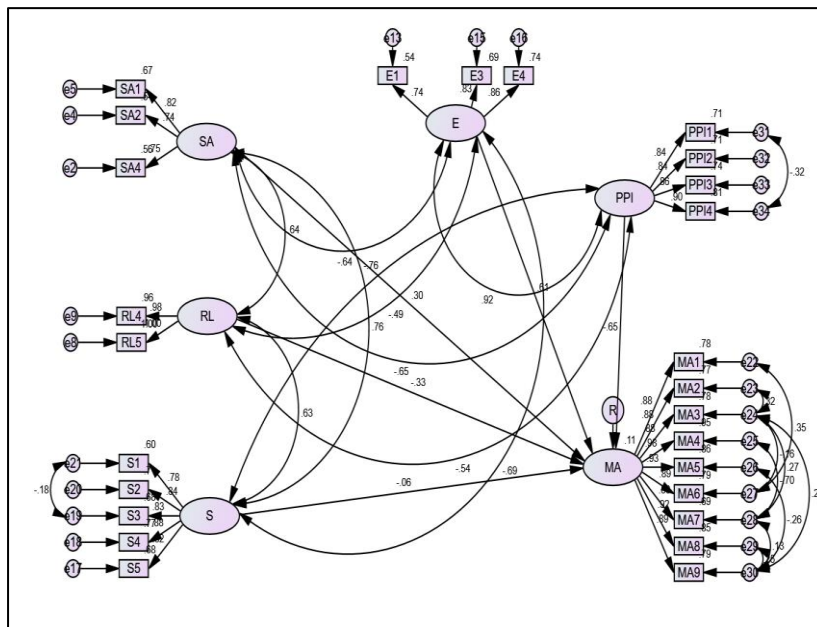
Table 1:

Fit Indices for Final CFA Model

Fit Index	Recommended Value	Coefficient
CMIN/DF	<5 Preferable <3	3.090
GFI	>0.9 Preferable >0.95	0.822
CFI	>0.9 Preferable >0.95	0.927
TLI	>0.9 Preferable >0.95	0.913
RMSEA	<0.08 Preferable <0.06	0.08

Figure 1:

Path Diagram



Source: Sample Survey 2022

Then the hypothesized relationships within the variables can be evaluated using the proposed structural model.

Table 2:

Summary of the Results for the Hypothesis

Hypothesis	Effect Type	Path Coefficient	P Value	Result
H1	SA → MA Direct effect	0.300	0.025*	Supported
H2	RL → MA Direct effect	-0.326	0.003**	Supported
H3	E → MA Direct effect	0.615	0.027*	Supported
H4	S → MA Direct effect	-0.062	0.356	Not Supported
H5	PPI → MA Direct effect	-0.652	0.048*	Supported

*Note: * $p < 0.05$, ** $p < 0.01$*

According to table 2, the factor loadings (regression weights) output in AMOS suggests that four out of five hypothesized associations for the sample were validated.

When students' negative attitudes increase by one point the mathematics anxiety of undergraduates would increase by 0.300. The standardized coefficient value is significant at 5% of significance level. When the role of lecturers increases by one point the mathematics anxiety of undergraduates would decrease by 0.326. The standardized coefficient value is significant at 1% of significance level. When negative emotions increase by one point, the mathematics anxiety of undergraduates would increase by 0.615. The standardized coefficient value is significant at 5% of significance level. When peers and parents influence increase by one point the mathematics anxiety of undergraduates would decrease by 0.652. The standardized coefficient value is significant at 5% of significance level. However, there is no relationship between skills and mathematic anxiety of undergraduates. Because the effect is insignificant.

Conclusions and Recommendations

Five factors were tested with the dependent variable (Math Anxiety). They are Students' Attitude, Role of Lecturers, Emotions, Skills and Peer & Parent Influence. There is a direct positive relationship between students' attitude and mathematic anxiety of Social Sciences and Humanity undergraduates. There is a direct negative relationship between the role of lecturers and mathematic anxiety of social sciences and humanity undergraduates. There is a direct positive relationship between emotions and mathematic anxiety of social sciences and humanity undergraduates. There is no relationship between skills and mathematic anxiety of undergraduates. Finally, there is a direct negative relationship between the influence of peers and parents and mathematic anxiety of Social Sciences and Humanity undergraduates.

In conclusion, the structural equation modeling used in this study indicated that, with the exception of one factor, all factors are significant drivers of mathematics anxiety.

It is recommended that it is necessary to foster a love of mathematics by establishing "Mathematics Clubs" in each university in Sri Lanka and undergraduates should be aware of the link between their attitudes and their mathematical performance.

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EFFECTIVENESS OF ONLINE LEARNING ON UNIVERSITY UNDERGRADUATES DURING COVID -19 PANDEMIC (A STUDY BASED ON THE SABARAGAMUWA UNIVERSITY OF SRI LANKA)

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Abstract

The Corona virus, which became a major health problem worldwide, affected all sectors. The uncertain lockdown bitterly affected the educational institutions. Therefore, the education authorities decided to focus on online learning. But most of the undergraduates in Sri Lanka are familiar with the traditional learning process. Due to the change in this paradigm, they had to face many difficulties in their educational performances. The objective of this study is to identify the effectiveness of online learning on undergraduates during the COVID-19 pandemic. The study was based on 308 students in the Sabaragamuwa University of Sri Lanka. The data were collected through the mailed questionnaires. A sample was selected through the two-stage cluster sampling method. Structural equation modeling was applied to analyze the collected data. According to the analysis results, students' willingness to attend physical class was found as a negative significant variable for the effectiveness of online learning. Lecturers and the university adopting online learning and the technical capability of the students were found as significant positive variables for the effectiveness of online learning. The conclusion of this study is that all parties involving university learning can improve skills regarding online learning and that will help to improve the effectiveness of online learning.

Keywords: *COVID-19, Effectiveness, Online learning, Undergraduates*

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Introduction

The Corona virus, which started spreading from the Wuhan area of China at the end of December 2019, had a major impact on many sectors of the society including the education sector (Sakina & Uyun, 2020). As countries were affected by Covid 19, the lockdown methodology was adopted. With hundreds of millions of educators being forced to stay home, education policymakers have taken steps to launch online learning as a remote method of educating students outside the classroom to continue the learning process. Meanwhile, the Sabaragamuwa University of Sri Lanka in May 2020 strategized its teaching and learning process and took the academic process to an online platform albeit with some modifications. It was a new experience for the students and professors. The Sabaragamuwa University of Sri Lanka (SUSL) has not done online learning before. Therefore, online learning caused many problems and difficulties for university students and lecturers. However, SUSL has been conducting online lectures and online assessments for more than one year time period up to now with these difficulties. Therefore, saying that online learning is completely effective is debatable. According to that, this study seeks to understand the effectiveness of online learning on the university undergraduates.

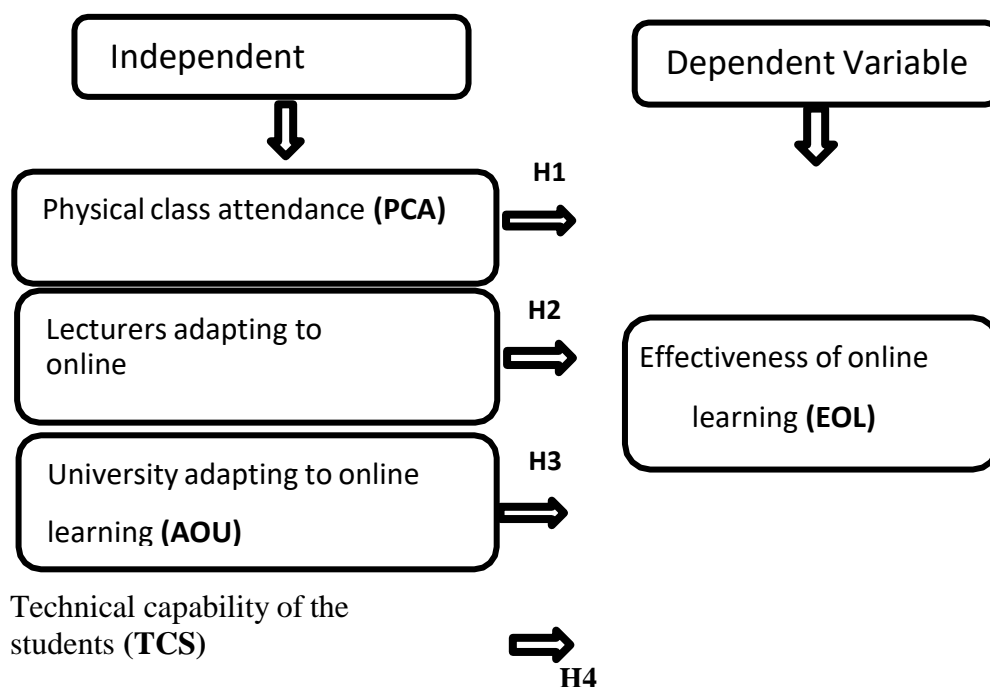
Materials and Methods

This research was based on the Sabaragamuwa University of Sri Lanka. At the present, about 14250 students are studying in the university under 8 faculties. In This study, two-stage cluster sampling was selected as the sampling technique. As the 1st stage 5 faculties such as Faculty of Applied Sciences, Faculty of Social Sciences & Languages, Faculty of Management Studies, Faculty of Agriculture and Faculty of Geomatics were selected. At the 2nd stage the students from 3rd and 4th-year were selected from the 5 faculties. The sample size calculator was used to find the sample size which is 308 students. According to the number of undergraduates in each faculty, 45 from the third and fourth years of the Applied Sciences faculty, 35 from the third and fourth years of the Social Sciences and Languages faculty, 41 from the third and fourth years of the Management Studies faculty, 18 from the third and fourth years of the Agricultural Science faculty and 15 each from the third and fourth years of the Geomatics faculty were selected. A mailed questionnaire was used to collect the data. The questionnaire of the study consists of 3 main parts. Those are personal information, information regarding online learning during pandemic and the effectiveness of online learning. Covariance based Structural Equation Modelling using SPSS AMOS software was applied to examine the relationship between an

independent and dependent variable. This is an explanatory study with two variables, the independent variable is online learning, the dependent variable is the effectiveness of online learning. Latent variables used to measure independent and dependent variables are shown below.

Figure 1:

Conceptual framework



Results and discussion

In the analysis of this study, the first run of the confirmatory factor analysis (CFA) results shows that further space for improvement. The indices to indicate the model fit the data as none of the fit indices is in the acceptable level. Therefore, based on the high modification indices several items such as AOL1, AOL2, AOU1, AOU4, TCS1, TCS2, TCS6 and EOL2 were deleted. Accordingly, a good fit model was achieved after deleting the items from the initial measurement model. Following table represents the acceptable fit indices after the improvement of the model.

Table 1:*Acceptable fit indices after the improvement of CFA*

Fit indices	coefficient
CMIN/DF	2.576
GFI	0.864
CFI	0.964
TLI	0.956
RMSEA	0.072

After obtaining goodness of fit of the model, the relationship between independent and dependent variables can be tested through the structural model. The structural model with the standardized coefficients for the sample is represented in the following figure.

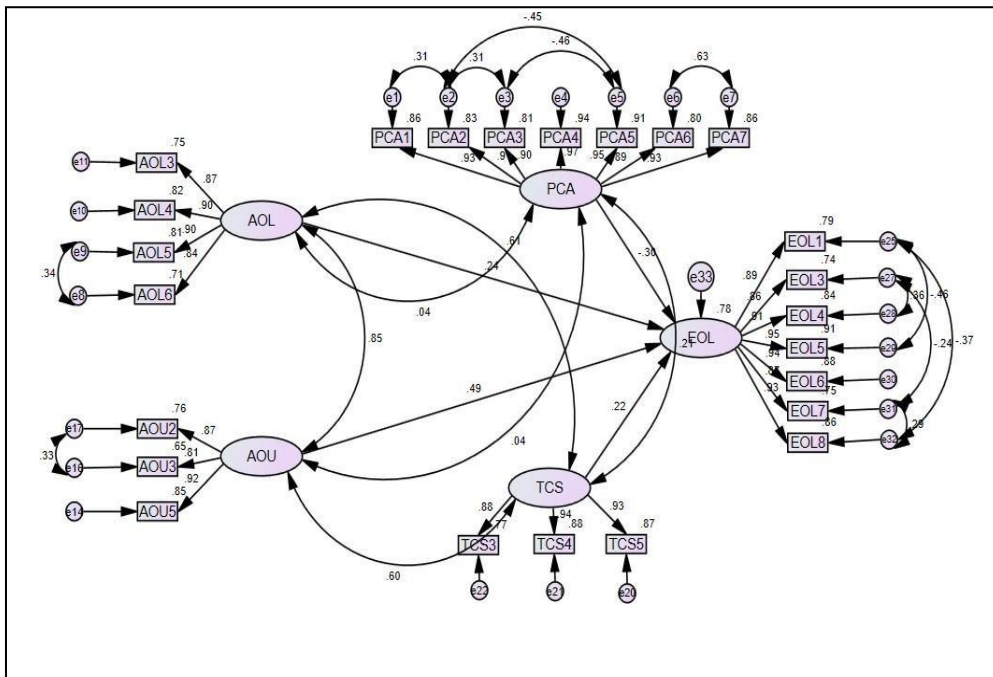
Figure 2:*Standardized Structural Model*

Table 2:*Results of the hypothesis*

Hypothesis	Effect	Std coefficient	Results
H ₁	PCAàEOL	-0.303*	H ₁ is supported
H ₂	AOLàEOL	0.245**	H ₂ is supported
H ₃	AOUàEOL	0.487*	H ₃ is supported
H ₄	TCSàEOL	0.217*	H ₄ is supported

Note: *Significant at 0.01 level, ** Significant at 0.05 level

Based on the coefficient of willingness to physical class attendance on the effectiveness of online learning is -0.303 representing the direct negative significant effect of physical class attendance on the effectiveness of online learning. Bali & Liu (2018) found that students who like to attend physical classes negatively affect the effectiveness of online learning. Therefore, results of this study confirmed the previous research. The coefficient of lecturers adapting to online learning on the effectiveness of online learning is

0.245 representing the direct positive significant effect of lecturers adapting to online learning on the effectiveness of online learning. Platt, Raile, & Yu (2014) found that the lecturers are able to manage online learning correctly and effectively and then increase the effectiveness of online learning. Accordingly, results confirmed the previous research. The coefficient of university adapting to online learning on the effectiveness of online learning is 0.487 representing the direct positive significant effect of university adapting to online learning on the effectiveness of online learning. Previous research, Liaw & Huang (2013) found that confidence of online learning in university positively affect the effectiveness of online learning. Results of this study confirmed the previous study. Finally, the coefficient of the technical capability of students on the effectiveness of online learning is 0.217 representing the direct positive significant effect of the technical capability of students on the effectiveness of online learning. Previous study Sun, Tsai, Finger, Chen, & Yeh (2008) also found that ICT support of the students positively affect the success of the online learning. Therefore, results of this study confirmed the previous study.

Conclusions and Recommendations

According to the results of this study, students' willingness to physical class attendance negatively affects the effectiveness of online learning. Moreover, in this construct, respondents have provided high scores for all the items. This study also found the variable, lecturers adapting to online learning positively affect the effectiveness of the online learning. The majority of the respondents provided median scores for items in this construct. The construct variable, the university is adapting to, is that it affects the effectiveness of online learning highly positively. Here the majority of the respondents provided moderate scores for the items. Finally, the variable technical capability of the students also positively affected the effectiveness of online learning, in that construct variable, the majority of respondents provided slightly higher scores for the items. Based on the analysis results can be conclude effectiveness of the online learning in the Sabaragamuwa university of Sri Lanka is in a moderate level. Recommendation of this study is that all parties involving university learning can improve skills regarding online learning and that will help to improve effectiveness of the online learning. Suggestions for the future research are that further research can be done based on the perceptions of other parties involved in online learning and this study used only a mailed questionnaire to gather data. But future research can be done based on methods like personal interviews to collect the data. It would be supported to get the most reliable data.

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THE IMPACT OF SMARTPHONE ADDICTION ON ACADEMIC PERFORMANCE OF THE UNDERGRADUATES IN SRI LANKA (WITH SPECIAL REFERENCE TO THE SABARAGAMUWA UNIVERSITY OF SRI LANKA)

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Abstract

It is commonly known that smartphones are useful in the human life. But excessive use of smartphone usually makes students addicted to it. The study aimed at investigating the influence of smartphone addiction on the academic performance of the undergraduates. This survey was conducted using the quantitative research approach, and a structured questionnaire has been used to accumulate data. A total of 300 questionnaires were collected from the undergraduates at the Sabaragamuwa University of Sri Lanka using a Multistage sampling technique. The Structural Equation Model was constructed to test the hypothesis. Results revealed that the daily-life disturbance, positive anticipation, and tolerance exposed to smartphone addiction significantly affected their academic performance. Furthermore, the results showed that most of the students prioritize the use of smartphones than their academic performance and smartphone addiction causes disturbances of daily life activities. It can be concluded that smartphone addiction induces the effect on poor academic performance. This survey suggested that the students should reduce the heavy usage of smartphones to carry out their academic performance effectively.

Keywords: *Academic performance, Daily-life disturbance, Positive anticipation, Smartphone addiction, Tolerance,*

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Introduction

There was a technological advancement based on the internet with the beginning of the 21st Centenary. This changes the behavior and system of consumption of people around the world and in the modern world, information and communication technology influences human learning behavior and awareness acquisition systems (Shakoor, Fakhar, & Abbas, 2021).

An investigation by a group of Italian (Serra, Scalzo, Giuffrè, Ferrara, & Corsello, 2021) revealed that in the current global epidemic of the Covid 19, the smartphone addiction of the students has increased compared to the past. Due to the pandemic situation, our traditional classrooms were changed into the online remote classroom in which students are available through the online sessions from their smartphones, and the teachers or lecturers deliver lectures to students remotely from anywhere around the world. The use of smartphones has become popular among the younger generation as various applications can be accessed through the smartphone, but excessive smartphone use usually makes students addicted to it (Mukhdoomi, Farooqi, Khan, Ajmal, & Tooba, 2020). Therefore, it is important to explore the link between students' smartphone addiction and their academic performance. Thus, the present study focuses on identifying the impact of smartphone addiction on the academic performance of undergraduates in Sri Lanka.

Material & Methods

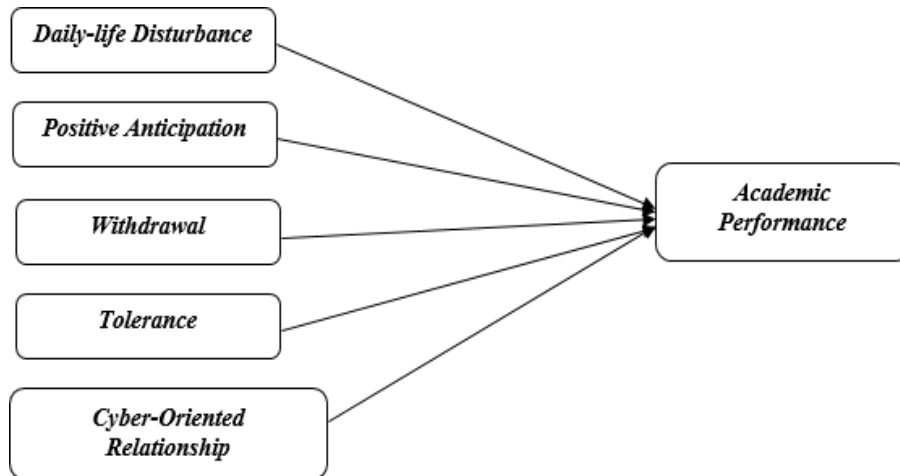
The dependent variable of this research was the academic performance of the undergraduates and independent variable was smartphone addiction. The smartphone addiction was measured using five latent constructs: daily-life disturbance, positive anticipation, withdrawal, cyber-oriented relationship, and tolerance, and those latent variables were measured under 27 indicator variables. The academic performance was also a latent variable and it was measured under 8 indicator variables.

In this study, students of Sabaragamuwa University (SUSL) have been considered the population including five faculties representing the Faculty of Agricultural Sciences, Faculty of Applied Sciences, Faculty of Geomatics, Faculty of Management Studies, and Faculty of Social Sciences & Languages. The population of SUSL was about 5254. The structural equation modeling sample calculation method was utilized to calculate the sample size. To select the sample a two-stage sampling procedure was used. As the first stage, using stratified sampling above mentioned five faculties were considered as strata and the sample size of 300 was selected to represent the students from each faculty proportion to the population of each stratum

(faculty). In the second stage, the 4th Year students were selected to the sample using cluster sampling.

Figure 1:

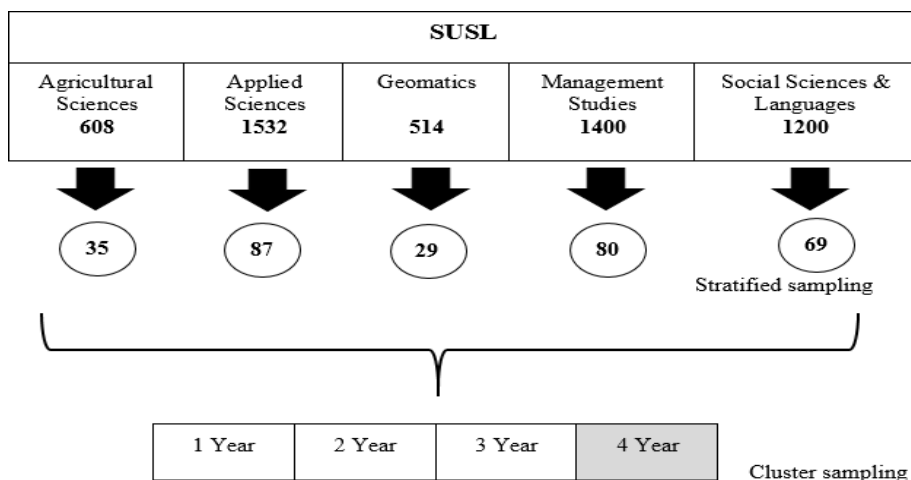
Conceptual Framework



Source: Sample survey (2022)

Figure 1:

Sampling Procedure



Source: Sample survey (2022)

The mailed questionnaire was provided to all 4th year students in five faculties and the data of the first answered questionnaires were collected for
Faculty of Social Sciences and Languages

analysis based on the faculties cutoff sample size. The questionnaire contained 35 Nine-point Likert scale questions for the main six latent constructs in the conceptual framework. The scale was from 1 (Strong disagree) to 9 (Strongly agree), and the middle point scale of 5 represented the average opinion of the responders (either agree or disagree). Covariance based Structural Equation Model performed by using SPSS AMOS software to test the hypothesized relationship between independents and dependent variables.

Results and Discussion

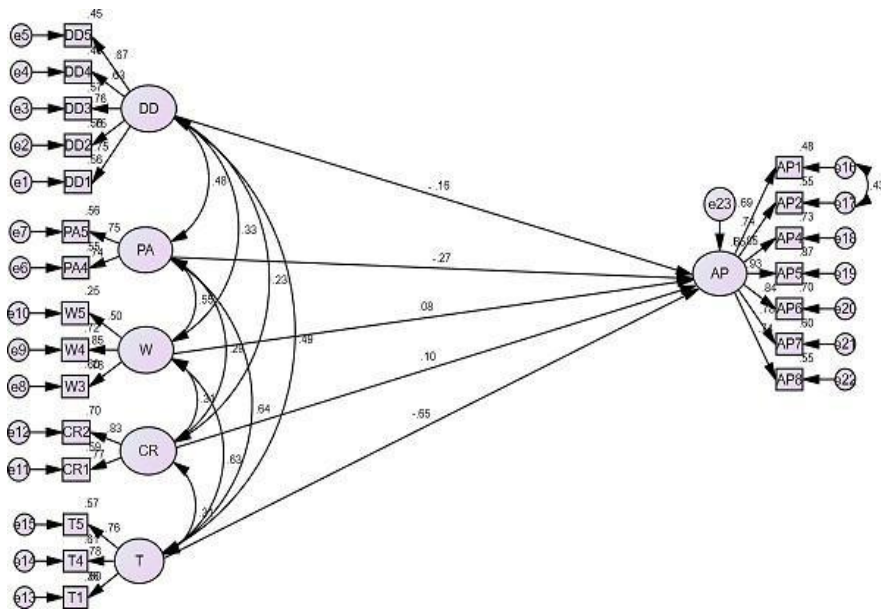
In this study, a total of 35 items were used to derive CFA. The results of the first run of the CFA model showed that further space for the improvement the indices to indicate the model fit of the data as any of the fit indices are not in the acceptable level. Therefore based on the lower factor loading (Standardized regression weight) of the indicator variables and higher modification indices, several items were removed from the model. The process was to remove one variable at a time and re-estimate the model. Table 1 represents the acceptable fit indices after the improvement of the model.

Table 1:

Fit indices of model

Fit Indices	Recommended Value	Coefficient
CMIN/DF	<5 Preferable <3	1.521
Goodness of fit index (GIF)	>0.9	0.918
Comparative fit index (CFI)	>0.9	0.969
Tucker-Lewis Index (TLI)	>0.9	0.963
Root mean square error of approximation (RMSEA)	<0.06	0.042

Source: Sample Survey (2022)

Figure 2:*Path Coefficients*

Source: Sample Survey (2022)

The results of the path analysis about hypothesized direct relationship among independents and dependent variables are presented here.

Table 2:*Summary Results of the Direct Hypothesized Relationship*

Hypothesis	Proposed Relationship	Path Coefficient	P-value	Study Result
H ₁	DD → AP	-.162	.039	Supported
H ₂	PA → AP	-.266	.006	Supported
H ₃	T → AP	-.654	***	Supported
H ₄	W → AP	.084	.333	Not Supported
H ₅	CR → AP	.099	.100	Not supported

Source: Sample Survey (2022)

The finding concludes that the daily-life disturbance and tolerance significantly affect academic performance. The results were similar to the

study of Arefin, Islam, Mustafi, Afrin, & Islam (2017) and conclude that the daily-life disturbance and tolerance were associated with academic performance. This study found that the positive anticipation of the use of smartphones by the university students significantly affects the academic performance which contradicts the results of the survey conducted by Arefin, Islam, Mustafi, Afrin, & Islam (2017), and concludes that the positive anticipation does not affect academic performance. The researchers concludes that the cyber-oriented relationships are not a significant factor that affects the academic performance of undergraduates. This finding was related to the research finding of Arefin, Islam, Mustafi, Afrin, & Islam (2017). But it contradicts the finding of the research conducted by Raza, Yousu, Rafi, & Javaid (2020) and concludes that cyber loading of students was related to academic performance. There was no relationship between withdrawal exposure by smartphone addiction and those results are equal to the research finding of Arefin, Islam, Mustafi, Afrin, & Islam (2017)

Conclusion & Recommendations

This study was conducted to identify the relationship between smartphone addiction and the academic performance of the undergraduates. The smartphone addiction is considered in daily-life disturbance, positive anticipation, tolerance, withdrawal, and cyber-oriented relationship. The finding concludes that the daily-life disturbance, positive anticipation, and tolerance negatively affect the academic performance. Moreover, it found that the focus on work during the study, proper revision of notes, and schedule proper time for study are reduced due to the excessive smartphone usage. The majority of the undergraduates has experienced lightheadedness or blurred vision, feeling tired and lacking adequate sleep, and pain in the wrists or at the back of the neck while using a smartphone due to the excessive use of it. That indicated the smartphone addiction also affects the physical health of the students. This study finally concludes that the smartphone addiction influences the poor academic performance of undergraduates.

The students should reduce the usage of smartphone addiction and increase the learning hours per day. It is commonly known that the smartphones are useful for education. Therefore, guidance should be provided to develop the ability to use smartphones to improve learning efficiency. This study will help university students to gain an understanding on how smartphone addiction affects their academic performance and how to use smartphones more effectively in their studies.

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FACTORS INFLUENCING THE DATA USAGE FOR ONLINE LEARNING OF THE UNDERGRADUATES DURING THE PANDEMIC PERIOD (WITH SPECIAL REFERENCE TO UNDERGRADUATES OF SABARAGAMUWA UNIVERSITY OF SRI LANKA)

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Abstract

From the beginning of the year 2020, Covid 19 virus spread around the world. This global virus impacted on the daily activities of the people. The main objective of this study is to investigate the factors influencing the data usage for online learning of the undergraduates during the corona period. Researcher used second- and third-year students in SUSL as the population. There is a positive relationship between the number of workshop hours and data usage in terms of Sri Lankan Rupees. There is an inverse relationship between the family income of the students before and after the pandemic period with the data usage. Online exam hours, number of online presentation hours and online workshop hours are positively correlated with the data usage in terms of giga bytes.

Keywords: - Covid-19, Data Usage, Online Learning, Pandemic Period,
Subject Stream

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Introduction

Covid 19 is an infectious disease caused by the SARS COV-2 virus, which caused a large number of deaths in all countries. The Ministry of Education in Sri Lanka has stopped physical education and started distance learning as a precautionary measure to prevent the spread of covid 19 virus. Students used Zoom, MS teams and Google classroom apps to interact with the lecturers. The Zoom app was commonly used to deliver the university lectures to undergraduates. During the pandemic period a lot of service providers introduced a variety of Zoom packages to save data.

Covid 19 pandemic situation has impacted the entire education system, especially universities, and brought a new phase in education-learning. The learning supported with electronic technology like online classes and portals to access the courses outside the classroom is known as E-learning. (Elumalai et al 2020).

The main objective of this study is to investigate the factors influencing the data usage for online learning of undergraduates during the pandemic period by using the undergraduates in Sabaragamuwa University as a special reference.

Materials and Methods

The population of the study is based on the 2nd and 3rd year undergraduates in the Sabaragamuwa University of Sri Lanka. A stratified random sampling technique was used to select the 8.76% sample from the 2828 students in SUSL. Researcher was willing to take 240 undergraduates as a sample. The sampling unit is the 2nd year or 3rd year undergraduates in SUSL. The questionnaire sent through the internet is the only method used to collect data.

There are 21 independent variables in this study under the following three categories.

1. Demographic Factors
2. Educational Factors
3. Technological Factors

Dependent Variable of this study is the data usage which is discussed in terms of Sri Lankan rupees and Giga Bytes.

The impact of each factor on data usage in terms of Sri Lankan Rupees (RS) and data usage in terms of giga bytes (GB) was tested using a multiple linear regression model.

Results and Discussion

Table 1:

Final model of data usage in terms of RS

Term	Coefficient	P-value	VIF
Constant	1705	0.000	
Recording usage	-66.6	0.005	1.23
Online workshop hours (monthly)	11.93	0.000	1.15
Faculty (Reference: Management)			
Geomatics	94	0.056	1.43
Social Sciences and Languages	253	0.061	1.43
Agriculture	856	0.002	1.16
Applied Sciences	987	0.000	1.23
Degree Field (Reference: Management)			
ICT	651	0.007	1.59
Science	842	0.000	1.72
Arts	494	0.003	2.46
Surveying	295	0.149	1.99
Gender (Reference: Male)			
Female	135	0.233	1.17
Online platform (Reference: MS Teams)			
Zoom	187	0.337	1.17

Source: Sample survey

If recording usage is increased by 1, data usage in terms of RS will be decreased by 66.6. If monthly online workshop hours increase by 1 hour, data usage in terms of RS will be increased by 11.93. When compared to the Faculty of Management Studies, in the Faculty of Geomatics, the data usage in terms of Rs will be increased by 94. In the Faculty of Social Sciences, data usage 41 in terms of Rs will be increased by 253. In the Faculty of Agricultural Sciences, the data usage in terms of RS will be increased by 856. In the Faculty of Applied Sciences, data usage in terms of RS will be increased by 987. When compared to the Management field, students' degree field is ICT, data usage in terms of RS will be increased by 651. In the degree field of science, data usage in terms of RS will be decreased by 842. In the degree field of arts, the data usage in terms of RS will be increased by 494. In the field of Geomatics, the data usage in terms of RS will be decreased by 295. When compared to the male students, female students' data usage in terms of RS will be increased by 135. When compared to MS teams, the mostly used online platform is Zoom, the data usage in terms of Faculty of Social Sciences and Languages

RS will be increased by 187.

Table 1:

Final model of data usage in terms of GB

Term	Coefficient	P-value	VIF
Constant	4.05	0.003	
Members using the online platform	3.938	0.000	1.66
Monthly online presentation hours	0.404	0.001	2.20
Monthly online workshop hours	0.188	0.000	1.64
Degree Field (Reference: Management)			
ICT	2.07	0.585	2.52
Science	8.07	0.027	2.82
Arts	2.00	0.393	2.87
Surveying	6.49	0.043	2.46
Service provider (Reference: SLT)			
Dialog	4.72	0.606	1.37
Airtel	18.8	0.000	1.19
Hutch	13.5	0.005	1.44
Mobitel	0.74	0.793	1.39

Source: Sample survey

If the number of members using online platforms increases by 1 person, the data usage in terms of GB will be increased by 3.938. If the number of monthly online presentation hours increases by 1 hour, the data usage in terms of GB will be increased by 0.404. If the number of monthly online workshop hours increases by 1 hour, the data usage in terms of GB will be increased by 0.1884.

When compared to the management field, (degree field is ICT), data usage in terms of GB will be increased by 2.07. In the degree field of arts, the data usage in terms of GB will be increased by 2. In the degree field of surveying, data usage in terms of GB will be increased by 6.49.

When compared to SLT, the mostly used service provider is Dialog. The data usage in terms of GB was increased by 4.72. In Airtel, the data usage in terms of GB will be increased by 18.81. In Hutch, the data usage in terms of GB will be increased by 13.5. In Mobitel, the data usage in terms of GB will be increased by 0.74

Conclusion and Recommendations

In MS teams, the female students find a lot of extra facts relevant to their academic activities than the male students on online learning activities. There is an inverse relationship between ln income before covid 19 period and data usage in terms of GB. Students who use other service providers have more data consumption than the SLT users. Airtel users have the highest data usage and then Hutch, Dialog, and Mobitel have fast connections.

The researcher wants to recommend government authorities to create policies and take actions to develop the online learning of undergraduates who are in lower-income families. Most of the students use the Wi-Fi method to connect with the online lectures. But some students use a mobile hotspot to connect with the online lectures. So, we can conclude that they have no Wi-Fi facilities. The researcher wants to recommend government authorities to take actions for this.

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Track 03

**GEOGRAPHY AND ENVIRONMENTAL
MANAGEMENT**

Summary of the Plenary Speech

Quantification of Soil Erosion as an Effective Tool for Environmental Conservation and Sustainable Development

Prof. Tilak Hewawasam

Department of Geography and Center for Environmental Sustainability, University of Peradeniya



Soil, the skin of the Earth, provides a multitude of ecosystem services critical for life on earth such as agricultural production, plant growth, animal habitation, biodiversity, carbon sequestration and environmental quality which are also vital for accomplishing the United Nations' Sustainable Development Goals (SDGs), specifically zero hunger (SDG 2), climate action (SDG 13), and life on land (SDG 15). Erosion, the removal of soil from Earth's surface, impedes the SDGs; hence improving soil quality through conservation is an integral step towards achieving the SDGs.

In the natural state, there is a balance between soil formation and erosion but mostly human interventions have broken this balance leading to what is known as 'accelerated soil erosion'. If this process is allowed to continue, the productive soil layer can be lost to the present and future generations to sustain their lives. The end result of accelerated soil erosion is degraded lands and regaining its productive potential is extremely difficult. A range of measures such as biological conservation techniques, terrain structural techniques and agronomic practices are widely applied to conserve the soil. Application of such conservation measures is always based on identifying erosional hotspots, where soil erosion rates have extensively exceeded the natural rates. Quantification of natural benchmark levels (natural erosion rates and/or the rate of soil formation) was a great challenge until the isotopic techniques were developed. A key objective of this presentation is to reveal the natural erosion rates and soil production rates in the Central Highlands of Sri Lanka, quantified through the measurement of in-situ produced cosmogenic nuclides in mineral grains with mass balance approaches. Then, the soil erosion rates derived from field measurements over short-term time scales, in anthropogenic landscapes, are compared with natural benchmark levels to show the magnitude of soil erosion in the hilly regions of Sri Lanka.

The Central Highlands of Sri Lanka is considered as the heart of the country, where all the rivers originate and supply water for hydropower, irrigation,

engineering and domestic requirements. The region is located in the wet and intermediate climatic zones of the country. It is believed that a large part of the Central Highlands was completely covered with natural forest, mainly montane rain forests, before the British conquest in the early 19th century. Subsequently, the forest cover was cleared on a large scale for plantation agriculture leaving only segregated patches of natural rain forests at higher elevations. The soil production rates of the regolith in the Central Highlands were quantified as 10 mm/ky by measuring in-situ produced cosmogenic nuclides (Hewawasam *et al.*, 2013). The natural erosion rates in the Central Highlands, which integrate erosion over the $10\text{-}20 \times 10^4$ time scale, vary from 4 to 45 mm ky⁻¹. In contrast, short-term erosion rates derived for small catchments in Walawe, Kalu and Mahaweli Rivers using sediment yield data over a 1-10 y time scale range from 50 to 800 mm ky⁻¹. Comparison of these rates estimated over the two time scales clearly illustrates that erosion in the Central Highlands has increased up to 10 to 100 times over the natural benchmark levels due to recent increase in erosion by anthropogenic activities. When these short-term erosion rates are compared directly to the soil production rates determined at the regolith site, it can be concluded that soil is being lost at a rate of up to 100 times over its production rates. Hence, this comparison highlights the significance of implementing soil management activities in the human disturbed catchments to save this non-renewable resource of soil (Hewawasam *et al.*, 2003 and Hewawasam, 2010).

In order to conserve soil, different types of conservation measures are applied at catchment scale, but their effectiveness is rarely evaluated by quantifying stream loads. Therefore, the second attempt of this presentation is to illustrate the effectiveness of soil conservation strategies with the aid of actually measured sediment loads in the stream before and during of two soil and water conservation projects in Sri Lanka. Mahaweli Authority of Sri Lanka embarked on two soil conservation projects in the Upper Uma Oya catchment, one of the tributaries of the Mahaweli River, from 1995 to 2005 along with monitoring of sediment yields in the stream. Soil loss measurements in the agricultural plots of the catchment and sediment yields in the stream measured before 1995 have revealed that soil erosion is intense in the catchment. In contrast, sediment yield measurements in the stream, after the implementation of conservation programmes in 1995, revealed that the suspended load in the stream had been reduced by a factor of five, emphasizing the effectiveness of soil conservation measures applied (Diyabalanage *et al.*, 2017).

Generally, erosion rates of agricultural plots or catchments are assessed in the field by applying different field based methods that integrate erosion over short-term periods or advanced techniques such as application of cosmogenic nuclides that integrate erosion on a long-term time scale. However, all of these

methods are laborious, and hence it is challenging to apply them at a wider spatial scale to cover more field sites. Therefore, the tendency is to apply empirical models such as the Universal Soil Loss Equation (USLE), Revised Universal Soil Loss Equation (RUSLE) and Modified Universal Soil Loss Equation (MUSLE) to predict rates of soil loss in croplands and catchments as an indirect approach. The advantage of this approach is that it can be applied to any geographical area as a rapid tool that can be integrated with GIS/RS-based methods. This method has become very popular, even in Sri Lanka, but its key limitation is the lack of validation in the field. Therefore, the final aim of this presentation is to validate the RUSLE model for Sri Lankan settings and then to apply it for soil erosion hazard mapping. Soil erosion hazard maps are enormously useful for policy makers for effective land management and also to identify erosional hot spots rapidly for conservation. In this study, soil erosion of six sub-catchments of the Mahaweli River of Sri Lanka was modeled with RUSLE in the GIS environment and their rates were compared with field-based actually-quantified measurements. The mean modeled soil erosion rates of the catchments were within 0.12 and 7.70 t ha⁻¹ y⁻¹, whereas the field-based rates range from 1.14 to 15.83 t ha⁻¹ y⁻¹. Most importantly, modeled erosion classes of the sub-catchments were comparable with localized erosion rates quantified from plot experiments. Therefore, it can be concluded that erosion rates calculated from the model and field-based observations were on the same order. Hence, the use of RUSLE for soil erosion hazard mapping is recommended for Sri Lankan settings (*Somasiri et al., 2021*).

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URBAN GROWTH PROCESS OF GREATER KANDY DEVELOPMENT AREA: AN INVESTIGATION OF PAST, PRESENT AND FUTURE SCENARIOS OF GROWTH PATTERN

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Abstract

The purpose of conducting this study is to identify present and past spatiotemporal growth patterns of urban expansion in the Greater Kandy Development Area (GKDA). In addition, a comprehensive definition to detect the urban area by interacting with several geospatial data was developed. Specifically, Landsat images, nighttime light data, carbon data, population grid data, and schools, hospitals, and roads data were employed. Data demonstrated that the dynamic pattern of urbanization in GKDA resulted in progressive growth in built-up regions while lowering non-built-up areas. A high concentration of built-up areas along the road is vital by showing ribbon-type urban growth. Based on the developed definition, Aluth Pallekale and Madawala GNDs can be identified as "emerging urban nodes" in the area.

Keywords: GKDA, Land use/cover changes, Urban growth, Projection, Urban definition

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Introduction

The population living in urban areas in developing countries in 2018 was 50.6 percent and it will increase up to 65.6 percent in 2030. The present trend reveals that a higher level of urban growth will take place in developing countries. In parallel to this pattern, Sri Lanka being a developing country exhibits rapid urban growth mainly concentrating on the Colombo Metropolitan Region (CMR) in the urban landscape.

It is reported that the urban growth of Sri Lanka was prompted after the British arrival and tended to spread into the peripheral areas leading to “messy” urbanization. Today, Sri Lanka's urbanization is characterized by sprawl and ribbon development patterns, with signs of rapid expansion on the periphery of the CMR and along major transportation corridors (Maskorala and Daawansa, 2015) The World Bank (2014) estimated that up to one-third of Sri Lanka's population lives in rural areas with urban characteristics

UDA has launched a new project titled "Urban Area Development" to assist city and town dwellers in managing the negative impacts of suburbanization. The current policy environment in Sri Lanka focuses a heavy emphasis on the development of secondary cities. In addition to the western region, the continuous policy emphasis aims to develop the Greater Kandy Development Area, which stretches beyond the Kandy Municipal Council's 26.8 square kilometers and 45 Grama Niladari Divisions to over 210 square kilometers (Greater Kandy Development Plan, 2019). The proposed area for the current study has not been investigated properly. Not just Kandy, but also the Greater Kandy Area, is situated in an extremely environmentally fragile region. As in developed nations, thorough monitoring of the physical growth of urban areas is essential in this region. Several issues may arise if this environmentally sensitive area is degraded by urbanization. But there has never been a proper study to track and forecast the growth of urban centers in this region. This is why there are issues with urban growth in this region. This study examines the previous growth of the Greater Kandy Development Area and predicts its future growth. On the basis of these findings, a new method to assist and manage urban expansion will be developed in this region. Specifically, the methods employed to conduct this study will assist in predicting the urban expansion of another city.

Material and Methods

This study was based on secondary data. This study used secondary data from websites and literature reviews. Landsat data was downloaded through the official website of the United States Geological Survey (USGS). The nightlight data was obtained from NASA, Earth Science and Applied Science's

official website. The population grid data were collected from the official website of NASA Earth Data: Socioeconomic Data and Applications Center (SEDAC). The carbon data (CO₂ data) was obtained from the Center for Global Environmental Research's (CGER) official website. Data on urban functions, especially schools and hospitals, were collected by the national data archive. Data about roads were collected using 1:50000 metric maps.

LULC mapping is the most widely used in remote sensing for studying changes (Subasinghe et al.,2016). Using Landsat imagery from three selected years (2005, 2011, and 2020), LULC maps were created to examine the land-use changes. This process mainly includes several steps. Classification of Landsat Images is the first step. The pixel-based-supervised classification was employed to generate 3 land use maps of selected years. The accuracy of each land use map was checked by using randomly selected 100 points for each year. For this, Google Earth TM images were used. Using a particular formula, land use changes for 2005–2011, 2011–2020, and 2005–2020 were identified.

Predictions were made for the Greater Kandy Development Area using TerrSet software's multi-layer perceptron neural networks (MLP NN) and CA-Markov modules. These modules can be used to forecast future land usage and cover from one point in time to the next. By combining multi-criteria, particular definitions for urban areas were prepared. Nighttime Light Data (NLTD), carbon data (CO₂ data), distance from schools, distance from roads, and distance from hospitals were the criteria used to prepare the definition.

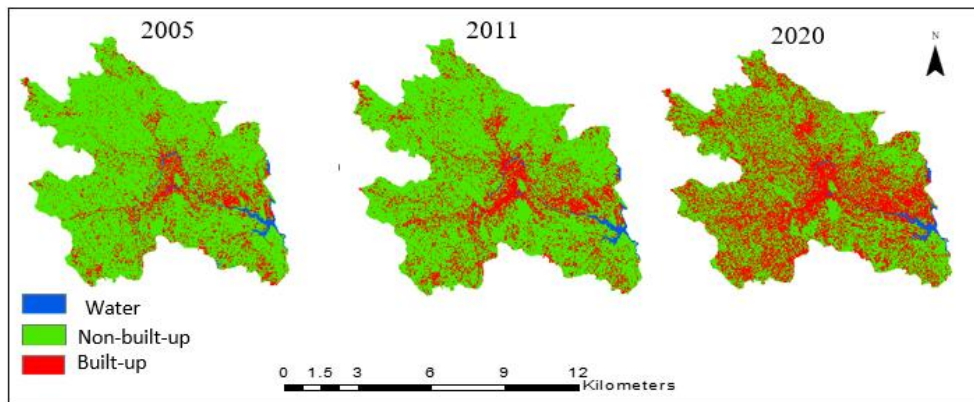
Results and Discussions

According to the analysis, after 2011, the urban growth in GKDA has become more visible. (Figure 1)

The east part of the city shows the start of the development of built-up areas. In 2005, 489.34 thousand hectares of land was non-built-up, and that fell to 462.36 thousand hectares or 77.45% in 2011. In 2020, it continued to decline to 350.99 thousand hectares or 58.79% of the total area.

Figure 1:

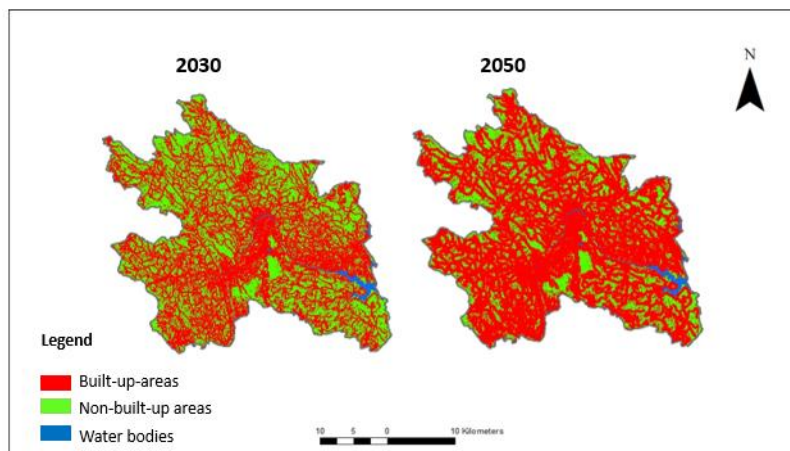
Land Use/Land Cover (LULC) changes in GKDA in 2005, 2011 and 2020



The region located in the center of the study area exhibits the greatest increase in built-up areas. Of the study areas, the urban areas are located in the middle, but urbanization is more prevalent in the south and west. When non-built-up regions are taken into account, the majority of forest areas outside of protected zones have deteriorated significantly.

Figure 2:

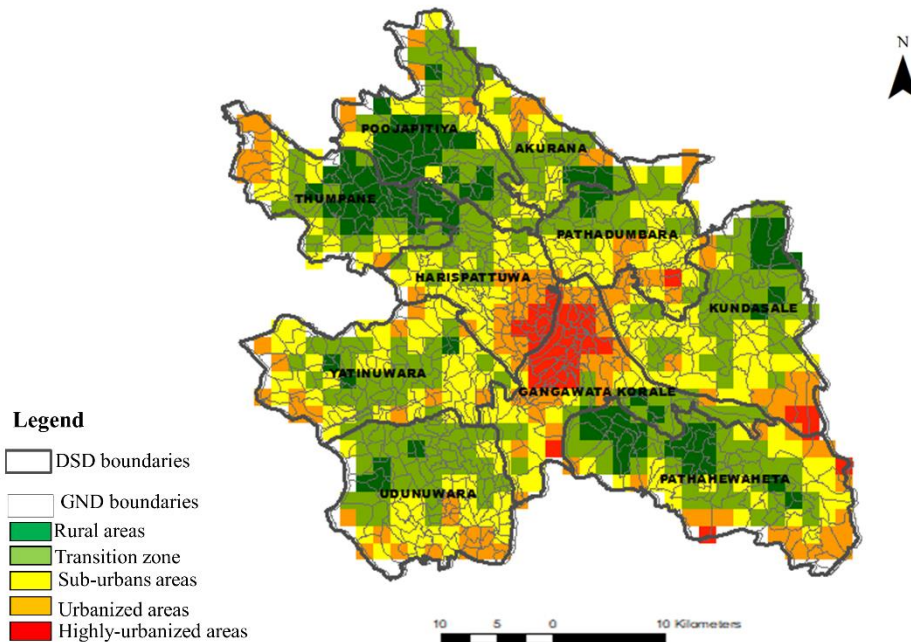
Predicted LULC maps of GKDA for years 2030 and 2050



In 2011, 77.45% of the land, or 462,36 thousand hectares, was undeveloped in the GKDA. After the year 2020, water bodies exhibited neither gain nor loss. The total land area will increase to 338,57 thousand hectares by 2030. In 2050, 447,61 thousand hectares, or 74.98% of land area, will be included.

Figure 3:

Spatial distribution pattern of urban areas in GKDA according to the newly created definition



In GKDA, Kandy MC is the only municipal council area. Almost all the land extent within the city boundary shows at least suburban characteristics (Figure 3). The large area of the northern part of the Udunuwara Divisional Secretariat Division (DSD) demonstrates transition characteristics. As a result of urban growth exceeding the city boundaries, urban growth starts to spread towards the adjacent Harispattuwa DSD. Aluth Pallekale Grama Niladari Division (GND) indicates highly urbanized characteristics and surrounding areas also show urbanized as well as suburbanized characteristics.

Conclusion and Recommendations

Potential migrants from rural to urban areas find Sri Lanka's cities unappealing. Sprawl and development patterns are a representation of their "messy" urbanization. As Sri Lanka's first completely unbounded metropolis, Kandy city is starting to grow beyond its physical confines. The amount of non-built-up areas has been replaced by the expansion of developed land as a result of the rise in urbanization.

The growth of the city has increased the demand for land. The Yatinuwara, Akurana, and Poojapitiya DSDs frequently experience flash floods. 79 % of

historic structures are found in the city center, according to the World Heritage Committee. A development plan with a clustered pattern of growth (2008–2020) was envisaged in the Greater Kandy Development Plan. The LULC maps unequivocally show how the city center is becoming a business concentration.

There are many educational institutions located all across the city of Peradeniya. The central business district of the city is where the majority of KMC's urbanized areas are located. Numerous urban problems have been caused by urban sprawl and ribbon development along important transportation lines. Due to the underuse of natural resources, rural economies are experiencing economic stagnation. The only municipal council area in the Greater Kandy Area is Kandy MC.

Only a few sites show signs of suburbanization, whereas the majority of the remaining regions display characteristics of urbanization. It is possible to disregard growth that takes place outside of metropolitan zones in urban peripheries as not being urban.

Due to the lack of adequate monitoring of urban expansion in Sri Lanka, Kandy can be identified as the second unbounded city in Sri Lanka. There is a special need for a new policy to further control the growth of the city. It is essential to plan a proper urban defense system.

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IDENTIFICATION OF GROUND WATER POTENTIAL ZONES USING GEOGRAPHIC INFORMATION SYSTEMS (GIS) WITH SPECIAL REFERENCE TO PUTHUHAPUWA GRAMA NILADHARI DIVISION

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Abstract

The objectives of the study were to identify the water scarcity in the Study area and to identify the ground water potential zones by generating a map of the groundwater potential zones in the study area using GIS as a solution. The study identified that people in the area are facing physical water shortages and the generated groundwater potential zone map identified 112095m² of area has a good groundwater potential, 683700m² of landscape shows a moderate groundwater potential and 229066 m² of area has a very low groundwater potential level. GIS is very efficient and effective software in identifying ground water potential zones and in case of inadequate use of water from surface water sources, it is advisable to use ground water sustainably as a solution to water shortages.

Keywords: *GIS, Groundwater Potential Zones, Reclassify, Water Scarcity, Weighted Overlay*

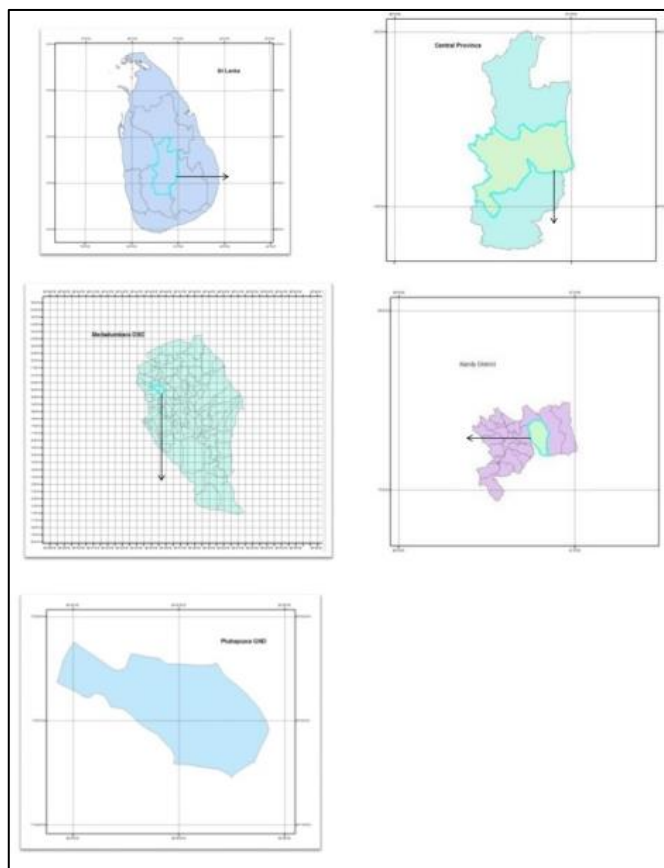
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Introduction

Remote sensing and GIS play an important role in groundwater exploration and assessment and are widely used in groundwater studies related identification, monitoring, assessment, conservation and various other fields [1]. Through this study, as a solution to the shortage of water in the surface water sources in the area, the groundwater potential zone map has been created using Geographical Information System to identify the groundwater potential zones and its validity has been confirmed using GPS technology. Puthuhapuwa Grama Niladhari Division can be identified as one of the 93 Grama Niladhari Divisions of the Medadumbara Divisional Secretariat Division in the Kandy District of the Central Province of Sri Lanka.

Figure 1:

Map of the study area

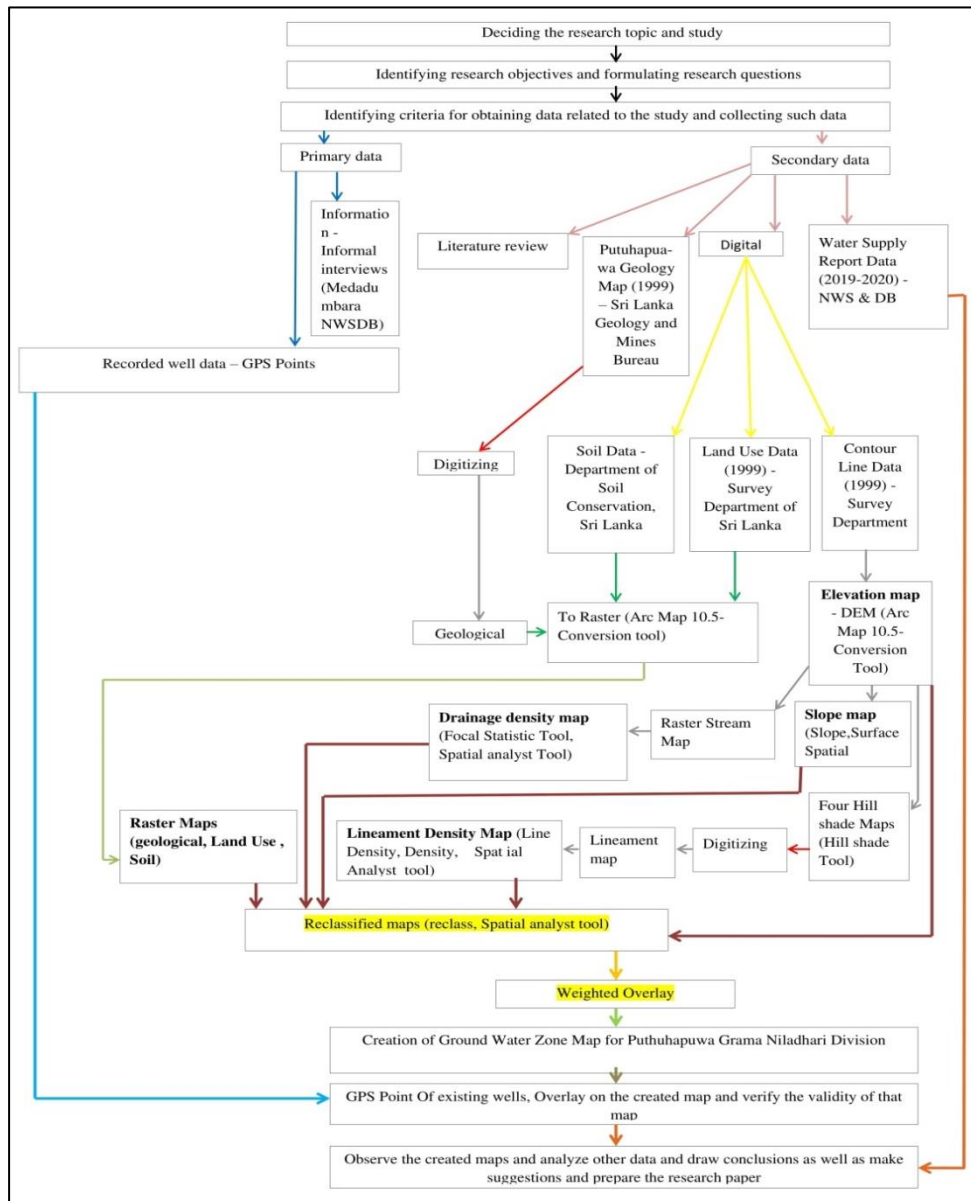


Source: 1:50000 Digital data of the Survey Department of Sri Lanka, 1998

Material and Methods

Figure 2:

Methodology of the study



Source: Created by author

Generating reclassified maps

The thematic maps were then generated separately as reclassification maps by adding weights to each subclass of thematic maps, as shown in Table 1, using Reclassify tool in GIS.

Table 1:

Weights assigned to subclasses of factors affecting groundwater potential zones in the study area

Factors (Theme Map)	Subclasses	Contribution to groundwater creation	Weight
Geology	Quartzite	good	3
	Marble	Very good	4
	Charnockytic biotite gneiss	Moderate	2
	Alkaline feldspar granite	Weak	1
Soil	Reddish brown latasolic	good	2
	Immature brown loamy	Moderate	1
Slope	0° – 6.459029703°	Very good	5
	6.459029704° – 15.76003247°	Good	4
	15.76003248° – 23.51086812°	Moderate	3
	23.51086813° – 39.27090059°	Weak	2
	39.2709006° – 65.88210297°	Very Weak	1
(m ^{-m2})			
Lineament density	0 – 0.005154734	Very good	1
	0.005154734 – 0.013283354	Good	2
	0.013283354 – 0.021213715	Moderate	3
	0.021213715 – 0.03013537	Weak	4
	0.03013537 – 0.050556049	Very Weak	5
Elevation	600 – 658.0392157 m	Very good	5
	658.0392158 – 695.6862745 m	Good	4
	695.6862746 – 730.1960784 m	Moderate	3
	730.1960785 – 763.1372549 m	Weak	2
	763.137255 – 800 m	Very Weak	1
Land use	Home garden	Good	6
	Paddy	Very good	7
	Coconut	Moderate	4
	Shrubs	Weak	3
	Tea	Very Weak	2
	Cemeteries	Very Very weak	1

	Open forest	Good	5
	(m ^{-m2})		
Drainage	1 – 52	Very good	5
density	52.00000001-120	Good	4
	120.00000001-204	Moderate	3
	204.00000001-302	Weak	2
	302.00000001- 432	Very Weak	1


Source: Created by author

Weighted Overlay

The thematic maps reclassified by Weighted Overlay Tool in GIS were weighed in percentages according to their contribution (impact) to the creation of groundwater potentials and each reclassification maps were integrated.

Table 2:

Percentage of weights assigned to factors affecting groundwater potential zones in the study area

Factors (Reclassified Theme Map)	Impact On Ground water Formati on	Satti's Scale (Fract ions)	Satti's Scale (Decimal)	Impact (%) = (Satti's Scale / Collection) * 100 (Rounded To the Nearest Decimal Place)
Geology	High	1	1	36
Soil		1/2	0.5	18
Slope		1/3	0.33	12
Lineament Density		1/3	0.33	12
Elevation		1/4	0.25	9
Land Use	Law	1/5	0.2	7
Drainage Density		1/6	0.16	6
			Total=2.58	Total = 100

Source: Created by author

The percentage of constituents affecting the ground water potential zones was calculated based on Satti's analytical hierarchy process ^{[2].}

Confirmation of the validity of the groundwater potential zone map of the study area

Obtained from the existing water harvesting wells as GPS Points by Smart phone, the extracted GPS Point and the created groundwater potential zones were retrieved on the map.

Results and Discussion

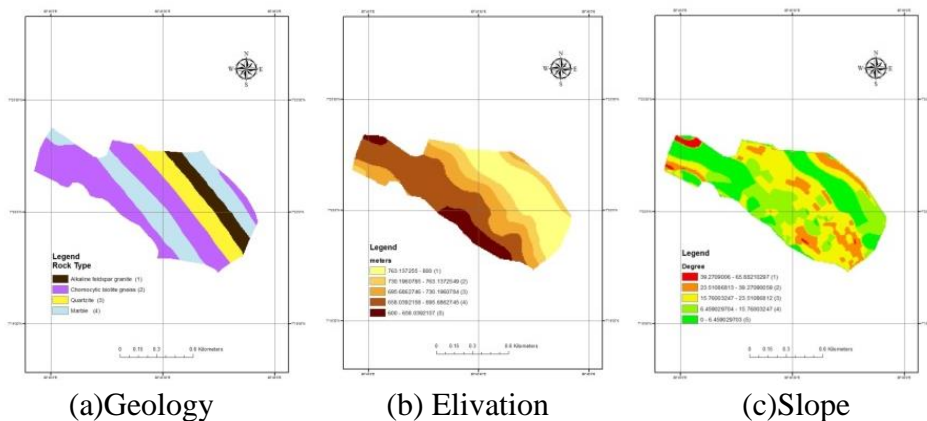
Water scarcity in the study area

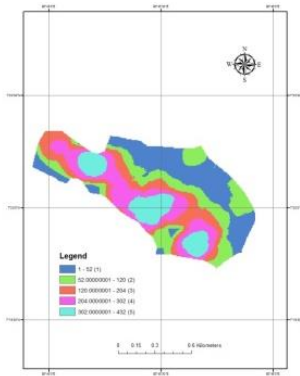
According to the information obtained by the Medadumbara Water Supply and Drainage Board, this area is facing a water problem because the piped water supply to this area is not continuous.

Factors influencing the formation of groundwater potential zones in the study area

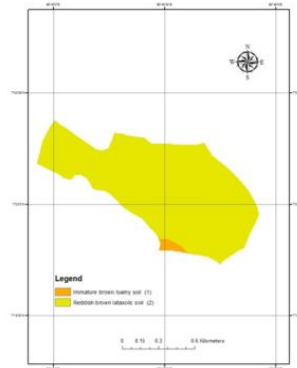
Figure 3:

Factors influencing the formation of groundwater potential zones in the study area

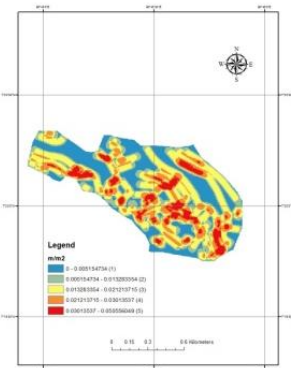




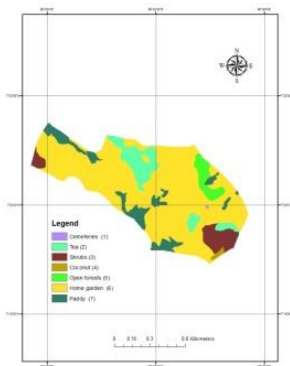
(d) Drainage Density



(e) Soil Type



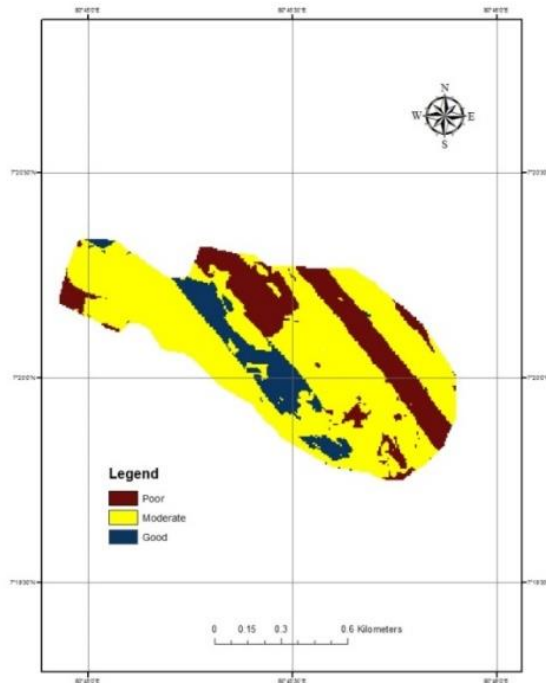
(f)Lineament Density



(g) Land Use

Note. Geology (a), elevation (b), slope (c), drainage density (d), soil type (e), lineament density (f), and land use (g) factors have led to the creation of groundwater potential zones in the study area. (7 reclassification thematic maps were created using GIS based on the sub-characteristics of each of these factors contributing to the creation of groundwater potential zones.)

Source: Putuhapuwu Geology Map of Sri Lanka, Geological Survey and Mines Bureau, Digital Data of the Survey Department of Sri Lanka, 1999

Groundwater potential zones**Figure 4:***Groundwater potential zones of the study area (h)*

Source: Created by author

(h) reveals three groundwater potential zones in the area as good, moderate, and poor.

Table 4:*Areas of land belonging to groundwater potential zones*

Ground water potential zones	M ² * pixel	Count of	Area (m ²)
Good	53 * 2115		112095 m ²
Moderate	53 * 12900		683700 m ²
Poor	53 * 4322		229066 m ²

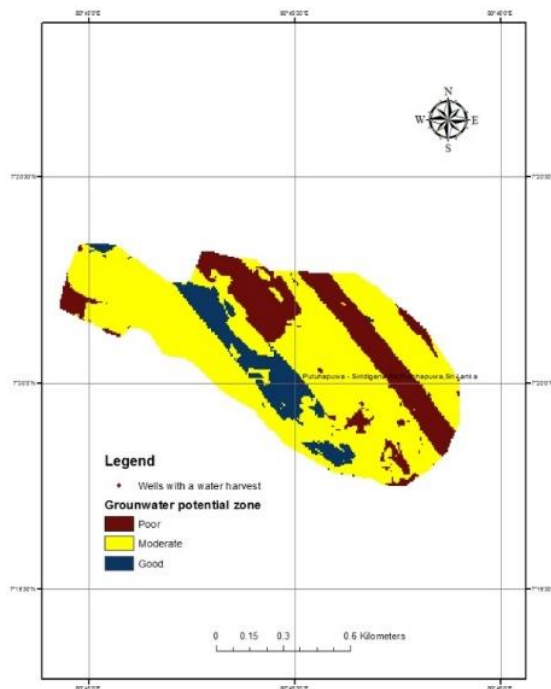
Note. *The areas belonging to each zone are identified on the basis of the arrangement of pixels representing each zone in the map attribute table.

Source: Created by author

Check the validity of the created map

Figure 5:

Wells in the groundwater potential zones of the study area (i)



Source: Created by author

According to the (i), the groundwater potential zone map created has high validity and accuracy because the well with existing water yield in the area is located in the good groundwater potential zone map of the groundwater potential zone map.

Conclusion and Recommendations

A long-term solution to water scarcity in the area is to develop a system to sustainably extract water from the identified groundwater potential zones in the study area by the responsible agencies. Geographic information system technology was a very efficient and useful tool for identifying groundwater potential zones in this area, and based on that, suitable locations for withdrawing groundwater could be identified with high accuracy, so it can be used in identifying groundwater potential zones with high efficiency and accuracy. GIS can be used as a tool. Accordingly, GIS works as an efficient

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tool that provides highly accurate results with less time and cost in identifying groundwater potential zones, so this geographic information system technology is very suitable in identifying groundwater potential zones.

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SPATIO-TEMPORAL DISTRIBUTION PATTERN OF DENGUE IN BADULLA DIVISIONAL SECRETARIAT DIVISION, SRI LANKA

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Abstract

The research focused on analyzing the spatio-temporal distribution pattern of the dengue epidemic in the Badulla Divisional Secretariat Division (DSD) in the Badulla District. Accordingly, 29 Grama Niladhari Divisions (GNDs) were considered for the study. Data of the recorded dengue cases in the study area were obtained from the secondary sources of the Medical Officer of Health (MOH) for the years 2015-2019. When considering the Average Nearest Neighbor Analysis, the spatial distribution of the households of the dengue patients represents a clustered pattern under the 99% confidence level. The Kernel Density Estimation revealed that the dengue hotspots are seen in the western part of the study area and more than 70% of the cases have been reported in the urban domains every year. The year 2017 was the most vulnerable, representing about 44% of the total cases. While, 2019 was the second in order, representing about 32% of the total cases. High population density, and improper solid waste disposal methods are the major factors of the vulnerability of the epidemic.

Keywords: *Average Nearest Neighbour Analysis, Dengue Epidemic, Hotspots, Spatial Distribution, Temporal Distribution*

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Introduction

Sri Lanka being a tropical country has various mosquito-borne infectious diseases and among them, dengue could be considered as the most vulnerable disease. According to the National Dengue Control Unit in Sri Lanka, the total dengue fever cases were 105,049 in 2019, 31,162 cases in 2020, and 25,067 cases in 2021. It has become a nationwide and year-round epidemic in the country due to the unavailability of the dengue fever vaccine. With this background, the research focused on analysing the temporal and spatial distribution of the dengue epidemic in the Badulla Divisional Secretariat Division (DSD) in the Badulla district in Sri Lanka.

The importance of this research is that it represents urban, semi-urban, and rural areas of the Badulla DSD. Accordingly, the research selected 13 Grama Niladhari Divisions (GNDs) governed by the Badulla Municipal Council and another 16 GN divisions governed by the Badulla Pradeshiya Sabha. Also, most of the research in terms of the dengue epidemic in Sri Lanka has been done from a medical perspective and only a few research could be found from a geographical perspective. The present research also focused on a geographical perspective study on identifying the spatial and temporal behavior of the dengue epidemic in the Badulla DSD.

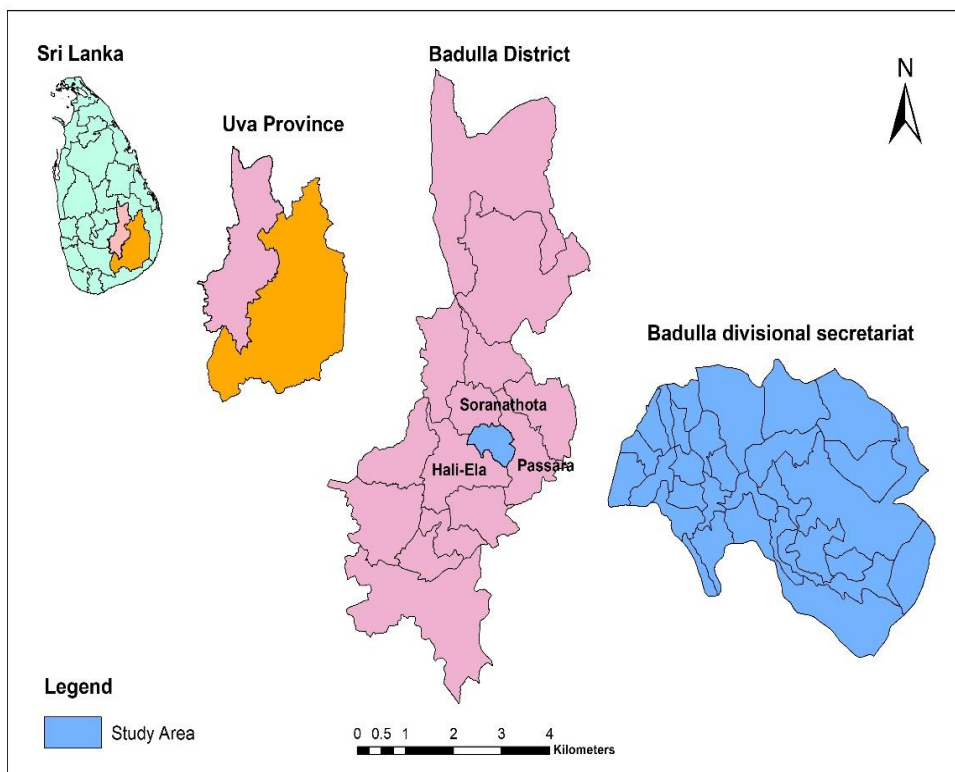
Material and Methods

Objectives of the Study

The research aimed to analyse the temporal and spatial patterns of the transmission of the Dengue epidemic in the Badulla DSD in the Badulla district (Figure 1). Hence, the objectives of the study were to analyse the temporal distribution pattern of the dengue epidemic during the period 2015-2019 and to identify the spatial distribution pattern of the dengue epidemic in the year 2019.

Figure 1:

Location Map of the Badulla DSD in the Badulla District



Source: Prepared by the Authors using ArcGIS 10.1 software.

Methodology

The data for the research were obtained from the secondary data sources of the Medical Officer of Health (MOH), Badulla. The percentage method and ArcGIS 10.1 were used to analyse the temporal distribution pattern of the dengue epidemic. The Average Nearest Neighbor Analysis and the Kernel Density Estimation method were used to identify the spatial distribution patterns of the dengue epidemic. Figure 1 shows the study area of the study.

Results and Discussion

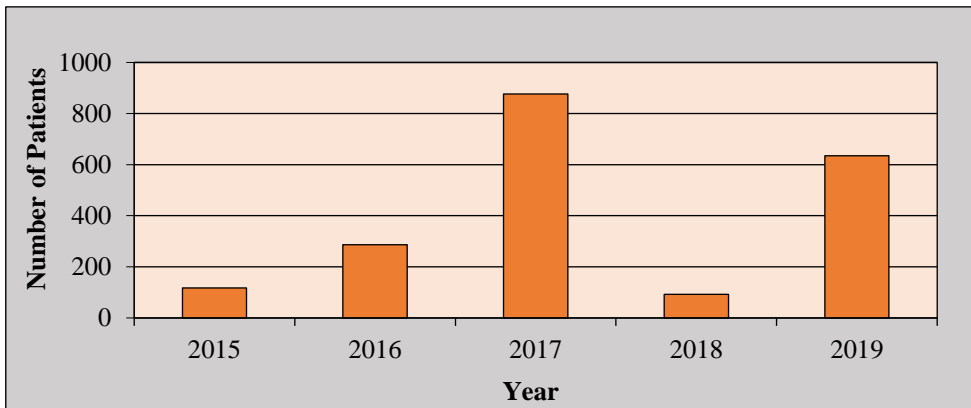
Temporal Distribution Pattern of Dengue in the Badulla DSD

Figure 2 shows the temporal distribution pattern of the dengue epidemic in the Badulla DSD during the period 2015-2019. It could be identified that, within the considered period, the highest cases were reported in 2017, which represented about 44% of the total cases. The year 2019 had become the

second highest, which represents about 32% of the total cases within the period considered. The minimum cases were reported in 2018 and represented only 5% of the total cases.

Figure2:

Number of Dengue Cases in Badulla DSD During the Period 2015-2019

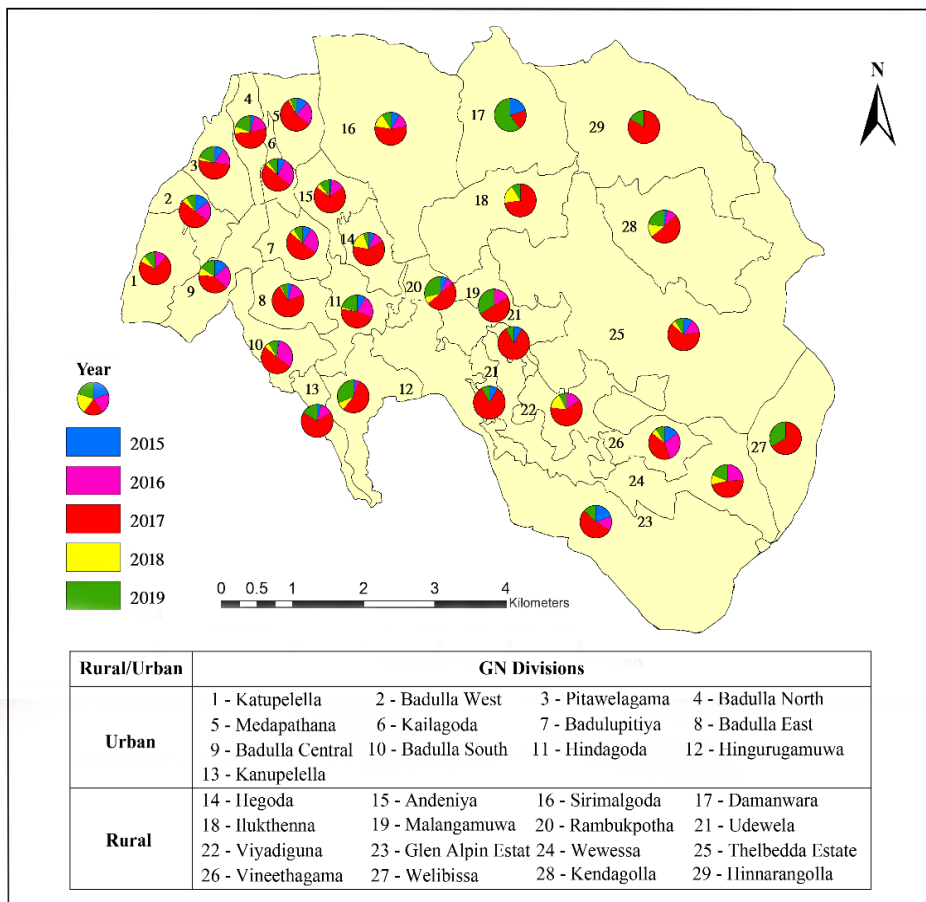


Source: *Prepared by the Authors based on Secondary Data of the MOH, Badulla*

The research also found that all the reported dengue cases were from the urban divisions and, in 2015 and 2016, the majority of them were from the Badulla central urban area. Figure 3 represents the spatial distribution of the dengue epidemic in the Badulla DSD during the period 2015-2019. It is important to mention that Higurugamuwa GND reported the highest number of cases in the years 2017, 2018, and 2019.

Figure 3:

Number of Dengue Cases in the GNDs in the Badulla DSD for 2015-2019



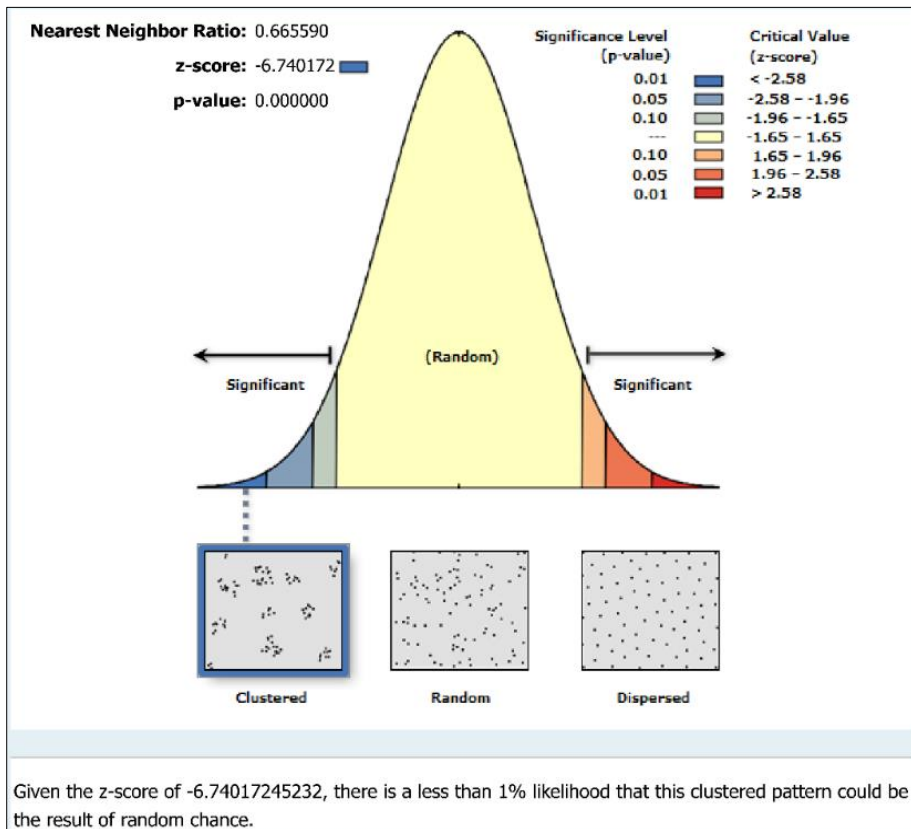
Source: Prepared by the Authors based on Secondary Data of the MOH, Badulla

Spatial Distribution Pattern of Dengue in the Badulla DSD

According to the results obtained from the Average Nearest Neighbour Analysis performed using ArcGIS 10.1, the spatial distribution of the households of the dengue patients represents a clustered pattern at the 99% confidence level (Figure 4).

Figure 4:

Results of the Average Nearest Neighbor Analysis

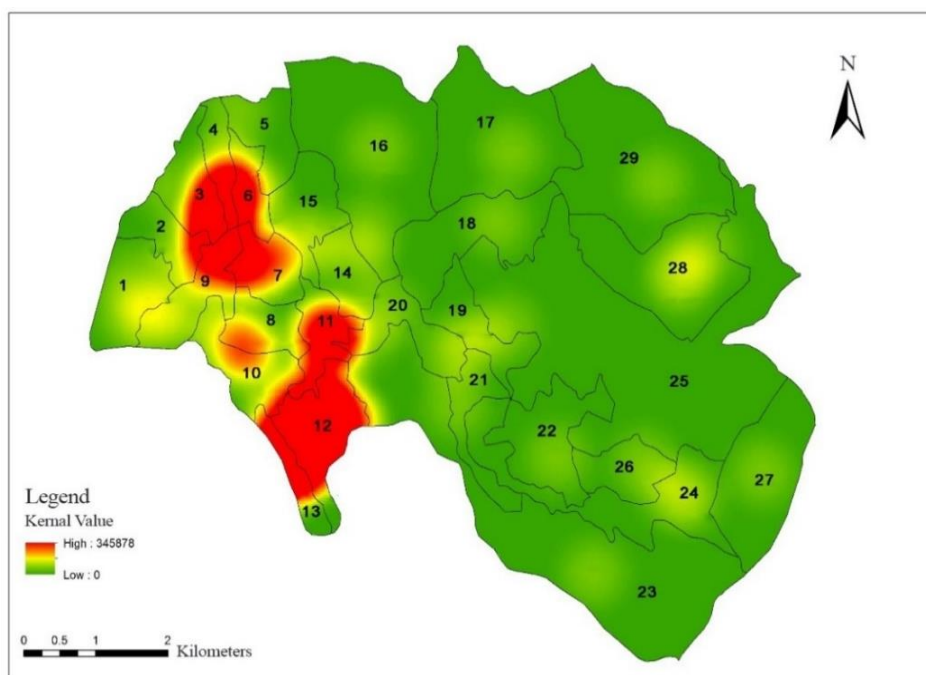


Source: *Prepared by the Authors based on Secondary Data of the MOH, Badulla*

A hotspot analysis has been performed using the Kernel Density Estimation method to identify the concentration of dengue cases in the study area in 2019 (Figure 5). The results of the hotspot analysis show that the distribution of dengue cases in 2019 is concentrated in the western parts of the Badulla DSD.

Figure 5:

Spatial Distribution of Dengue Cases in 2019 in the Badulla DSD in 2019



Source: *Prepared by the Authors based on Secondary Data of the MOH, Badulla*

Conclusion and Recommendations

According to the spatial distribution pattern of the dengue epidemic in the Badulla DSD in 2019, the western half of the study area could be identified as the hotspot area of the epidemic. As identified in the Average Nearest Neighbour Analysis, the spatial distributions of the households of the dengue patients represent a clustered pattern at the 99% confidence level. Temporal distribution patterns of the dengue epidemic in the Badulla DSD during the period 2015-2019, more than 70% of the cases have been reported in the urban domains every year. Among the total cases of 2008, about 75% were reported in 2017 and 2019, 44% and 32% respectively, and most of the higher numbers were found in urban areas. High population density, and improper solid waste disposal methods in the urban domains are the major factors of the vulnerability of the epidemic therefore, the research suggests vigorous dengue prevention methods especially in the municipal council area, proper solid waste disposal methods, breeding predators of mosquitoes (butterfly,

dragonfly, etc.), and continuous community awareness programs in the study area.

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COMMUNITY PERCEPTION ON RAINFALL VARIABILITY IN THE KURUWITA DIVISIONAL SECRETARIAT IN RATNAPURA DISTRICT

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Abstract

The study aimed to analyse the community perception of the rainfall variability in the Kuruwita DSD since climate change-induced adverse weather effects are common in the area. The study is based on the primary data collected using a structured questionnaire considering 12 Grama Niladhari Divisions (GNDs) in the Kuruwita DSD. As revealed by the study, the majority of the sample population is aware that the rainfall pattern has changed in the area (70%) rainfall is not received in real-time (55%) means that the seasonal rainfall pattern in the area has changed, and high intensity of rainfall (58%) in the area. They have experienced an increasing number of rainy days per year, therefore a high amount of rainfall (77%). Comparatively, people who are living in the higher latitudinal areas are more knowledgeable about the rainfall variability than those in the lower latitudinal areas. The study suggests further research on community mitigation and adaptation methods to cope with rainfall variability.

Keywords: *Community Perception, Rainfall Variability, Kuruwita DSD, Seasonal Rainfall Pattern, Rainy Days*

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Introduction

Because of the location in the wet zone, Ratnapura district receives year-round rainfall and also faces the windward side of the central highland experiencing relatively high rainfall, especially during the southwest monsoon season. Extreme events of rainfall led the area to flood disaster and the researchers found that high intensity of rainfall and frequent floods during the last two decades have become a common feature in the area. Hence, identifying mitigation and adaptation methods to minimize the negative impact of rainfall variability and flood disaster is uttermost important. Understanding community perception of rainfall variability should be the initial stage of mitigation and adaptation planning. Therefore, this research aims to identify the community perception of seasonal rainfall variability in the Kuruwita Divisional Secretariat in Ratnapura District. In the literature, it could be seen that Navaratne et al. (2019) focused on understanding the perception of rainfall variability of the owners' small-scale tea plantations in Sri Lanka, while Ranasinghe (2019) focused on the paddy farmers in Sri Lanka. Both researchers pointed out that the local community has a clear perception of the rainfall variability in their living areas, however, their adaptative capacity to rainfall variability is low due to the lack of external support from the government and non-government agencies.

Objectives

To analyse the community perception of rainfall variability in the Kuruwita DSD.

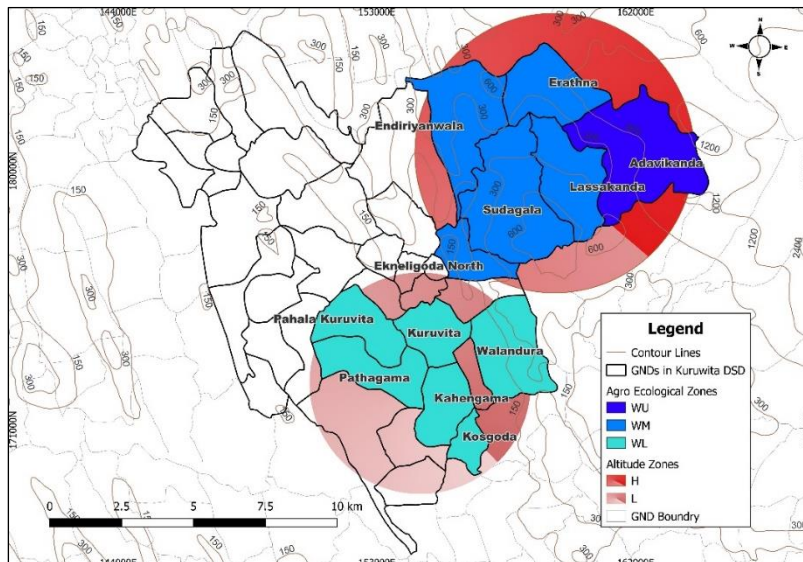
Material and Methods

Data and Sampling Method

The study is based on the primary data collected using a structured questionnaire considering 12 Grama Niladhari Divisions (GND) in the Kuruwita DSD. Approximately, 7293 households are located in the GND s, and among them, 120 households were considered as the sample based on the agro-ecological regions classification in Sri Lanka. Selected GNDs represent the altitudinal zones of Sri Lanka: Low-country, Mid-country, and Up-country. In the study, the GN divisions that are located in the Mid-country and Up-country named the high altitudinal zone (H) and Low-country considered the low altitudinal zone (L) (Figure 1) considering the extreme rainfall induces hazards; landslides are prominent in the Mid-country and Up-country and flood hazard is the common features in the Low-country.

Figure 1:

Study Area



Source: Based on the data of the Survey Department of Sri Lanka, 2018

Methods of Data Analysis

Open questions that are examined through the questionnaire are under the Likert's 5-point rating scale and the 'Mode' of the calculation is considered to verify the perception level of the community in terms of rainfall variability. Mann-Whitney U Test and Spearman's Rank Correlation Coefficient were also used to confirm the statistical significance of the analysis.

Results and Discussion

Eight questions were posed to gauge the community's perceptions about the seasonal rainfall variability in their living area and the results of the Likert Rating Scale are presented in Table 1. Those questions are comparable with the results of the research enabled in terms of the rainfall variability in Sri Lanka.

Table 1:*Community's Perception of Rainfall Variability*

Number	Statement	Likert's Scale					
		1	2	3	4	5	Total
1	Rainfall pattern has changed in the area	4	6	20	84	6	120
2	Rainfall receives in real time	7	66	28	19	0	120
3	High intensity of rainfall	1	14	30	69	6	120
4	The number of rainy days per year has increased	1	8	12	93	6	120
5	The number of days without rain has increased	2	80	19	16	3	120
6	The amount of rainfall received in a year has increased	1	11	13	93	2	120
7	In the Ratnapura district, flood events have increased compared to the past	1	15	20	81	3	120
8	In the Ratnapura district, landslide events have increased compared to the past	2	6	23	86	3	120

Source: Field Survey Data, 2022

As seen in Table 1, about 70% of the total sample agrees with the view that the rainfall pattern has changed in the area and 55% disagree with the idea that rainfall receives in real-time; this means that the seasonal rainfall pattern in the area has been changed. People are experiencing a high intensity of rainfall as agreed by 58% of the sample. A similar percentage of the sample (77%) agreed with the idea that the number of rainy days per year has increased as well as the increased amount of rainfall per year, therefore did not agree (67%) with the idea of the days without rains within a year has increased. Responses on increasing flood disasters and the occurrence of landslides in the recent past showed 67% and 72% respectively.

Identifying the Community Perception of Rainfall Variability Based on Altitudinal Zones

As depicted in Figure 1, altitudinal zones based on community perception of rainfall variability were analyzed using the Mann-Whitney U Test, and the results are shown in Table 2. The results show that community perception of rainfall variability in the study area is relatively higher in the high altitudinal GNDs. It could be revealed with the idea of the 'rainfall pattern has changed in the Ratnapura district' at the 95% significant level ($0.035 < 0.05$). Similar results are also found under the posed questions about 'high intensity of rainfall' (significant at the 99% level; $0.000 < 0.01$), also about the

‘increasing the days without rainfall’ (significant at the 99% level; $0.002 < 0.01$) and the idea of ‘increase of the amount of rainfall’ (significant at the 99% level; $0.004 < 0.01$). The perception about the ‘rainfall received in real-time is more agreed by the low country people.

Table 2:

Altitudinal Zones Based on Community Perception of Rainfall Variability

Number	Statement	Altitudinal Zone	Mean Rank	Mann-Whitney ‘U’	Significance
1	Rainfall pattern has changed in the area	High	65.92	1475	0.035
		Low	55.08		
2	Rainfall receives in real time	High	61.22	1757	0.803
		Low	59.78		
3	High intensity of rainfall	High	74.14	981.5	0.000
		Low	46.86		
4	The number of rainy days per year has increased	High	63.90	1596	0.143
		Low	57.10		
5	The number of rainy days per year has increased	High	52.12	1297	0.002
		Low	68.88		
6	The amount of rainfall per year has increased	High	67.20	1398	0.004
		Low	53.80		
7	In the Ratnapura district, in the recent past, flood events have been increased	High	64.73	1546	0.107
		Low	56.27		
8	In the Rathnapura district, in the recent past landslide events have been increased	High	64.03	1588.5	0.160
		Low	56.98		

Source: Field Survey Data, 2022

Conclusion and Recommendations

Results of the study could be concluded that the community in the Kuruwita division is more aware of the rainfall variability in the area. The majority of the sample population is aware that the rainfall pattern has changed in the area (70%) rainfall is not received in real-time (55%) means that the seasonal rainfall pattern in the area has changed, and the high intensity of rainfall (58%) in the area. They have experienced an increasing number of rainy days per year, therefore a high amount of rainfall (77%). Comparatively, people who are living in the higher latitudinal areas are more knowledgeable about the rainfall variability than those in the lower latitudinal areas. The study suggests further research on community mitigation and adaptation methods to cope with rainfall variability.

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ESTIMATION OF PADDY CULTIVATION USING REMOTE SENSING AND GIS: BASED ON IMBULPE DIVISIONAL SECRETARIAT DIVISION

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Abstract

A preliminary data collection method called "Sample Surveys" is still used to estimate paddy cultivation areas in Sri Lanka. Also, the representation of such data is done only at the district level. But Remote Sensing technology and Geographic Information Systems can be used as an easy and viable alternative to traditional methods of compiling agricultural statistics in response to emerging data needs and overall opportunities for a sector in high demand, such as rice, in modern agriculture. Through this research, a new methodology has been introduced using Remote Sensing technology and Geographic Information Systems to generate statistical data on paddy cultivation areas. Imbulpe Divisional Secretariat division has been used for data collection. According to the technical method, it was found that the paddy cultivation area of Pallewela village is 188.573 acres. The results showed a classification accuracy of 83.33% and a Kappa coefficient of 0.7807. Accordingly, this research will encourage and support the Department of Census and Statistics to adopt satellite pilot-based technology as an alternative to the existing data collection and representation methods, and to present the feasibility of representing such data at the rural level. It aims to educate other researchers and readers that adopting this methodology can improve the quality and timeliness of agricultural statistics, as well as encourage this methodology.

Keywords: *Paddy Cultivation Estimation, Traditional Sample Surveys, Image Classification, Geographic Information System, Remote Sensing Technology.*

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Introduction

The Department of Census and Statistics estimates the average yield of paddy at the district level through a sample survey. This method may involve problems with regard to the accuracy of the crop area. The errors also directly affect the yield estimation, where the issue of paddy excess or deficit can also be affected. As a result, the method introduced for estimating paddy cultivation areas using GIS and RS, will essentially be a new method that can meet the Department of Census and Statistics' needs for ease of data collection and data accuracy.

Material and Methods

This research is completely based on secondary data. The satellite images used here are: WorldView 2 and QuickBird 2 (1.5 m) – Imbulpe [256 sq. km] [2011/12]. In order to compare the results of this analysis, the data of paddy cultivation areas obtained under the current estimation methods were available through the Imbulpe District Secretariat. Also, the data on production and surplus/deficit estimated by the Department of Census and Statistics 2011–12 by season and district, as well as the 2011–12 Ratnapura paddy area in acres, bushels, and hectares, in kilograms, were obtained separately for the two seasons.

In order to accurately identify paddy fields, the method called image classification was understood to be more appropriate in the study area. There, a more accurate image classification could be done through ERDAS IMAGINE compared to the image classification done through Arc GIS. But when classifying images through this method, it is important to open the relevant satellite image through Arc GIS and confirm the accuracy at eye level.

Results and Discussion

Here, the data required for this analysis from the data obtained using traditional methods are:

- Areas of paddy fields related to the year 2011–12 in the Pallewela Grama Niladhari domain
- Paddy harvest related to the year 2011-2012 in Pallewela village officer domain
- Surplus/deficit in the Pallewela Grama Niladhari domain for the years 2011–12

This data was obtained by the Population and Statistics Department and through the resource profile of the Imbulpe Divisional Secretariat, and since

the Population and Statistics Department data is at the district level, the data should be converted according to the area of Pallewela.

- Areas of paddy fields related to 2011/12 in Pallewela Grama Niladari division 181 acres
- Paddy harvest related to the year 2011/12 in Pallewela Grama Niladari division 416561.05119840003 kg
- Surplus/Deficit in Pallewela Grama Niladari division for the year 2011/12 63953.83884 kg

Analysis of the data obtained from the study methodology

Image classification results

Figure 2 below shows the final result of image classification using ERDAS IMAGINE and Arc GIS.

Figure 1:

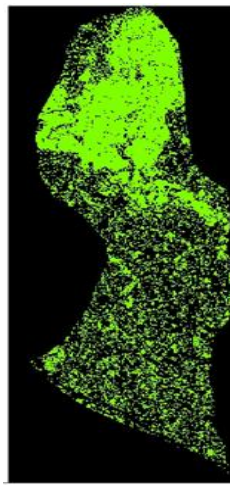
Before image classification



Source: Author. WorldView 2 and QuickBird 2 (1.5 m) – Imbulpe [256 sq. km] [2011/12] [Satellite Image].

Figure 2:

After image classification



Source: Author. WorldView 2 and QuickBird 2 (1.5 m) – Imbulpe [256 sq. km] [2011/12] [Satellite Image].

Classification Accuracy Assessment Report

Image File: c:/users/user/pallewela_fin_11.img

Username: user

Date: Thu Dec 16 13:08:56 2021

Accuracy Totals

Class Users	Reference	Classified	Number	Producers	
Name	Totals	Totals	Correct	Accuracy	Accuracy
Paddy	6	6	5	83.33%	83.33%

Kappa statistical analysis

Since this study focuses only on paddy fields, the accuracy of Kappa coefficient value for paddy fields is considered here. Accordingly, the Kappa coefficient of paddy fields has a high accuracy of 0.7807.

KAPPA (K[^]) STATISTICS

Overall, Kappa Statistics = 0.2363

Conditional Kappa for each Category.

Class Name	Kappa
Unclassified	1.0000
Other	0.0196
Paddy	0.7807

According to the technical method, it was found that the paddy cultivation area of Pallewela village is 188.573 acres. Based on that data, paddy surplus can be calculated.

Table 1:

According to the study results, paddy area, paddy production and paddy excess

Area	Paddy area in acres	Paddy production in kg	Paddy excess kg
Pallewela	188.573	433987.2669725298	66628.56

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Comparison of the study results with the results of the traditional method

In a situation where it is not possible to provide a standard assessment of the correctness of the cultivation area through the traditional data collection method, without spending a lot of time, effort and money, under the new method it is possible to collect data about the paddy cultivation area very efficiently without any physical connection with the study area. For this, the information obtained from the farmers by the village officials and primary reporters is not necessary, and here only an officer with satellite photos and GIS knowledge for the relevant year is required.

Table 2:***Conventional estimation data and study results***

Data type	Conventional data collection methodology	Technical Data Collection Methodology
Acres of paddy land	Acres 181	Acres 188
Rice production	416561.05119840003 kg	433987.2669725298 kg
Paddy excess	63953.83884 kg	66628.56 kg

Source: Using Conventional and Technical data created by the Author

Studying the gap between the two methods

As far as the gap between the two methods is concerned, it is also seen that it is more appropriate to obtain data under the new method, which is easy and efficient since relatively large differences cannot be identified.

Variation in the paddy area

188 acres - 181 acres = 7 acres

Variations in rice production

433987.2669725298 kg - 416561.05119840003 kg = 17426.2149 kg

Paddy surplus

66628.56 kg - 63953.83884 kg = 2674.72116 kg

Conclusion and Recommendations

At present, the collected data is represented only in terms of districts. But the study area selected in this research is the village officer domain. Here, the paddy cultivation areas were calculated using satellite images without any difficulty. There are various problems related to time, labor, and wealth in collecting data through the traditional method such as a sample survey without accurate ground level, but according to the findings of the study, the satellite images obtained through this method can confirm 83.33% accuracy. This means that there is a very high possibility of obtaining reliable data.

Policies can be made to use the new method as an alternative to the traditional method.

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ANALYSING THE POPULATION GROWTH IN PADUKKA DIVISIONAL SECRETARIAT DIVISION

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Abstract

The study aimed to analyse the urban characteristics of the Padukka Divisional Secretariat Division (DSD) based on a suggested alternative definition; where GNDs with a minimum population of 750 persons and a population density greater than 500 persons per km², can be considered urban. Two objectives were formulated for the study; identifying urban characteristics of the study area based on population and identifying urban characteristics in the study area based on population density. Eight Grama Niladari Division (GNDs) of the Padukka DSD are selected for the study. The results of the study revealed that the Padukka DSD can be classified as urban since 2001 in terms of population and population density and the central and northern segments of the area are highest in urban character. Prediction of the population in the area shows further development of urban character with linear growth, an estimated 22,755 persons in 2040. Future studies are needed to analyse the urban characteristics of the Padukka DSD in terms of the land use pattern, domestic water usage, and domestic fuel usage.

Keywords: *Padukka DSD, Population Density, Urban Characteristics, Linear Growth*

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Introduction

As revealed by many researchers, there is no universal definition to define urban areas in the world, therefore different countries use different definitions. In Sri Lanka, Municipal Councils (MCs) Urban Councils (UCs), and Town Councils (TCs) were considered urban areas until 1987. As the changes in the administrative structure of the country in 1987, abolished TCs, and absorbed them under the Pradesheeya Sabha (PS). After that only MCs and UCs were considered urban, and the PSs are in the rural category. Weeraratne, (2016) stated that, due to this rigid administrative structure, many vibrant areas that reflect urban characteristics remain classified as rural. According to the researcher, the current administrative definition in Sri Lanka has a serious limitation due to its static nature, which does not capture the dynamism of urbanization in Sri Lanka, therefore suggesting an alternative definition including indicators that reflect ecological, economic, and social characteristics of an area. Uduporuwa (2011) identified the factors to be considered in urban as technological innovation, economic development, and socio-political development. The Padukka Divisional Secretariat Division (DSD) belongs to the PS administrative category of the country, therefore classified as rural. However, the area reflects urban characteristics. In this context, the study aimed to analyse the urban characteristics of the Padukka DSD.

Objectives of the Study

Two objectives were formulated for the study to accomplish the aim of the study.

- (i) To identify the urban characteristics of the study area based on the population.
- (ii) To identify urban characteristics in the study area based on the population density

Material and Methods

Data

Padukka DSD has been selected as the study area. Grama Niladhari Divisions (GND) wise secondary data of population and population density in the Padukka DSD from the resource profiles in the Padukka DSD office were used for the study, covering the years, 2001, 2012, 2016, and 2020. Padukka DSD consists with 46 GNDs and among them 8 GNDs were selected for the research.

Methodology

The Time series analysis method was used to identify the temporal changes in the population in the study area. Using the QGIS software, the Equal Count Quantile method was applied to measure the population density of the area. The spatial distribution patterns of the population and the population density were portrayed using the QGIS. Two alternative definitions suggested by Weeraratne (2016) have been utilised to accomplish the objectives of the study. According to the proposed definitions by Weeraratne, the GNDs with a minimum population of 750 persons are considered urban and the GNDs with greater than 500 persons per km² are as urban areas.

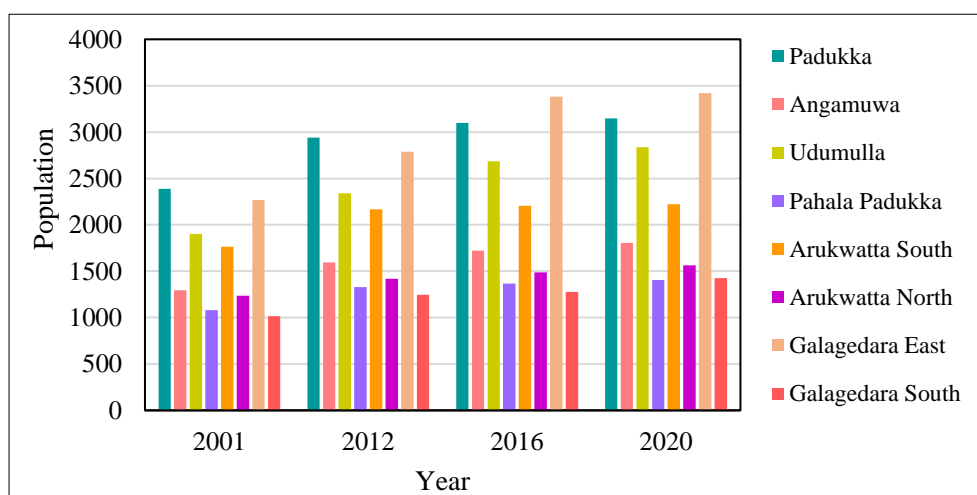
Results and Discussion

Identifying Urban Characteristics Based on the Population

According to the alternative definition suggested by Weeraratne, (2016), the GND with a minimum population of 750 persons is considered urban. Accordingly, every GND in the study area could be identified with this characteristic for the considered years 2001, 2012, 2016, and 2020 as presented in Figure 1. Looking at Figure 2 for temporal changes in the population in the study area, the population has increased as a parallel line and this shows the fact that increasing the population in the area is a slow process. This can be concluded as the increasing population in the area led to the urban development as slow progress.

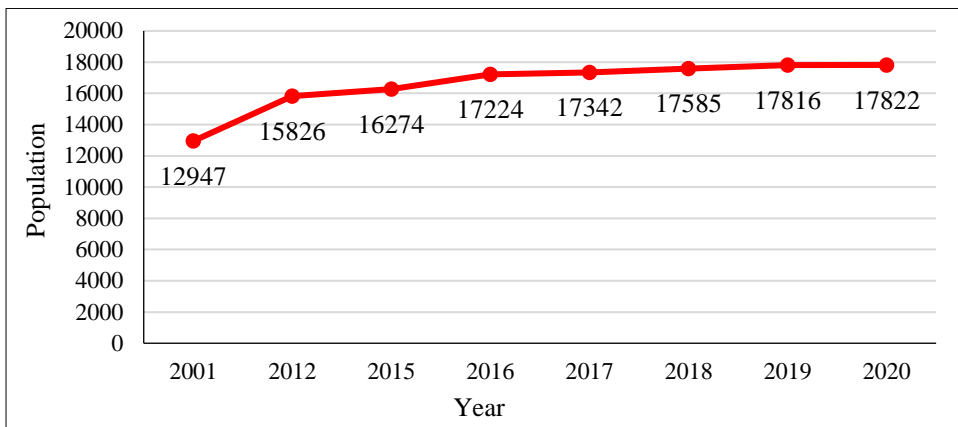
Figure 1:

Population in the selected GNDs in the Padukka DSD



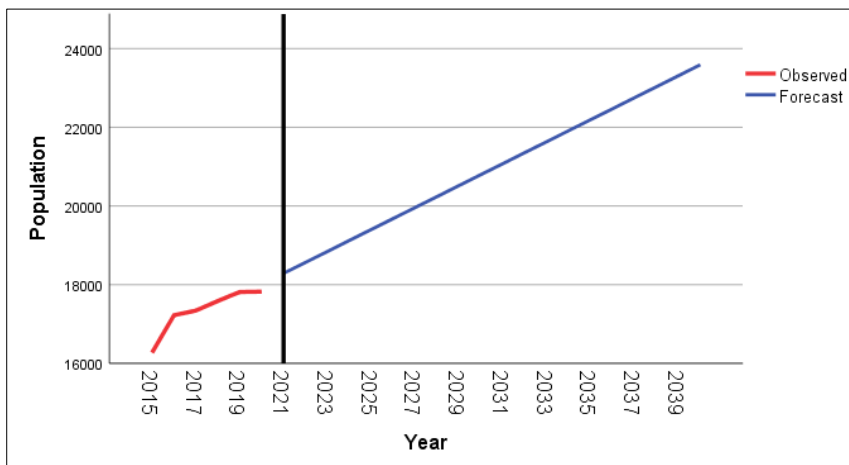
Survey Data, 2022

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Figure 2:*Temporal Changes of the Population in the Padukka DSD*

Survey Data, 2022

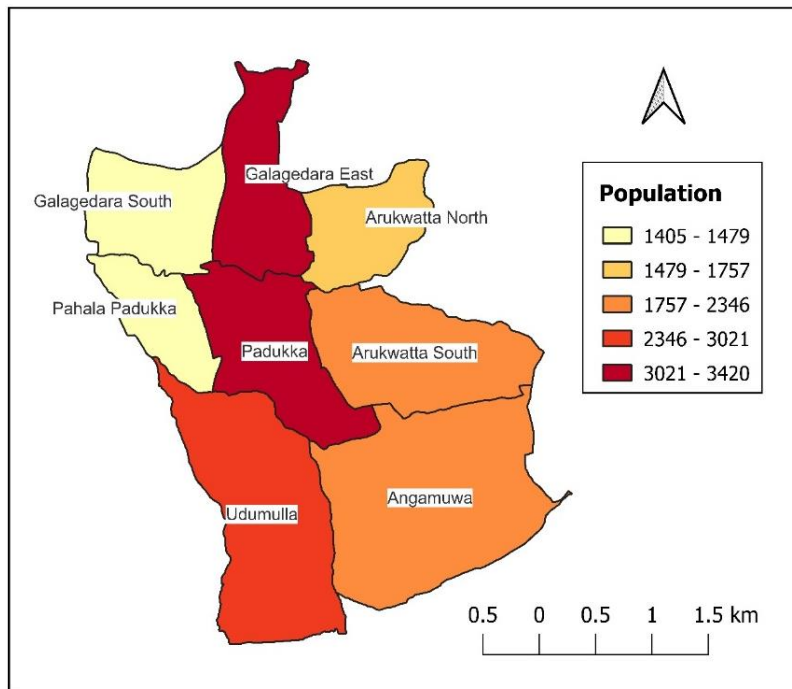
When looking at the future growth of the population in the study area by using time series analysis, the prediction up to 2040 and Figure 3 demonstrates a linear growth, an estimated 22,755 persons in 2040, therefore urban characteristics will be further developed in the area.

Figure 3:*Future Growth of the Population in the selected GNDs in the Padukka DSD*

Source: Survey Data, 2022

Figure 4:

Spatial Distribution of the Population in the selected GNDs in the Padukka DSD in 2020



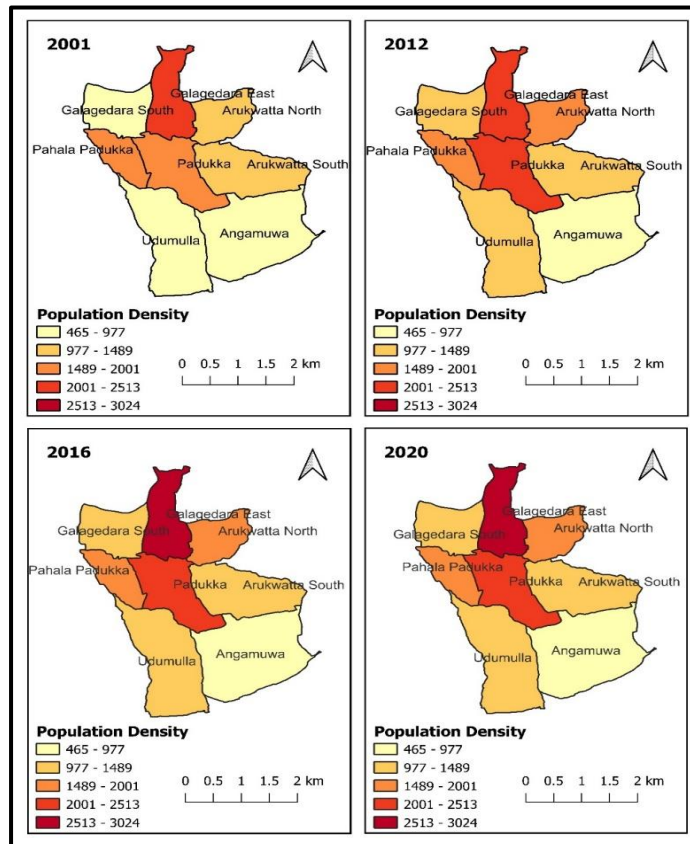
Source: Prepared by the Authors based on the Resource Profile 2020 of the DSD Office in Padukka

The spatial distribution of the population in the Padukka DSD in 2020 is seen in Figure 4 and, a relatively higher number of persons are concentrated in the GN divisions which are in the southern and northern parts of the DSD and give the idea that those areas are comparatively more urban than the rest of the areas. While comparatively less concentration could be seen in the western and northwestern parts of the DSD. However, according to the alternative definition of Weeraratne (2016), all the considered DSDs are urban.

Identifying Urban Characteristics Based on Population Density

Figure 5:

The temporal distribution pattern of the population density in the selected GNDs in the Padukka DSD



Source: Prepared by the Authors based on the Resource Profile 2020 of the DSD Office in Padukka

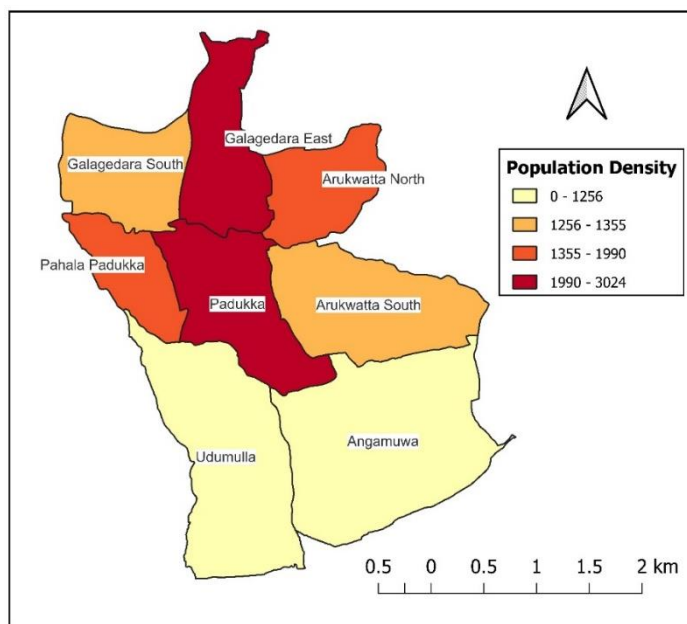
The temporal distribution pattern of the population density in the Padukka DSD is shown in Figure 5. As suggested by Weeraratne (2016) the alternative definition of population density greater than 500 persons per km² is applied in this study to identify urban characteristics in the Padukka DSD if any. According to the Figure 5, the highest population density is found in the Galagedara East GN Division for all the considered years; 2001, 2012, 2016, and 2020.

According to Figure 5, from 2001-2012, the population density in the DSD increased rapidly and after that, the growth has been slowed down. However,

according to the alternative definition considered, all the GN divisions are urban within the period considered except Angamuwa DSD in 2001.

Figure 6:

The population density in the selected GNDs in the Padukka DSD in 2020



Source: Prepared by the Authors based on the Resource Profile 2020 of the DSD Office in Padukka

When looking at the spatial distribution of the population density in the DSD in 2020, the highest concentration could be identified in the central and northern segments of the DSD, representing Padukka and Galagedara East. Relatively, the GN divisions of Udumulla and Angamuwa which are in the southern and southeastern segments of the DSD represent less population density, however, according to the alternative definition, those GN divisions also could be devoted as urban.

Conclusion and Recommendations

The study concluded that the Padukka DSD classified as urban since 2001 in terms of population and population density and the central and northern segments of the area are highest in urban character. The time series analysis that was used to the Prediction of the population in the area shows further development of urban character with linear growth, an estimated 22,755 persons in 2040. Future studies are needed to analyse the urban characteristics

of the Padukka DSD in terms of the land use pattern, domestic water usage, and domestic fuel usage.

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IMPACT OF CLIMATE VARIABILITY ON PADDY CULTIVATION: WITH SPECIAL REFERENCE TO PADDY CULTIVATION IN RAJANGANA SCHEME IN ANURADHAPURA DISTRICT

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Abstract

The agricultural sector could be defined as the most vulnerable sector to climate variability. It is highly related to climatic parameters such as rainfall, precipitation, and evapotranspiration. In the agricultural sector paddy cultivation is highly related with climatic parameters and it is highly vulnerable to the changes of those climatic parameters. Hence this study focused on the impact of climate variability on paddy cultivation in the Rajanganaya scheme. The study is based on the primary data and data have been collected through a questionnaire survey. For the data analysis Excel and Arc GIS had been used. According to the outcomes, 95% of the total sample accepted that there is climate variability and it has an influence on paddy cultivation. 30% of farmers have abandoned their paddy cultivation as the result of adverse impacts of climate change. And most of them are following adaptation strategies like changing cultivation schedules, using short-term seed varieties and having crop insurance.

Keywords: *Climate Variability, Adaptation Strategies, Paddy Cultivation, Rajangana Scheme*

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Introduction

Average weather condition in a region over a time period is known as climate. The word climate has become a popular topic among researchers because the changes of climate have high influence on each and every sector in the world. There are two terms that have been using to denote these changes. They are climate change and climate variability. Difference of these two terms depend on the time. The long-term variation of the climatic factors known as climate change and the short terms variation is climate variability. Furthermore, climate change is the long-term changers of the statistical distribution of weather over a period and this period is ranging from decade to millions of years (Nawarathna Banda, n.d.).

There are two main rice varieties in the world which are named as Affrica rice (*Oryza glaberrima* Steud) and Asian rice (*Oryza sativa* L.). Furthermore, *Oryza sativa* L. has been divided into 3 sub varieties as Indica, Japonica and Javanica (NARO, n.d). Three types of rice cultivation practicing in the world as lowland plots, upland dry fields and terraces in the hill sides (Crystal & Whittlesey, 2004). Rice is the staple food of Sri Lanka and it is contributing to 11.3 of agricultural GDP of the country (walisinghe, Rohde, Rathnasiri, & Guest, 2017; CBSL, 2015). Depending on the average temporal changes of precipitation there are two major cultivation seasons in the country as Maha (October to March) and Yala (Late April to early September). Climate variability has severe impact on the paddy cultivation of the country. The variation of climatic parameters from 2008-2014 period cause for both booms and busts in the agricultural production and this causes for the increase of pressure on the local market price (Humanitarian, 2008). Thus, majority of the farmers and consumers are adversely affected by the changes of climate (Zubair, et al., 2021). Hence it is crucial to study about the impact of climate variability on paddy cultivation and in identifying fruitful mitigation strategies on it.

Objective of the Study

Main objective of the study is examing the impact of climate variability on paddy cultivation and mitigation activities which is followed by the paddy farmers to overcome the adverse impacts of climate variability.

Material and Methods

Study Area

Rajanganaya reservoir in Anuradhapura district has been selected for the study. Catchment area of the Rajanganaya reservoir is about 769 Km² and was

built in 1951 by crossing the Kala Oya. More than 6,200 farm families are settled under this scheme.

Data

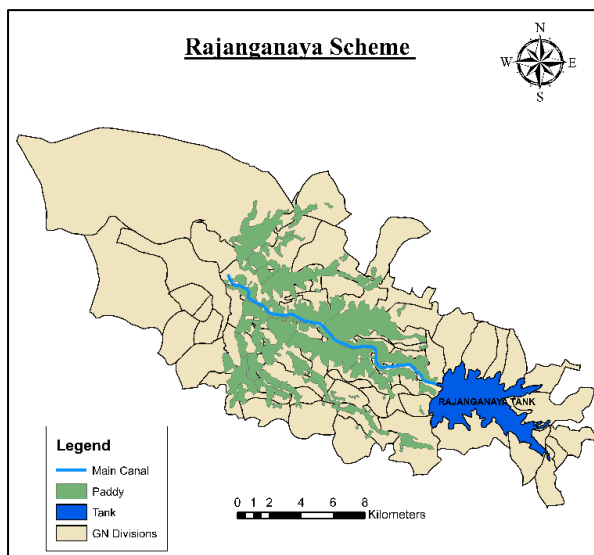
Primary data have been used for the study and data have been collected using 120 questionnaires.

Sample

As the sample, 120 farmers have been selected for the study by using systematic sampling method. In Rajanganaya there are two major channels for water distribution which are known as the Right Bank and the Left Bank. According to the spatial distribution of the scheme these channels could be divided into three as Head, Mid and Tail. Representing both channels, 120 samples have been selected from the Rajanganaya scheme as 40 for each section.

Figure 4:

Rajanganaya Scheme



Source: 1:5000 Digital Data Survey Department of Sri Lanka

Data Analyzing and presenting

Data analyzing has been done by using descriptive statistic methods and data presented as graph, charts and maps. For the analyzing Microsoft Excel and Arc GIS 10.4 were used.

Results and Discussion

According to the analyzed data, from the total population of Rajanganaya scheme 95% (114) have been accepted that there is a climate variability. 15% of them have been accepted that there is an increase in the temperature. According to 109 farmers there is no decrease of temperature as a result of climate variability. 81.7% of farmers do not believe that there is an increase of precipitation as a result of climate variability. 51.1% of farmers agreed that there is a medium impact on paddy cultivation from the climate variability. When considering about the impact of climate variability on water supply for the paddy cultivation 80% of farmers expressed that there is no impact on the water supply from the climate variability but 24 farmers have mentioned that there is an impact on water supply from it and it is 20% from the total sample. In the paddy cultivation temperature and the precipitation are the most important climatic factors. According to the survey results 38.33% of farmers have agreed with that there is a medium impact of paddy cultivation from the high precipitation but they are mentioned that there is a low impact from the high temperature on paddy cultivation. 43% of farmers slightly agree with that there is an increase of pest and diseases in paddy cultivation as the results of climate variability. In Rajanganaya from the total sample 77.7% of farmers are following adaptation strategies to overcome adverse impacts of the climate variability. Among these adaptation strategies 32.5% of farmers are changing cultivation schedule as the adaptation strategy. 22.5% percentage of farmers are using short term seeds for the cultivation. Others are using crop insurance, change cultivation, mix cultivation, drought resistance crops, built shallow water resource in the field and cultivate near by a water source as adaptation strategies to overcome adverse impacts of the climate variability.

Impact of climate variability on the income of paddy cultivation has been examined. According to the farmers' feedbacks 64.2% of farmers have mentioned that their income has a minor impact from the climate variability. There is a medium impact of income of the paddy cultivation from climate variability according to the 17.5% of paddy farmers. 19 paddy farmers have mentioned that they do not have impact on their income from the climate variability. To overcome these incomes loses, 55.8% farmers from the total sample practicing other income source while continuing the paddy cultivation. 30% of them had abandoned paddy cultivation and have chosen other occupations. In addition to that during the water shortage they replaced their paddy cultivation with other crops which are having less demand of water. As these substitutional crops Bada Irrigu, Kaupi and vegetable cultivation are mostly being practiced.

Conclusion and Recommendations

According to the findings of the study, majority of farmers have accepted that there is a climate variability and it has medium impact on the paddy cultivation. To overcome these influences, they have been practicing several adaptation strategies, and the most common adaptation strategy is changing the cultivation schedule. Climate variability has considerable impact on the income of paddy farmers, to overcome these influences majority farmers are engaging in other economic activities to recover their income lost. 30% of paddy farmers have abandoned paddy cultivation. To overcome these conditions, successful mitigation strategies should be introduced. Having a crop insurance and mix cropping could be named as successful strategies to overcome adverse impact of climate variability but study reveals that farmers are not practicing them. From the total sample crop insurance is practiced by only one farmer and 3 farmers are practicing Mix cultivation. Hence it is crucial, to inform the farmers about the importance of following adaptation strategies to overcome the adverse impacts of climate variability unless it will adversely affect on the food security of the country.

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THE ENVIRONMENTAL IMPACT CAUSED BY THE SMALL-SCALE GEM MINING INDUSTRY; WITH SPECIAL REFERENCE TO RATNAPURA DISTRICT IN SRI LANKA.

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Abstract

The gem industry can be identified as one of the world's leading mining industries. This industry has different processes such as mining, gem cutting, and selling. It is also a significant industry in Sri Lanka and has had positive and negative consequences. The main objective of this study is to identify the environmental damage caused by the weaknesses and challenges of using sustainable strategies in the gem mining industry. The Kuruwita DSD was selected as the study area and three GNDs were selected as sample sites. Microsoft Excel was used to analyze quantitative and qualitative data and GIS and Google Earth Pro were used for creating maps and data visualization. Data analysis has shown that the weaknesses and challenges in using sustainable strategies in this industry are detrimental to the environment. The results reveal that 53% of gem mining sites were abundant mine pits and there prevails a lack of awareness about the rules and regulations regarding the gem mining industry. It has also been recognized that using a sustainable approach is imperative due to its environmental impact.

Keywords: *Environmental damage, Small-scale gem industry, Sustainable strategies, Weaknesses & challenges*

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Introduction

The gem industry in Sri Lanka takes place in two forms, large scale and small scale. Both of these types have an impact on the environment. Although proper instructions have been given to the gem industry, the industrialists have not followed that advice properly, which has caused various problems in the gem mining areas. The environment is not rebuilt in a short period. Even the gem resource takes thousands of years to develop. However, digging into the ground and getting those gems takes a little time. Nevertheless, the environmental damage they cause will continue to affect us for hundreds of years. This is a tragedy on one hand.

The Sri Lankan gem business has taken on a whole new dimension with the intervention of new gem trading communities such as China and Russia, and the mining industry is increasingly surpassing environmental regulations and challenging the ecological balance. Due to this, there is an urgent need to focus on the feasibility of using sustainable structures for gem mining in Sri Lanka. " (Soba magazine, 2015). No matter what kind of license is issued, the damage to the environment is not insignificant. Due to this, the people of Ratnapura are facing many problems at present. It is important to identify these harmful conditions associated with gem mining and find appropriate solutions. "Mining in several paddy fields in the lower Karavita section of the Ratnapura District, Balangoda, Imbulpe, and Pelmadulla suburbs has caused many social and health problems in those areas." (Island, 2015).

The National Gem and Jewelry Authority Act No. 50 of 1993 has been enacted to regulate the gem industry. The Special Audit Report of the National Gem and Jewelry Authority dated 14th January 2020 on the activities of the National Gem and Jewelry Authority shows that the laws against illegal gem mining have not been adequately enforced. The same fact has been emphasized in the 2013 audit report. Mechanical mining surveillance is unsatisfactory and on-site inspections are unsatisfactory. The audit report also states that the systems were not installed in any of the mines.

According to those details, the research problem was, what is the environmental impact caused by the weaknesses in using sustainable strategies associated with the small-scale gem industry?

Material and Methods

According to the study, a practical application was made to identify the environmental damage caused by small-scale gem mining in the Ratnapura district. This study can be considered inductive research since conclusions are

made based on observation and surveys. This study is applied research done following an inductive reasoning. In a study like this, data must be collected to fulfil the study's aims. Research methodology can be divided into five main categories as follows; selecting a study area, selecting a sample, data collection, data Analyzing and data presentation.

Sixty samples were selected for acquiring primary data and several sources were used for secondary data. Primary data was collected by using questionnaire surveys, observations, and interviews. Secondary data was collected through a few institutes, such as National Gem & Jewellery Authority, District Secretariat Office, Ratnapura, DSD Kuruwita, Geological Survey and Mines Bureau, Grama Niladhari Division, (Kuruwita/ Kadangoda/ Delgamuwa). Although research articles, books, magazines, newspapers, and the internet were used to collect secondary data the data collected must be systematically prepared for analysis. A combination of data analysis methods had to be used to achieve the research objectives. The findings were analyzed using both qualitative method and quantitative methods.

On the other hand, qualitative approaches were easier to gain a better understanding of the research findings. Quantitative data were analyzed using the statistical data analysis method and basic statistical techniques under MS Excel, and required charts, graphs, and tables were obtained. For better understanding, the researcher used ArcMap 10.7 software to represent the maps. Finally, the researcher used the descriptive data analysis method to analyze the qualitative data.

Results and Discussion

The researcher mainly analyzes the data on the environmental damage caused by weaknesses in the use of sustainable strategies in the small-scale gem mining industry. Accordingly, based on the research objectives, the data collected is used to suggest appropriate action plans to minimize the problems caused by the non-use of sustainable strategies. Here are the data based on 60 questionnaires, mainly from the study area. Here, researcher could identify the weaknesses and challenges in using sustainable strategies in the study area.

- Low educational level
- Lack of awareness of environmental issues in the community.
- Lack of continuous environmental impact assessments.
- Political barriers.
- Lack of government coordination and enforcement.

Here the researcher could identify and present mitigation methods required to minimize environmental damage.

Faculty of Social Sciences and Languages

- Mandating the use of sustainable strategies after mining.
- Further strengthening the monitoring system.
- Appointment of evaluation committees to supervise mining-related areas.
- Use of mine for other valuable purposes.
- Formalize mining activities and regulate ecosystem management pragmatically.

The damage to the environment caused by these deficiencies has been studied here in several areas. Environmental impact has been studied in terms of sediment and water pollution, soil erosion, destruction of arecanut trees, effects on biodiversity, landscape effect, and geomorphological changes. These conditions in the region have created a strong need to adopt sustainable strategies. Sedimental and water pollution were one of the areas that could be identified in the study area. This mining adds chemicals to the water. The chemical is used in a variety of situations, so it can degrade the water and damage the quality of water. The same chemical is harmful to fish species.

Also, this mining is an excavation process. Therefore, the layers of soil that have been created over some times are subject to mixing due to this mining industry. Below pictures shows the loose soil is then washed with water.

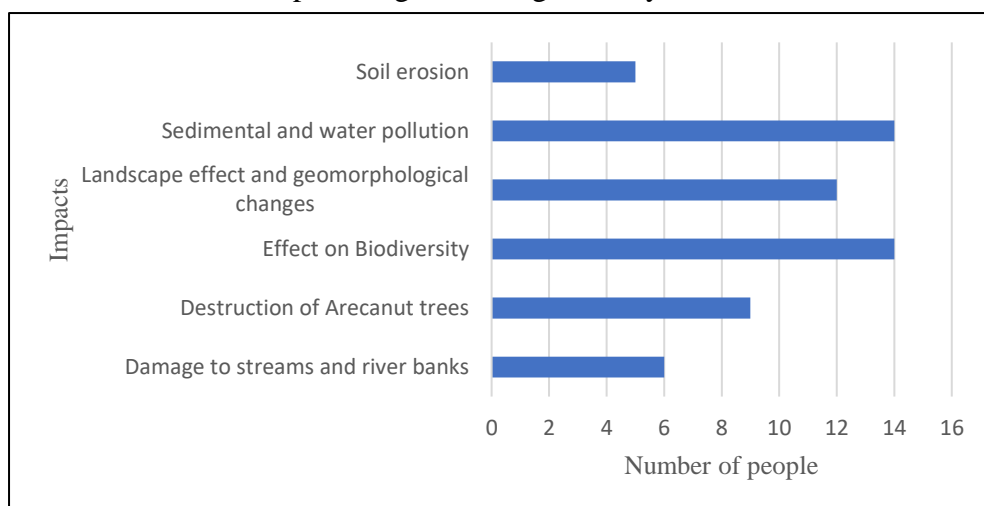


Source: Captured by the author, during the field observations, 2022

It is also a detrimental effect on cultivation. As a result, the study confirmed that paddy cultivation as well as other cultivations have been disrupted. It also confirms the need to adopt sustainable strategies for mining. Sustainable methods can be used effectively for soils and crops that are damaged by mining (Figure 01).

Figure 01:

The environmental impact on gem mining industry



Source: Field survey, 2022

Destruction of arecanut trees is another requirement. Arecanuts are widely grown in the area and are now widely used in the mining industry. Therefore, it is confirmed that this has had an impact on the areca tree population in the area. This is done to prevent the walls of the mines from collapsing and to strengthen the walls to avoid endangering the lives of the miners. But this has had a huge impact on the plant population as a large number of arecanut trees are required for one mine. Thus, instead of using arecanut trees, another method should be followed. This effect on arecanut trees is a weakness in the use of sustainable strategies. Studies also show that the widespread use of these arecanuts should be minimized. That is, to be sustainable. The above is another factor that is needed to use sustainable strategies.

Another thing that became clear in the study was the effects on biodiversity. Mining uses any swamp or paddy field or other cultivated land that is believed to contain gems. Here, the forest areas are cleared and used for mining. The field study revealed that endemic species such as wild roosters were endangered during this process. People claim that even some rare herbs are not found today. It is a really sad situation. Therefore, the study confirms that this industry should be prevented from further damaging biodiversity. It is clear that a formal program needs to be put in place for that. The study confirms that there is an urgent need for the mining industry to adopt sustainable strategies to protect valuable biodiversity.

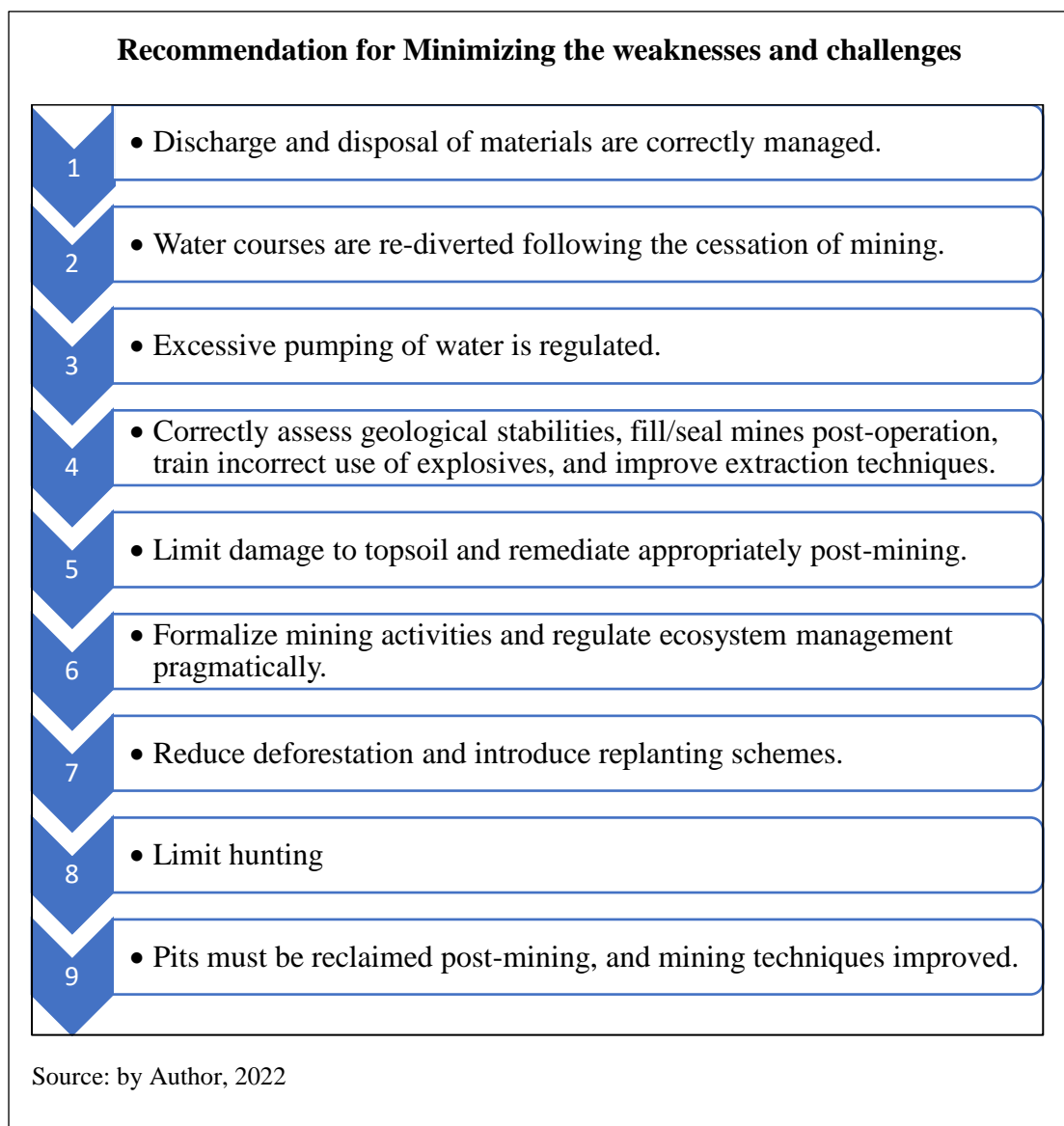
In terms of landscape effect and geomorphological changes, it can also be seen that the damage has been magnified due to the weaknesses in the use of sustainable strategies. About 85% of the gem mining sites selected for the study were found to be illegally mined. Its impact can go back even to the next century. This geomorphological landscape was not created overnight. It also took years to create. So it is clear from the study that they do not think about it but only think about their advantage. Accordingly, it is implied that there is an urgent need for the use of sustainable strategies.

Conclusion and Recommendation

Here, it focuses on identifying the weaknesses and challenges in using sustainable strategies in the small-scale gem mining industry, responding to them successfully, and taking necessary steps to keep the small-scale gem mining industry sustainable in the Ratnapura district. After the analysis, environmental damage assessment? due to weakness in using sustainable strategies in the Gem mining industry.

After considering all the details, the researcher can identify the long-term consequences of the damage in opinion as follows.

Figure - 02



According to the study, it is clear that the weaknesses in using sustainable strategies are causing excessive harm to the environment. Therefore, it is important to address this environmental issue with the relevant agencies and collaborate general community. Moreover, figure 02 shows the recommendation for minimizing the weakness and changes in the gem industry in Sri Lanka.

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Track 04
SOCIETY, STATE AND POLITICS

Summary of the Plenary Speech

Political Centralisation as the Main Obstacle to Sustainable Development

Dr. Jehan Perera

*Executive Director,
National Peace Council of Sri Lanka*



President Ranil Wickremesinghe has pledged to resolve the country's ethnic conflict by the time of its 75th Independence anniversary next February.

In 1948, when the country attained independence from British colonial rule after 150 years its prospects were bright. It was even called the Switzerland of the East. But these expectations have not been realized.

The constitution that Sri Lanka inherited from the British was unitary, with parliament enjoying legislative powers that were checked and balanced by independent courts and civil service.

In 1972 the Soulbury constitution given by the British was replaced by the first Republican constitution. The powers of parliament, and the elected politicians, were elevated, and the judiciary and civil service was made subordinate.

This eroded the system of checks and balances. The elected politician was now supreme.

The power of the politicians was further increased by the second Republican constitution of 1978. This constitution created an executive president. J R Jayewardene, the first executive president, said that the only power he did not have now was to make a man into a woman and vice versa.

My first thesis is that the supremacy of the elected politicians over other institutions of the state has created a culture of impunity and lack of accountability. This situation has worsened over time. Even in the midst of the present economic crisis, allegations of corruptions are not investigated and the responsible politicians are not held accountable.

The passage of the 22nd Amendment by 174 votes with only one dissension can be considered to be a victory for President Ranil Wickremesinghe under whose leadership a significant restructuring of the state's system of checks and balances has taken place with virtual unanimity. By way of contrast, the ruling

party has seen its disintegration in three or more parts. There were only about 30 plus MPs out of a total of 134 in the government who opposed the 22nd Amendment and the effective removal of its party's national organizer from parliament.

The passage of the 21st Amendment will reduce some of the powers of the presidency particularly with regard to appointments to the independent commissions and high officers of state. These included the Chief Justice, judges of the Supreme and Appeal courts, the members and chairpersons of the Election Commission, Human Rights Commission and Police Commission and the IGP. This power will now be transferred to the Constitutional Council over which the president will have influence but not unilateral power.

It is expected that the members of the constitutional council will reflect a genuine balance between government and opposition. They need to be selected by the president together with the prime minister and the opposition parties as well. The three civil society members of the Constitutional Council who can best ensure a non-partisan selection will be appointed jointly by the prime minister and leader of the opposition.

My second thesis is that the unitary and centralized system of government has proved to be susceptible to exploitation by politicians who exploit race and religion as the primary form of political mobilization.

Race and religion-based politics has empowered the ethnic and religious majority politicians and marginalized the ethnic and religious minority politicians. The latter are denied having political power. This has led to political conflict, separatism and finally terrorism and warfare.

The three-decade long war depleted the economic resources of the country and discouraged business investments. As a result, the country has been consuming more than it produces, spending more than it earns, and borrowing to the point of bankruptcy.

The president has promised to find a political solution to the ethnic conflict very soon. The practice of democracy needs to be supported by institutions that ensure the inclusion of minorities into processes of decision-making and that pay heed to minority voices.

There is considerable cynicism and also opposition to the president's efforts to make this process a success. The failure to deal with accountability issues is adduced as a reason this will fail too.

Corruption and power politics are not peculiar to Sri Lanka. They are found elsewhere in the world as well.

The way forward lies in political leadership that is willing to sacrifice self for the nation, if need be. An enlightened citizenry who can see beyond their own group interest to the well-being of all needs to support this leadership, as in south Africa.

The Aragalaya has created this awareness; it also brought about a change in leadership.

Getting to the path of economic sustainability would first require setting up systems of checks and balances to ensure accountability and to stop impunity in government.

Second, it would also require setting up a system of power sharing that would empower the ethnic and religious minorities to be part of the decision-making processes, both nationally and regionally.

Both of these solutions require overcoming the obstacle of political centralization.

GENDERED STATE: ‘GOVERNMENTALITY’ AND THE LABOUR MIGRATION POLICY OF SRI LANKA

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Abstract

Governments’ use of its authority to control the behaviour of their citizens through ‘mechanisms of management’ such as education, laws, rules, and regulations is discussed widely in the Foucauldian concept of ‘governmentality’. This research broadly discusses the ‘Family Background Report’ which was introduced in 2013 by the Government of Sri Lanka as a part of their labour migration policy regulation, as an instance of a government effectively utilising the concept of ‘governmentality’ to intervene in the decision-making authority of individuals. The research concludes revealing how government re-establishes obsolete gender norms in society to achieve this purpose. It further reveals how movements of female migrant workers have been controlled over the years to accommodate policy interests of consecutive governments since 1980s.

Keywords: *Family background report, Gender norms, Governmentality, Migrant women, Sri Lanka*

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Introduction

In June 2013, the government of Sri Lanka changed its labour migration policy through a series of circulars (starting from circular 13/2013) issued by the government's specialized agency on labour migration, the Sri Lanka Bureau of Foreign Employment. These circulars included a set of restrictions targeting the females who are migrating under the category of unskilled workers i.e., domestic and care workers. The new regulations imposed a mandatory prerequisite of producing a 'Family Background Report' and obtaining the government's approval to migrate for the females who migrate under this category.

The regulation was only applicable to the female workers who migrate to Gulf countries at the initial stage, but later expanded to all female unskilled migrant workers disregarding their country of destination. Despite heavy criticism leveled by scholars, human rights activists, UN officials etc., who interpreted the new circulars as a violation of women's right to work, the government continued to emphasize the importance and the necessity of implementing these regulations as they were intended to ensure social stability, by highlighting the protection of under-aged children and family members of the migrating females (Ministry of Foreign Employment Promotion and Welfare, 2008).

This article aims to discern the above action of the government as an instance of using its power over a classified group, i.e., unskilled female migrant workers to control their behaviour by using its 'mechanisms of management'. Within this context, we attempt to answer the research question as to how government intervened in individual decision-making (to control their behaviour) of a classified group of people to reach the interest/s of the state?

We will take theoretical backing from the Michael Foucault's concept of 'governmentality' for this analysis. The intervening mechanisms of government could be direct i.e., laws and regulations, as well as indirect i.e., educating desires/aspirations, configuring habits and re-enforcing beliefs of the population (Murray & Li, 2007). The focus of these interventions, as Foucault underlined in his concept of 'governmentality', is mainly to reach the government endorsed goals of securing "welfare of the population and to improving its condition" (Burchell, Gordon, and Miller 1991:100). Governments often utilizes the operational practice of classification of individuals, which is mostly done based on socioeconomic norms and demarcations such as race, religion, profession, income level, ethnicity etc. (Huff, n.d.), and selectively make disciplinary interventions to achieve their larger goals.

The arguments of this paper are twofold: the government uses its authority to regulate the behaviour of unskilled female migrant workers through re-establishing gender norms and to do so, they highlight appealing terms such as value of the 'role of mother' and 'the wife' for the wellbeing of the family. By examining the policy changes of the successive governments in past four decades, the research further argues that the governments' use of the 'mechanisms of management' to regulate the behaviour of unskilled female migrant workers are largely shaped by the economic interests (or financial priorities) of each period.

Even though many studies have conducted to study the different aspects of the new labour migration law implemented by the government of Sri Lanka, there are no research conducted to examine this phenomenon as an instance of controlling the behaviour of migrant women. This paper intends to fill this research gap and contribute to the literature by revealing how does the concept of 'governmentality' can be used to explain the conduct of the migration policies by the government to control the behaviour of female labour migrants.

Materials and method

This emancipatory research adopted a combined methodology. The study analyses selected policies implemented by the GoSL concerning labour migration to explain how the concept of 'governmentality' has been successfully implemented by the government to execute its policies. The study conducts an extensive review of literature on labour migration as well as on the concept of 'governmentality' to support its argument. The materials collected from the government reports and international organisations are being utilized in addition to the scholarly articles. Thus, the research also employed empirical data collected from a structured interview with relevant government officials is also utilized.

Results and discussion

The government of Sri Lanka's introduction of the National Policy on Migration and therein categorization and justification of female migration workers as a 'vulnerable' category to place its mechanism of management (laws and regulation) to intervene/control the behaviour this select group of citizens based on the state's interests over the period, reveals the government's embedded thinking of group manipulation by invoking specific social and cultural norms. This study brought out that, in this process, how the government has reproduced gender norms in the society with a view to convincing its decisions regarding female migration to its citizens as well as justifying them to the international community.

The study further reveals how government of Sri Lanka successfully practices its authority, as explained by Foucault in the concept of ‘governmentality’, to control the movements of a selected group of individuals, unskilled female migrant workers through ‘mechanisms of management’. The study reveals how does the movement of female migrant workers are being controlled in different phases based on the policy priorities of each Sri Lankan government. It also attempts to reveal how traditional gender norms exist in South Asian societies are being framed through policies to justify government’s decisions. The study also reveals how the ‘power’ of the government depends over how the action of power is demonstrated by the citizens.

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THE ROLE OF GENDER IN REPRESENTATION, PARITY AND HIERARCHIES IN THE DEMOCRACY OF THE VILLAGE-BASED FORMAL ORGANIZATIONS

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Abstract

This case study has been conducted to explore the trends in gender representation in the leadership positions of four formal organizations in two villages located in two districts in Sri Lanka, and to find the reasons for such trends. According to the results, frequently females are only selected for the secretary position because of their ability to maintain written reports and their inability to perform so called 'masculine duties related to other positions. Female leaders have been influenced by the male leaders indirectly in decision making. Also, the matured and educated female officers were respected by the other members while young female officers who have settled in the village recently have been frequently challenged by males. In conclusion, even though neither the gender equality is empowered nor gender discrimination is encouraged by the constitutions, the gender norms, unawareness, and lack of skills have created inequalities and hierarchies in representation and parity in the democracy of these village-based formal organizations.

Keywords: *Formal organizations, Gender representation, Leadership, Village*

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Introduction

According to the World Health Organization (n.d), Gender refers to the socially constructed characteristics including norms, behaviours, and roles associated with being a woman, man, girl, or boy, and relationships with each other. Kangas et al (2014), argue that gender is a medium for observing how power structures and social norms influence the lives and opportunities available to different groups of men and women. Also, they argue that women are appointed to political positions lesser than men nationally and internationally.

According to the World Development Report (2012), there is lesser participation of women in formal politics than men and they are underrepresented in the upper positions of organizations in many countries. Kushandajani and Alfirdaus (2019) conducting a study focusing on gender equality in village law in Indonesia finds that there is a tendency to limit women in supporting roles rather than the core roles, and women who have been recruited in village government organizations are more likely to be assigned to administrative divisions than strategic ones.

The objective of this study was to explore what are the trends in gender representation in the leadership positions of the four formal organizations in two villages in Sri Lanka and find the reasons for such trends. Two villages were selected from two districts: Matara and Ampara which have two different socio-economic backgrounds. The names of the villages are introduced by pseudo names; the village in Matara district is Village 1, and the village in Ampara district is Village 2. The population of village 1 consists of public and private sector workers whose additional sources of income are cultivating paddy, tea, coconut, rubber, and cinnamon. The main income of the majority of the population of village 2 is paddy cultivation. In this study four organizations were selected from each village; Village 1 - Art society, Village development society, Burrial society, and Samurdhi development Society, Village 2 – Burrial society, Farmers' Society, Samurdi Development Society and Village Development Society.

Material and Methods

Mixed method was employed in this study. Primary data were collected through semi-structured and in-depth interviews conducted with former and current female and male representatives of four formal village-based organizations from both villages. Secondary data were collected from the annual reports of those organizations. Data were thematically analysed by two independent co-coders.

Results and Discussion

According to the results of village 1, the membership of these societies is mainly given to the 'father' of each family. The membership has been given to a woman only when her husband has died or divorced. Even though the majority of the female participants are not members of those societies, they have been elected for the leadership positions on behalf of men in their families. There is a higher number of women in leadership roles and most of them are formally educated and working women. As well as, the same females have been elected for the same post repeatedly. In Burrial society, even though women have been elected for the upper posts, only males have been elected for the post of advisor. Sometimes the decisions taken by female officers have been influenced by him. Opposed to the above situation, both the memberships and the leadership positions of the Arts society are mainly occupied by the females of the village.

In village 2, most of the members of the selected four organizations are males. Most of the posts; president, vice-president, treasurer, auditor, and advisor had been obtained by males. Females had occupied the posts of secretary and vice-secretary. However, there are a few occasions where females have been elected and served as president and vice-president in recent years. Also, females have never been elected to the posts of advisor, treasurer, and auditor in any of the above-mentioned societies of village 2.

According to the ideas of former female officers of Village 2, they have been encouraged and supported by both males and females during their working period. Also, according to former male representatives of these societies, there have been talented females who could work as hard as men. In contrast, some of the current male officers in those organizations complain that, it is difficult to work with female officers because of their inability to drive vehicles and work with men at night. When analysing the ideas of both male and female former officers, it was found that the matured and educated, female officers were respected by the members of the societies while young female officers who have settled in the village recently have been frequently challenged by male members during the meetings. As a result, some of them have given up those posts within a short period.

Conclusion and Recommendations

In conclusion, neither the gender equality is mentioned nor any gender discrimination is encouraged in the constitutions of all the eight organizations included in this study. However, in Village 1, even though the females have obtained the leadership roles, since they are working on behalf of the males of their families, female identity is hidden behind the males. In Village 2, women

were elected to the positions such as secretary and co-secretary since the duties related to those posts are considered to be suitable for females and frequently men were elected for the posts of president, vice-president and treasurer since the duties related to those posts considered to be masculine.

In both villages, the trend of reserving the post of advisor only for men who influence the decisions of other female leaders can be viewed as a symbol of men overpowering women. Also, female leadership is marginalized by electing them only for the posts of secretary and deputy secretary frequently. As a solution to the lack of practical skills of women, it is recommended to empower them with necessary skills through governmental and non-governmental projects. Also, awareness programs are needed to be conducted related to gender equality which seems to be an alienated concept for them.

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READING *GOTAGOGAMA* WITH HENRI LEFEBVRE'S THREE-DIMENSIONAL DIALECTICS OF SPACE

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Abstract

This study examines the instrumentality of *Gotagogama* as a space of resistance in keeping the momentum of the *Aragalaya* and attracting and assembling people into the movement and its impact on continuing the struggle. To explain the power in space and its relevance for *Aragalaya*, we explore how *Gotagogama* has been socially constructed following Henri Lefebvre's three-dimensional dialectics of space (perceived, conceived, and lived space). Our study relies on three main data sources – direct observations, social media, and open-ended interviews with residents and migrants of *Gotagogama*. Reading *Gotagogama* with Lefebvre's theory of social production of space allows us to infer that although the physical/perceived space of *Gotagogama* is subverted by state tyranny, the political power, value, and meaning spawned from *Gotagogama* cannot be erased or annihilated. The challenge is to sustain *Gotagogama* as a symbol of transformative politics in the social imaginary, although it is physically disrupted by the dominating power of the Sri Lankan state.

Keywords: *Gotagogama, Politics, Social production of space, Space*

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Introduction

The *Aragalaya* (protest movement) and *Gotagogama* gathered unprecedented momentum for the last three to four months, registering a new phase of political protest against the ruling regime, its political leaders, and the state. Those at *Gotagogama* claimed to be apolitical, not aligned with any political party, non-violent, and heavily depended on technology, satire, and aesthetic creativities. The term “struggle” (*Aragalaya* in the Sinhala language) was predominantly used to describe this protest movement, making it an idiom of everyday life. People reacted in ways we have not seen before in Sri Lanka, given the difficulties in everyday life arising due to fuel shortages, rising prices of essential food items, and fast eroding democratic rights of citizens.

Gotagogama in Gall Face became its fullest spatial inscription and expression. The immediate objective of the struggle was well captured, literally and metaphorically, by this name, offering the necessary vigour, splendour, and morale. It carried the aura of a carnival, festival, and we would say, at times, a pilgrimage – not any of them, but all of them at once. Any form of generalization of *Gotagogama* disrupts its spirit, momentum, and especially the specificities that must not go unnoticed as a social space and its impact on Sri Lankan society. It unfolded with its dynamics in the context of the events on May 9th, June 9th, and July 9th in such a way that (different) phases can be identified.

Gotagogama, although located within the territorial state of Sri Lanka, can be likened to an autonomous space that had in some way transcended the state’s political authority, embodying a “new” political identity, authority, and subjectivity. The French philosopher, Henri Lefebvre, tells us that “a social transformation, to be truly revolutionary in character, must manifest a creative capacity in its effects on daily life, on language, and **on space** (emphasis added)” (1991, p. 54). Thus, *Gotagogama* provided a space for people to express and experiment with their political feelings, resentments, and hopes. Thus, it was becoming a space of resistance, with risks and potential to fail in hand, yet projected with hopes onto the future. On the night of July 21st, 2022, the new President used the coercive force of the state to dismantle *Gotagogama* and thus disrupt *Aragalaya*. By August 12th, 2022, all had withdrawn from the premises removing their tents. This study examines the instrumentality of *Gotagogama* as a space of resistance in keeping the momentum of the *Aragalaya* and attracting and assembling people into the movement and its impact on continuing the struggle. To understand this, we probe the following in this study.

- Taking the reverse approach of Henri Lefebvre, rather than treating *Gotagogama* as a product, we ask how it has been socially produced.
- How does this socially produced space energize and empower *Aragalaya*?
- Could *Aragalaya* have been launched without *Gotagogama*, and now can it be continued without its physical space?

Materials and Methods

Theoretically, *Gotagogama* inspired us to re-read Henri Lefebvre's work on "Social Production of Space" (1991). He argues that the "space is the ultimate locus and medium of struggle" (Elden, 2007, pp. 106–107), explaining why a particular space – *Gotagogama* – was needed for the *Aragalaya*. Elaborating on Lefebvre's work, Stuart Elden writes, "there is politics of space because space is political" (2007, p. 107), and therefore, space must be seen as a political and philosophical project. In exploring the social production of *Gotagogama*, we use Lefebvre's three-dimensional dialectic or the conceptual triad of space (perceived, conceived, and lived space), keeping aside the taken-for-granted notion that space is a physical reality. However, this study should not be misunderstood as an application of Henri Lefebvre's theory of social production of space to *Gotagogama*.

Our study relies on three main sources of data – our direct observations of *Gotagogama*, discourses on *Gotagogama* on social media, and open-ended interviews with different types of shareholders and outside spectators of *Gotagogama*. Our direct observations help us understand the material reality of *Gotagogama* as a perceived space. We use social media – textual and visual postings, especially satire – to elaborate it as a conceived space. Finally, narratives gathered through interviews of residents and migrants to *Gotagogama* allow us to reconstruct its' lived experience.

Results and Discussion

Through this space of resistance, the *Aragalaya* was transformed into an everyday life experience – whether at Galle Face or in outside places. In other words, it was able to make politics an everyday life experience, not something practised during the elections or limited to those engaged in either party politics or trade union politics. *Gotagogama* provided a sense of sanctity for people to escape everyday life programmed by the state and its neo-liberal ethos and rethink and exercise their political subjectivity. What has been dismantled by state terrorism is the perceived space of *Gotagogama* – one of the three-dimensional dialectics of Lefebvre's schema. We identify *Gotagogama* as an autonomous space of resistance challenging the state, its

hegemony, and political regimes in power yet projecting itself to the future without any centralized, formal power.

Space is always tied to its social reality (Lefebvre, 1991). Thus, *Gotagogama* emerges from the disruption of everyday life with the long lines for fuel and gas, losing daily incomes, and the rulers' complete abandonment of the citizens. This disruption of everyday life was common to all ethnicities and classes – the rich and the poor. Thus, at *Gotagogama*, the struggle becomes multi-class and multi-ethnic. Although it is debatable whether the social boundaries are bridged, this resistance space acknowledges differences. In our observations and interviews, it is clear that different groups were not intermingling with each other, yet they were not ununited in their immediate objective. Individuals and groups from different social categories could perform their political power, autonomy, and subjectivity in their own ways without being judged or interfered with by others. This is a space built by people's power (Perera, 2015) within the territorial boundaries of the state yet challenging it with a decolonizing effect. One can identify that *Gotagogama* as a space of resistance has evolved with its three-dimensional dialectic of perceived, conceived, and lived spaces. However, none of these spaces can be taken independently of each other because of their mutual articulation and symbiosis that create social space. While that has been the case, in theory, the lived experience/lived space (different people in one place acknowledging differences, willingness to share the same space and activities, shattering all binaries and divisions of social life) and conceived space (social media posts and adding *Gotagogama* into Google maps) seem to have a determining effect on the production process of *Gotagogama*.

Conclusions and Recommendations

Most importantly, Lefebvre (1991) remarks, “no space ever vanishes leaving no trace and in space what came earlier continues to underpin what follows.” Thus, although the physical/perceived space of *Gotagogama* is subverted by state tyranny, the political power, value, and meaning spawned from *Gotagogama* cannot be erased or annihilated. The crucial challenge is to sustain *Gotagogama* as a symbol of transformative politics in the social imaginary, although it is physically disrupted by the dominating power of the Sri Lankan state. Nevertheless, the traces it created still motivate the public to produce new spaces of resistance.

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THE IMPACT ON CHILDREN'S PRIMARY EDUCATION DUE TO THE TREND OF WOMEN LABOUR MIGRATION DURING THE CURRENT PERIOD OF ECONOMIC CRISIS IN SRI LANKA

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Abstract

The migration of women abroad to provide labour began in the 1970s. The migration of women in Sri Lanka as housekeepers took place mainly focusing on the Middle Eastern region. Women are currently migrating to countries such as Dubai and Kuwait to work in the apparel industry as part of new trends in women's labor migration. The government has taken measures to encourage male migrants and reduce female labor migration due to the negative impact on children and social order caused by female emigration. Due to the current political and social instability and economic collapse in Sri Lanka, a new trend of women going abroad can be identified in violations of the various immigration laws imposed by the government on women's labor migration. Due to this, the family corporation and society are facing a serious situation where the mothers and guardian women of the children in primary education are going abroad. Thus, the main objective of this study is to investigate the impact of women's migration in Sri Lanka on children engaged in primary education. Here, both qualitative data and quantitative data were obtained using mixed methods research. In the primary data collection, interviews and observations were used as methodological tools. In the secondary data collection, Sri Lanka Foreign Employment Bureau reports, Central Bank reports, Ministry of Education reports, Grama Niladhari, and Family Health Officer reports were used as the methodological tools. With the current economic crisis in Sri Lanka, the labor migration of women has accelerated again, also a form of illegal migration can also be identified. In this situation, migrant women suffer from various problems and violence and many problems are arising in the socialization process, safety, education, and nutrition of children of primary education age. Due to this, many problems have arisen such as failure of the child's education, various cases of abuse, exploitation of the child's labor, nutritional problems in the child, and development of deviant behaviors in the child. Accordingly, our study concludes that in the face of the current economic crisis, the acceleration of women's labor migration has faced many challenges for these children receiving primary education and that the number of these children may increase in the future.

Keywords: *Economic crisis, Mental health, Primary education, Socialization, Women labor migration*

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Introduction

Children are the new members of a society. The process of adapting children to society can be identified simply as the process of socialization. Socialization, which is the most important continuous process in the life of an individual, is presented in several variants in the book “Sociology” (Roberston, 1997) and in the book, “Sociology: principles of sociology with an introduction to social thought” (Shankar Rao, 2012). They are Primary Socialization, Secondary Socialization, Tertiary Socialization, Re-socialization, and Incorrect Socialization.

The child first learns about his environment and society for the first time through primary socialization. There, the family becomes the most important social agency (Gaitán, 2014). Thus, the family plays a major role in building the individual's personality. Often these primary socialization problems occur in families with children of expatriate parents, and these children are often prone to later deviant behavior. After primary socialization is provided by the family, the child formally enters the socialization process through secondary socialization. There, school and peer groups are important (Nickerson, 2022). Here, the first five years of the child entering primary education are very important in formal education. This is because primary education is a very important factor for the development of a person's personal behavior and life skill (Al-Shuaibi, 2014).

The fifth-century philosopher “Plato”, in his book “Republic” has pointed out that primary education should consist of subjects such as music, wonder, movement, games, and storytelling, and that there is nothing left for children to teach elementary children by force. Also, according to Maria Montessori’s (1876-1952) opinion regarding primary education, the child should be given the necessary freedom to express his ideas and self-study. It is also said that it is valuable to provide the opportunity to learn through the development of the skills necessary for the development of the child's abilities.

Although the UNESCO organization on primary education believes that children have the right to receive education, and the right to receive education has been highlighted in the Sustainable Development Goals, it has been proven that more than 130 million children of school age in developing countries of the world do not go to school (Human Development Report, 2021/2022).

Also, the skills to be acquired by the child are the skills related to the natural, social and artificial environment, the skills related to ethics and religion, the skills related to having fun, and the skills related to learning.

However, factors such as the imbalance in the distribution of resources, poor infrastructure, learning poverty in marginalized communities such as plantation communities, education becoming a commodity in the face of the competitiveness of education, reduction of parental supervision and care, negative ideologies of parents about education, etc. are present in primary education and they have caused problems in primary education. The problem there is that the educational policies are not suitable for the Sri Lankan social system. The reason is that Sri Lankan society is developing and is constantly facing various socio-political and economic crises. There, the changes in the social system directly affect education and Social Corporation. This study also studies the effects of international female labor migration in Sri Lankan society on the children engaged in primary education.

In 1970, the unemployment rate in Sri Lanka was 20%, and the country's labor was exported as a result of the open economy (Selvanayagam & Mustafa, 2019). There, mainly women from this country went abroad to work as housekeepers who can earn a high income in the Middle East. Until 2009, the majority of labor migrants in Sri Lanka were women. According to the report of the Foreign Employment Bureau, in 2011, the number of labor women was 126,654 (48.16%) (SIBFE, n.d.). In this situation, the Sri Lankan government has tried to reduce women's labor migration due to situations such as sexual and labor exploitation and accidents. Also, in order to reduce the adverse effects on the child's socialization process, nutrition, and safety during the mother's departure abroad, it was made mandatory for foreign female workers to submit a family background report. But in the face of the severe economic crisis that Sri Lanka is currently facing, it can be recognized that women are moving abroad through illegal channels beyond this legal framework, and due to this, it can be recognized that there is a negative impact on the primary education and socialization of children. According to the Trending Economics 2013 report, Sri Lanka's net migration rate is 1.95. According to that, it appears that every year the amount leaving the country is more than the amount entering the country. Currently, there is high external labor migration in Sri Lanka. Also, according to data from the Foreign Employment Bureau in 2011, 41% of the community was still engaged in female housekeeping. Due to this adverse economic situation, there will be an increase in female labor migration in the next few years, which will directly affect the children who continue to receive primary education in this country.

Methodology

In carrying out this study, it is extremely important to investigate the impact of the family's primary education on the child in the process of re-accelerating female labor migration as a main answer to the current economic crisis in Sri

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Lanka. Here, it is also important to investigate the impact of primary education on the child. Also, the concepts of migration and social change are important. And the concepts of socialization and primary education are also used as important concepts. Accordingly, the main objective of this research is to investigate the impact of international female labor migration on children who are engaged in primary education.

Here, mixed research methods were used using both qualitative data and quantitative data as the research method. The sample was selected using a purposive sampling method. 25 children who are engaging in primary education were selected as the sample size. In the primary data collection, interviews and observations were used as methodological tools. In the secondary data collection, Sri Lanka Foreign Employment Bureau reports, Central Bank reports, Ministry of Education reports, Grama Niladhari, and Family Health Officer reports were used as the methodological tools.

Results and Discussion

Through the twenty-five primary school children who were subjected for this study, educational problems as well as many other problems could be identified. A mother's support in education is extremely important for a child of primary education age. It is extremely important for the success of the child's learning process. The families of the children under study are the families suffering from poverty, most of them are rural families, and urban and semi-urban families are the least among them. Mothers in these families were found to have migrated abroad to escape poverty, mainly for housekeeping in the Middle East. This migration of the mother has caused physical and mental problems for the child. Often, these children are characterized by a tendency to be alone, less involvement in sports and extracurricular activities, poor academic performance, failure to form social relationships, lack of friends, and nutritional problems. These children are often underweight in height and physically weak. It can be detected that the father or guardians of the family do not care much about the child's education. Also, most of these children with migrant mothers remained isolated. They exhibited aggressive behavior and were found to be quick to lose their temper and fight with classmates when they faced a problem. They also lacked self-confidence and leadership qualities (Perera & Rathnayaka, 2013). Often the father or the guardian is also not getting a proper education, lack of understanding of the importance of primary education, and lack of proper supervision of the child by the school has left the child isolated and frustrated.

Also, it is a special feature that all the mothers of these children have gone abroad during the period of 2015-2022, and going abroad through private agencies is a common feature. It is also an important fact that all these female labor migrants are unskilled labor migrants. Also, the education of male children who receive primary education of these expatriate women is at a minimum level compared to female children. These boys spend a lot of time watching television, using cell phones, socializing with peer groups, and spending the least amount of time on educational activities. And the supervision of these children is minimal. Lack of love, care, guidance, and lack of mother's love has caused various mental problems in these children. Anxiety and personality disorders can be seen in them. And in these families, the child's education is only considered as consumption, and education is not considered a future investment. And it can be recognized that these children have to dedicate a lot of time to their labor for family work. Often the male child works with his father in various activities and the female child provides her labor for household activities. And due to this, these children have faced accidents such as burns and injuries. Also, situations such as marginalization and neglect of these children happen at school and in relatives' society, and due to this, various personality problems have arisen in the child. Also, these children have very poor reading and writing skills and are reluctant to engage in sports and recreational activities.

Lack of a mother's protection, love, guidance, etc. has been the main reason for the failure of children's primary education. The only ambition of these children is to go abroad like their mother. The causes of such problems are based on the fact that the living environment is not suitable for the child and the separation from the mother since childhood. This situation is intensifying with the current economic crisis in Sri Lanka, and it can be identified from this study that the migration of mostly women has a direct impact on the failure of children's primary education. Also, the future existence of a society is determined by the education of the society and the upward movement of any society is caused by education.

There primary education is more important as it creates the basic foundation of the future generation. There, the school as well as the parents and the entire society have a huge responsibility. It is no secret that the problem of primary education will lead to the creation of a crisis in the future society.

Conclusion and suggestions

It can be recognized that due to female labor migration, educational problems and physical and mental health problems also occur in children who engaging

in primary education. Although female labor migration is economically advantageous, the loss of the mother to the child can cause various problems. It can also be concluded that this situation may worsen in the future due to new trends in migration. Therefore, there is a need to revise national policies and implement more practical policies to minimize the harm caused to children and the family unit by recognizing the new trends in society and migration that are changing due to the current socio-economic crisis. The reason is that the collapse of the study of society is the cause of the collapse of society as a whole.

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ESTABLISHING A NEW ERA BEYOND SECTION 365 OF SRI LANKAN PENAL CODE: A COMPARATIVE ANALYSIS ON GENDER IDENTITY AND MARRIAGE EQUALITY FOR TRANSGENDER PEOPLE IN THE LEGAL CONTEXT OF SRI LANKA AND THE UNITED KINGDOM

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Abstract

This paper aims to establish marriage equality for transgender people beyond mere equality and non-discrimination in the legal context of Sri Lanka. This study further adopts the qualitative research method to examine the lack of legal gender recognition, constitutional lacuna, and outdated criminal law for affording marriage equality for transgender people in Sri Lanka. Thus, in light of the progressive developments in the jurisdiction of the United Kingdom, this research crucially aims to make suggestions to enhance the domestic legal regime also by recognising the legal rights of transgender persons to marry. Accordingly, the enactment of specific legislation on recognising the gender identity of transgender people and their 'right to marry and find a family' is identified as the viable solution to affirm the equality and recognition of transgender people in Sri Lankan society.

Keywords: *Gender identity, Human rights, Marriage equality, Sri Lanka, Transgender people*

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Introduction

The word ‘transgender’ creates humiliation in the minds of Sri Lankans as our society consistently recognises only two sexes as male and female. A transgender individual is a person whose gender identity and gender expression do not conform to his or her gender which is assigned at birth. They have been identified as a deserted group even within the lesbian, gay, bisexual, transgender, and intersex (LGBTI) community. Therefore, in the current context, the transgender rights movements are entering a new era of claiming marriage equality. That means the right to marry and the right to find a family.

In this regard, this research discusses the problem of marriage equality for transgender people in Sri Lanka by exploring the inadequacy of the available laws in terms of both domestic and international obligations. Eventually, in light of the jurisdiction of the United Kingdom, this study makes suggestions to enhance the domestic legal regime by recognising the legal right that a transgender person should have to marry.

Material and Methods

The methodology adopted for this research is a purely qualitative research method. It is supported by primary and secondary sources of law related to the topic, such as statutes, international legal instruments, judicial decisions, academic writings, and e-sources.

Results and Discussion

The right to marry is one of the most fundamental rights of every human being that should be protected by law. In Sri Lankan context, the Constitution guarantees equality and non-discrimination under Article 12. It states “no citizen shall be discriminated against on the grounds of race, religion, language, caste, sex, political opinion, and place of birth or any one of such grounds”. However, this Article does not interpret equality and non-discrimination based on sexual orientation and gender identity. This non-recognition often deprives the rights of transgender people affecting almost all aspects of their daily lives. The Ministry of Health, Nutrition, and Indigenous Medicine issued a circular in 2016 aiming to fill this constitutional lacuna by establishing a process to issue the ‘Gender Recognition Certificate’. But that does not provide strong legal protection for transgender people since that is merely an administrative process and not a law passed by the legislature. Similarly, Sri Lankan marriage law has been limited only to two binary sexes and does not provide protection for people with different gender identities.

Moreover, the Penal Code of Sri Lanka, 1883 passed during British rule criminalises a wide range of sexual offences under Section 365. It identifies unnatural offences as “carnal intercourse against the order of nature with any man, woman, or animal”. Furthermore, section 365A criminalises “any act of gross indecency” with another person. These provisions can be widely applied to sexual acts and romantic affection between two individuals of the same sex respectively. On the other hand, Section 399 identifies another criminal offence as “cheat by personation”. That has been often used to arrest transgender people based on the assumption that they have the malicious intention of cheating others by taking measures to reveal or hide their gender identity which is different from the sex assigned to them at birth. Moreover, the Vagrants Ordinance No. 4 of 1841 targets transgender persons making them more vulnerable to abuses.

Since there is no unalterable international human rights treaty that specifically protects the rights of transgender persons, the explicit provisions in the existing international legal instrument can be applied to protect the rights of transgender people. The right to marry is secured under Article 23 of the International Covenant on Civil and Political Rights (ICCPR). It recognises the “right of men and women of marriageable age to marry and to found a family”. However, this Article should not be regarded as one that excludes other ways of finding a family. Thus, on the one hand, international law aims to promote equality and eliminate discrimination and on the other hand, it is voiceless as far as marriage equality for sexual minorities like transgender people is considered. Therefore, ‘Yogyakarta Principles’ was drafted in 2007 as non-binding international legal guidelines to afford better protection for people with different sexual orientations. Accordingly, Principle 24 of Yogyakarta Principles identifies a right that goes beyond the right to marriage: “everyone has the right to found a family, including through access to adoption or assisted procreation (including donor insemination) regardless of sexual orientation or gender identity”.

Consequently, in the current context, the United Kingdom has made some progressive initiatives to affirm transgender persons' marriage equality. Thus, the Gender Recognition Act, 2004 of the United Kingdom permits transgender people to apply to the Gender Recognition Panel to have a Gender Recognition Certificate. That also permits the holder to be recognised for all legal purposes including marriage. Similarly, the marriage rights of British transgender people are positively affected by the Marriage (Same Sex Couples) Act 2013. Thus, in order to ensure whether provisions of law related to transgender rights are implemented in practice, the UK Government, under the Equality Act 2010 has enacted the Section 7 to prohibit discrimination based on “gender

reassignment” as the “protected characteristic”. All in all, this can be regarded as a huge step forward in protecting the rights of transgender people.

Conclusion and Recommendations

Every person should have a “right to marry and found a family”. But, as discussed in the section above, the existing legal framework of Sri Lanka does not guarantee the right of transgender persons to marry and to find a family. Amendments or replacements to the existing constitutional provisions and criminal law are not viable solutions to ensure the protection of the complex legal issues faced by transgender persons. Therefore, the necessity of enacting specific legislation on recognising their gender identity, and the right to marry and find a family through adoption or assisted procreation are identified as the constitutional provisions along with this, newly enacted legislation on the matters of transgender people will hopefully reaffirm their right to equality and recognition in Sri Lankan society.

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THE IMPACT OF SOCIAL MEDIA ON WOMEN'S POLITICAL PARTICIPATION: WITH SPECIAL REFERENCE TO THE PRESIDENTIAL ELECTION IN 2019

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Abstract

This study intended to investigate how social media has impacted on women's political participation, selecting the 2019 presidential election as a case study. The study used a mixed-method approach. The qualitative and quantitative data were gathered by using primary and secondary sources. Primary data was collected through structured questionnaires and semi-structured interviews. The sample size consisted of 80 respondents. Secondary data was collected from books, research reports, official reports, journal articles, newspapers, websites, etc. The SPSS was used to analyze quantitative data. The content analysis and thematic analysis were used to analyze the qualitative data, and they were presented using texts, narratives, tables, charts, and figures. The study found that as a result of social media, women are now able to speak for themselves and express their political opinions. A key role played by social media in enhancing political changes and women's literacy in using technological equipment was the reason behind these factors. The study also highlighted that, it is also important to ensure gender equality and establish networks, websites, and a pool of candidates on special platforms through appropriate policies. The study finally found that Sri Lanka can increase women's political participation by strengthening its cyber security law and advocating them.

Keywords: *Gender Equality, Political Participation, Presidential Election, social media, Women*

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Introduction

Political participation is voluntary activities undertaken by the mass public to influence public policy either directly or by affecting the selection of persons who make policies (Longley, 2021). These activities include voting in elections, involvement in a political campaign, expressing political opinions, donating money to a candidate or political party, competing as a candidate, representing a particular political body, petitioning, protesting, and working with other people on issues, etc. All these activities have enhanced the political participation of the public, particularly women. Considering the contemporary world rather than utilizing voting, and political party organization, other platforms occur on behalf of political participation with the development of technology. Essentially it comes to “Social media Platforms” besides one of the most highlighted platforms utilized by the public, government to carry out its own political opinion. In addition to the influence made by traditional media, social media has become an alternative such as television, and radio. Facebook, Instagram, YouTube, WhatsApp, and Twitter would be the most famous social media in this context. Facebook, which revolutionized social networking, gives powerful platforms for women to express openly and bring to life their ideas on whatever topic they want, from fashion to human and civil rights, feminism to politics (Kaluarachchi, Nagahawatta an Warren, Matthew, 2020 and Mendis, 2019). This dimension has not been adequately studied by researchers in the field of political science. Thus, this study bridged the gap in the literature by investigating how social media has impacted on women’s political participation, selecting the 2019 presidential election as a case study. Within this broad objective of the study, the following specific objectives have been pursued: to identify how women’s participation can be improved in politics through social media and to identify effective ways of using social media to empower women in politics in Sri Lanka.

Material and Methods

The study used a mixed-method approach. The study was carried out in the Hanwella divisional secretariat division in the Colombo district. The qualitative and quantitative data were gathered by using primary and secondary sources. Primary data was collected through structured questionnaires and semi-structured interviews. The sample size was consisted of 80 respondents. The researchers selected 70 women for the questionnaire survey by using a simple random sampling method and cluster sampling method, and 10 women were selected for semi-structured interviews by using a purposive sampling method. Secondary data was collected from books, research reports, official reports, journal articles, newspapers, websites, etc. The SPSS was used to analyze quantitative data. The content analysis and

thematic analysis were used to analyze the qualitative data, and they were presented using texts, narratives, tables, charts, and figures.

Results and Discussion

Women in Sri Lanka play a significant role in politics. Social media has been able to bring together women's political opinions into the real context, especially in the electoral process. With this, the researchers conducted this study to identify the impact of social media on women's political participation during the 2019 presidential election. According to the data analysis, social media become a strong factor during the 2019 presidential election in increasing women's political participation. Accordingly, the Main findings of the study can be highlighted as follows;

- I. **Social Media Has Become a Platform for Women's Voice** - Women are now engaging on social media and express their ideas directly on social media. Facebook was the major platform used by them for the expression of their political opinion. The data analysis revealed that the majority of young women are now using social media, not only in urban areas but even in rural areas.
- II. **Social Media Enhances Women's Political Interest** - Women have become social media activists. It caused to strength of other women as well. The analyzed data revealed that 80% of women were influenced by politics through social media. Further, Twitter was also used as a medium to share their ideas at the international level. TikTok was not used well. but in the future, it will go over Facebook as a marketing platform in Sri Lanka.
- III. **Social Media Has Become Key Figure in Enhancing Political Changes** - social media is a platform that supports users and depends on their usage. The targeted audience determines social media marketing.
- IV. **Women Have Enough Literacy in Using Technological Equipment** - The analyzed data revealed that women are aware of the main things an individual should do while using the smart app. Uploading, promoting, commenting, making chat groups, making pages, and finding friends are the only things they know. In addition, the analyzed data revealed that education is a must to make them aware of using social media properly.

- V. **Social Media Has Become a Leading Marketing in Sri Lanka** - Traditional media are also utilizing social media platforms for promotions. As a result of their busy lives, most youngsters now use social media more often. It only has a finger point distance. In Sri Lanka, Facebook is the leading social media by 2022. With that TikTok platform also has become a leading marketing media. Next came YouTubers and Instagrammers. The future will experience sudden changes and revolutions more than ever thanks to social media.

Conclusion and Recommendations

The study concluded that social media makes a positive impact on women's political participation throughout the presidential election in 2019. Women were able to speak freely by the support of social media. A significant factor that was successful in attracting more voters was the social media campaign. However, social media was able to modify public opinion and mold it. To overcome the problems related to women's political participation, the study recommends that enhancing rural-level women's literacy, advocating women's political participation, increasing political parties also an option to support women through social media, establishing the social media data privacy act under the cyber security law, making women's platforms and develop school level political participation.

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“NIRPAAKSHIKA ARAGALAYA”: UTOPIAN RHETORIC OR FALLACY?

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Abstract

“*Nirpaakshika aragalaya*” became a catchphrase for the *aragalaya* as anti-government dissenters rejected the Rajapaksa regime and Sri Lanka’s legislature that had failed the country for seventy-four years. “*Nirpaakshika aragalaya*” is therefore, more than just a phrase denoting a political concept: it is a political force encompassing the voice of the protesters that mobilized, supposedly, to reject party politics and affiliations. A counterargument emerged that the *aragalaya* is not non-partisan as it received political backing from stakeholders belonging to various political parties. As we attempt to explore the ideological basis “*nirpaakshika aragalaya*” draws on, our objective is to examine the implications of the term “*nirpaakshika*”. This paper concludes on the note that the *aragalaya* seeks both regular and ad hoc support of intellectuals and political parties, but maintains the appearance of non-partisanism and that violence erupts when this facade is disrupted by the faces of political figures.

Keywords: *Aragalaya, Nirpaakshika aragalaya, Non-partisanism, Party politics, People’s movement*

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Introduction

After March 31st 2022, Sri Lanka's politics entered a new phase. The people's movement in Sri Lanka, locally known as the *aragalaya/ poraattam*, stormed the bastille of dynastic and nepotistic Rajapaksa rule calling for solutions for a collapsing economy and political chaos. The economic meltdown produced multiple resistive efforts by the people against the then existing political center. Gotagogama (Galle Face) protest movement emerged on 9th April 2022 as a result of the economic pressure on people's day-to-day lives and the state's crackdown on the people's resistance movement. The direct political action of the protesters who protested in front of former President Gotabaya Rajapaksa's private residence in Pengiriwatte, Mirihana has produced unanticipated outcomes (Thoradeniya, 2022): It has shaken the very foundations of an autocratic-authoritarian regime that was, up until now, perceived to be undefeatable.

The *aragalaya/ poraattam* emerged as a people's resistance movement supported by several ad-hoc pocket protests springing up in various struggle sites in (and perhaps outside of) the country. These pocket protests and resistance movements diffused through various cities and towns creating epicenters of the *aragalaya*. The *aragalaya's* origin is, therefore, decentralized by default due to a historical accident. It is not an act of volition of the masses but an accident. Despite this inherently "decentralized" nature, the *aragalaya* emerges as a cohesive people's resistance movement and evolves with the backing of various interest groups and civil society activists.

Protests evolved with the condemnation and rejection of the widespread influence of the Rajapaksa regime on the legislature, judiciary, economy and other arenas, and produced ripple effects in society rejecting the convergence of power on a single person and authority. It not only rejected the autocratic and nepotistic Rajapaksa regime but also the 74-year history of party politics in post-independence Sri Lanka, the 225 Ministers of Parliaments and the governance system that resulted in the economic collapse. It is against the backdrop of this rejection of party politics that the term "*nirpaakshika aragalaya*" emerged. "*Nirpaakshika aragalaya*" is therefore, more than just a phrase denoting a political concept. It is a political force encompassing the voice of the protesters that mobilized, supposedly, to reject party politics and affiliations. This study attempts to explore the ideological basis "*nirpaakshika aragalaya*" draws on, and unpack and examine the implications of the term "*nirpaakshika*".

Material and Methods

This study uses a qualitative method of data inquiry. Using the analytical lens of Critical Discourse Analysis by Norman Fairclough, this study problematizes and attempts to unpack the term “*nirpakshika aragalaya*”. Data is collected through speeches telecasted in TV channels, smear campaigns that took over social media and protest flashcards. This study is also informed by data gathered through interviews conducted with political scientists, political activists and social activists from the people’s movement. This includes a sample of 30 participants.

Results and Discussion

The concept of “*nirpakshikawaadhaya*” or *non-partisanism* appealed to the masses who were frustrated with the political anaemia in Sri Lanka. However, ordinary citizens who have been pushed out on to the streets out of hunger, starvation and poverty did not proclaim themselves to be “*non-partisan*”. The rapid spread of the term “*nirpaakshika aragalaya*” originated with political commentators using it in their analysis which was soon picked up by factions of the *aragalaya* as a descriptor. For instance, an anti-government protester, Samantha Thilakarathna in a talk delivered at Gotagagama states, “This is an open space for everyone. This is a place where a non-partisan platform is built regardless of color and party. We don't want all 225 elected representatives” (Thilakarathna, 2022). Amani Nilar too calls the *aragalaya* “the non-partisan people’s struggle” (Nilar, 2022). Yet, the *aragalaya* being a decentralized movement that sought/seeks support from its various bases/epicenters across Sri Lanka is not a monolith. Therefore, it is reductionist to monolithically describe the *aragalaya* as non-partisan.

Despite the contested origin and usage, the catchphrase “*nirpakshika aragalaya*” speaks for the dire need for an oppositional political movement (or an “*alternative government*”?) that separates itself from post-independence divisive party politics in Sri Lanka. Placards from the *aragalaya* demonstrate people’s dissatisfaction with the government and the system of governance. For instance,

“My struggle is against the 225”

“*225ma vigananaya karapiyaw*” (Audit all of the 225)

“We need a system change – go home old men”

“No more stupid leaders”

“Sarva-paakshika, antharvaara marisi epaa” (no all-party, interim government jiggery-pokery)

“Detox Sri Lanka from corrupt politicians”

“225 deemanaa ahosi karaw” (abort the 225)

“Deshapaalana horun pannamu” (chase the political thieves/rogues)

“Balaya diyavannawen eliyata” (power beyond Diyawannawa)

“Hora nadayama gedara pala” (go home gang of thieves)

“Gotabhaya - me ahapan/ paeduru kotta - akulaganin/ aathal aethi – nawathaapan/ janathaawata – rata deepan” (Listen Gotabhaya/pack your belongings/ stop your nonsense drama/ give this country to the people)

“Deshapaaluwanta kadey noyanu” (don’t be stooges)

“Janathaa paramaadipathya” (people’s sovereignty)

“Give us our stolen money back”

“We don’t need sex – Government fucks us every day”

Figure 1:

sarva-paakshika antharvaara marisi epaa (no all-party, interim government jiggery-pokery)



Source: (Gamage, 2022)

Figure 2:

parmaadipathya balaya janathaawa sathuya (sovereignty of the people)



Source: (Gamage, 2022)

Figure 3:

My struggle is against the 225



Source: (Gamage, 2022)

Figure 4

balaya diyavannaven eliyata (power beyond Diyavannava)



Source: (Gamage, 2022)

With the call for “*non-partisanism*”, the people’s movement speedily expanded as a decentralized movement of resistance. Yet, with its diverse political ideological bases and other financial and political expedients channeled through political parties with political agendas, the “*non-partisanism*” of the *aragalaya* became questionable. For instance, data gathered through interviews reveal that the backing of the Inter-University Student Federation (IUSF) came through the Frontline Socialist Party and the Socialist Youth Association supported by the People’s Liberation Party (JVP). Furthermore, throughout Galle Face Movement, the financial support lines were channeled through civil society activists, and political figures with party affiliations or political agendas. Although the people's movement emerged as the core group that held the resistance movement as a cohesive whole, a question remains about its *non-partisanism*.

Three participants of the study are of the opinion that “non-partisanism” also gives rise to another party or faction although it is outside of mainstream political parties. The *aragalaya* protesters have broadened the term “*nirpaakshika/non-partisan*” as protesters have come to understand the *aragalaya* as a non-partisan yet all-party struggle (Perera Y., 2022).

Zulfik Farzan quotes President Ranil Wickremesinghe’s speech at the United National Party 76th Anniversary in 2022:

The youth of this country demanded for change without taking up arms. But, continuing such peaceful struggles was not easy and the frontline groups started turning violent from within the struggle. Eventually, the youth left the struggle and the violent protesters took charge... (Farzan, 2022)

In this speech, Wickremesinghe makes a distinction between peaceful youth protesters and frontline groups that took over the *aragalaya*. It is interesting how this speech is premised upon the notion of a group of peaceful youth protesters as separate from frontline groups yet possibly under the violent influence of Frontline Socialist groups “from within the struggle”. Unpacking the politics of this discourse, it means that the *aragalaya* is a mix of both peaceful youth protesters who ask for a political change and frontline groups who incite violence. This line of rhetoric in turn implies that the *aragalaya* is not non-partisan anymore.

Jayadeva Uyangoda calling for solidarity among the democrats in Sri Lanka writes that the citizens’ struggle for re-democratisation requires a “democratic left-wing alliance” or non-partisanism and non-sectarianism within the left-wing political actors (Uyangoda, 2022). As Uyangoda writes about the need

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for “creative initiatives of non-partisan and non-sectarian kind by the JVP and Frontline Socialist Party”, one implication is that, at the time of writing, there existed partisan cleavages among the left-wing supporters of the *aragalaya*. Lionel Bopage doing a comparative analysis between Sri Lanka and international protests too calls for much broader solidarity and notes that “*janatha paakshika*” or “*pro-people*” is more appropriate than “*adeshapalanika*”(non-political), “*nirpaakshika*”(non-partisan) and “*sarvapakshika*”(wholly partisan)” (Bopage, 2022).

Saravanamuttu (2015, p.827) discussing civil society in Sri Lanka states that it has been "politicised in partisan terms to a point approaching extinction and the political realm has been 'depolicitised' in the sense that both community and party that hijacked the state have effectively suppressed the opposition and neutralised dissent." He claims that party politics have infiltrated civil society and politicized it to the extent that civil society is now almost non-existent and ‘depolicitized’: Any potential opposition is suppressed and dissenting voices are neutralized. Going by Saravanamuttu's analysis, one can argue whether the *aragalaya* which draws its support from civil society too is non-partisan or not. Fractions of the *aragalaya* claiming that it is non-partisan has secured the support of the masses. Yet, smear campaigns against the *aragalaya* counter-argued that it was not a “*nirpaakshika aragalaya*” as it is backed by various stakeholders with different political agendas and party affiliations. One reason for this line of argument is the inability to distinguish between dissidents with and without party affiliations as the *aragalaya* site constituted factions of loyalists from various political parties. However, one tangible evidence that supports the claim of *non-partisanism* is the people’s movement’s demand for a People’s Council through which they can wield political power and pressure the State - their demand was not to form a political party. Yet, as heterogeneous as it is, one faction of the *aragalaya* formed a political movement called ‘Xcore’, on December 12th 2022, with the intention of training young leaders entering the political arena (Perera, 2022).

On the other hand, through interviews and participatory observation, instances of assimilation were found wherein people’s leaders were assimilated to the main political camps and thereafter ceased to protest or took a different course of action. At the same time, it is observable that interest groups aligning with left-wing political parties are preferred over others which makes non-partisanism questionable. In such a backdrop, questions arise whether the *aragalaya* can exist in a non-partisan form? Is it not utopian to believe in the possibility of non-partisanism in the context of the people's movement?

Conclusions and Recommendations

As we attempt to unpack the scenario of the *nirpaakshika aragalaya*, we begin on the premise that the non-partisan People's movement is utopian in rhetoric. That is to say it is idealistic and romantic. The notion of 'non-partisan' is intriguing as it presumes that everyone who becomes part of the people's movement is devoid of and/or rejects party politics. In fact, while a faction of the *aragalaya* rejected party politics, there is also a proliferation of political actors coming from various parties and ideologies although left-wing political actors are given a prominent place. Therefore, the notion of *non-partisanism* is utopian and romantic. It is simplistic to even envision people devoid of political bias, agenda and affiliations in a people's movement. There is nothing apolitical in this citizen's struggle. It is even more reductionist to use "*nirpaakshika/ non-partisan struggle*" as an umbrella term that captures the entirety of the anti-government protests of the *aragalaya*.

Building on the above premise, this study views "*nirpaakshika aragalaya*" both as utopian rhetoric and as a fallacy. It is utopian in its hope for separation from divisive party politics and it is fallacious as *the nirpaakshika aragalaya* shows an anomaly in its "non-partisanism" as it works closely with certain left-wing political parties. To support this claim, let us scan the closest allies of the *nirpaakshika aragalaya*. It maintains close ties with *Janatha Vimukthi Peramuna*, and the Frontline Socialist Party whereas the UNP and Samagi Jana Balavegaya are considered outsiders in crucial decision-making situations. For instance, during the protest on the 2nd of November 2022 (Jayasinghe, 2022), a scuffle broke out in Pettah as Sajith Premadasa's supporters working closely with *Samagi Jana Balavegaya* were rejected for hijacking the protest. These are obvious instances of partisan cleavages.

This study notes that individual actors or core-memebrs of the *aragalaya* seek both regular and ad hoc support of intellectuals and political parties, but as a whole the *aragalaya* maintains the appearance of "non-partisanism"; and conflicts and violence erupt when this facade is disrupted by political figures who attempt to outshine by piggybacking on the *aragalaya* from time to time. However, the anomalous behaviour of the "*nirpaakshika/non-partisan*" *aragalaya* in giving preference to left-wing political parties over others makes the "*nirpaakshika/non-partisan*" rhetoric dubious and fallacious.

This study concludes on the note that "*bahupaarshavika aragalaya*" and "*janathaa paakshika aragalaya*" (Bopage, 2022) are more appropriate terms than "*nirpaakshika aragalaya*" in describing the *aragalaya*'s political affiliations. Since the *aragalaya* is still an ongoing people's movement, we

wish to end this piece inconclusively and abruptly with this question for future research in this area: Is the *aragalaya* non-partisan, anti-partisan, apartisan, multi-partisan or all-party and pro-people?

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CHINA'S CYBER DOMINANCE OVER INFORMATION SECURITY: A CASE STUDY OF AUSTRALIA

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Abstract

Offensive cyber operations had become a recent interesting phenomenon world over. Cyber-attacks have been used by various stakeholders around the world to obtain their preferred outcomes. Among the Cyber giants in the world China has become one of the main cyber powers in the world. Some of Their cyber activities has a direct link with their political intensions. This research paper will be looking at whether China has become a threat to the information security of Australia. For this particular research I have used Secondary data. The analysis has been done through materials such as research papers, online publications, dissertations and YouTube interviews etc. Content Analysis method has been used to analysis the qualitative data. According to the conclusion of the research is that China has become kind of a threat to the information security of Australia. Where the critical and sensitive information has been stolen by the cyber activists of related to China. Furthermore, there were new security dilemmas has been formulated because of these cyber-attacks.

Keywords: *Australia, China, Cyber-attacks, Cyber Power, Information Security.*

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Introduction

Cyber Technology has become one of the most interesting topics worlds over. Initially it was used for the enhancement of Information Technology and to make human life more convenient. However later on cyber-Technology has been used for aggressive measurements. Therefor cyber security has become one of the main branches under the study field of security. Intensive growth of cyber actions such as hacking and cyber-attacks has prompted a threat to national as well as international security. Considering Cyber-attacks various stakeholders conduct cyber-attacks for various reasons. (Kremling & Parker, 2018). It can be a hacker who wants to achieve personal outcomes or it can be an organization willing to conduct attacks against their competitors. Otherwise, it can be a nation-state who are conducting cyber-attacks against other political actors to gain their political outcomes. If a nation state conducts a cyber-attack against another nation state or international organization, we identify such activities as cyber warfare. .(Kremling & Parker, 2018) Because those attacks directly has a political intension and those are politically motivated. Cyber Power has become one of modern mode of influencing other than the hard power and soft power. (Nye, 2014). We also identify them as state sponsored cyber-attacks when there is a clear involvement of a nation state. Today world over there are many nation states which has been identified as cyber giants such as USA, China, Russia, Israel and North Korea. Where they have great cyber capabilities to influence other stakeholders around the world. In this particular research I will be focusing on Chinese aggressive cyber activities conducted against Australia to bring about a threat to the information security of Australia. There are various ways that we can classify cyber-attacks those are sabotage, espionage, propaganda attacks and economic disruptions. (Zetter, 2019)

The mode of Cyber-attacks which are most common with the dispute between China and Australia is espionage. Espionage is an equal term for spying. It has been typically done by governments to obtain politically or military sensitive data. Espionage campaigns also conducted through cyber methods which is known as cyber espionage or cyber spying. (Valerino & Maness,2018) Therefor the paper will focus on offensive cyber operations against the information security of Australia.

Materials and Methods

This research is based on secondary data. The method of content analysis has been used to analyze the qualitative data off the research. The materials which has been used for this particular research is secondary data relevant to the purpose of the research they are such as research papers, online Publications,

reports, dissertations and interviews etc. The data have collected form open sources. The method of content analysis has been implemented to analyze the above-mentioned qualitative data.

Results and discussion

The results of this research shows that there is a serious threat towards the information security of Australia because of the cyber activities done by Chinese organizations. These offensive cyber operations have been happening for the last few years. In the year 2019 the computer systems of the main political parties in Australia have been hacked cyber-attacks launched against the labour party,

National party and the liberal party in Australia. This cyber incident happened before the general elections of Australia in that particular year. Those are espionage campaigns which seeks to obtain the policies of those political parties, Australian government claimed that information breach done by a state sponsored stakeholder. The policy documents of various political parties are critical information because it illustrates about policies regard to national security and foreign policy economic policy and etc. It is clear that stealing such kind of data through offensive Cyber activities is an obviously threat to information security of Australia. (Sky News, 2019)

Another critical cyber-attack took place in the Australian National University in that particular year. The details of more than 20000 students and Academic Staff has been stolen. (afr.com,2019) The data accessed by the aggressor includes names, addresses, contact numbers and other personal details of the students not only that information such as text, finance, payroll information, bank account details and passport details are also included among the data which has been stolen by the aggressor.(afr.com,2019)

Furthermore, Australian liberal senator James Patterson exposed that the Chinese government has access to the data in the social media platform of Tiktok. Therefore, the government is collecting data about the Australian Tiktok users. According to Senator Patterson these data can be used to conduct disinformation campaigns in order to manipulate the public opinion of Australian Tiktok users. Although these social media platforms functions through an Algorithm it can be manually programmed to achieve such outcomes. Not only data of the ordinary Tiktok users but they attempt to collect some other sensitive data of the government as well. (SkyNews,2022)

An American cyber security agency knows as Proof Point identified another cyber espionage campaign targeting Australian media, defense and telecommunication companies. And they have shown a special interest on

matters relevant to South China Sea as well. Currently there is an ongoing dispute among China Australia and other western powers as well. South China Sea has become one of the strategically important stand points of the Indo-Pacific. The accused hacking group known as (TA423 Red Ladon) Red Ladon is a China-based, espionage-motivated threat actor that has been active since 2013, targeting a variety of organizations in response to political events in the Asia-Pacific region, with a focus on the South China Sea. Targeted organizations include defense contractors, manufacturers, universities, government agencies, legal firms involved in diplomatic disputes, and foreign companies involved with Australasian policy or South China Sea operations. (Proofpoint, 2022)

Based on the above-mentioned cyber incidents we can clearly identify that Australian information security is clearly under threat because of destructive cyber activities conducted by Chinese government and Communist party related authorities. Mostly the Australian authorities has not been able to protect they are critical information on sectors such as universities administrative sector healthcare sector, Media, Public data and matters related to other critical infrastructure moving beyond that highly sensitive data of their political parties also has been hacked. Therefore, we can clearly determine that they are the information security is clearly and a threat.

Conclusions and Recommendations

There are certain research findings that can be illustrated in this paper especially all of these operations are politically motivated these attacks are state-sponsored. China might be involving directly in these offensive operations who otherwise they could hire a non-state actor to conduct these offensive cyber-attacks.

Nonetheless certainly there are political motivations at the first place. China wants to dismantle the critical Infrastructure in Australia. They wanted to establish their cyber dominance over Australia. There are various political factors for politically motivated cyber-attacks. Especially Australia is one of the best friends of USA in this South Pacific region and for the more there are issues related to the South China Sea. Use of cyber power is somewhere in between the conventional soft power and hard power this is the most modern method of influencing and manipulation. Therefor it is clear that China has implemented its offensive cyber capabilities to steel the critical information in Australia.

As per the recommendations Cyber deterrence is one of the major topics that are currently discussed by Cyber strategy experts' world over. Nonetheless in

order to counter this situation Australia should work to improve their network security. However, implications of cyber security will not be enough to counter such attacks. Because in the cyber domain connectivity creates more and more vulnerabilities. Most connected nations are the most vulnerable in the cyber domain. There for Australia should focus on their foreign policy as well to counter balance such kind of cyber threats.

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MENTAL HEALTH STATUS AND PSYCHOLOGICAL COUNSELING NEEDS OF UNDERGRADUATES IN THE CONTEXT OF VIOLENT UNIVERSITY SUB CULTURE

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Abstract

Politicized state universities in response to the downsizing welfare in a shrinking economy, class polarization of state and private sector university clientele appear to have constructed a violent sub-culture downgrades the teaching-learning experience of undergraduates. The objective of this study was to capture the mental health status of undergraduates at the so-called 'rag season' while analysing their behaviour seeking psychological counselling services. Questionnaire covered 848 fresh students, data of 137 students sorted psychological counselling services, 10 interviews with students brought primary data analysed using mixed method approach. Depression (38%), stress and anxiety disorders (22.6%) are the most common mental health issues reported. About 14% experienced suicidal ideation while 45.9% associated the distress with ragging and coercive student politics. Psychiatric illness and suicidal ideation among students show a relationship with ragging and other form of violence ($P=0.000$ & $P=0.019$). Thematic categories proposed that ragging and peer induced violence downgrade the teaching-learning experience significantly and for a minority of cases the damage is permanent.

Keywords: *Mental Health, Psychological Counselling, Undergraduates, Ragging, Violence*

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Introduction

Despite the favoritism to be educated in a state university, there has emerged a public debate over the politicization of the university sub-culture, prevalence of 'ragging' and sexuality and gender-based violence in state universities. This backdrop has resulted in a negative attitude towards state universities while developing a positive favoritism towards private Universities (Gunaratne, 2017). Better quality of life was reported from non-state universities (Wijayarathna et al., 2021). Psychological counseling in universities may be decisively important student support mechanism particularly on these grounds. University undergraduates show a high level of awareness regarding counseling services despite the negative attitude held with reference to psychological openness, indifference to stigma and help seeking behavior (Abhayasinghe, 2014).

Research problem of the study is, investigating the mental health status of first year undergraduates serves as a precursor of behavior seeking psychological counseling? This study had the objectives of measuring the mental health of fresh undergraduates, while understanding main reasons for seeking psychological counseling. Understanding the most common type of psychiatric problems and explaining them in the context of teaching-learning were the other specific objectives.

Materials and methods

This study included two samples. First was the Likert scale covered 848 fresh students entered the Sabaragamuwa University of Sri Lanka representing all the faculties. Vast majority of students represented two faculties of social sciences and Management sciences. A Likert scale captured student attitude reflective of 23 aspects of mental health. The scale was analyzed and explained using descriptive statistics function of SPSS software. These students were subjected to the questionnaire at a session common to all faculties within the graduate orientation program.

The second sample included 137 students sorted psychological counseling services at the *Sitharana* Psychological Counseling Center, Sabaragamuwa University of Sri Lanka between the five-year time span of 2014-2019. This confidential data was accessible to the author as he has been serving in this center for more than 10 years at the capacity of a psychological counselor. Data record sheets of 137 clients were taken in to the analysis while safeguarding the confidentiality of clients conforming the ethical standards.

Results and Discussion

In a context that Sri Lankan state universities are disgraced in the public outcry with the prevalent bullying and political violence, this study evaluated some

mental health dimensions of fresh undergraduates and behavior seeking psychological counseling in general. Below tables present some selected aspects of their mental health.

Table 1:

Dimensions of current mental health of 1st year undergraduates (%).

<i>Descriptor I am.../I am with</i>	<i>Very high</i>	<i>High</i>	<i>Moderately</i>	<i>Low</i>	<i>Not at all/Very low</i>	<i>Total</i>
Happy	39.6	40.7	16.7	2.2	.8	100
With self-control	24.8	38.7	23.2	11	2.3	100
Free	38.2	36.8	18.4	5.6	1.1	100
With quality Sleep	51.6	31.7	14.1	1.9	0.7	100
With Concentration	14.2	41.1	29.0	12.3	3.4	100
Tired	1.0	6.3	29.4	40.7	22.5	100
Depressive thoughts	1.7	3.7	20.6	42	31.8	100
Frustrated	6.8	14	31	37.7	14.4	100

Source: Sample Survey

Above descriptive statistics suggest that vast majority of students acknowledge their intra-familial bonds were sound and happy which is associated with better mental health among adolescents and youth to be an indicator of better mental health (Chen and Harris,2019). A majority of students appear to have sustained the psychological stability being in the outset of studies. More than 80% and 75% of students claimed they are 'high' or 'very high' category respectively mentioning whether they are 'happy' and 'free'. However, above data points out that thought a minority, but a sizable number of students in the sample are psychologically disturbed.

This minority of disturbed students are by no means negligible. Going by above statistics, if the university attracts 1000 students for the first year, 54 students' reports alarming levels of depressive thoughts and 208 students tend to mention they are frustrated exceeding the average. Psychiatric illness, suicidal ideation and other problematic behaviors including dropouts are reported from these disturbed minority of student. Below tables indicate the main problem types resulted in opting psychological counseling by students.

Below table points out the contrastingly high prevalence of psychiatric conditions as the reasons for behavior seeking psychological counseling. Broken love affairs and 'ragging' are the other two reasons reported highest frequencies. However, analysis of client profiles reveal that considerable proportion of students experience psychiatric illness and conflict with peers reported ragging and peer violence as the immediate reason for psychological

distress. About 14% experienced suicidal ideation while 45.9% associated the distress with ragging and coercive student politics. Cross tabulations of data support the relationship with ragging and other forms of violence with psychiatric illness and suicidal ideation ($P=0.000$ & $P=0.019$).

Table 2:

Reasons for seeking psychological counseling by students

	Frequency	Percent	Valid Percent	Cumulative Percent
Psychiatric illness	59	43.1	43.1	43.1
Love affair	23	16.8	16.8	59.9
Ragging	10	7.3	7.3	67.2
Sickness	4	2.9	2.9	70.1
Family problems	12	8.8	8.8	78.8
Sexual disorders	5	3.6	3.6	82.5
Valid addictions	7	5.1	5.1	87.6
Antisocial	1	.7	.7	88.3
Helping a friend	2	1.5	1.5	89.8
Conflict with students	5	3.6	3.6	93.4
Academic or career issues	9	6.6	6.6	100.0
Total	137	100.0	100.0	

Source: Statistical Summary, Client Profiles, Sitharana Psychological Counseling Centre, 2020

Depression, stress and anxiety disorders are the commonest psychiatric conditions observed. Nearly two third of students who are with psychiatric problems had experienced the illness before they entered the University, and mostly they had consulted a psychiatrist at least once. Client profiles reveal that high stress experienced due to ‘ragging’ and related violence appear to trigger psychiatric symptoms. Suppressed psychiatric issues controlled by medications seem to surface being under the pressure of violence. Psychiatric conditions coupled with stigma appear to put them in a relative social isolation which probably further deteriorate their mental well-being. As a proportion of the sample, depression (38%), stress and anxiety (31%), schizophrenia (3.6%), obsessive compulsive disorders (4.4%), phobias (3.6%), personality disorders (2.9%) were reported when rest of the clients in smaller percentages suffered the conditions such as trauma, bipolar disease and addictions.

Conclusions and recommendations

Despite being in the ‘rag season’, a majority of students maintained moderate to high levels of mental stability. However, less than 10% of first year students are in psychological instability. There prevails a relationship between ragging and peer violence with psychiatric illness and suicidal ideation. More than one third of students seeking psychological counseling experience depression and nearly one third experienced high stress and anxiety symptoms. On the basis of qualitative data, the study concludes that the psychological damage done on a small minority of students remains more or less permanent and ragging and violence works as a trigger for psychiatric illness. Politically motivated violence is systematically induced as an organized crime. This study brings the suggestion that a special resilient measure should be introduced to help this minority of students who are vulnerable for psychiatric illness. The administrative hierarchy may follow stringent measures to arrest the violence hinder the potential of disturbed students and the state universities.

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Track 05
LANGUAGE, LITERATURE AND MEDIA
STUDIES

Summary of the Plenary Speech

What is the best Innovative Strategy for Sustainable Development? Just one Word. Change.

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Words can be tiring - no, tiredness-inducing. Phrases like ‘Sustainable Development’, words like ‘Innovation’ and so on have been heard so much by Sri Lankans that they have lost their currency, and have become noise, irritating noise. What development, for example, have we seen in this country, in these nearly 75 years of independence, sustainable or otherwise? These are phrases that come in every manifesto put forward by every government that have failed to bring any kind of prosperity to this land – they are still being trumpeted off rooftops by every moron wise enough to know that Sri Lankans will get caught, yet again, to the same wordy net of lies they spin, cast out and reel in again with the spoils at election. Words have become empty skeins which cover walls that have been crumbling since around the 1950s in this country – they mask the rot, the corruption and the hopelessness of a nation that have been lead by the incompetent, whose incompetency has been excused by the masses who repeatedly vote them in, for which we – the academia – have also to take much of the blame for.

So, if I am to rant about the condition of the country and its rulers, there is no way I can hold myself, nor any of those listening to me, away from the criticism due to those responsible for this state of affairs - belonging as we do to the most important institutions that exist in the country responsible for the intellectual health of the nation. If there are academics listening to me, they cannot be unaware of the existing conditions in our arts faculties, where despite the fact that we keep bumping onto words like ‘innovation’ in every corporate sounding plan we are meant to waste time over, we have the sad reality of the majority of teachers not being able to read the most modern of knowledges coming into existence because of the problem of language; tertiary education being reduced to note taking and repetition of whatever the teacher was taught when they were undergraduates; recruitment and promotions given that make a joke of what it is to be addressed by particular titles sometimes. All we need to look at it is what we produce. What can the young men and women we are putting out to society capable of doing? Not

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agitating against, not pontificating on, not simply thinking and worrying about – but simply - doing?

I do not have to tell you the answer. You already know. The situation in the country makes it obvious anyway, should you want to make a guess, if you are not aware.

So how do we actually try and make things better? And not simply get lost in the meaningless of words like ‘system change’ and ‘sustainable development’? We – we all – need to change. We need to teach students how to calculate the worth of graduation not in the glossiness of the photos at graduation day and the smiles and the makeup (though that happiness is important too, I agree): we need to create a generation of people who believe in things beyond image, in this day and age that it seems to have become the be all and end all of all things. Downsizing the importance of image is not easy in a country where the worth of a teacher is measured by the dress she wears, and not much on how much she knows and can teach. Then we have inauthenticity: we have young academics who get through the grueling process of getting a permanent position in the university system almost as a first step to get a visa into a developed country. All this is always covered with excuses – “we have nothing to do if we come back”, “we did it for our children” – as if their job was not given to them in the first place to serve all the children of the nation; as if they are right in demanding and are entitled to be provided opportunities to put their skill to use – when they have been blessed with enough brains to see how work can be created within a system that the politicians have sucked dry. That’s our job – to see how things can be made better in a very terrible place – if it is through protest and constant pressurizing the powers to solve issues, so be it; if it is through finding new ways to solve old problems, so be it. There is always something to be done. That is why we have been given a salary and been paid to study – so that we can make things better in this country.

So, what I will do today with the time I am given will be to show you two things that we did in the university of Sri Jayewardenepura to create new ways of helping people learn English as a second language which is my subject area: the “Basha Buddy” Project and the “English for Fun” Project. The discussion will not be based on the success or failure of these projects (because we have anyway given too much importance to these two concepts at present: not only might worrying about both these things make us prefer not to do anything different at all, but no one hardly ever questions the fact that we have bought wholesale the idea of success given by a profit-driven capitalist economic system that is fundamentally warped) – but on the possibility of change; of thinking outside the box; of trying to beat the system through over-riding it, if

it is not possible to change it. Because one of the major problems I see that we have as a people is that we don't try new things enough, we do not try and change things enough. We don't try fresh young people in positions almost left alone for old people – especially old people – to fill; we don't try breaking frontiers in academic subjects in arts faculties often enough; we do not try leaving aside old and heavy cultural baggage that have kept women miles back in some aspects – and if it is fear of failure that is making us not do any of this – then fear of failure is the first thing that needs to be thrown out of the window, if we are even thinking of going where the word innovation is leading us.

To bring it back to where it applies to all of us again - the university system itself is too much of a white elephant to change its character much – but within that system, academics do have much freedom – and we are being paid to think and innovate. So, let's use this chance, this slight opening, to see what we can do. And above all else, let's teach our students how to use their brains to see how change can be brought into a country that is crying out for it. That is what we need to do if we are going to use words like sustainable development and innovation with the seriousness they deserve. We need to do just one thing: Change.

A STUDY OF THE UNIQUE LITERARY FEATURES OF SRI CHANDRARATHNE MANAWASINGHE’S LYRICS: SELECTED POETICAL EXPERIENCES THROUGH LOCALITY

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Abstract

The intent of the study is to investigate the unique literary features of Sri Chandraratne Manawasinghe’s lyrics based on his selected poetical experiences through locality. Further the study examines how Manawasinghe employed his inherent poetic abilities to compose lyrics. Manawasinghe’s lyrics were developed enough to garner respect from Sinhala literary authorities as a form of poetry. This, being a qualitative study, focuses on documented resources as primary resources of the research, therefore text analysis and literary appreciation were used in relation to the methodology to arrive at the conclusion. It establishes his lyrical approach, placing him as an innovative and a path-breaking lyricist in post-independent Sri Lanka. The findings of the research show that the lyrics by Sri Chandraratne Manawasinghe contain aesthetic and literary features that were derived through local experiences.

Keywords: *Aesthetic delight, Similes and metaphors, Taste of meanings, Taste of melody*

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Introduction:

Sri Chandrarathne Manawasinghe (1913- 1964) was a pioneer poet and lyricist in Sinhala literature who immensely contributed to creating aesthetic enjoyment of music. As a poet, he was highly concerned of the implicit meaning of lyrics and the implications of the tone. This facilitated him to convert complicated experiences in simplistic yet rhythmic songs. He skillfully made use of the authentic natural experiences of rural villages for structure and content of his lyrics which made the composer's task easier. The usage of similes and metaphors enabled the listener to create visual imagery. For a successful song, not only the tune but also lyrics matter into a greater extent. He was born in 1913 in the village of Puwakdandawe and ordained into the Buddhist monkhood at the age of thirteen. Manawasinghe was trained in Sanskrit, Pali, Sinhala poetry composition and astrology from Puwakdandawe Monastery. He was a prolific linguist which enabled him to employ diction and rhyme to produce delightful lyrics in a skillful manner. In a time where imitative and distasteful songs prevailed in the Sri Lankan literature, Manawasinghe's contribution was paramount in converting Sinhala lyrics into creative and aesthetic songs.

Materials and Methods

This literary survey is conducted as a qualitative study that focuses on the documented resources by the author as primary resources. Therefore, text analysis and literary appreciation are used in relation to interpretation to arrive at the conclusion which establishes the view that Manawasinghe is a creative and aesthetic lyricist. As primary resources the selected ten lyrics from Chandraratne Manawasinghe's poetry & lyrics collection of *Komala rekha* (2013) and ten lyrics from Manawasinghe's *Guvan Viduli Geetha* are used. Further, the experiences gathered through enjoying and singing Chandraratne Manawasinghe's lyrics are considered as primary data. As secondary resources, scholarly articles, books, and audio and video documents on Chandraratne Manawasinghe's lyrics are used.

Results and Discussion

The findings of the study show how Manawasinghe employed his inherent poetic abilities to compose lyrics. The selected ten lyrics from *Komala rekha* (2013) which are; '*Prema thatake mekai menike*', '*Maha bo vannama*', '*Samanala vannama*', '*Wasantha geethaya*', '*Ganga boda senasilla*', '*Guru gedarata yana atharamaga*', '*Eth gale daru pema*', '*Budu mihira*', '*Sina rella*', '*Rasa pem madira* and ten lyrics from Manawasinghe's *Guvan Viduli*

Geetha; ‘*Seethala himagira*’, ‘*Mal geethaya*’, ‘*Se midule*’, ‘*lowe mihira*’, ‘*Sudata sude maha godak walakulu*’, ‘*Sagara rala*’, ‘*Hada deka pibidena kumudu akare*’, ‘*Poson udavai*’, ‘*Asala geethaya*’, ‘*Gopathi geethaya*’ resound phenomenally in bringing new meanings to the Sri Lankan lyrical tradition. In this context, it is timely that the above lyrics are contextualized in a new semiotic and literary spotlight so that the new generation can overcome the shallowness in the new populism.

The selected lyrics indicate that Maanawasinghe has successfully articulated the romanticism in an altered manner that reserves the national identity of the Sri Lankans. For example, ‘*Guru gedarata yana atharamanga*’ that appears in his *Komala rekha* (2013) illustrates that he capably extracts lively images of a delightful evening in Sri Lankan village. The metaphor in the lyrics carries so much liveliness and refreshes the nostalgic childhood memories that can bring the listener to a romantic countryside. Evening and human relationships are contextualized in an existential manner that corresponds a yearning for the listener to travel back through his/her own memories.

(“*hendewata kaha sudu rathu - hendirikka mal pipunama,*
e langa gal poththak uda vadikarannam,
vadi karala langin indan nala pimbinnam” (Maanwasinghe, 2013 p.72).

For instance, In *Maha bo vannama*, Manavasinge introduced the new poetics meter for the Sinhala lyrics. Most of the poets in twentieth century often wrote the poem by four-line stanzas with lines having an equal number of syllabic instants, which are metrical units of time as *matra*. However, Manawasinghe’s poetic meter was new because his four stanzas diverged from the convention of four lines with an equal amount of *marta*.

According to Mahagamasekara’s judgment, Manawasinghe’s composition could stand on its own as a piece of literature and Sekera’s evaluation might have influenced by the medium through which he intended the literary features of Manawasinghe’s song lyric. As a poet Manawasinghe clearly understood the difference between poetry and lyrics. The translation of Manawasinhe’s poem is not easy because of its complex literary lexicon, specific literary features, and poetics syntax.

He shows a remarkable born talent through his lyrics that can be appealing to both western and eastern aesthetics. Further to his popular approach, he has

successfully incorporated melodic features to his poems so that they can be easily sung.

Conclusions and Recommendations

From 1950's Manawasinghe produced numerous literary creations to Sinhala literary field. He meticulously studied the structure of poems and lyrics which enabled him to enhance the literary quality of Sinhala lyrics. To compose enlightened lyrics, Manawasinghe's multifaceted literary talents profusely helped him. He employed the literary meaning and tonal variations to Sinhala lyrics which intensified the literary excellence of the lyrics. The knowledge of his mother tongue with Pali, Sanskrit, and Bengali languages enabled him to enrich his literary creations. In conclusion Chandraratne Manawasinghe's lyrics contain not only tune but also successful and well-structured lyrics. In the Sinhala literature he is credited as a creative and aesthetic lyricist. Further, this study also illustrates the aesthetic integrity and sensibility in Manawasinghe's lyrical approach placing him as an innovative and a path-breaking lyricist in post-independent Sri Lanka. In the 50's Sunil Santha and Ananda Samarakoon strived to generate uniqueness in Sinhala lyrics which has been successfully achieved in Manawasinghe's literary creations.

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DERIVATION OF SOCIO-POLITICAL CONCEPTS OF THE DRAMA ‘THE HOUSE OF BERNADA ALBA’ INTO SRI LANKAN CONTEXT

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Abstract

Translation reinforces the camaraderie that exists between language and socio-political concepts of a society. Accordingly, the genre of dramatic text translation, reserved a crucial space. Hence, the fundamental objective of the present study was to identify the manner in which the socio-political concepts of the drama, ‘The House of Bernada Alba’ has been derived into the Sri Lankan context while identifying the translation methods employed by Prof. Ranjini Obeyesekera in its Sinhalese translation. This qualitative research approach addresses the translation procedure of Jean-Paul Vinay (1950) and Jean Darbelnet (1950). The primary data were segmented into two classifications as sociological and political concepts and further analysed under five subordinate concepts as overbearing repression, culture, religious aspects, appearance and respectability, and capitalism as the political concept. Accordingly, the translator has employed adaptation and equivalence along with the addition to enhance the immeasurable repercussions of socio-political concepts of repressed individuals in the society.

Keywords: *Culture, Dramatic Text Translation, Socio-political concepts, Translation methods*

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Introduction

This study can be considered as an attempt to examine the derivation of socio-political concepts of the drama, 'The House of Bernada Alba' into Sri Lankan context while providing clear descriptions and examples of the translation methods and techniques used by the translator and also highlighting the issues and gaps in the field of literary translation.

Materials and Methods

The present study is fundamentally based on the qualitative research approach composed of one variable, analysed under the content analysis method. Data were collected through primary and secondary sources. The English translation, 'The House of Bernada Alba' by Michael Dewell and Carmen Zapata (Source Text – ST) and its Sinhalese translation '*Bernada Albage Parapura*' by Ranjini Obeyesekera (Target Text – TT) is the sample of the study which was selected based on a stratified sampling method.

Results and Discussion

Primarily, the discussion unfolds under two main divisions as sociological and political concepts while evaluating the appropriateness of those derivations when they are translated into the target language.

1. Sociological Concepts

Derivation of sociological concepts in a dramatic text translation can be interpreted as a sensitive engagement that should be subtly completed by a translator. The fatal frustration of these domineering sociological concepts by the social forces itself transcends the dictative authority it creates, at a momentum.

1.1 Overbearing repression

The oscillation between individual passion and social custom in the drama 'House of Bernada Alba', explores the expected morals of the prevailed Spanish society while suggesting that a strict code of honour represses the natural instincts of human beings. The concept of overbearing sexual repression is a universal apt and has highlighted through the method of adaptation. Thus, the Sri Lankan society also has reinforced the issue of repression with simultaneous force but in different directions.

Example 1

ST

Poncia: Somethings' wrong with that girl. She seems restless, shaky, frightened as if she had a **lizard between her breasts**.

(Act II, pg. 137)

TT

පොන්චියා: ඒ ළමයට නං මොනවදෝ අමාරුවක් තියෙනවා. එක තැනක ඉන්න බෑ. ගැස්සෙනවා. බයවෙනවා. හරියට හැට්ටේ අස්සේ කටුස්සෙක් ලැගලා වගෙයි.

(2 වෙනි ජවනිකාව, පිටු.24)

1.2 Appearance and Respectability

The clash between appearance and respectability has been raised by Lorca as a doubtful point to be reconsidered by the people. The typical concern of the middle class to appear respectable can be applicable to the Sri Lankan society as well and the methods of equivalence and literal translation have been used to illuminate it.

Example 1

Bernada: For a hundred miles around, **no one can measure up to them. The men here are not of their class. What would you have me do - turn them over to some field hand?**

(Act I, pg. 129)

TT

පොන්චියා: දැන් ඉතින් දුලා දිග දෙන වයසක් ආවනේ.

බර්නාඩා: අපට හැතැප්ම සියක්වත් මගේ දුලට කැපෙන කෙනෙක් නෑ. ගමේ පිරිමි අපේ තත්වයට කිට්ටු කරන්න බෑ. ඉල්ලන ඕන ගොපලුවෙකුට මගේ දුලා දෙන්නද කියන්නේ?

(1 වන ජවනිකාව, පිටු. 14)

1.3 Culture

Lorca addresses the notion of culture in the drama through different dimensions such as gender issues while suggesting drastic social paralysis which took place in the rural Spanish society. It suggests the fact that, females dominating power over their own kind is more critical than male domination.

Sri Lanka can be counted as a country inherited with pure Asian culture and typical issues of gender often occur within the society and the concept is highlighted through the methods of equivalence, literal translation and adaptation.

Example 1

ST

Magdalena: **To hell with being a woman.**

Bernada: **A needle and thread for women: a mule and a whip for males.**

TT

මැග්ඩලිනා: එහෙනම් මුළු ගැණු ජාතියම මක බෑ උනාවේ!

බර්නාඩා: ගැණුන්ට ඉදිකවුයි නූලයි. පිරිමින්ට කසයයි, හරක් බානයි.

1.4 The Concept of Religion

Lorca highlights the commercialization and the authoritarianism of the concept of religion which is Spanish Catholicism and universalizes its effects on individuals regarding their own fundamental rights to become exposed to freedom and to be liberal through emphatic symbols and colours. The Sinhalese translator employed her shrewdness through the method of adaptation unfolding infirmities of Spanish Catholicism which are emphasised in the source text without causing any damage to the pure aspects of Catholicism.

Example 1

ST

Poncia: **The walls trembled**, and when he sang the ‘Amen’, it was as if a **wolf** had come into the church.

(Act I, pg. 121)

TT

පොන්චියා: දෙයියන්ගේ පිහිටයි බිත්ති හෙල්ලුනා! “ආමෙන්” කියනකොට හරියට පල්ලියට කොටියෙක් පැන්නා වාගෙයි.

(1 වන ජවනිකාව, පිටු. 5)

2. *Political Concepts*

The political narration of the drama, 'The House of Bernada Alba' can be elucidated as a powerful admonition towards the prevailed dictative Franco regime in Spain. Equally, the play draws close parallels with the status of Sri Lankan political catastrophe which transpired during the 1970s.

2.1 *Capitalism*

The presence of 20th-century capitalism in the specific drama has been interpreted as one of the inevitable political elements of Spain during the time. The translation of symbols and sarcastic language elements utilizing the method of literal translation which critically highlights the nature of capitalism and the injustice it causes to the citizens can be rated as a note of success.

Example 1

ST

Bernada: Work and keep your mouth shut. **It is the obligation of those who are paid to work.**

(Act II, pg. 151)

TT

බර්නාඩා: වැඩ කරලා කට පියාගෙන ඉන්න එකයි හොඳය. පඩියට වැඩ කරන කාගෙන් යුතුකම ඒකයි.

(2 වන ජවනිකාව, පිටු. 41)

Conclusions and Recommendations

The derivation of socio-political concepts of the specific drama into the Sri Lankan context has taken place as a translation procedure with multiple limitations since the translator attempts to avoid transcending the inherited cultural and traditional elements of the Sri Lankan society. Thus, future research should be conducted to emphasise the unaddressed ramifications of dramatic text translations.

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FOREIGNIZATION AND DOMESTICATION IN MICHAEL ONDAATJE'S *RUNNING IN THE FAMILY*: TRANSLATING TITLES INTO FRENCH AND SINHALA

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Abstract

Michael Ondaatje's *Running in the Family* (1983) has been translated into several languages, including French and Sinhala. The present study focuses on the two translations aiming to examine the use of two main translation strategies: Foreignization and Domestication. The study is centered on the chapter titles as they play a key role. The titles and their translations are analyzed and compared to understand how the two strategies are adopted by the translators in their respective translations. Lawrence Venuti's theoretical framework of foreignization and domestication is applied to the analysis. The results reveal that both strategies are used in French and Sinhala and highlight certain limitations of their applications. Their application, particularly domestication, though makes the titles more comprehensive to each readership, offer at times, interpretations different from what is intended by the author, and may mislead the target reader.

Keywords: *Challenges, Strategies, Translation, Titles, Venuti*

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Introduction

Michael Ondaatje's *Running in the Family*, set in Sri Lanka in the early 1900s when it was called Ceylon, narrates his family history and anecdotes. The choice of the text is significant as it is published by a world-renowned Sri Lankan Diaspora writer. The success of Ondaatje's novels has led to the source text (ST) being translated into several languages including French and Sinhala. The availability of the translation in a foreign language and a local language makes it possible to analyze and compare various aspects of the two target texts (TT). The present study examines how foreignization and domestication are applied when translating the chapter titles.

Materials and Methods

The ST was translated into French by Marie-Odile Fortier-Masek and published as *Un air de famille* in 1991. In 2012, *Pavule uruva*, the Sinhala version was published, and translated by Sepala Wijesekara.

The study focuses on the translation of chapter titles found in the ST. A total of fifty titles are found, including the main title, all of which are translated into both languages. The chapter titles play a key role in taking the reader along a journey through time and space. They also reflect the content of each chapter playing upon the curiosity of the readers. It is important to make sure that the titles are translated accurately without misleading them. Further, titles being concise, the translation strategies can be effectively identified in them.

When translating, the translators face two main challenges: culture and syntax. Foreignization and domestication are often seen as binary opposites that allow translators to find solutions. Lawrence Venuti who advocates foreignization sees it as an "enthodivariant pressure" registering the cultural and lexical differences. It allows at the same time to highlight the role of the translator. On the other hand, domestication is called an "ethnocentric reduction of the foreign text to target-language cultural values" eliminating what is unfamiliar (2004).

Results and Discussion

All the translated titles are analysed and compared in order to understand how the two translators have adopted foreignization and domestication when translating the titles. Table 1 presents a sample of ten titles in which the two strategies are adopted to find translation solutions.

Table 1:*Examples of translated titles in the two TTs*

ST	TT French	TT Sinhala
April 11, 1932	11 avril 1932	1932 اپريل 11
Don't talk to me about Matisse	Ne me parlez pas de Matisse	Matisse gena ma samaga katha nokaranna
St. Thomas' Church	L'église Saint-Thomas	Santha Thomas dewu mendura
The Karapothis Aunts	Les Karapothis	Karapoththo
High Flowers	Les tantes	Nendala
The Cinnamon Peeler	Hautes fleurs	Pol mal
	L'écorceur de cannelle	Kurundu thalanna
The Prodigal	Le fils prodigue	Nasthikaraya
Tea country	Au pays du thé	The wewena rata
The Ceylon Cactus and Succulent society	La société cinghalaise des cactus et plantes grasses	Lanka pathok ha <u>mangsala</u> shaka sangamaya

The results reveal that both foreignization and domestication are adopted in the French and Sinhala titles. Borrowing of Sinhala terms is noted in the French TT. A case in point is Karapothis. The translator adds *Les* (The) *Karapothis* to complete the title in French. Borrowing which emphasizes foreignization, adds an exotic touch to the TT.

Orthographic adaptation which is considered a foreignization practice is inevitable when foreign names are written using the Sinhala alphabet. However, the French name Matisse is inaccurately presented as මැටිසේස් in Sinhala, which should have been avoided.

The translation of the date is an example of domestication in both the TTs. Necessary modifications such as lowercase letters for the month in French and the change of place of the year and the date in Sinhala are carried out to make it familiar to the respective reader. The translation of St. Thomas' Church also shows how it is domesticated in two different ways. Written in English as St.,

it is translated into French with a hyphen. Further, the apostrophe is eliminated. The Sinhala translation සාන්ත තේමස් respects its language rules.

The translation of the several titles reveals how the Sinhala translation when domesticated becomes more specific. The term Aunts is literally translated into French as “tantes” but in Sinhala, the translator opts for *Nendala*. The Sinhala translator specifies the nature of the relationship which is not seen in the English title. The title, High Flowers, indirectly refers to the coconut flower. In the chapter, a vivid description of the toddy tapper collecting toddy from the coconut flowers is given. The French title is literally translated while in the Sinhala translation, the translator directly announces the name of the flower without arousing the curiosity of the readership. The title Cinnamon Peeler, though literally translated into French, is again changed in Sinhala. A more familiar verb (*thalanna*) is used instead of to peel.

The French translator too offers different interpretations favoring domesticating. The prodigal is defined as “a person who spends money in a reckless, extravagant way”¹. Though it is translated to give this meaning in Sinhala, in French, the translator changes it to “Le fils prodigue” or the prodigal son. It refers to “a son/daughter who leaves his or her parents to do things that they do not approve of but then feels sorry and returns home”². It is evident that the translator interprets the context differently. The translation of Tea Country shows more changes. In Sinhala, the verb *vevena* is added to make it more comprehensible. In French, the title is translated bringing to mind another translation, Lewis Carroll’s *Alice aux pays des merveilles*³. The French title gives the meaning “in the country of tea”. Another significant change is noted in the translation of the Ceylon Cactus and Succulent Society. In the French translation, Ceylon has been replaced by “cinghalais” which means Sinhala. The ethnic category is emphasized instead of the country.

Conclusions and Recommendations

It is evident that by adopting particular domestication the translators modify information provided by the author for the benefit of the targeted readership. These modifications in the titles, at times, may mislead the reader or by being more specific than the author, suppress the curiosity of the reader. Further,

¹ <https://www.lexico.com/definition/prodigal>

² <https://www.merriam-webster.com/dictionary/prodigal%20son%2Fdaughter>

³ <https://www.livredepoche.com/livre/alice-au-pays-des-merveilles-suivi-de-de-lautre-cote-du-miroir-9782253082446>

mistakes must be avoided especially in the titles, as they draw more attention and scrutiny.

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THE DEPICTION OF PARAPHILIC DISORDERS IN SOMARATNE DISSANAYAKE'S *UNDERPANTS THIEF*: A CRITICAL ANALYSIS

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Abstract

Paraphilic disorders refer to deviant sexual urges that negatively impact both the individual suffering from the disorder and society. Sri Lankan cinema has overlooked this theme until the production of *Underpants Thief: Jangi Hora* by Somaratne Dissanayake in 2021 and a paucity of research pertaining to the cinematic depiction of paraphilia in the domestic context can be seen. This paper attempts to critically analyse the cinematic depiction of paraphilic disorders in *Underpants Thief*, adopting a descriptive qualitative methodology. The analysis shows that paraphilic disorders are portrayed accurately to a certain extent. Yet, rather than demystifying the depiction of paraphilia problematizes and complicates paraphilic disorders. The research concludes that the film accurately depicts the negative impact of paraphilic disorders on the protagonist's life. Further, an 'ideal' reaction to paraphilic disorders is proposed by the film.

Keywords: *Cinematic depiction, Critical analysis, Paraphilic disorders, Somaratne Dissanayake, Underpants Thief*

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Introduction

The depiction of paraphilia is a common theme in cinema. Films like *La Pianiste* and *Salo* depict paraphilia in both men and women in the western context. However, in the domestic context, paraphilia had been an overlooked cinematic theme until the production of *Underpants Thief* by Somaratne Dissanayake in 2021. *Underpants Thief* aka *Jangi Hora* is a Sinhala movie with a running time of 96 minutes. The protagonist of the film, Sam, is an individual with paraphilic disorders and the film is woven around him and Nayani, his sister-in-law.

The film is significant to Sri Lanka's cinematic landscape as it is one of the few films with commercial success that addresses sexual deviance and the present study explores the depiction of paraphilia in this film.

Material and Methods

The objective of this research is to explore the depiction of paraphilic disorders in the film *Underpants Thief*. Provided that the research is situated in the interpretivist paradigm, it adopts a descriptive qualitative approach. Accordingly, the film *Underpants Thief* by Somaratne Dissanayake is used as primary data and the plot and the characterisation of the film are analysed qualitatively.

Results and Discussion

The analysis suggests that paraphilic disorders are depicted accurately in the film. For example, the characterisation of Sam shows that the protagonist is diagnosed with two paraphilic disorders in accordance with DSM-5 paraphilic disorders: fetishism and frotteurism or partialism (First, 2014). The former relates to the fetish for women's underpants which prompts Sam to steal underwear and touch women's posteriors. The latter can be identified in relation to Sam's desire to touch women's breasts. The film depicts the said disorders accurately in accordance with the classification criteria of DSM-5 disorders, portraying how they negatively impact the socio-economic life of the paraphilic protagonist.

However, it should be noted that the said depiction of paraphilic disorders in the film is complicated and problematised to a certain extent through the lead actor's portrayal of the protagonist. The character of Sam is portrayed by the lead actor as a person with intellectual disabilities. The protagonist, based on Chaturanga's interpretation and portrayal of the character, can be identified as a person with autism spectrum disorder. While the incorporation of the intellectual disability into the character of the paraphilic individual can be understood as an attempt at increasing representation and inclusion by the

director, it seems to make paraphilia as a disorder even more obscure and detached from the realm of 'normality' rather than educating the audience on paraphilic disorders and demystifying them.

Further, as aforementioned, the analysis shows that the protagonist is depicted in the light of a person with disabilities. For example, paternalistic attitudes, which are prevalent in society according to the minority group model of disability (Bennett, 1968 as cited in Hahn, 1986), are projected on Sam, aptly showcasing how he is exploited by his brother who is curtailed by a veneer of benevolence. In addition, the desire to segregate those with disabilities is brought out through the recurrent references to mental asylums. The stigma aimed at Sam is implied through the depiction of societal reactions where Sam is rejected, beaten and despised. This particular depiction stands true to Sam's intellectual disability and, it can be conceived that it applies to individuals with paraphilic disorders too. However, it should be noted that this is complicated by the blurring of the lines between intellectual disability and paraphilic disorders.

In terms of the societal reaction to paraphilia, it can be seen that the director's approach is two-fold. On one hand, he presents the way society reacts to paraphilia. The multiple instances where Sam is thrashed, the aforementioned segregationist desires and the stigma depicted in the film accurately and realistically portray the way society reacts to and treats paraphilic individuals. On the other hand, the director presents the way paraphilic individuals 'should be' treated. This 'ideal' reaction to paraphilia as conceived by the director is presented through the character of Nayani, bringing the audience along the journey of her character development from an intolerant individual to a sensitive individual who is accepting and accommodating of paraphilia.

While this idealistic reaction imagined and promulgated may positively impact the marginalized and mal-treated existence of paraphilic individuals, it cannot be neglected that it simultaneously contributes to the trivialization of paraphilic disorders. Marriage is presented as the ultimate cure for paraphilia and medical treatments are overlooked in the film. Nayani's reception of Sam seems to promulgate the notion that paraphilic individuals should be accepted and accommodated at any cost. In other words, the compassionate and humane Nayani allowing Sam to steal her underwear and fondle her breasts is presented as the 'ideal' reaction to paraphilia and the viewer is prompted to follow suit. This may have negative consequences and it seems that giving precedence to medical treatments would have presented a far more accurate depiction and 'acceptable' treatment of paraphilia.

Conclusion and Recommendations

This research concludes stating that the film *Underpants Thief* depicts paraphilic disorders in an accurate manner to a certain extent. The depiction of paraphilia is problematized and complicated through the incorporation of autism spectrum disorder into the characterisation of the protagonist, who is presented in the light of a person with disabilities. In terms of the reception of paraphilia, the film forwards two strands, one depicting the actual reception of paraphilic individuals by society and the other depicting an ideal reception as imagined by the director. The former is accurately brought out through the depiction of stigma, segregation and violence projected on the protagonist. The latter is brought out through the character development of Nayani and it seems that medical treatments aimed at curing paraphilia are overlooked in this regard.

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CODIFICATION OF NAVALAR'S TAMIL GRAMMAR

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Abstract

We have described the codification process of Navalar's Tamil grammar. In this process, JSON (JavaScript Object Notation) is used to store linguistic information, and Python is used to write linguistic rules. Since Tamil is a low-resource language, it is essential to develop tools and resources and make them available for technologists and linguists to take up Tamil language computation to the next level. This paper gives an account of Tamil grammar tradition, a note on Navalar's Tamil grammar, the approach used to codify the grammar, and the challenges faced when codifying Navalar's grammar.

Keywords: *Codifying grammar, Grammar modelling, Low-resource language, Navalar's grammar, Tamil grammar*

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Introduction

The development of Tamil grammar has a long history. *tolkāppiyam* is identified as the very first scholarly work on Tamil grammar. The date of this publication is not exact, yet it is believed to have been published more than 2500 years ago. *tolkāppiyam* is considered to be a derived work of an even older work called *agastyam*; the whole work of *agastyam* is not extant. Tamil grammar publications can be divided into ones composed by native scholars and those that Europeans have written to facilitate the acquisition of the Tamil language, mainly by foreigners. Native grammarians prescribe rules for phonology, orthography, morphology, syntax, and semantics of the Tamil language based on the literature found previous to their period. Grammars prescribed by native scholars are considered to be the standard for writing in Tamil and are taught in schools. Although there are a few works like *aṭippaṭait tamiḷ ilakkaṇam*, most of the other grammars taught in schools are derived from ancient texts. The grammar that is still widely used and taught is what is defined in *nannūḷ*, which dates back to the 13th century and is derived from *tolkāppiyam*. Therefore, it is challenging to use this grammar to carry out linguistic analysis of modern Tamil texts, which have evolved significantly over time, especially with the boom of the Internet.

This is the context in which we have attempted to codify a recent Tamil grammar from the book *ilakkaṇac curukkam* written by *śrīlaśrī ārumukanāvalar*, which is a derived work of *nannūḷ*. We have outlined the approach and the challenges we faced when codifying the Navalar's grammar. It is important to note that the year 2022 is declared as the 'Navalar year' by the government of Sri Lanka.

Need for codifying a Tamil grammar

Tamil is a low-resource language in terms of computational resources such as annotated data and language processing tools. On the other hand, the state-of-the-art approach to language computation requires a significant amount of annotated data for training, development, and testing. Although several natural language processing toolkits, such as NLTK¹ are available publicly, none of them have support for Tamil linguistic processing. Since Tamil is distinct from European languages and other resourceful languages, the existing resources cannot be used straight away. In addition, analyzing a large amount of Tamil text would be challenging due to the rich nature of Tamil. On the other hand, more and more applications are being developed in local languages, and the local language adaptation has become an important unique

¹<https://www.nltk.org/>

selling proposition in the business world. Therefore, it is essential to develop computational resources for the Tamil language to support linguistic analyses and language computation.

Materials and Methods

Navalar's Tamil grammar

Arumuka Navalar alias Nallur Arumuga Pillai (1822-1879) was a Tamil language scholar, polemicist, and religious reformer who has made ninetyseven publications, including the book *ilakkaṇac curukkam* for Tamil grammar. This work has 406 statements or rules divided into three sections, namely *eḷuttatikāram* (orthography, phonology, and morphology), *collatikāram* (morpho-syntax), and *toṭarmolīyatikāram* (syntax).

The first section - *eḷuttatikāram* introduces the Tamil alphabet and various rules that need to be followed when writing letters together. This section also briefly covers how words are formed by introducing different parts of a word. A large portion of this first section is *puṇariyal* which outlines the phonological rules that must be used when conjugating two morphs or compounding two words.

The second section - *collatikāram* covers the four types of words, namely nouns, verbs, particles and pre-/postpositions, and adjective/adverbs and their morpho-syntactic properties and semantics.

The third section - *toṭarmolīyatikāram* is the short section which outlines the types of phrases and simple sentences and their syntax, as well as some common errors occurring in texts.

The coverage of this grammar is not comprehensive enough to model the Tamil language using formal approaches. For instance, the interactions between morphology and syntax are important in identifying grammatical cases and subordinate clauses. However, such linguistic phenomena are not discussed in Navalar's grammar.

Our approach

There are several approaches used to capture the linguistic information of a language. For instance, grammar formalisms such as TAG, LFG, HPSG, and CCG or computational formalisms such as Finite-State Machines are used to capture linguistic information. Apart from these formal approaches, linguistic information is also captured using computer data structures and programs, like NLTK. The former requires a very in-depth and comprehensive

descriptive study of a language using modern linguistic theories. A few initial attempts have been made to use formal approaches to model Tamil grammar.

Nalvalar's grammar is in the form of rules, and these rules are not comprehensive enough to model the Tamil language. Therefore, in this paper, we have attempted to codify part of Nalvalar's grammar using data structures and programs and published them as application programming interfaces (APIs) for others to make use of the knowledge. These APIs can be used to do language preprocessing and develop other language applications. For instance, this can be used to validate texts before carrying out any morphological analysis or preprocess and clean text before training a machine translation system. Apart from its usage in the natural language processing domain, this API is also useful for carrying out linguistic analyses.

We have used JSON⁴ to store information and Python⁵ to write rules. For instance, the list of letters with which a word can start is a fixed number of letters, and they are stored in a JSON object. We have used Python rules to check if the initial letter is valid, as this cannot be directly checked due to the complex nature of Tamil orthography.

Conclusions and Recommendations

In this 'Navalar year', we have attempted to codify Nalvalar's Tamil grammar in view to help technologists process the Tamil language and linguists carry out analyses. We use JSON to store linguistic data and Python rules to process and analyse information.

We encountered several challenges when codifying the grammar, and because of that, we could not cover the grammar entirely. For instance, entities in Tamil (nouns) are primarily categorised as rational and irrational, which is necessary to write rules. However, compiling the words in a language and categorising them is challenging and tedious. Further, Nalvalar's grammar is written based on texts from the 18th century; therefore, the grammar does not capture the modern grammatical constructs and lexical words found in recent texts. However, we are in the process of completing the codification using other means, like by using machine learning approaches.

Although the codified Nalvalar's grammar is not comprehensive, it is helpful to carry out basic linguistic analyses and language preprocessing tasks. More importantly, this attempt is an appropriate contribution to Nalvalar's year 2022.

⁴ <https://www.json.org/json-en.html>

² <https://www.python.org/>

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AN EXPERIMENTAL STUDY ON CHINESE TONE ACQUISITION ERRORS OF SRI LANKAN UNIVERSITY STUDENTS

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Abstract

This study was carried out to investigate the errors in the Chinese tones of Sri Lankan undergraduate students, analyze the causes of the errors, and summarize the error rules through experimental method. Findings indicate that Sri Lankan students had a relatively short tone length for the fourth tone compared to native speakers. Moreover, their tonal range is relatively low and narrow, and their yang-ping tonal type is evident. From the aspect of tonal patterns, there is more confusion between the position of the Yangping and the upper tone in the pattern space of the Sri Lankan students, plus they pronounce the Yangping as the upper tone. Aiming at the above errors, this paper analyzes the causes of the errors in terms of the negative transfer effect of the Sinhala mother tongue, the complexity of Chinese tones, the difficulty of acquiring Chinese tones, and the learning environment incorrect countermeasures and methods.

Keywords: *Acoustic experiment, Chinese tones, Error analysis, Sri Lankan University students', Teaching strategies*

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Introduction

The Chinese language is recognized as a tonal language. Tone has great significance in acquiring Chinese as a second language. In the teaching and study of Chinese tone, tone has always been the focus and difficulty of instruction. Even at the intermediate and advanced stage, the problem of intonation is still an important reason for the "foreign accent" of foreign students. For Chinese learners whose native language is toneless (such as English, Sinhala, etc.), tones are particularly difficult to acquire, and they often confuse the Chinese tones with the accent phenomenon in their native language or the native intonation. In view of this, in this paper, we use an experimental approach to investigate the deviation of Chinese tones in Sri Lankan university students to promote their improvement in Chinese language ability.

Material and Methods

Samples and materials

There are 24 undergraduate students; 6 males and 18 females who are majoring in the Chinese language in 3 state universities in Sri Lanka with elementary, intermediate, and advanced Chinese proficiency. Then another 6 native Chinese speakers; 3 males and 3 females with Putonghua level 1.

In this experiment, 5 groups of words for each tone of Yinping (阴平), Yangping (阳平), Shangsheng (上声), and Qusheng (去声) were selected as our experimental word list, and the more commonly used words were selected in the word list to ensure that the subjects could read them correctly.

Data analysis

The voice analysis software "Praat" was used to extract and measure the pitch and duration of each syllable, and to make a pattern diagram of each subject's 4 tones. To facilitate the comparison with the fifth-degree value, we adopt Shi Feng's research method to convert the average frequency values of the starting point, midpoint, and ending point of the tone curve into a logarithmic scale and then normalize them according to the tonal range of the subjects. Gets the reference value for fifths. Specifically, Shi Feng's formula is used: $T = (\lg x - \lg b) / (\lg a - \lg b) \times 5$. Among them, a is the upper limit frequency of the modulation domain, b is the lower limit frequency of the modulation domain, and x is the frequency of the measurement point; the value obtained in this way, 0 ~ 1.0 is equivalent to 1 degree of the fifth, 1.0 ~ 2.0 is equivalent to 2 degrees, 2.0~3.0 is equivalent to 3 degrees, 3.0~4.0 is equivalent to 4 degrees, and 4.0 ~5.0 is equivalent to 5 degrees.

Results and Discussion

First, mispronunciation of 1st tone between 4+1 tone combination was one of the most prevalent errors committed by Sri Lankan Chinese learners. And then Several issues were discovered when pronouncing the 1st tone soon after pronouncing the 4th tone. Another issue, students have difficulty accurately pronouncing the 4th tone because the students gave more attention to appropriately pronouncing the 1st tone which was placed after the 4th tone. Finally, it was discovered that pronouncing the 4+1 tone combination as the 4+4 tone combination was a common error made by many students.

Figure 1:

Pitch contour of 4+1 tone combination (Native speaker)

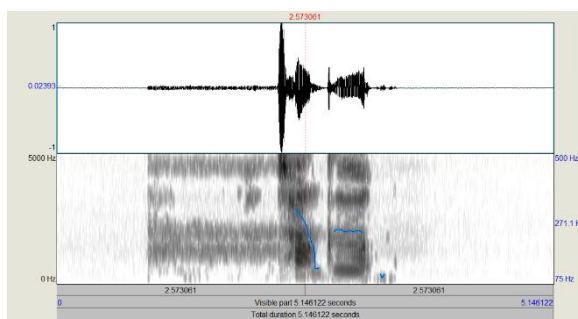
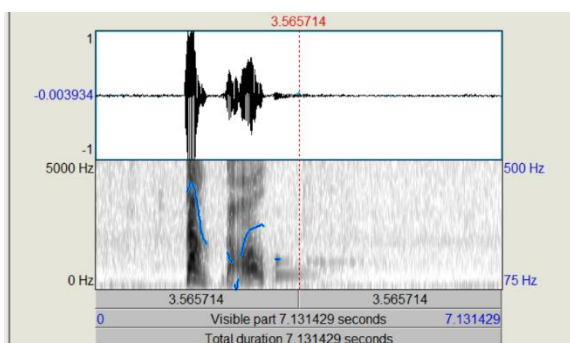


Figure 2:

Pitch contour of 4+1 tone combination (Local student)



Regarding this study, as another issue, the first tone could not be pronounced correctly because it was placed after the 4th tone, which pronounces starting from the high pitch and ending in low pitch. So, the students unintentionally start to pronounce 1st tone in a low pitch.

Figure 3:

Pitch contour of 4+1 tone combination (Native speaker)

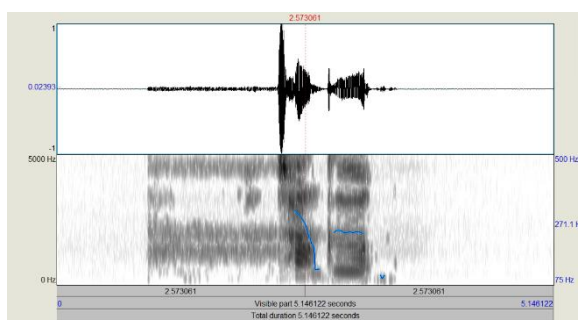
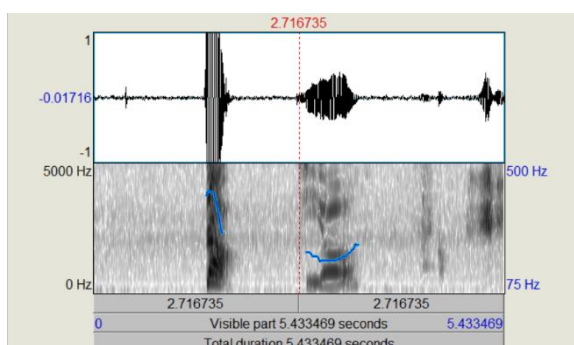


Figure 4:

Pitch contour of 4+1 tone combination (Local student)



As previously mentioned, students tend to pay more attention to the first tone out of anxiety of being mispronounced. Because the first tone is one of the hardest tones to pronounce among Sri Lankan Chinese learners. So as a result, the fourth tone which is placed before the 1st tone is pronounced incorrectly. Here we can carry out it as one kind of anxiety in tone pronunciation. (Figure 5, Figure 6)

Figure 5:

Pitch contour of 4+1 tone combination (Native speaker)

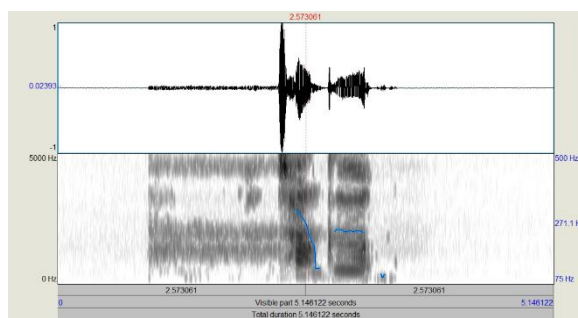
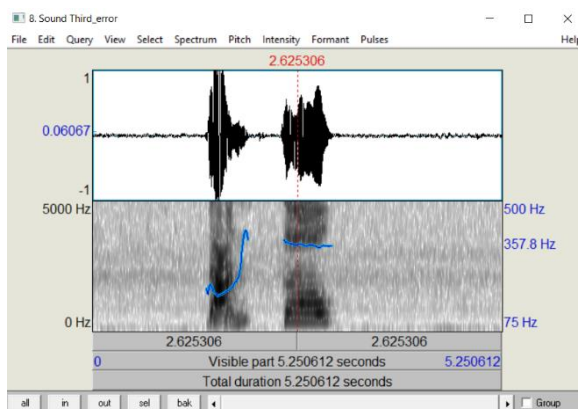


Figure 6:

Pitch contour of 4+1 tone combination (Local student)



Conclusion and Recommendations

By comparing the acoustic characteristics of Chinese tones between Chinese and Sri Lankan university students, we discovered that Sri Lankan university students had errors in tone length, tone range, and tone pattern when they acquired Chinese tones. The tonal deviation of Sri Lankan university students is mainly in the tonal domain. The most serious errors are in the first and fourth tones. The specific performance is that "the first tone is not high enough, and the fourth tone is too long." Based on the findings of a number of studies that have been done before, the researchers implemented some of the causes that led to the errors mentioned in this study. They are: the yin level does not rise, and the yang level loses tonal length. Errors in the acquired Chinese tones by students are mainly caused by various factors, such as their native tone habits and learning strategies. Analyzing the causes of Chinese tones in Sri Lankan university students can effectively help teachers teach tones and summarize

their rules for tone acquisition. Based on the acquisition laws of Chinese tones for Sri Lankan students, scientifically designed teaching strategies can be proposed to guide students to learn Chinese tones more effectively.

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A STUDY ON EFFICACIOUS USAGE OF TEACHING AIDS IN CHINESE GRAMMAR TEACHING IN SRI LANKA: WITH SPECIFIC REFERENCE TO SABARAGAMUWA UNIVERSITY OF SRI LANKA

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Abstract

Teaching aids engage in a salient part in the teaching-learning process. It presents information in a latest and helpful manner so that students get a better understanding of what they are taught. In regard to Chinese language learning in Sri Lanka, teaching aids found to be much effective since Chinese is taught as a foreign language. Particularly, Chinese grammar can be found as the most demanding area that students always get the influence of mother tongue and English. The main purpose of this study is to apprehend the most efficacious teaching aids that can be used to teach Chinese grammar in Sri Lankan classrooms. The literature study method has used to analyze the influence of different teaching aids while questionnaire analysis method has used to examine the manipulation of teaching aids in Chinese grammar teaching at Sabaragamuwa University in Sri Lanka. It illustrates that, along with multimedia, computer, mobile applications and organizing flashcard games were found as effective teaching aids for Chinese grammar teaching in Sri Lanka while depressing the usage of blackboard or whiteboard throughout the whole lesson. Further, it encourages teachers to utilize Adobe Flash or Adobe Animate to make video tutorials, make an effort on online digital content creation tools such as Edpuzzle, Kaltura and digital applications such as Kahoot to conduct audio-visual games in order to ensure interactivity and stimulate students' enthusiasm for learning Chinese grammar.

Keywords: *Acquisition, Chinese grammar, Effective teaching aids, Influence, Teaching Chinese as a foreign language*

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Introduction

The use of teaching aids can be traced back to ancient times in Sri Lanka. When it comes to kindergarten education, we can clearly remember one of the most popular teaching aids in the history of Sri Lanka, "the welipilla". Later on, it transformed into the blackboard. Then, there were many teaching aids, such as multimedia, computer and mobile phone applications, smart whiteboards, which can smoothly carry out the teaching process. In addition, they have also introduced into relevant disciplines. Recently there are special teaching aids for language, history, mathematics and science. Teaching aids can be helpful in teaching and learning process to break the boring routines and add a healthy life to the classes, to retain the information longer, to convey concepts in a better manner, to a better learning experience and to increase conceptual thinking.

As Chinese belongs to the Sino Tibetan language family and Sinhala and English belongs to the Indo European language family, there are some major difficulties in acquisition a foreign language like Chinese to Sri Lankan students. In terms of sentence structure, both Chinese and English have the sentence structure of "subject + verb + object" while the sentence structure of Sinhala is composed of "subject + object + verb". Therefore, Sri Lankan students experience more difficulties in absorbing Chinese grammar patterns. Further, students strive to compare the Chinese grammatical patterns with their mother tongue. Therefore, it is very important to have proper teaching methods and teaching aids when teaching Chinese grammar.

Teaching aids are materials used by teachers to supplement classroom teaching or stimulate students' interests (www.dictionary.com). Kumar (2017) put forward his own definition of teaching aids, that is tools and equipment used as auxiliary means to improve students' learning interest in classroom teaching. Zheng Lihue pointed out that if you use too much class time, compensatory teaching method is the most effective method. In addition, he said that changing teaching aids in the classroom can avoid students' weakness and boredom. Mwamwenda. T (1990) proposed that the teaching aids used in the classroom should be convenient and easy to transfer. The use of teaching aids is a whole process. Therefore, it can be adjusted according to the situation. Aloraini (2012) and Yangyuan (2015) also proposed multimedia assisted teaching through research. They have discussed several aspects of multimedia in grammar teaching such as plain text, text with pictures and text with videos. Li Jing and Kang Muyun (2014) believed that using multimedia is the best way to improve the efficiency of Chinese classroom teaching. Therefore, researchers generally believe that multimedia assisted instruction is a huge task in any type of classroom teaching. On the other hand, Li Chunling (2000)

mentioned that "expression teaching" is very important in teaching Chinese as a foreign language. Basic learners know only a few words. Therefore, he said, "sign language"+"expression"+"visual aids" play a huge role in basic Chinese teaching. It points out that teachers should keep both intuitiveness and abstractness when using teaching aids. Recently, Li Yifei (2019) and Qi Xiaoling (2011) talked about games as a method of Chinese teaching. However, the scope of effective teaching aids in teaching grammar to foreigners has not been clearly studied. The scope of this study will make up for the lack of effective teaching methods in basic grammar teaching in Sri Lanka.

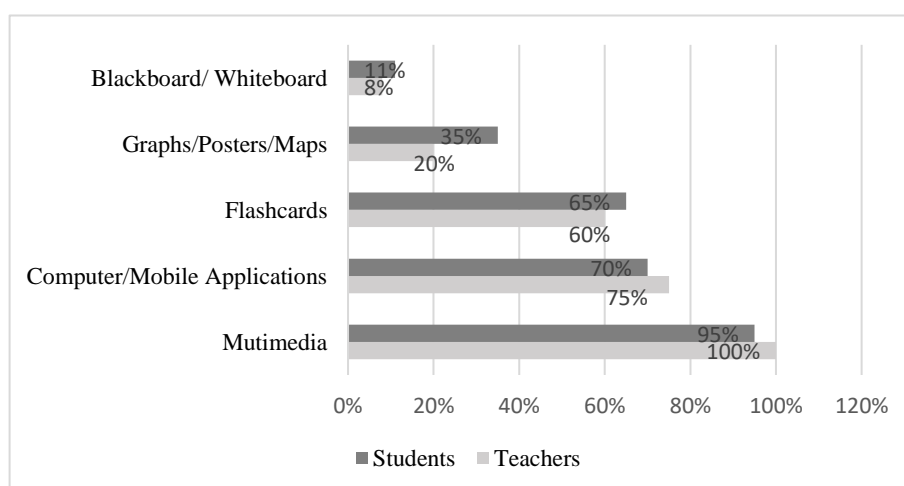
Material and Methods

Questionnaire analysis method has used to examine the manipulation of teaching aids in Chinese grammar teaching in Sabaragamuwa University in Sri Lanka. This study randomly selected 50 students those who learn Chinese and 10 Chinese teachers who engage in teaching currently and who engaged in teaching previously in Sabaragamuwa University of Sri Lanka. The main data were collected through a questionnaire and conducted short interviews through mobile applications: WeChat and WhatsApp. The collected data were analyzed quantitatively and qualitatively by mixed method while Microsoft Excel has used as the data analysis tool. In addition, literature research method was used to analyze relevant literature review by browsing relevant papers, articles, periodicals, books to analyze the influence of different teaching aids in Chinese grammar learning and teaching.

Results and Discussion

Figure 1:

The Perception of Teachers and Students on Efficacious Teaching Aids



Faculty of Social Sciences and Languages

According to the data analysis, it is clear that most of the teachers and students are more positive with the modern digital teaching aids such as multimedia, computer and other mobile applications, flashcards while depressing the usage of traditional teaching aids such as blackboard, whiteboard, graphs, posters, maps etc. While using these modern digital teaching aids, teachers can switch between teaching aids, instead of relying on one teaching aid all the time, and students can also use computers or mobile applications for self-study. In the whole classroom teaching process, use of whiteboard is very inappropriate. Therefore, teachers can use different teaching aids throughout the classroom. In this way, it can not only save time, but also improve the enthusiasm of students. The use of multimedia can also be distinguished by using PowerPoint presentations and video tutorials, and exercises can be realized as small games. Teachers can introduce flashcard games for the classroom where students often have confusion in language. Especially in teaching, such as measuring words, location words, telling time or numbers, teachers can organize effective flashcard games or computer games as aids. It is not only helpful to improve students' fast learning ability, but also helpful to improve students' memory. Teachers should be encouraged to use smart whiteboards instead of traditional whiteboards. At the same time, teachers can also divide teaching aids according to class hours and allocated time periods. It is the teacher's responsibility to manage the teaching plan between teaching aids. For example, to introduce new words, teachers can use picture cards. In order to explain the grammatical structure, teachers can use multimedia with visual effects. In order to practice grammar lessons in class, teachers can use flashcard games. Finally, for the practice part, teachers can upload the exercise form to a blog maintained by themselves or a digital learning management system like Google Classroom.

Using a variety of teaching aids can avoid students' boredom. In addition, we can use separate teaching aids to compare and contrast grammar lessons between different languages. It will enable students to have a clear concept of what they have learned, and help students identify differences between languages. For example, if this is a grammar lesson that can be seen in both mother tongue and Sinhalese, it may first use PowerPoint and blackboard to give a brief explanation in mother tongue. Then, through picture cards and video tutorials, we can explain the differences or similarities between the two languages. After explaining the whole lesson, it may encourage students to conduct a self-survey of the lesson and find more similarities and differences through language. Therefore, the diversity of teaching aids will enable students to participate in classroom teaching effectively.

Conclusion and Recommendations

In order to ensure a better acquisition of Chinese grammar in the classroom by using effective teaching aids, teachers can switch between teaching aids instead of relying on one teaching aid all the time. Students can also use computers or mobile applications for self-study. During the whole lecture, the use of whiteboards was very inappropriate. Therefore, teachers can use different teaching aids throughout the class. In this way, it can not only save time, but also improve students' enthusiasm for learning.

The contemporary student is always familiar with new technology, and it is difficult to advance without new technology. Compared with other countries, Sri Lankan classrooms are inadequate in the use of technology. The more they get used to this technology, the easier it is to advance with the progress of knowledge. As they always find updated information, which enables them to learn more about what they have learned in the classroom. At the same time, it can also save teachers' extra energy and time. The teaching aids used in the Chinese grammar class must avoid boredom and increase efficiency, and more students should be allowed to carry with the progress of new technology. In modern classrooms, both teachers and students are interested in using interactive teaching methods. It attaches great importance to students' self-discovery of knowledge instead of relying on teachers. Only using visual aids or audio aids in the classroom will make the lesson too monotonous. Therefore, teaching aids must be equipped with a mix usage of audio-visual aids to avoid the boredom in the classroom. It is required not only play slides, but also develop multimedia teaching by adding educational video clips and so on. The audio-visual teaching method is more effective in grammar teaching. Therefore, teachers can continue to take lessons at the same time with the video tutorials. Adding the native Chinese phonetics to the video tutorials will help improve students' oral and listening ability. It can ensure the improvement of all four skills of a language: reading, writing, listening, speaking. Teachers can make an effort to use Adobe Flash or Adobe Animate to make video tutorials, or try online digital content creation tools such as Edpuzzle, Kaltura. Using these online digital applications such as Kahoot also can conduct audio-visual games to make the course more interactive. The usage of more interactive teaching aids can stimulate students' enthusiasm for learning and will not easily give up grammar lessons.

The teaching aids must be accompanied by exercises and review tests before and after class. Teachers can update classroom exercises and additional exercises through digital spaces such as blogs or Google groups. Students are encouraged to exercise themselves and participate in online tutoring. Students can complete the exercises within a period of time and submit answers in time

after each class. The submission date can also be arranged in advance. This can reduce the maintenance of exercise books, and it is also convenient for teachers to take time for corrections. To review the previous lesson before the beginning of the new lesson, it may use simple flash cards to remember the new vocabulary and may consider about some quick games. Then, students are used to observe more and actively participate in grammar classes. As they can get their corrections quickly by using digital platforms, so that they can review their answers and study their mistakes by themselves. At the same time, it may drive the grammar lessons more student centered rather than the traditional teacher centered classrooms.

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**THE USE OF DRAMA AS A PERFORMANCE
ENHANCER IN TEACHING GERMAN AS A FOREIGN
LANGUAGE: A CASE STUDY BASED ON THE
STUDENTS' PERFORMANCE OF THE DRAMA FAUST
BY JOHANN WOLFGANG VON GOETHE**

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Abstract

This research seeks to examine the impact of using drama as a performance enhancer in teaching German as a foreign language. This is a case study based on the first year German Honors Degree students' performance of the Drama Faust by first – years students doing an Honors Degree in German at the University of Kelaniya. The data was collected by distributing a questionnaire among 15 students who took part in the drama performance. The findings of the research indicated that the use of drama in foreign language classrooms enhances the learners' oral skills, intercultural competency, and translation skills as well as their skills in social and performing arts, while extending the ability to remember the content of the literary work through dramatization.

Keywords: *Drama, Faust, Foreign Language, German, Performance enhancer*

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Introduction

Drama and theatre have been used in the foreign language curriculum to enhance the performance level of language learners since the beginning of the 19th century. Drama in foreign language teaching uses techniques like improvisation, role -playing, pantomime and puppets, and many other creative tools. One of the most important benefits of using drama in the foreign language classroom is that it contributes to creating a positive safe, ideal, and warm learning environment, which is sensitive, to the individual personality of the learners. The use of puppets, masks, props, and other creative elements used in stage plays, helps shy and troubled students, to reduce their anxieties and inhibitions connected with the language learning process, and fosters nonthreatening interaction among students. This friendly learning environment, replaces the characteristics of a traditional language learning classroom, where the learners are pressurized to learn the linguistic and syntactic patterns and encourages them to cherish the learning process and to store the new learning material faster in the long-term memory.

Written drama provides the learners an opportunity to bridge the past and present, where a stage performance can bring history in to the present as a lived experience. During the performance, the students need to act as if they were people from the target language country and should possess an in-depth knowledge about the socio-cultural context of the literary epoch in which the drama is set in. Drama and theatre allow the learners to practice the language in a situational context. Although their characters are fictional, they will use the language to convey emotional elements such as moods and feelings and recreate the lives and emotions of people, who lived in another time in a distant culture.

Drama and theatre in the foreign language classroom creates possibilities to improve nonverbal communication. Techniques used in dramas to convey human emotions such as gestures and mimics and facial expressions are rarely approached in text books but are essential gestures in day-to-day communication.

Moreover, students engaged in dramatic performances during rehearsals exchange enriching cultural experiences which assist them to overcome the fright of dealing with people from different cultural contexts. Therefore, the cooperative act of performing a drama allows the learners to have close contact with the otherness and foster intercultural, negotiation, and creative skills. The objective of this research is to examine the impact of drama and theatre on enhancing foreign language learning skills.

Materials and Methods

This research is a case study based on the drama performance “Faust” by first year students of the Honors Degree in German at the Department of Modern Languages, University of Kelaniya. The research sample was selected using a purposeful sampling method where a total number of 15 students who took part in the performance were selected as participants. A survey was conducted, through the distribution of an online Google form questionnaire. The questions were mainly focused on examining the learning experience of the students and the development of foreign language learning skills. As the majority of the questions in the survey were open-ended questions the thematic analysis method under content analysis was used for the data analysis.

Results and Discussion

The findings of the research indicated, that the learners have developed a wide variety of skills not limited to foreign language learning but also related to performing arts and theatrical techniques. The majority of the students have used creative tools such as masks, background music, and ornaments and as the drama was presented in virtual space, using the zoom conferencing software, the learners have used features in zoom application such as animations and virtual backgrounds which have been very effective during the performance.

When using creative tools, more focus was given to the moods and emotions of the main characters and the setting of the scenes. The emotions and feelings of the characters were portrayed with the use of makeup, facial expressions, and suitable background music. According to the students’ opinions oral pronunciation, and listening skills were mostly developed through the performance. As the drama was performed in Sinhala, the German text was translated in to Sinhala during which the learners have faced certain challenges such as difficulties in finding suitable Sinhala terms for German phrases due to the differences in language structures and translating the script in to Sinhala without harming it’s pure and real sense was considered by the learners as one of the main challenges during the translation exercise. Yet the learners have highlighted that this exercise was helpful to develop their translation skills and understanding of how unique languages can convey human emotions and feelings in vastly different ways. When inquiring whether there are any characters or scenes which the cast found difficult to play, the learners mentioned that acting in the male roles and imitating male voices and attributes, and changing the appearance completely using male costumes and make up as female actress, was very challenging.

The learners have identified the use of drama in the foreign language classroom as an interesting effortless way of learning the target language culture without following the traditional, monotonous language learning methods. The learners had, in general, a very positive impression of the drama performance as it helped them to remember the story line, dialogues, scenes, themes and characteristics better and also to enhance their performing art skills.

Conclusions and Recommendations

It was evident through the research, that the use of drama and theatre in foreign language classroom enhance the learner's language competency skills such as listening, reading, oral skills, translation skills, and intercultural skills as well as their social and performing arts skills while extending the ability to remember the content of the literary work through dramatization. It is suggested through the research findings, to integrate more live group activities, both physical and online such as making short movies and short story narration exercises in to the German Honors degree curriculum.

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GRAMMAR DEFICIENCY AFFECTED BY GERMAN GRAMMATICAL GENDER AMONG SINHALESE LEARNERS OF GERMAN AS A FOREIGN LANGUAGE IN SRI LANKA

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Abstract

In learning German as a foreign language, the acquisition of grammatical gender poses a challenge to beginners when it comes to appearing in articles for nouns, unlike Sinhala. This study investigated the main reasons for difficulties of acquiring German grammatical gender L1 as Sinhala Students and this study insight into contrastive aspects of Sinhalese and German gender. For beginners, acquiring the grammatical gender of German has often been viewed as a problem whereas their mother language does not have a grammatical gender system. According to the analysis of collected data, it has been identified that Multilingual and bilinguals acquire this grammatical gender concept better than monolinguals. Along with that lack of understanding of German language structure and ignorant of derivational suffixes that help to identify the gender of a noun in German, is also one of the reasons for this problem. Therefore, this paper presents a set of guidelines that help Sinhalese native speakers to use German articles correctly.

Keywords: *Gender acquisition, German grammar, Grammatical gender, Natural gender, Sinhala grammar*

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Introduction

Grammatical gender is one of the most complex and fascinating linguistic categories in the German language (Hocken,1958). In a language, gender systems can be categorized as natural, grammatical gender and genderless languages. In many Indo-European languages, the names of males belong to the masculine gender and females to the feminine gender. Whether an animate-inanimate distinction is made varies with the language (Susan-1962). German nouns have a grammatical gender unlike in Sinhala or English where the three genders feminine, masculine, and neuter are logically placed as masculine and feminine for humans or animate nouns and neuter for non-humans or inanimate objects. According to Sinhala, the words used for grammatical functions gender is (*linga*). Sinhala nouns are also divided into (animate) and (inanimate). In the field of linguistics, a grammatical gender system is a specific form of noun class system natural gender. In the Sinhala language, Male human beings are almost always assigned to the masculine gender and women belong to the feminine gender. But in German, (das Mädchen) ‘the girl’ is neuter, as well as (das Fräulein) ‘unmarried women’. When it comes to the inanimate objects, (das Handy) ‘the phone’ is neutral, (die Tür) the door is Feminine, (der Tisch) ‘the table’ is masculine.

The +/-animated and +/-human classification is therefore more important in Sinhala than the masculine/feminine and neuter classification. Living beings are first divided into +/- human, i.e., humans and animals, and then into +/- masculine” (Premawardana, 2001). German nouns always represent gender with an article. Whether Sinhala has not had a separate article to show their gender identity, they have suffixes (*-ek*) for animates and (*-ak*) for inanimates. The gender system of the German language is important in the morphology and sentence structure of the language. Unlike Sinhala, which has almost all forms of declension of adjective endings, cases and definite, indefinite articles of a noun and demonstrative pronouns changed according to the gender of the noun in German. Owing to the complexity of the gender system in German, it is challenging for learners to master this concept of an L2 as Sinhalese. Therefore, this study focused on the main reasons for the difficulties of acquiring German grammatical gender L1 as Sinhala students and then insight into contrastive aspects of Sinhalese and German gender.

Materials and Methods

The study applies a mixed method both quantitative and qualitative. Mainly interviews, questionnaires (with variable and invariable data), Tests and observation were used. The sample of this study consists of two groups, both learners and teachers from academic and school levels. Summing up to 100. All participants are Sinhala native speakers of whom some are bilinguals.

The quantitative method is used to have a wider picture of the research to find out what the picture is concerning the acquisition of the German grammatical gender and the qualitative methods are used to explore the underlying reasons behind the deficiency of acquiring the grammatical gender of the German language. Written Sinhala is considered in this study while contrasting two languages. These exploratory and confirmatory process includes not only questionnaires to quantify and conclude but also personally structured interviews to gain diversified reasoning and justification of the research problem and hypothesis.

Results and Discussion

Consistent with analysis, it has been identified that this gender of the noun in German effect the multitude of other inflections in the language. For example, the masculine definite article in the nominative case is *der*, and the feminine is *die*, but in the dative case the feminine is *der* again. Apart from the fact that if a sentence has an article and adjective in front of a noun, they are infected according to gender, is the present investigation for the confusion of the learners. And also in Sinhala, there is no article like in German which controls the meaning of the sentence. Moreover, teachers do not use interesting and effective methods to teach the gender of the noun. Also, multilinguals and bilinguals perform well on the test than monolinguals. Especially those who are learning a language that has grammatical gender. Furthermore, strong diglossia of the Sinhala language is also one of the reasons for this matter.

Conclusion and Recommendations

Deficiency in acquiring German grammatical gender is a challenge when the learner's L1 is Asian language. But within the better understanding of the language structure and memorizing a set of guidelines help Sinhalese native speakers to use German articles and gender correctly. One of the recommendations is to get as much exposure to the language as possible. In addition, practice the language by using new technology in extra time other than learning the language. Along with that watch movies, read books and

articles, listening news, write texts, practice songs and learn a new language that has grammatical gender.

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INTEGRATION OF TRANSLATION FOR THE G.C.E ADVANCED LEVEL SYLLABUS OF GERMAN AS A FOREIGN LANGUAGE IN SRILANKA

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Abstract

The integration of translation for German as a foreign language in Sri Lanka is in high demand. The German language is taught in many schools in Sri Lanka. Especially, it is included as a subject in the Advanced Level examination. As this syllabus is not included as a part of the translation and at the same moment it integrated a major question translation into the course of teaching German as a foreign language in GCE (advanced level) in Sri Lanka is timely. The aim of this study is to investigate the reasons for not integrating translation into the syllabus and to define that it is a major part to be included. The effectiveness of teaching translation in the classroom in order to make students comfortable and skilled at the Advanced Level Examination. An empirical survey at schools in Sri Lanka, where German is taught supports gathering the essential and practical based data and they were gathered by using questionnaires, observations, and discussions with teachers and students. Allied with them, interviews with some experts have been done regarding the possibilities, impossibilities, and suggestions for integrating translation into the syllabus. The results of this study show the necessity of integrating translation into the syllabus and the facts that should be taught. This study shows that the teachers have less guidance and training with regard to the effective and interesting teaching of translation applying GFL teaching methods. Furthermore, it shows that the limited time within a period in the classroom finds problematic for effective teaching of translation, finally offering guidance and a new critical way of looking at the effective teaching of translation methods for all German teachers in schools in Sri Lanka is detected.

Keywords: *GCE A/L Sri Lanka, Methods of translation, Syllabus –German as a Foreign Language, Teaching translation*

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Introduction

The term "translation" usually means transferring the meanings and conveying messages from one language to another. The source text is translated into the target language at various levels, from words and sentences to entire texts. In the process of translating, a person who tries to understand the unknown text would automatically translate it in their mind into their first language as a basis for understanding and/or producing it in the first or another language. Therefore, it is obvious that translation is important in foreign language learning because learners naturally use translation to facilitate understanding of the foreign language.

As for Sri Lanka, globalization has paved the path to the growth of tourism and international relations, and languages hence play a key role in transmitting information to and from nations around the globe. Many people with proficiency in a foreign language have become the most sought-after employees in the field where foreign relations take place. Hence, acquiring a foreign language has gained vital importance and is a trend in modern Sri Lanka due to its geographical location. Among the foreign languages in demand, German takes a leading role. As a result, during the last two decades, the German language has become a major elective among students of government and non-government educational institutions. Therefore, it is a timely requirement that the government includes translation into its curricula. With such a demand for learning German as a foreign language in Sri Lanka, a study into the importance and the role of translation in the German curricula in Sri Lanka deserves an investigation. This study aims to explore the position and integration of teaching translation to and from German, emphasize the dire need, and give feedback on its implementation.

The Sri Lankan GCE (advanced level) examination is competitive, and for many who are not selected for a state university, it is an educational exitpoint. Hence, it is rewarding to see the recognition that the Examination Department has given to translation by incorporating a German-to-English translation in the Sri Lankan GCE (advanced level) examination. Given the case, one could observe that there is no space given for the practice of translation in the Sri Lankan GCE (advanced level) curriculum. Therefore, the candidates sitting for the examination are almost, if not completely, untrained to do a proper translation. A close examination makes it clear that there is considerable weakness in practice or guidance for teaching or learning to translate a German text into their mother tongue and vice versa. The student should practice translating a text using basic translation strategies. If a translation occurs outside of these translation strategies and

fundamentals, the product is evidently unsuccessful. Even though the GCE (advanced level) examination expects a CEFR level A2 from the candidates, it is apparent that the teaching level does not adopt the system thoroughly so as for the students to understand the salient features of both languages. Teachers, on the contrary, lack the required linguistics knowledge to guide the learners. Some have false pre-conceived notions about translation while others do not conceive the advantages of exercising translation from the early stages. Quite a number of students have no experience in spontaneous translations, or the skills required to translate cultural contexts. Therefore, the question arises as to why this situation prevails in the present. An empirical study is required to examine the crux of the existing quarry of research.

Accordingly, this research was done to solve the problem of why translation is not integrated into the G.C.E Advanced Level Examination and how to integrate translation into the syllabus of German language and literature. Advanced Level examination as per the above research question, the objectives of this research were to identify the necessity of teaching and learning translation to the students who are waiting to translate a text into German and examine the possibilities of integrating translation into the syllabus of German as a Foreign Language.

Material and Methods

The integration of translation into effective teaching and learning processes in teaching German as a foreign language at CEFR levels A1 and A2 in Sri Lanka should be investigated empirically. In order to examine the validity of the priory-built hypothesis background study and the competencies of the teachers were done. The fact that teaching is also done through translation methods was also observed.

Teachers who teach German in Advanced Level classes in Sri Lanka, only train students at a low level to only translate texts. Neither teaching nor learning translation strategies, how would the translation that students do in the exam be called accurate translation? Therefore, this research is a qualitative empirical work carried out in order to observe the reasons for the non-integration of translation in German as a foreign language at GCE A/L, order to teach it propagandistically, in order to examine how successful, the integration of innovative methods of translating in the teaching German as a foreign language in schools in Sri Lanka.

Since this research is qualitative empirical research, both self-collected and existing data are, of course, collected. Since this research on the integration

of translation into teaching German as a foreign language is effectively being explored among high school students in Sri Lanka, a sample of 22 high school German teachers and 270 German learners is examined. In the case of self-collected samples, self-collected data is collected. The result of the self-collected data is analyzed with the already existing data in order to achieve the end purpose. As already mentioned, both existing data and self-collected data are included in the research context. As with already existing data, data from printed literature such as monographs and articles are used, while at the same time data from observations, interviews, worksheets, and questionnaires is included in the self-collected data. Printed publications on the topic gained prominence in this research, providing the theoretical basis for teaching translation in the classroom.

Results and Discussion

Through empirical data, the following facts were found for discussion:

- Identification of barriers and skills related to teaching translation in high school.
- The possibility of integrating translations into the course.
- The importance of translation lessons for the learners of German in the A/L class.

This study focuses more on the non-incorporation of translation into the curriculum through the observation of teachers and students to identify these deficiencies. In addition, the importance, possibility, and capability of integrating translations were clarified through interviews with the individuals concerned. In the area of identifying the different dimensions with regard to the translation of a German text by the students, a part from worksheets, live observation was carried out to confirm the information included in the interviews and discussions.

According to the result of the worksheet, the student's knowledge of translation was recorded. Since the range of the evaluation criteria is not higher than 50%, this proves that the students should be familiar with translation skills. There the question with the conclusion: negative effects of the non-integrated translation on the course of German as a Foreign Language in the Abitur in Sri Lanka, affirmative. However, some contributing causes related to teaching translation in the classroom have been explored using questionnaires and interviews. Responses were tested in observation alongside questions from questionnaires on learning and teaching translation. Sometimes contrasting areas are identified between the teacher questionnaire responses and the observation phase. Since observation is a

clear measuring cone within research, it has gained great importance as a result of this research. Discussions with teachers and students help to determine the respective causes. The discussions held with the experts also contributed to the appreciation of the research results.

Figure 1:

Reasons for not teaching Translation at German at schools. (Teachers perspective)

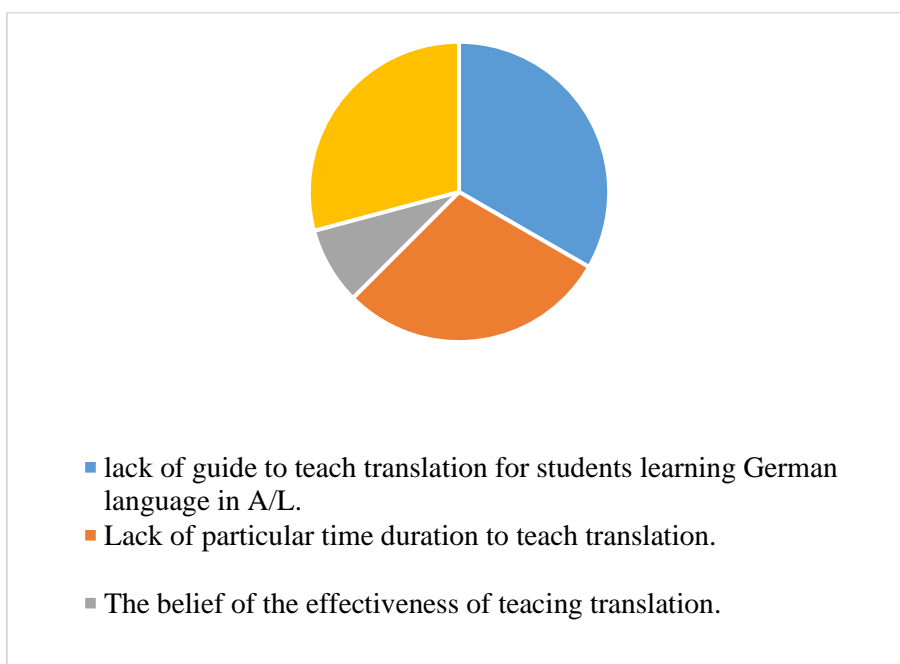
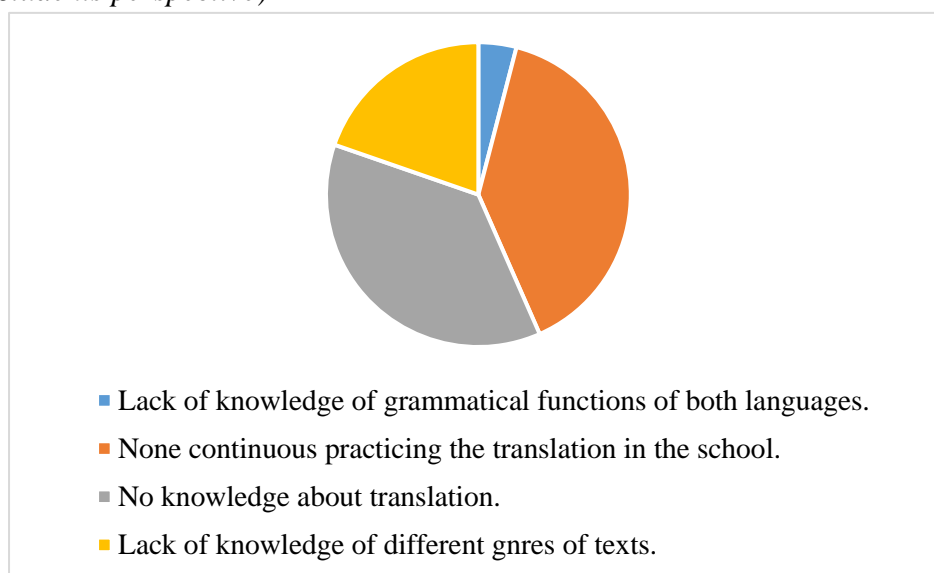


Figure 2:

*Reasons for not learning to translate in German at Sri Lankan schools.
(Students perspective)*



Conclusion and Recommendations

The conclusions are recommendations of the research that are directed at the curriculum, teachers teaching German as a Foreign Language in Advanced Level classes, and students learning German as a foreign language for Advanced Level examinations.

Consequently, the use of the method phases made sense, and the teacher should always be able to trust them. In this case, effective and interesting teaching of translation in the classroom is essential, and at the same time, the teacher should be more motivated and interested in teaching innovative methods so that the methodology of teaching translation in German as a foreign language becomes a success.

For Nord, (Nord, C., 1997., 165) it is important when discussing Translation lessons between translating as a form of practice in distinguishing foreign language teaching and translation to the aim of developing translation skills. In that opinion, the method of translation in foreign language teaching can be used in two ways. To develop productive skills, a translation of the mother tongue into the foreign language and to test reading comprehension from the foreign language into the mother tongue. With these two methods, she points out that translation contributes massively to foreign language teaching and

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learning. Even its aspects have been recognized by many other researchers, who reused their research and articles via written translation terms for foreign language teaching. According to Königs (2000: 6), translation as a skill and as a form of practice can have different goals at FSU. He further points out that when compiling in the FSU, a distinction is usually made between translation as a separate capability. Translation as a form of exercise Accordingly, among other things, on the insight that translation competence cannot be achieved in foreign language teaching." But he is of the opinion that, if there is translation instruction in a foreign language classroom, continuous practice of translation tests and exercises should also be included. Butzkamm (1987: 63 in Ehnert/ Schleyer) is of the opinion that "the undisputed high status of translation in intellectual life should be enough to secure a place in school" and adds: "The training of the ability to translate should be an independent teaching goal". Krings (1995: 328 in Bausch/ Christ/ Krumm) is of the same opinion and emphasizes that "measuring translation in foreign language teaching makes sense as an independent learning objective because translation or interpreting skills are part an extracurricular, professional and private language contacts situations can be used." On the other hand, he emphasizes that translation in language acquisition "should not be the means of choice in practically no function" but should only be used selectively. Like Krings, many find Scholars who have researched the topic found that other forms of exercise (e.g., control questions, summaries, etc.) are more effective than translation.

Finally, the use of innovative teaching methods such as the correct application of the teaching translation, the use of new technologies, the use of interesting activities, the use of a good lesson plan, etc. is essential to integrating the combination with the translation into the course so that the students do the translation task in the GCE A/L exam comfortably and increase the dignity of the course.

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SIGNIFICANCE OF LISTENING COMPREHENSION IN GERMAN AT THE G.C.E. ADVANCED LEVEL EXAMINATION OF SRI LANKA

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Abstract

Listening comprehension is a receptive skill, which ought to be developed methodically with specific strategies. The progress of methods of teaching German as a foreign language for many decades shows significant attention to the development of listening comprehension skills in the foreign language classroom. A close examination of the teaching and evaluation process of German in Sri Lanka shows certain discrepancies in teaching and testing listening comprehension at the school level. In-depth observation of the schools teaching German in Sri Lanka discloses many problematic areas in the teaching-learning environment, as well as demotivation in developing the listening skill, as it is not tested at state-level examinations. Empirical research on this matter revealed that apart from a lack of training and technical support at schools the evaluation system has a lacuna with regard to testing listening comprehension at state-run university entrance examinations at the GCE advanced level. Through the outcome of the research, suggestions are made to make the teaching staff of German aware of the significance of listening comprehension, a revision is made to the German curriculum, and a component to test listening is included in the state examinations in German with the adoption of the teaching and evaluation principles adopted by the Common European Framework of Reference (CEFR).

Keywords: *Evaluation, Listening comprehension, Teaching German as a Foreign Language in Sri Lanka*

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Introduction

Listening is the medium through which people gain a large proportion of their education, their information, their understanding of the world and human affairs, their ideals, sense of values (Guo and Wills 2006: 3). Of the total time spent on communicating, listening takes up 40-50 %; speaking 25-30 %; reading 11-16 %; and writing about 9 %” (Mendelson: 1994, p. 9). Peterson (2001), emphasizes the importance of listening in language learning and states that “no other type of language input is easy to process as a spoken language, received through listening ... through listening, learners can build an awareness of the inter-workings of language systems at various levels and thus establish a base for more fluent productive skills” (p. 87). Hence, listening has an important role not only in daily life but also in classroom settings. Most people think that being able to write and speak in a foreign language means that they know the language; however, if they do not have efficient listening skills, it is not possible to communicate effectively. That is, listening is the basic skill in language learning and over 50% of the time that students spend functioning in a foreign language will be devoted to listening (Nunan, 1998).

A glimpse at the historical evolution of teaching German as a foreign language in Sri Lanka from the methods perspective reveals that the main method by which the language instructions were done at the beginning was the Grammar Translation Method (GTM), where language learning was considered as learning sets of rules which aimed to help students to read and understand the literary works of the foreign language. It is evident that teaching listening and/or to have trained to teach listening to a text in a methodical manner was never a primary concern. With the advent of foreign language teaching the Direct Method (DM) was accepted as the natural method and became very popular as a major shift in teaching German as a foreign language. The proposed idea by this is to teach and learn German in German medium and this method concentrated on developing listening skills before other skills. Even though the target language was used in the classroom, there was no use of listening strategies to develop listening comprehension. Therefore, these two methods were followed by the communicative method. Of all the four main language skills, listening was the most influenced by those changing trends. In the 1970s, listening as a skill to develop, started to take place in language teaching programs besides speaking, reading, and writing. With the rise of Communicative Language Teaching in the late 1970s, teaching German for communication began to play a significant role and the importance of teaching listening increased. At present, attention to listening, and aural comprehension had gained a significant place in teaching and learning German as a Foreign Language.

Listening comprehension is a receptive skill. As it is an activity of listening to a text along with continuous live sound signals, the listener has to segment the stream of signals into meanings with prior knowledge of the language in which the listening text is transmitted. The listener has very little control over the speed of the sounds as well. Therefore, the listener has to repeat the reception as often as necessary to make sense of what's heard and spoken. Listening comprehension of recorded sounds is often more difficult than listening to dialogues and descriptions of daily life as it is not visible unless it is a video recording. Therefore, listening is a skill to be developed in the process of learning a language, as it unavoidably functions as a major component of the mode of communication and understanding of a new language. Listening effectively is crucial for people to sustain effective communication. This inevitably suggests specific areas of difficulty in the teaching-learning environment. Although the centrality of listening in German as a foreign language is well established today appropriate listening comprehension instruction is essential for target language competency. Given this fact, listening is one of the most neglected skills in German as a foreign language classroom in Sri Lanka. Both the German syllabus and the teachers pay more attention to reading and grammar, and teaching listening has not become a significant feature of the language teaching process.

Materials and Methods

A mixed method of both qualitative and quantitative research methods was integrated to reach a consensus in the discussion of research. Probability sampling is used to collect data on the existing situation and issues within the research problem in the practice of listening comprehension in the A/L classes; The sample group was the students, teachers, and authorities of the State examination department, as well as the National Institute of Education, were included in the qualitative research in order to get a broad picture of the agreements and disagreements at the bureaucratic level. The questionnaires include both independent and non-independent variables for a vivid analysis. Personal interviews would be held with teachers and authorities regarding the feasibility of applying the evaluation and its significance to the syllabus.

Results and Discussion

The most common drawback of the situation in the school environment could be considered the lack of technical assistance, as many school teachers are not equipped with the facilities to conduct listening comprehension at school. As the classrooms are open, the sound disturbs others as much as the concentration of the students does not retain for long. The side of teaching staff is not well trained with the required strategies to teach and test listening

comprehension, and as a result, both parties (teachers/students) lose motivation to do so, and consequently, they tend to skip such components in the textbook. As far as the evaluation is concerned, none of the district-level examinations or state-level examinations have a component for listening comprehension to be tested. This, on the other hand, discourages teachers and students from concentrating on developing the skill, as they find it useful to utilize that time to practice the skills tested in the examination. The examination department continues with the examination structure for German as it has done since its advent, and the National Institute of Education works rather independently from the examination department.

Conclusions and Recommendations

It is an accepted fact at present that each of the four skills should be given an equal proportion of time in the language teaching environment as well as in the evaluation process. The results of the study done to examine the situation with the evaluation of German as a foreign language have revealed that German as a subject, even though it has many potentials, has drawbacks and pitfalls within the teaching and evaluation processes, as listening comprehension is not tested at any stage of the examination process in Sri Lanka. It is highly recommended that an assembly at an institutional level be held in order to discuss this matter regarding the evaluation and integration of listening comprehension and testing into the German syllabus. Another recommendation should be a serious consideration of adopting the common European framework of reference (CEFR) for the teaching and evaluation process of German, as it would be useful in the long run if the government-run exams are internationally accredited. A formalized teacher training program is suggested, especially in connection with one teacher training college in Sri Lanka, to place things in order.

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CROSS-LINGUISTIC INFLUENCE IN THIRD LANGUAGE ACQUISITION

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Abstract

This study investigates the role of previously acquired languages, testing three different third language (L3) acquisition models: the absolute L1 transfer, L2 status factor, and Typological Primacy Model (TPM). The absolute L1 transfer claims that the first language (L1) plays a privileged role in L3 acquisition, whereas the L2 status factor suggests that the second language (L2) plays a stronger role than the L1 in the early stages of L3 grammar development. Turning to the TPM, it maintains that the initial stage transfer depends on psycho-typological proximity between third language and prior languages. To understand the role of prior languages, the researcher tested knowledge of object pronouns in French by proficiency-matched L3 and L2 French speakers whose L1s are either Chinese (n=17) or English (n=28). The data were collected via production tasks in French. The results suggest that L3 speakers experience non-facilitative transfer from their L1.

Keywords: *Chinese, French, Object pronouns, Second language transfer, Third language*

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Introduction

The present study investigates transfer in L3 acquisition by testing three different L3 acquisition models: Absolute L1 Transfer, L2 Status, Factor, and Typological Primacy Model (TPM). L3 models make different predictions about the role of previously acquired languages. The absolute L1 transfer assumes that L1 plays a significant role in L3 acquisition (Hermas, 2010). The TPM has been developed by Rothman in a series of studies (Rothman 2010,). This model claims that transfer in L3 acquisition occurs selectively, depending on psycho-typological proximity between L3 and prior languages. The L2 Status Factor suggests that L2 plays a stronger role than the L1 in L3 grammar development (Bardel & Falk, 2007). The key goal of the present study is to shed light on L3 grammar development. This goal is achieved by means of a study of L3 French speakers whose prior languages are English and Chinese. Further, this group was compared to a group of L2 French-L1 English speakers.

Syntactic background

As illustrated in (1), the referential pronoun is expressed overtly in English, and overtly expressing referential object pronouns are obligatory in English as in (2).

1. Speaker A: Do you read the newspaper?
Speaker B: Yes, I read it.

- 2.Speaker A: Do you read the newspaper?
Speaker B: *Yes, I read \emptyset .

In French, object pronominalization is realized through a clitic or a weak pronoun (as in 3-b). The clitic construction given in (3-b) allows us to comprehend that in French, clitics precede inflected verbs. Further, null object pronouns are not accepted in French as in (3-c).

- 3.a. Speaker A: Est-ce que tu lis le journal?
Q you read the newspaper
'Do you read the newspaper?'
- b. Speaker B: Oui, je le lis.
yes I it read
'Yes, I read it.'
- c. Speaker C: *Oui, je lis.
yes I read
'Yes, I read.'

Chinese differs from English and French with respect to the object pronominalization. Chinese allows overt and null referential pronouns as in (4).

4. a. Speaker A: Zhangsan kanjian Lisi le ma?
Zhangsan see.PST.3.SG Lisi PTCL Q
'Did Zhangsan see Lisi?'
- b. Speaker A: ta kanjian ta le.
he see.PST.3.SG him PTCL
'He saw him.'
- c. Speaker C: ta kanjian le.
he see.PST.3.SG PTCL
'He saw.'
- (Huang, 1984a, p. 533)

Research questions and hypotheses

To determine the source of transfer in L3 French acquisition, the present study compares knowledge of object clitics in French by L1-Chinese–L2-English–L3-French speakers and L1-English–L2-French speakers. The following research question frames the present study.

Research Question 1: What are the characteristics of object pronominalization in L3 French (L1-Chinese–L2-English–L3-French) compared with L2 French speakers (L1-English–L2-French speakers)?

Hypothesis 1: acquisition of object pronouns under the Absolute L1 Transfer.

If this model is correct, then the L3 French speakers will transfer from L1 Chinese. Transfer from Chinese will be non-facilitative as it allows null object pronouns. Under nonfacilitative transfer from Chinese, the L3 speakers will accept null object pronouns in French. However, the L2 speakers will reject null object pronouns as they will transfer from L1 English.

Hypothesis 2: acquisition of object pronouns under the L2 Status Factor and TPM

If the L2 Status Factor is correct, the L3 French speakers will transfer from English and they will reject null object pronouns in French. Similarly, the L2 French speakers will also transfer from English. Therefore, both groups will reject null object pronouns in French. English and French are similar typological languages. Therefore, if the TPM is correct, the L3 speakers will transfer from English. It means that the L2 Status Factor and TPM predictions are similar.

Methodology

Seventy-six participants took part in the study. There were two experimental groups and a control group. Two experimental groups included seventeen L3 French speakers and twenty-eight L2 French speakers whose prior languages were L1-Chinese–L2-English (hereafter L3 speakers) or L1-English (hereafter L2 speakers). The native control group included fifteen L1-French speakers. The L2 and L3 speakers completed a validated cloze test in French. The independent samples *t*-test showed that the L2 speakers and L3 speakers are not significantly different with respect to French language proficiency ($t(46)=1.32$, $p=.385$).

Materials

The data was collected via a production task in French. It compares the use of object pronouns in French by L2 and L3 French speakers. The participants completed the task individually. The following predictions were made in the French production task. If the L3 speakers experience non-facilitative transfer from Chinese, they will use null object pronouns in French. On the other hand, if they transfer from English (their L2), they will reject null object pronouns in French.

Results and discussion

The results are reported in Table 1. The L2 group has more than 30% of S-CI-V⁶ structure, whereas the L3 group's use of that structure is lower (24.41%). Interestingly, the two non-native groups differ from each other as the L3 group used *S-ø-V⁷ (25%) more frequently than the L2 group (4.6%). Following Larson-Hall (2016), A chi-square analysis was conducted on the three response types produced by the two non-native groups. The result was significant ($\chi^2(2)=29.61$, $p\leq.001$).

Table 1:

Percentage (raw number) of each structure produced, by group

Structure produced	Group		
	L1 French (<i>n</i> =15)	L2 French (<i>n</i> =28)	L3 French (<i>n</i> =17)
S-CI-V	86.67 (260)	32.14 (180)	24.41 (83)
*S-ø-V	00.00 (00)	04.46 (25)	25.00 (85)
S-V-NP ⁸	13.33 (40)	63.40 (355)	50.59 (172)

⁶ Object clitic structure as in (3-b).

⁷ Null object pronoun structure as in (3-c).

⁸ Overtly expressed object pronoun as in (1).

Conclusion and Recommendation

Hypothesis 1 is compatible with the Absolute L1 Transfer. It maintains that if the absolute L1 Transfer model is correct, then the L3 French speakers will transfer from L1 Chinese. Therefore, the results suggest that the L1 plays a stronger role than the L2.

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A STUDY ON TRANSLATION STRATEGIES EMPLOYED IN INTERSEMIOTIC TRANSLATION (WITH SPECIAL REFERENCE TO THE NOVEL ‘THE ROAD FROM ELEPHANT PASS’ AND THE MOVIE ‘ALIMANKADA’)

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Abstract

Translators employ various strategies in translation. With respect to the strategies of intersemiotic translation in the translation of the English novel 'The Road from Elephant Pass' into the Sinhala film 'Alimankada', this study intends to identify the categories of strategies used in intersemiotic translation, particularly from written semiotics into cinematic semiotics. Data for the study were collected by observing a selected novel and a movie based on it. Content analysis was used for data analysis. The results of this study are significant as it may have a vital influence on the relevant discipline. Empirically, the study assists to decrease the scarcity that remains in the studies related to intersemiotic translation in Sri Lankan literature. As a result, the researchers have identified three strategies introduced by Olga. They are reduction, reinterpretation, and extensions. Similarly, three new strategies of resemblance, transference, and unification are also found. In conclusion, the researchers have found out the strategies used in the intersemiotic translation to be useful in conveying the source text's message accurately and effectively to the target audience.

Keywords: *Cinematic semiotics, Intersemiotic translation, Movie, Strategies, Written semiotics*

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Introduction

Entertainment is an energetic need for each being, from the start of human evolution. Among the methods of entertainment, movies are a more practical way as they contain audio-visual movements. In cinematic creations, fiction can be written as a script to convert a novel into a movie which is called intersemiotic translation according to Olga Leontovich (2019). In 1998, Mona Baker has observed that insufficient studies have been led in the arena of intersemiotic translation (Kazmierczak, 2018). Besides, in Sri Lanka, no study on intersemiotic translation has been conducted referring to its own literature. This study focuses on satisfying the above gaps and supporting the researchers of Translation Studies to be familiar with intersemiotic translation.

‘Alimankada’ is a Chandran Rutnam film based on the Gratiaen Prize winning novel ‘The Road from Elephant Pass’ by Nihal De Silva. Actors Ashan Dias and Suranga Ranawaka were the leading characters of the movie as Captain Wasantha Rathnayake and Kamala Velaithan respectively.

The research aims to discover the strategies employed in the movie ‘Alimankada’ in the process of intersemiotic translation.

Concerning the above research problem, the main objective of this study is to identify the strategies of intersemiotic translation employed in the movie 'Alimankada'

This study provides a broadminded influence on the development of Translation Studies and an assurance to decrease the scarcity remaining in studies on intersemiotic translation from Sri Lankan literature. Furthermore, this study is beneficial for individuals who are interested in evaluating strategies of intersemiotic translation.

Material and Methods

The current study is a corpus-based research with a qualitative approach in which the content analysis method is used. In this case, the English novel 'The Road from Elephant Pass' by Nihal de Silva and the movie 'Alimankada' directed by Chandran Ratnum were selected as the contents to be analyzed. These two materials are the primary data of this study while previous research papers, e-books, and journals were used as secondary data. Collected data were analyzed to identify which strategy is employed in each scene and they were classified according to the strategies introduced by Olga Leontovich. Accordingly, the research problem is solved through observations and evaluation.

Results and Discussion

In her paper, "A sensible image of the infinite: intersemiotic translation of Russian classics for foreign audiences" (2019), Olga introduces three strategies which are available in intersemiotic translation under the category of verbal to visual translation.

1. Reduction: omission of parts of the original
2. Extension: addition, filling in the blanks and signifying the unsaid
3. Reinterpretation: modification or remodeling of the original in accordance with the director's creative ideas.

Apart from these, another three new strategies are also found by the researchers.

4. Resemblance: converting written semiotics into visual semiotics, rendering a parallel message which is received by the reader of the novel to the spectator of the movie
5. Unification: connecting similar written semiotics as a single visual semiotic
6. Transference: separation of a written semiotic from the corresponding visualized semiotic and insertion of it into a different one.

- Reduction

In this particular intersemiotic translation, the director has reduced the number of written semiotics.

Ex: On their way to the Army headquarters, Velaithan sees a church and wants to get off to pray (p.328). This scene is reduced from the movie showing that they directly arrive at the Army Headquarters from Upali's house.

- Extension

Newly created visual semiotics added by the filmmaker belong to this strategy. In this particular movie, two types of extensions were identified.

1. Addition

Conveying a fresh message which is only received by the spectator but not by the reader

Ex: A woman listens to the discussion in the truck (21:25 – 22:49)

In the written semiotics, they only discuss their further plans but no one hears it.

2. Signifying the unsaid

Conveying the hidden messages in the written semiotics by a fresh scene which is to be only known by the spectator but not by the reader

Ex: Burying a dead body on the way to Pooneryn (14:16 – 15:51)

On their way from the shelter to the main road to Pooneryn they find a dead body. Velaithan, assuming him to be a Tamil, tries to bury it while Captain finds his NIC, and recognizes that he is a Sinhalese. Then Kamala gets angry and leaves. Captain keeps the NIC found on the body and leaves. Here, the likes and dislikes of the two enemies and their hatred towards the enemy but their warmth towards their own people are emphasized.

- Reinterpretation

In the present analysis, two types of reinterpretations are recognized.

1. Recreation with the central message

Change of the roles while preserving the central message. Here, both the reader and the spectator finally received the same comprehension through dissimilar imageries.

Ex: Splitting the haunch of the doe (49:17 – 19:27)

In written semiotics, Velaithan is the one who splits the haunch of the doe with her kitchen knife. In visualized semiotics, Captain splits the haunch of the doe while Velaithan is standing at a distance. Here, the roles of the characters have changed. However, the central idea that they split the haunch of the doe is preserved.

2. Reorientation

Enhancement of written semiotics with an addition while creating a variance between the awareness of the reader and the spectator.

Ex: Snakes (1:10:41 – 1:10:49)

Written semiotics mentioned that snakes are not met. However, one day the Captain is bothered by the fear of snakes. Conversely, the filmmaker shows a snake on their way and the pair unexpectedly gets frightened. Here, the imaginations of the reader and the spectator run through different orientations regarding the same fact.

- Resemblance

Ex: Kalliyadi Police Station (23:14 – 23:19)

Written semiotics: "A prominent new signboard carried the Tiger Emblem and some writings in Tamil. Below that, proudly in English – POLICE STATION KALLIYADI." (p.37). The filmmaker has thoroughly followed the written semiotics. As the reader gets the imagery of a signboard with Tiger Emblem, Tamil letters, and English letters, the spectator also sees the identical signboard through the visuals.

- Unification

Ex: Uprooting lotus yams and conversation on Tamil's traditional homeland (56:08 – 58:58)

Written semiotics convey the message that Captain uproots yams alone while Velaithan is preparing the meal. They cook them and eat them. After that, they start their conversation. Written semiotics expressively delivers the image of Captain uprooting yams alone but the filmmaker has unified two incidents to show they argue on the above fact while uprooting yams.

- Transference

Ex: Kamala reveals her information (11:08 – 11:57)

In written semiotics, Velaithan reveals her information in a shrubbery at Alimankada, in the 2nd chapter. The corresponding visual semiotics of this part has been inserted into the scene in the shelter at Wannu, in the 3rd chapter.

The followings are a numerical summary of the findings.

Table 1:

Frequency and percentage of each strategy

Strategy		Frequency	Percentage (%)
Reduction		52	24%
Extension		14	7%
Reinterpretation	Recreation with the central message	30	14%
	Reorientation	8	4%
Resemblance		72	33%
Unification		36	17%
Transference		3	1%

Table 2:*Challenges that are overcome by each strategy*

Strategy		Challenge overcome
Reduction		<ul style="list-style-type: none"> • Extracting the major storyline
Extension		<ul style="list-style-type: none"> • Maintaining the interconnection between different scenes
Reinterpretation	Recreation with the central message	<ul style="list-style-type: none"> • Avoiding impracticality
	Reorientation	<ul style="list-style-type: none"> • Enhancing the spectator's fearful experience
Resemblance		<ul style="list-style-type: none"> • Preserving the authenticity
Unification		<ul style="list-style-type: none"> • Managing time
Transference		<ul style="list-style-type: none"> • Avoid impracticality

Conclusion and Recommendations

The researcher concludes that in the scenes for which the resemblance strategy is used, the target film seems to function as a repeated text and a text of recreation of the written signs. In the scenes for which the extension and reinterpretation strategy is used the target film seems to function as a text of emphasis among the signifiers of the written signs. In the scenes for which the transference strategy is used the target film seems to function as a text of transference of information of the signifiers of the written signs.

It is suggested that other researchers analyze diverse sources to identify more strategies that could develop the faithfulness of intersemiotic translations. For that purpose, the present study will be productive in enhancing explorations and unveiling the untouched areas in Translation Studies.

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TRANSLATION TECHNIQUES ADOPTED IN TRANSLATING AGRICULTURAL TERMS: (WITH SPECIAL REFERENCE TO THE PERFORMANCE REPORT 2018 PUBLISHED BY THE DEPARTMENT OF AGRICULTURE)

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Abstract

This study focuses on the translation techniques adopted in translating agricultural terms with special reference to the Performance Report 2018 published by the Department of Agriculture. Since translators use different translation techniques to overcome challenges in translating agricultural terms from English to Sinhalese the main objective of the study is to examine the translation techniques adopted by translators in translating agricultural terms. This study is based on qualitative research methodology and content analysis was used for data analysis. The research has identified seventeen (17) types of translation techniques and from 230 terms, the most frequently used translation technique was calque which has been used 116 times. Naturalized borrowing, generalization, borrowing with modulation, and omission with addition were the least used translation techniques which have been used only one time. Since agriculture is one of the major sections which contributes to the world economy, it is important to conduct research on the translation of agricultural terms. Further, the research expects to provide recommendations for translators, translation students, and future researchers.

Keywords: *Agricultural terms, Calque, Performance report, Translation techniques, Technical translation,*

Abbreviations:

ST: Source Text

TT: Target Text

SL: Source Language

TL: Target Language

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Introduction

The agricultural translation is a fast-growing and demanding field in the translation services. Advanced knowledge of terminology and life sciences linked to crops, livestock, fertilizers, and soil are required in the agricultural translation. Due to the significant advancement in the agriculture industry, the demand for accurate and quality translations is increasing in Sri Lanka. In Sri Lanka, as a multinational state, it is important to draft documents in main three languages. Respecting the national requirement, the Department of Agriculture draft and compile its documents, publications, etc. in all three languages. In this study, the researcher has decided to identify and study the most common translation techniques used by the translators in translating agricultural terms of the Performance Report 2018 published by the Department of Agriculture.

Based on the background of the study, the research attempts to identify the translation techniques adopted by the translators in translating agricultural terms from English to Sinhalese of the Performance Report 2018 published by the Department of Agriculture.

In order to focus to the study, it is also expected to find the answer for the following question.

What are the agricultural terms?

Considering the problem above, the main objective of this study is to examine the translation techniques adopted by the translators in translating agricultural terms from English to Sinhalese with special reference to the Performance Report 2018.

This study is significant and it will be useful to provide information mainly for translators who work in the agriculture sector to produce quality translations. Additionally, this study may provide knowledge for undergraduates who follow translation studies degree programme to expand their translation skills and competences in agricultural translation. Further, the researcher expects that this study will be advantageous for future researchers to conduct new research based on translation techniques from different viewpoints.

Material and Methods

The qualitative approach was used for this study. The unit of analysis of the research is the sentences and topics which contain agricultural terms in the Performance Report 2018 and its Sinhalese translation. Content analysis was the technique of data analysis. Primary data was collected from the

Performance Report 2018 (English) and its Sinhalese translation. Secondary data was collected from relevant books, journals, online resources, etc. Collected data were categorized according to the types of translation techniques introduced by Vinay and Darbelnet, Peter Newmark, and Albir and Molina.

Results and Discussion

According to the theories presented by Vinay and Darbelnet (1995), Newmark (1988), and Albir and Molina (2002), 230 agricultural terms were analyzed using 17 types of translation techniques.

1. Calque

Calque is transferring SL's message literally into the TL without changing the structure of the ST.

The term 'open pollinated variety development' is translated with direct replacement into Sinhalese as 'විවෘත පරාගිත ප්‍රභේද සංවර්ධනය'.

2. Pure Borrowing

It is similar to the original word in the SL as they share the same expression and same word.

The translator has borrowed the term 'zeolite beads' directly into Sinhalese as 'සියෝලයිට් බීඩ්ස්'.

3. Naturalized Borrowing

These are words which are borrowed from foreign languages and made some adjustments according to the phonetic and morphological norm of the TL.

The term 'bushels' is translated as 'බුසල්' as it has been adjusted according to the TL's sound system.

4. Addition

Addition is used to add information to the TT which is not presented in the ST.

Under this technique, the translator has translated the term 'mereological data' as 'කෘෂි කාලගුණික දත්ත'. Generally, it means 'කාලගුණික දත්ත'. Here, the translator has added the word 'කෘෂි' in translating the term into Sinhalese. Since he has added the part 'කෘෂි', it can be taken under addition.

5. Literal Translation

The literal translation follows closely the form of the SL when translating into TL.

As the term ‘pruning methods’ is grammatically and semantically equivalent to the term ‘කප්පාදු කිරීමේ ක්‍රම’, it can be classified under literal translation.

6. Equivalence

It practices an entirely different expression to transmit the same reality into TL.

Since the term ‘කළුබඩු’ is already prevalent in the TL, the translator does not need to borrow a term or follow any other technique to translate the term ‘condiments’.

7. Description

It replaces the term in the SL with a description in the TL.

Since the translator was unable to find any definite equivalence for the term ‘fertigation technology’, he has used the description technique to render it as ‘පොහොර මිශ්‍රිත ජලය යෙදීමේ තාක්ෂණය’.

8. Transposition

Transposition is used to move from one grammatical category to another grammatical category without changing the meaning of the text.

In the term ‘callus regeneration media’, the word ‘regeneration’ which is a noun is translated as ‘පුනර්ජනනය වන’ which is a transitive verb. Since there is a change in the grammar, it can be taken under transposition.

9. Modulation

It is used to change the semantics and point of view of the SL.

The term ‘climate hot spots’ is translated as ‘කාලගුණික උපද්‍රව්‍යීලී ස්ථාන’. Here the word ‘hot spots’ means a small area with high temperature. The translator has used the term ‘උපද්‍රව්‍යීලී ස්ථාන’ for ‘hot spots’ by changing the point of view.

10. Omission

Omission means ignoring a word or phrase in the ST when it translates into TT.

In the term ‘Genetic Diversity Assessment’, the translator has omitted the word ‘diversity’ and translated it as ‘ජාන තක්සේරු කිරීම’.

11. Loan Blend

It is joining a loan word and an already remaining word in the language.

The translator has borrowed the ST term ‘sigatoka’ into Sinhalese as ‘සිගටෝකා’ and used the word ‘රෝගය’ as the equivalence to the word ‘disease’.

12. Generalization

This is used to make information in the ST less detailed when it is translated into TT.

The term ‘Distinctness, Uniformity and Stability Testing’ is translated as ‘DUS පරීක්ෂණය’ to make the meaning is more general.

13. Borrowing with Modulation

In the term ‘poly-tunnel’, the word ‘poly’ is borrowed from the ST and the word ‘tunnel’ is translated as ‘ගාහය’. Generally, tunnel means ‘උමහ’ or ‘බිම්ගෙය’.

14. Calque with Compensation

Compensation can be used where something cannot be rendered from SL to TL, and the meaning that is lost in the immediate translation is expressed someplace in the TT.

The term ‘induced mutation agents’ is translated as ‘ප්‍රේරිත විකෘතිකාරක’. Here, the words ‘induced’ and ‘mutation’ are translated according to the calque technique and the word ‘agents’ is translated by expressing the meaning of that word and connecting it with the word ‘mutation’.

15. Calque with Modulation

The translator has translated the term ‘invasive aquatic weeds’ as ‘ආක්‍රමණික ජලජ ශාක’. Here, the words ‘invasive’ and ‘aquatic’ are translated as per the calque technique and the word ‘weeds’ is translated as ‘ශාක’ with the use of modulation.

16. Calque with Naturalized Borrowing

In the term ‘allelochemicals’, the word ‘allele’ is borrowed from the ST and changed as per the TL as ‘ඇලීල’ and the word ‘chemical’ is rendered as ‘රසායන’.

17. Omission with Addition

In the term ‘Potato Dextrose Agar Media’, the translator has omitted the word ‘dextrose’ and added the word ‘රෝපණ’ and formed the TT term as ‘අර්නාපල් ඒගාර් රෝපණ මාධ්‍යය’.

The below-mentioned table demonstrates the translation techniques which are found in the Performance Report 2018 published by the Department of Agriculture.

Table 1:

Percentages of Translation Techniques

Translation Technique	Number of Data	Percentage
Calque	116	50.4%
Pure Borrowing	3	1.3%
Naturalized Borrowing	1	0.4%
Addition	4	1.7%
Literal Translation	29	12.6%
Equivalence	30	13.0%
Description	5	2.2%
Transposition	4	1.7%
Modulation	9	3.9%
Omission	5	2.2%
Loan Blend	9	3.9%
Generalization	1	0.4%
Borrowing with Modulation	1	0.4%
Calque with Compensation	2	0.9%

Calque with Modulation	3	1.3%
Calque with Naturalized Borrowing	7	3.0%
Omission with Addition	1	0.4%
Total	230	100%

Conclusion and Recommendations

The analysis of translation techniques in translating the Performance Report 2018 published by the Department of Agriculture presented that 17 types of translation techniques were adopted by the translators to translate the Performance Report 2018. The applied translation techniques are calque, pure borrowing, naturalized borrowing, addition, literal translation, equivalence, description transposition, modulation, omission, loan blend, generalization, borrowing with modulation, calque with compensation, calque with modulation, calque with naturalized borrowing, and omission with addition.

The most frequently used translation technique is calque which occurred 116 times. Naturalized borrowing, generalization, borrowing with modulation, and omission with addition occurred only one time which can be considered as the most hardly used translation technique.

This research is expected to expand the knowledge of the translation techniques used in agriculture sector and to provide theories and examples based on translation techniques for translation students. Further, future researchers can carry out researches on translation techniques using different types of documents.

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ANALYZING THE PROBLEMS IN TRANSLATING IDIOMATIC TEXTS FROM ENGLISH TO TAMIL AND TAMIL TO ENGLISH

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Abstract

The study investigates the problems in translating idiomatic texts from English-Tamil and Tamil-English, which is frequently occurring in general translation, and the effective ways of overcoming such problems using procedures of translation as techniques and strategies. This work has used both qualitative and quantitative methodologies. The data collected from the translation tests conducted for the undergraduates of the Department of Translation Studies, Faculty of Arts, University of Jaffna consisted of idioms at the sentence level. The validation of the text was through judgment comparing both source and target texts. The findings are as follows; when translating idioms from English to Tamil specific strategies like using an idiom of similar meaning and form, using an idiom of similar meaning but dissimilar form, Translation by paraphrase, and dynamic equivalence are adopted. This study will help the undergraduates/ trainee translators to translate in a reader-friendly manner.

Keywords: *Idioms, Strategies, Translation, Techniques, Undergraduates.*

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Introduction

The study 'Analyzing the problems in translating Idiomatic texts from English-Tamil and Tamil-English' is primarily focusing on the frequently occurring problems in idiomatic translation. Since culture and language are interrelated such problems will unavoidably happen as these languages belong to different language families. Idiomatic translation errors are very common among undergraduates of Translation Studies. Since they are the future translators, the mentors have to guide them to overcome such types of problems. Considering the facts, the study is based on the undergraduates of the Department of Translation Studies, University of Jaffna.

Idioms refer to a group of words that possess peculiar meanings and cannot be translated literally. In other words, idioms are figures of speech formed by more than one word that carries the connotative meaning. Particularly, idioms are formed to express specific emotions and meanings. They are categorized in various forms, according to the grammatical category, according to the concepts or emotions, according to the picture expressed by the idiom, according to parts of the body, idioms concerned with food, and according to the semantic class or meaning expressed classified as slangs, similes, dead metaphor, social formulas, and collocations.

Since the idiom translation relies on cultural connotation, understanding and translating the idioms which are culturally bound is a challenging task for translators. This study includes Ten English and Ten Tamil idioms. At this juncture, it is important to note that idioms are given with sentences because, idioms are used in spoken language and therefore, it is easy for the students to understand the culture.

Materials and Methods

The research is based on qualitative and quantitative methodologies. In qualitative methodology the researcher analyses the effectiveness of the translations of the students. Accordingly, comparative and descriptive methods are used. The comparative method is used to compare the Target text with translation theories and the descriptive method is used to describe the data by analyzing whether it is aligned with the aim of the study. This method gives more space to get the information for supporting the study. Using this method, the researcher is expecting to identify the problematic areas in the translation of idioms and to explain the appropriate translations with relevant justifications. The Undergraduates of the Department of Translation Studies, Faculty of Arts, University of Jaffna are selected as the participants.

Data Collection

The data for the study is collected in the following ways;

1. Primary Data Sources:

Classroom Assignment conducted for the Undergraduates of the Department of Translation Studies, Faculty of Arts, University of Jaffna is considered as the primary data source. Two types of Translation tests were given, firstly, from English-Tamil and secondly, from Tamil-English.

2. Secondary Data Sources:

Related books and e-sources are secondary data sources. All these data are collected from the Library of the University of Jaffna and websites. When focusing on the books related to translation the following books are important sources.

- a) Baker.M, (1992). *In other words, A course book on Translation*, London and New York: Routledge.
- b) Nida.E.A, (1991). *Theories of Translation. Language and Culture in Translation Theories*, Volume 4.

Results and Discussion

Idioms are a part of the language and not all idioms carry direct equivalents in the target language because it is a linguistic expression that belongs to a certain language and its culture. Accordingly, it is impossible to adopt one translation technique. In terms of translating idioms several translation strategies are applied since they express connotative and denotative meanings in accordance with the language. This study focuses on translating Ten English to Tamil idioms and ten Tamil-to-English idioms.

Translation from English to Tamil

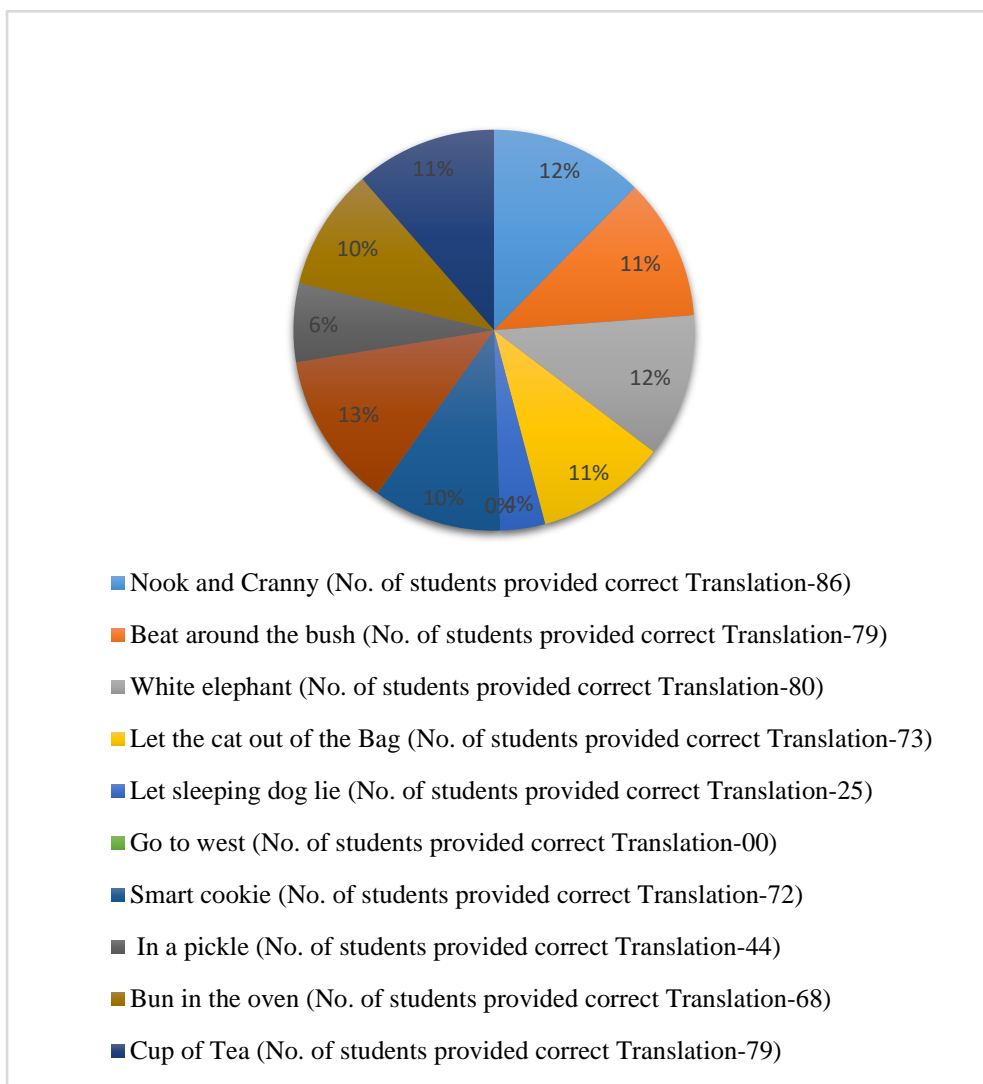
Ten idioms were given for the translation and they were written in sentences. When translating such idioms from English into Tamil the following strategies proposed by Mona Baker (1992) are adopted.

1. Using an idiom of similar meaning and form

This strategy means *using the idiom in the Target language that conveys the same meaning as the Source language idiom and includes equivalent lexical items (Baker, 1992, p.72).*

Figure 1:

Idiom Translation- English to Tamil



Accordingly, this strategy is applied to the following idiom by the students who produced the correct translation, but, other students did not find the correct equivalent due to the unfamiliarity of the idiom.

- a) **Source Text:** I could go on and on, I know every Nook and Cranny of the house.

Target Text: எனக்கு அந்த வீட்டின் முலைமுடுக்கெல்லாம் தெரியுமென்பதால் என்னால் தொடர்ந்து செல்ல முடியும்

Faculty of Social Sciences and Languages

Figure 2:

Idiom Translation – Tamil to English



2. Using an idiom of similar meaning but dissimilar form.

This category includes the idioms which have a similar meaning to the source language idiom in the target language but use different lexical items. (Baker, 1992, p.74).

The following idioms are translated using the aforesaid strategy.

a) **Source Text:** Let's be frank and don't beat around the bush

Target Text: வெளிப்படையாக இருப்போம் சுற்றிவளைத்துப் பேசவேண்டாம்.

b) **Source Text:** She is a smart cookie

Target Text: அவள் கற்பூரப்புத்திகொண்டவள்

3. Translation by paraphrase

This is the popular way of translating idioms when the source idiom cannot be translated using any one of the techniques: literal translation, dynamic equivalence, and cultural equivalence. Accordingly, the following idioms are translated by the students appropriately using the above strategy. However, students who produced the wrong translation tried to adopt one of the above-mentioned strategies and it led to producing the wrong translation. The proper translations of the idioms are as follow;

a) **Source Text:** Soon, I realized that the old car was difficult to maintain and it was like a **white elephant**.

Target Text: பழைய காரைப் பராமரிப்பது கடினமானது என விரைவில் உணர்ந்துகொண்டேன், இதற்கு தேவையில்லாமல் அதிகசெலவு செய்யவேண்டியிருந்தது.

b) **Source Text:** John didn't look surprised at all. Harry must have **let the cat out of the Bag** about his surprise birthday celebration.

Target Text: ஜோன் அதனைப்பார்த்து அச்சரியப்படவில்லை. அவனை ஆச்சரியப்படுத்தும் வகையில் நாம் ஏற்பாடு செய்த பிறந்தநாள் கொண்டாட்ட இரகசியத்தை ஹரி அவனுக்குச் சொல்லியிருக்க வேண்டும்.

c) **Source Text:** The newly appointed secretary is always **in a pickle** because of carelessness

Target Text: புதிதாக நியமிக்கப்பட்ட செயலாளர் கவனக்குறைவால் எப்போதும் குழப்பமான சூழ்நிலையிலேயே இருக்கின்றார்

d) **Source Text:** The doctor told her that she has **a bun in the oven**

Target Text: அவள் கர்ப்பமாக இருப்பதாக வைத்தியர் அவளிடம் கூறினார்.

e) **Source Text:** Dance is not my **cup of Tea**

Target Text: நடனம் எனக்குப் பிடித்தவிடயமல்ல.

4. Translation by Dynamic equivalence

When the idioms are unable to be produced using the above strategies dynamic equivalence is the possible procedure that helps to produce the effective output in the target language. Accordingly, the following idioms are translated using the procedure.

a) Source Text: Let the sleeping dog lie

Target Text: தொந்தரவு இல்லாத விடயங்களைப் பெரிதுபடுத்த வேண்டாம்.

b) Source Text: He had gone to the west

Target Text: அவன் காலமாகிவிட்டான்

Translation from English to Tamil

To identify the student's knowledge in translating idioms from Tamil to English ten idioms that are familiar in day-to-day life were given. Accordingly, to produce effective reader-friendly target idioms the following strategies are applied.

1. Using an idiom of similar meaning and form

a) Source Text: பணத்தை சம்பாதிப்பதற்கு ஏதேனும் வேலையைத் தேடு ஆகாயத்தில் கோட்டை கட்டாதே.

Target text: Don't build a castle in the air, just find some work to earn money

b) Source Text: நான் அவளுடைய பிறந்தநாளை மறந்ததை மனதில்வைத்து அவள் எனது பிறந்தநாளிற்கு வாழ்த்துமடல் அனுப்பாமல் பழிக்குப் பழி வாங்கிவிட்டாள்.

Target text: She didn't send me a birthday card. I think it was a tit-for-tat because I forgot her birthday.

c) Source Text: வறுமையிலிருந்த நண்பனுக்கு தக்கசமையத்தில் குமார் கை கொடுத்தான்

Target text: Kumar lends a hand to his friend in needy on time.

- d) **Source Text:** அந்தப்பாழடைந்த வீட்டினுள் நுழைந்தபோது தனிமையை விரும்புவர்களைக் கூட அச்சம் கொள்ளச்செய்யும் மயான அமைதி நிலவியது.

Target text: When entered into the abandoned house, a dead silence remained which can turn any solitary person to get scared.

2. Using an idiom of similar meaning but dissimilar form

- a) **Source Text:** வரவுக்குத் தகுந்த செலவு செய்.

Target text: To cut the coat according to the cloth.

- b) **Source Text:** ஒருவன் அபிமானத்திற்குப் பாத்திரமாய் இரு.

Target text: Be in one's good book

3. Translation by Dynamic Equivalence

When there is no similar meaning and form in the Source and Target idioms the translator has to apply another equivalent procedure. Accordingly, the following idioms are identified under dynamic equivalence.

- a) **Source Text:** அடுத்த தெருவில் ஒரு பச்சை மட்டை விழுந்திருக்கிறது.

Target Text: Someone has kicked the bucket in the adjoining Street

- b) **Source Text:** காணி வாங்கித்தருவதாகக் கூறி பணத்தைப்பெற்று அவர்களுக்குத் தண்ணீர் காட்டிவிட்டான்.

- c) **Target Text:** He is a nemesis because he got money saying he will help to buy the land.

- d) **Source Text:** எனக்கு ஏற்கனவே காது குத்தியாச்சு

Target Text: Do not try to deceive me. You can't.

Conclusions and Recommendations

According to the analysis depicted in the pie charts, it is clear that the understanding of the idioms varies. Most of the students have translated the following idioms correctly.

- I could go on and on, I know every **Nook and Cranny** of the house.
- Let's be frank and don't **beat around the bush**.

- c. Soon, I realized that the old car was difficult to maintain and it was like a **white elephant**.
- d. The corona virus problem is a **hard nut to crack**.
- e. Dance is not my **cup of Tea**.

- க. பணத்தை சம்பாதிப்பதற்கு ஏதேனும் வேலையைத் தேடு **ஆகாயத்தில் கோட்டை கட்டாதே**.
- ப. அந்தப்பாழடைந்த வீட்டினுள் நுழைந்தபோது தனிமையை விரும்புவர்களைக் கூட அச்சம் கொள்ளச்செய்யும் **மயான அமைதி** நிலவியது.
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- ஐ. பையனுக்கு எப்போ **கால்கட்டு** போடப்போறீங்க

To translate idioms from English to Tamil and Tamil to English it is impossible to adopt one translation procedure, a variety of translation strategies are applied to express connotative and denotative meanings according to the target language. When translating idioms, the following strategies of Mona Baker (1992) are adopted.

1. Using an idiom of similar meaning and form
2. Using an idiom of similar meaning but dissimilar form
3. Translation by paraphrase

These are appropriate translation procedures to bring out the intended meaning of the idioms. Further, dynamic equivalence is also applied when there is a need for connotative equivalence in the target language. In this regard, Mona Baker's strategies for translating idioms are useful procedures to bring out the Target idioms effectively.

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AN ANALYSIS OF THE IMPACT OF SEMANTIC EQUIVALENCE IN THE TRANSLATION PROCESS (ENGLISH AND TAMIL)

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Abstract

The study analyses the impact of semantic equivalence in the translation process, particularly when translate between English and Tamil Languages. This study consists the role of semantics in meaning discrimination. The meanings of the words and sentences are analysed under the categories: synonymy and polysemy. When more than one word has the similar meaning or nearest meaning, such words are called synonymy. One word has a number of related senses called polysemy. Polysemy is the change in the general semantic structure of a word. It may happen when the existing meaning is lost and new ones are added. The study is based on qualitative methodology and particularly the examples are cited from the real-life experiences. Further, comparative and descriptive methods were used to enhance the study. The finding of the study indicates that the translators or undergraduates should have adequate knowledge about the semantic concepts of a word to produce an effective translation. This study will help the researchers who are involved in the fields of linguistics and translation.

Keywords: *Equivalence, Polysemy, Semantics, Synonymy, Translation.*

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Introduction

This study consists of the role of semantics in linguistic and translation. Translators are all necessarily interested in meaning. They express the meanings of new words. Sometimes they are not sure about the message and they may get from something they read or hear. Particularly translators or Students of translation studies find pleasure in jokes, which often depends on their sense of humour in double meanings of words or ambiguities in sentences. Not only in one field, but also in numerous fields such as the documentation of commercial organization, document of legal field and in literary fields, translators have to face several problems to identify the accurate meaning of a text.

Linguists prefer to understand how language works, just what common knowledge do two people possess when they share a language. Semantics is the systematic study of meaning and linguistic semantics is the study of how languages organize and express meanings (*Introducing English Semantics Charles .w. Kreidler 1988 page 02*), in other words, Semantics is a field of linguistics that is defined as the study of the meanings of parts of words, phrases, sentences and texts. It can be approached from theoretical as well as an empirical point of view. The meaning of words which can be analysed by homonymy, synonymy, antonym, polysemy, and hyponymy. Therefore, the study focused on the importance of semantics in linguistics and translation.

Materials and Methods

This study is based on the qualitative methodology. The study is based on the secondary data collected from the real life experience of the researcher and from different materials analysed based on their different semantic meanings. Comparative method and descriptive method were used to bring out the study. Comparative method was used to compare the source text with its different meanings whereas descriptive method was used to describe the study with justifications.

Results and Discussion

The nature of the word that can be accounted for the traditional semantic classification of words in terms of synonymy and homonyms. The proper understanding of the meaning discrimination of the words is important to produce an effective translation in the target language. The semantics of the words can be classified as follows;

1. Two or more forms may be associated with the same meaning.
2. Two or more meanings may be associated with the same form in which case the words are homonyms.

3. In semantics, language is one of which the orthography is at variance with or unrelated to the phonology, and one may of course further distinguish between homography and homophony.
4. One word form brings out several meanings and several word forms are related to one meaning.

When comparing the English and Tamil examples of one word form with several meanings the researcher can observe the qualitative difference. One example is the English word *crane* and the Tamil word *Kaal*. Here, the similarity and dissimilarity are observed. The similarity is that the bird crane and the machine crane are similar in appearance or image. But the difference is one is a living thing, small in size, another is a non-living thing and very large in size. Due to the slight difference, the translator has to pay attention on the perception of the contextual meaning of a text, otherwise the accuracy of the translation will be lost.

When more than one word has the similar meaning or nearest meaning, such words are called synonymy. For example:

ST: அவள் கண்ணன் தன்னை திருமணம் செய்துகொள்ள விரும்பும் விருப்பத்தை ஏற்கமறுத்துவிட்டாள்

- She refused kannan's proposal to marry her
- She rejected kannan's proposal to marry her
- She declined Kannan's proposal to marry her.

The abovementioned sentences have the similar meaning and they differ only in the three words such as refused, rejected and declined. Translator when they translate or paraphrase the text, he or She has to find out the similar meaning to the context without affecting the original text. Accordingly, the translator must act as a lexicographer and must know the diction and synonyms accurately.

E. g: 02: **ST:** Her dance gives pleasure for the audience

TT:

- யுளயடயவார யேனயயெஅ ியசியளயசமயடரமர நயீயஅ வாயசரமகசெயவர
- யுளயடயவர யேனயயெஅ ியசியளயசமயடரமர அயமடைஉாை வயசரமுசெயவர
- யுளயடயவார யேனயயெஅ ியசியளயசமயடரமர யயெவொயஅ வாயசரமகசெயவார
- யுளயடயவார யேனயயெஅ ியசியளயசமயடரமர ஊயவெழழளயஅ வாயசரமகசெயவார

In the above translations, the words *inpam*, *makilchi*, *aanantham*, *santhoosam* have the same meaning. Accordingly, the difference in the form of these words is synonymous, two or more words if they are substitute at least in one context without meaning difference, would be synonymous.

The next problematic area is “Polysemy”. Polysemy or multiplicity of meaning is considered a common feature of English and Tamil since it exists in both languages. The existence of the linguistic phenomenon produces lexical problems in many situations. There are many definitions put forwarded about polysemy. Ullman (1967) defines polysemy as a “situation” in which the same word has two or more different meanings. The larger part of the vocabulary of a language includes of polysemous words. One word has a number of related senses called polysemy. For example, mouth can be defined as a part of human body and secondly, as any opening.

Polysemy is the change in the general semantic structure of a word. It may happen that some of the meanings have been lost and new ones are added. Due to this reason, the multiplicity of meanings is a reason for ambiguity in a language. The semanticist encounters the problems whenever he or she has to deal with polysemous words.

For example: Father:

- 1) Male parent
- 2) Ancestor
- 3) Founder or first leader
- 4) God
- 5) Priest
- 6) Title used in personification

According to the above meanings, the translator must understand the context of the original text and give the suitable words. Mostly, the sources of polysemy are divided as five categories.

- 1) Shift in application
- 2) Specialization in social milieu
- 3) Figurative language
- 4) Reinterpretation of homonyms
- 5) Foreign influence

1) Shift in application: Shift in application is noticeable in the use of Adjectives. Since these are apt to change their meaning to the noun they qualify. For example

Persons:

- 1) Apt, skilled, clever
- 2) Proper, fitting, decent
- 3) Beautiful with dignity

Sizes and Sums:

- 1) Fair, moderately large
- 2) Ample, liberal, munificent

Mostly, a word belonging to one sensory organ may be shifted to other sensory organs or even mind, for example, the word “sweet” firstly the meaning was given to “taste” or the sensory perception of tongue as in examples sweet fruit sweet mango, but this is used for other sensory perceptions like smell, hearing, sight etc.

2) Specialization in Social Milieu: Each word has different meanings in the ordinary Language. But only one of the words will be applicable in a given social milieu or context. For instance, English word “action” means legal action “in the context of law court and a soldier means a military operation. The word “paper” points out to the writing material in the general meaning. Anyway it gives different meanings in the social contexts legal or official documents, a newspaper, a set of examination question, a research article, in the context of educated seminar or conference. In Tamil, the following words have different meanings but they are differed in technical meaning. for example, the word “peyar” refers in general meaning “name” but the grammatical terminology is “noun”. Likewise, the word “vinai” gives the general meaning of “action” but the grammatical terminology is used as “verb”.

3) Figurative Language: According to Ullmann’s (1962) statement that is word that creates one or more figurative meanings without losing the meaning of its source text. Old and new may lie on side by side as long as there is no possibility of confusion between them. Metaphor and metonymy are the figures of speech due to which polysemy arises in languages. Meanings of words are extended on the basis of similarity of resemblance between different sets of denotata. In all languages, the names of human body parts are used to refer to similar objects. For example, the English word “eye” denotes a number of meanings due to metaphorical extension.

E.g. **ST:** Apples of one’s eye

TT: ஆயலடை முயலே’ வாந அயசம முக முடுநயஉமுஉம வயடை’

4) Foreign influence: Another language's equivalent influences to the change of the meanings of a word and create a new meaning. Hence the original meaning exists then the word becomes a polysemy. The Tamil word *Kilai* 'branch' (of a tree) has created a meaning 'branch of an institution on the influence of English word branch. Another example shown here is *ViciRi* that denotes the meaning, fan (native meaning) which is acquired to the foreign influence admirer of an actor sports man etc.

According to the analysis, ample words in English are polysemous, some of which have several meanings. Translators or students of translation studies are required to have keen perception when translating a word which seems strange if translated into its common meaning. Most of the subjects of our study failed to handle the meaning of the synonym and polysomic lexeme connections of the sentence. For instance

- Her father died
- Her father passed away
- Her father deceased
- Her father kicked the bucket

The above sentences are translated as

- யுளயடரனயதைய யீய சையவொயசஇ
- யுளயடரனயதைய யீய மமயடயஅயயயெயசஇ
- யுளயடரனயதைய யீய எயமைரவொயயெனயவொயசஇ
- யுளயடரனயதைய யீய ஆயவேயலயனிழுவவயச.

In English sentences, the same meaning is in one point. All lexicons are considered synonymous. The general meaning is that a particular person is not alive. Although the English words died, passed away, deceased, kicked the bucket give the same meaning but they have to be used in different social contexts or different emotional attitudes. Therefore, translators in some cases lose the social contextual meaning. They try to use the same Tamil equivalent as "*Eranthuviddar*". The first sentence denotes the informal way of speaking. The 2nd sentence gives the formal concept of the word which can be used in newspaper writing. In the 3rd sentence the word has to be translated related to the legal aspect. In 4th sentence the word kicked the bucket implies the idiomatic sense that is mostly used in the colloquial language which gives the emotional attitude. In this case, translators never give the direct translation or word for word translation. When they give the literal translation, it will sound as a translation never be as the original one.

A single word is connected with two or more meanings where the translator confuses to get the accurate contextual meaning. That sentence may have an

ambiguous meaning in the sentence “A synthetic buffalo hides”. Here in Tamil translation “*Seyarkaijana erumai thool*” Sometimes that sentence may give other meaning “*SeyarkaijanaSeyarkaijanaumai maraikirathu*” translators have to consider the real contextual meaning of the source text. In the sentence “*President is at the board*” the words president, and board have several meanings. The president may be a leader of the country or a committee. Likewise, the word “Board” also gives a different meaning. Here translators should attempt to reach the spirit of the original and avoid losing translations and possess perfect knowledge about the semantic fields particularly in synonym and polysemy otherwise translation will be humorous one.

As findings, it can be stated that, all cognitive experience plays an important role in the semantic field, without the cognitive knowledge a translator may not translate the accurate meaning in the process of translation. Whenever there is deficiency, terminology may be qualified and amplified by loan words or loan translation, neologisms or semantic shifts.

Conclusion and Recommendation

It can be concluded that translators, whose task is to bring out a target text that consists of a close resemblance to the source text, should be known the synonymic and polysemic words when translating from English to Tamil. Therefore, it is not enough for the translators to be aware of only the general meanings of the words but they must find out the accurate synonym and polysemic meaning that is related to co text meaning. They have to get across the collocation and connotative and cognitive meanings which determine the accurate meaning of the text. Most of the translators did not give the faithfulness of the original text. Therefore, they have to know the co text because the synonymy and polysemy are related to the co text dependent. Therefore, translators must be aware of the intricacies and should attempt to produce a good translation.

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LANGUAGE INTERPRETING ANXIETY AMONG TRANSLATION STUDIES LEARNERS

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Abstract

Language interpretation plays a vital role in the Translation Studies classroom at the Department of Translation Studies, University of Jaffna. In general, Interpretation is a verbal communication which is a process of rendering a spoken or signed message into another spoken or signed language, preserving the register and meaning of the source language content. However, the learners' anxiety in interpreting is a frequent challenge, which is encountered by the instructors of Translation Studies, negatively affects the teaching and learning process. In this concern, the present study attempts to investigate the factors influencing target language interpreting anxiety in the perspective of learners. The sample group was 25 undergraduates belonging to the fourth year discipline at the Department of Translation Studies, University of Jaffna. A structures questionnaire was administered to the learners in order to identify their perspective on the language interpreting anxiety in the Translation Studies classroom along with the factors that cause and reduce their anxiety. The findings revealed that, the students agree that language interpreting activities are beneficial, their reluctance to communicate stems from inadequate vocabulary, fear of making mistakes in grammar and constructing sentences through appropriate choice of equivalence.

Keywords: *Language, interpretation, Language proficiency, Source language, Target language*

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Introduction

According to the Webster dictionary, “interpretation is the action of explaining the meaning of something in the way something is explained or understood”. “In terms of language, the definition of interpretation is broader; rendering a spoken or signed message into another spoken or signed language, preserving the register and meaning of the source language content. Based on the previous studies, interpreting has traditionally been regarded as a branch of translation. A number of authors have provided different definitions of translation as a conversion process from one language to another, in either the written or the spoken mode. Most importantly, interpreting refers to the conversion of the spoken work or text in the source language into the target language. As explained in these statements, competency in both languages has become the need of hour with a vast variety of educational and career opportunities available for anyone possessing good translation and interpretation skills in the language field. With the purpose of addressing this essential requirement of language competency, a key area of focus in the translation studies classroom and a considerable amount of time are devoted to enhance the interpreting competency of the learner.

Various teaching strategies and resources are incorporated in teaching with the intention of equipping the learners with the necessary interpretation skills required for effective communication. However, despite the best efforts of the language teacher to encourage the students to interpret between official languages in Sri Lanka, anxiety in interpreting is often observed in the classroom. As revealed by various studies, this is a common situation encountered by the instructors of translation studies. No any researchers have attributed interpreting anxiety to a range of causes from mere lack of interest and unwillingness that require the instructor’s prompt attention and remedy including lack of confidence, poor guidance, negative reinforcement and the fear of communication itself. Addressing these concerns is a crucial requirement in language development because poor interpreting skills can have a detrimental effect on the language acquisition process preventing the learners from attaining the expected proficiency.

Interpreting anxiety may affect the quality of an individual’s communication or willingness to communicate which can hinder the learning process. In the Sri Lankan context where Tamil and Sinhala are considered the official languages and English is considered a linking language, interpreting anxiety is a major obstacle faced by translation studies instructors. This is observed in the undergraduate classrooms despite the fact that the students are

advanced learners who have been learning the languages for a number of years. Most of the learners display signs of nervousness, hesitancy and unwillingness to interpret in front of the classroom while some learners tend to avoid interpreting activities altogether by remaining passive or refusing to participate in the activities that require interaction in the languages. Since interpretation competency is essential for these learners in their performance in respective disciplines, anxiety has become a severe issue that the translation studies instructors confront on a daily basis. Hence, this study attempts to investigate the causes of language anxiety in the classroom through the perspective of a group of 25 mixed-ability undergraduates learning English as a core subject of their degree program. Special attention is given to the Department of Translation Studies. It is expected that the learners' perception will enable to develop a better understanding on language interpreting anxiety which will be beneficial in developing teaching materials.

Research Problem

Learners' anxiety in interpreting is a frequent challenge encountered by the translation studies instructors which negatively affects the teaching – learning process.

Objective of the Study

The main objective of the present study is to investigate the factors affecting the target language interpreting anxiety in the perspective of learners.

Significance of the study

No any research articles published in Sri Lanka highlighting the interpreting anxiety among the translation studies learners and the techniques or strategies to overcome those anxieties.

Materials and Methods

A group of 25 fourth year undergraduate students following BA in Translation Studies degree program at the University of Jaffna was selected for the study. The participants were a mixed ability group representing 25 districts of the country. Further, their first language is Tamil and they all learn English and Sinhala as core subjects during the first two years of their respective degree program. The curriculum covers essential interpreting lessons and activities with emphasis on the interpretation skills required at an academic setting. The students were given a structured questionnaire to investigate their perspective on interpreting and anxiety in the translation studies classroom. The collected

data were examined to determine the causes of anxiety, the learners' opinion towards interpreting and the factors that increase and reduce anxiety in the classroom.

Results and Discussion

The findings revealed that although the students have been learning English and Tamil for more than 10 years, they have made a little progress in relation to speaking and interpreting. As per the responses of most of the participants, interpreting had not been a prominent skill area in their language curriculum at school. They have had a little exposure to the actual use of language in a communicative setting and they have had a little practice in interpreting. In addition, the students have remarked that they translate English to Tamil solely in the written texts and only a few of them interpret between English to Tamil inside the classroom environment. It is evident that the lack of opportunities to interpret the languages is a problem they encounter in the university setting as well. Even though all the participants admit that they want to improve their interpreting proficiency, 73% of the students claim that they do not enjoy interpreting. Most of these participants have also commented that they feel scared and nervous in addition to forgetting what they want to interpret and not feeling their language proficiency is good enough. These responses signify that although the students are well aware of the importance of acquiring fluency in both languages, they are not willing to engage in any of the inside tasks and activities that are intended to develop their interpreting skill. Further, it is evident that they experience a considerable degree of anxiety and apprehension when asked to interpret in front of the classroom. It is vital to bear in mind that the students might naturally experience fear and anxiety to a certain extent especially when interpreting to a large audience. However, their responses to the questionnaire have implied that a variety of language-related problems have also triggered the aforementioned anxiety.

In relation to the language, it was identified that inadequate vocabulary is one of the major reasons contributing to the students' anxiety in interpreting. Majority of the participants in the present study have mentioned that they face difficulty with finding enough words to express source language ideas when interpreting between English and Tamil. Further, many of them were identified to be facing the problem of "getting stuck" while interpreting as they become unable to recall the right expression due to limited vocabulary and structured knowledge. The second cause of anxiety as per the responses of the students was the fear of making mistakes particularly due to the lack of familiarity with the language and culture in both languages. The learners are likely to feel anxious as they might "interpret incorrectly, mispronounce a

word, or simply not interpret fluently in the target language”. Since the learners selected for the study have limited exposure to the language being interpreted in a real-life setting, they were found to be encountering numerous problems related to pronunciation and grammar resulting in lack of confidence to interpret. The state of being “unsure” about the correct usage of language and cultural elements were revealed to be a major obstacle that discourages their interpreting ability.

The third contributing factor towards students’ anxiety was identified as the fear of testing. Based on some of the responses to the questionnaire, when they are aware of the fact that they are being tested on the interpreting ability, the students tend to become anxious as some mistake or poor interpreting performance might lead to loss of marks. As per the findings of the present study, students feel more anxious and threatened when being evaluated on interpreting rather than during a translation activity that involves writing. As a result, they were found to feel stressed resulting in more mistakes and an increased number of instances where they forget the right words to interpret. The present study revealed that the classroom environment and the language instructors are not contributing factors towards anxiety. Also, the participants’ comments have suggested that they are not affected by the peers’ response while interpreting. It can be assumed that as the participants are third year students and they have been exposed to the language learning setting for a period of time, the environment in the classroom is less threatening for them. Also, as they have been learning the language nearly for two years, the students are familiar with the teaching strategies employed in the classroom. In relation to the responses of the peers and the teacher, it was understood that they are familiar with both their classmates and the language teacher. As a result, the responses of both parties were observed to have a less impact on triggering the students’ interpreting anxiety.

Apart from the above learner centered problems, it was identified that certain classroom activities also contribute in increasing or reducing the students’ anxiety. Majority of the students have responded that speaking, presentations and individual speeches are the speaking tasks that mostly result in generating anxiety. It was evident that while the students do not enjoy the activities that allow them little or no time for preparation, the interpreting tasks that require them to stand alone in front of the class are equally anxiety triggering for the students. As per the responses gathered in the present study, it was understood that the students’ performance could be better if they are required to interpret in a less-stressful situation rather than interpreting in front of the classroom.

Conclusion and Recommendations

It is evident that the interpreting anxiety is a key factor affecting the proficiency of the learners in the translation studies. Anxiety in interpreting can have an unfavorable effect on language acquisition since it prevents the learners from engaging in sufficient interpreting activities. Therefore, it is required to take relevant measures to support the learners in overcoming their apprehension and creating an atmosphere that might enable them to actively participate in interpreting tasks in their future professions. This target can be achieved by addressing the causes of interpreting anxiety and minimizing the factors that might provoke the students' anxiety when interpreting between the source language and target language.

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EXPLORING THE QUALITY OF TRANSLATED TEXT FROM ENGLISH TO TAMIL: A STUDY BASED ON UNDERGRADUATES OF TRANSLATION STUDIES AT THE UNIVERSITY OF JAFFNA

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Abstract

Fidelity and transparency are regarded as the two major factors in the process of translation. Therefore, maintaining both fidelity and transparency equally in the same text is the Herculean task for a translator. Hence, the aim of this study is to explore the quality of translated text from English to Tamil by analyzing the levels of fidelity and transparency. A quantitative methodology has been used to collect the primary data by conducting a test among thirty second-year undergraduates of Translation Studies at the University of Jaffna. A qualitative methodology has been used to identify the problems of undergraduates in translating expressive sentences from English to Tamil. Therefore, a comparative method has been used to compare the pertinence of the translations of undergraduates with the source sentences. Meanwhile, a descriptive method has been used to describe the study. The major findings of the study highlighted that the undergraduates have faced obstacles in finding equivalences of expressive sentences. They have used translation procedures and methods to tackle such obstacles. According to the study, it can be concluded that a translation could have more fidelity and less transparency or vice-versa but, never be at an equally high amount.

Keywords: *Fidelity, Methods, Procedures, Translation, Transparency*

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Introduction

Fidelity means the precise rendering of the meaning of source text without doing any types of alterations such as additions, omissions, subtractions and distortions. This is mostly suitable for unidiomatic texts. Meanwhile, transparency means comprehensibility of the translation in terms of the cultural perspectives of the target readers. High fidelity and high transparency of translation are known as 'faithful translation' and 'idiomatic translation' respectively. Here 'idiomatic translation' is not actually meant to translate idioms or phrases. Indeed, idiomatic translation refers to rendering the intended meaning of the source text into the target text which sounds natural in the target language. This is a difficult task for a translator. When demonstrating the role of fidelity and transparency in the process of translation, the French Critic Ergo compares the translation with a woman. According to him, if a translation is beautiful, it is not faithful; if it is faithful, it is most certainly not beautiful. In this regard, this study explores the quality of translated text from English to Tamil from the perspective of levels of fidelity and transparency based on second-year undergraduates of Translation Studies at the University of Jaffna.

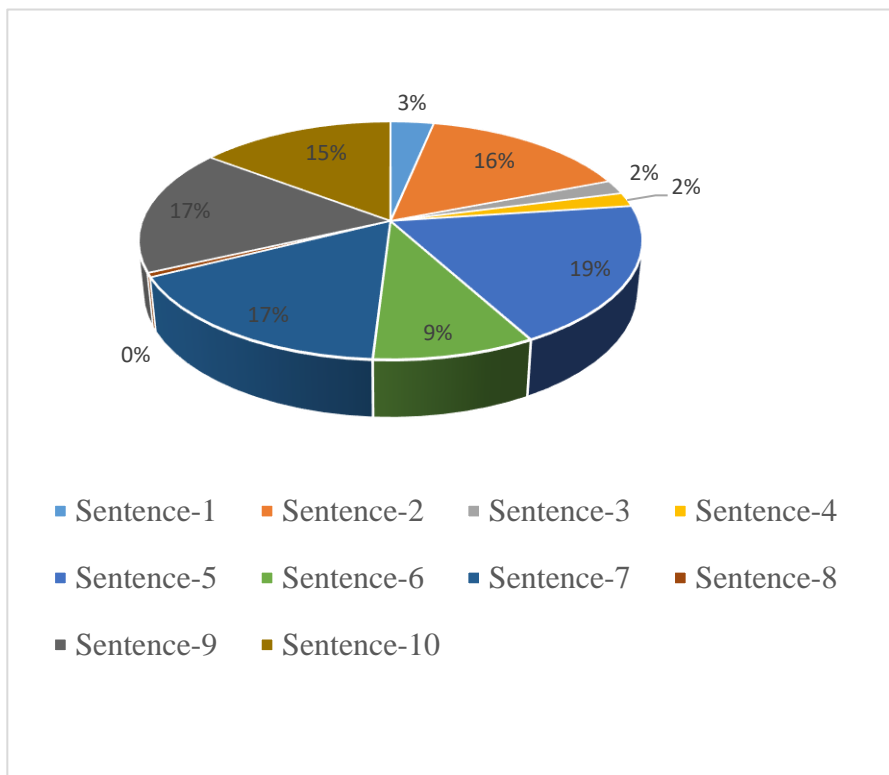
Methodology

This study is primarily focused on quantitative and qualitative methodologies. Quantitative methodology was used to describe the statistical analysis of the percentages of the undergraduates' levels in translation. Qualitative methodology was used to identify the obstacles faced by the undergraduates in translating expressive sentences from English to Tamil. Further, a comparative method was used to compare the relevancy of the translation of the undergraduates with original sentences. The descriptive method was used to describe the study. In this regard, the sample selected for this study involved thirty second-year undergraduates of Translation Studies from the University of Jaffna. Accordingly, the researcher has selected ten English sentences and provided such sentences to the undergraduates in order to evaluate the quality of translation from English to Tamil. Therefore, the data collected via test conducted for the second-year undergraduates has been used as the primary data for this study and the research articles, books and journals have been used as the secondary data for this study.

Results and Discussions

Figure 1:

No of Correct Translation



Sentence 1 - John always talks the talks not walks the walk.

According to the first sentence, the expression “talks the talks and walks the walk” is used to denote a person who always does what he says. In Tamil language, it has an idiomatical expression “ஜோன் எப்போதும் சொல்வதையே செய்வான் செய்வதையே சொல்வான்”. Accordingly, only 17% of undergraduates have translated correctly using the sense-for-sense translation method rather than using vernacular translation. When the above sentence was provided to the undergraduates, 83% of them failed to identify the actual meaning of the sentence due to their lack of familiarity with translating idiomatic expressions.

Sentence 2 - Hey Arthy! Don’t leave him in the cold.

The expression “don’t leave him in the cold” means do not leave a person in a bad situation. Hence, it could be translated as “ஆர்த்தி! அவனை ஒருபோதும்

நட்டாற்றில் விட்டுவிடாதே” using the ‘cultural equivalence’ strategy. When the source sentence is translated literally, it gives wrong meaning “ஆர்த்தி! அவனை குளிரில் விட்டுவிடாதே”. However, 83% of undergraduates identified the correct meaning according to the context. The remaining undergraduates (17%) used literal translation. This proved that they have a lack of knowledge in identifying the contextual meaning while engaging translation process.

Sentence 3 - He gave me a cold shoulder when I saw him at the market.

The intended meaning of the expression “give me a cold shoulder” is to ignore someone intentionally in an unfriendly manner. While translating such phrases, a translator does not render directly using denotative meaning. It should be translated as “நான் அவனை சந்தையில் பார்த்த போது அவன் என்னைப் பார்த்தும் பார்க்காதது போல் சென்றுவிட்டான்” in Tamil. Therefore, it could be noticed that only 10% of the undergraduates have been able to identify the intended meaning of the sentence. However, 90% of them have failed to adopt proper translation techniques. This shows that the undergraduates lack knowledge in finding the connotative meaning of the original text.

Sentence 4 - I think you got out of your bed on the wrong side.

According to the diagram, 90% of undergraduates have failed to bring out the correct equivalence of the sentence. Since they have erroneously understood the real sense of the sentence, they directly rendered the meaning “நீங்கள் உங்களது கட்டிலைத் தவறான இடத்தில் வைத்துவிட்டீர்கள் என நான் நினைக்கிறேன்”. Though 10% of them translated correctly, they have not rendered an actual cultural equivalence of the original. They have paraphrased it. This expression means “நீங்கள் இன்று யார் முகத்தில் முனித்தீர்களோ தெரியவில்லை” in Tamil. Accordingly, it could be observed that the undergraduates had a lack of understanding of the subject matter.

Sentence 5 - The trafficking and exploitation of children in the world, has been a serious issue for decades.

Based on the analysis, all the undergraduates (100%) have perfectly translated the aforementioned sentence into Tamil “உலகில்இ சிறார்களைக் கடத்துதலும் அவர்களை சீரழிப்பதும் பல தசாப்தங்களாகப் பாரியதொரு பிரச்சினையாக இருந்து வருகிறது”. Therefore, they have applied the ‘faithful translation’ method in order to bring out the correct meaning of the original.

Sentence 6 - During the pandemic period, properly following the safety measures is a herculean task for everyone.

The expression ‘Herculean task’ means ‘the toughest job’. This idiom is related to the Roman myth of Hercules. In Tamil, this expression is used to describe the huge work of king Bhageeratha who brings down the sacred Ganga from the Himalaya Mountain after the many struggles. Hence, this expression means “பகீரதப் பிரயத்தனம்” in Tamil. Translators can substitute such rendering according to the Tamil culture. The aforementioned diagram reveals that 47% of the undergraduates were able to identify the meaning precisely. They mostly rendered the word ‘கடினமான செயல்’ in their translation. No one has substituted such an expression in Tamil. However, 53% of them have failed to grasp the actual meaning of the source sentence.

Sentence 7 - He is a big cheese in the village.

The expression ‘big cheese’ means ‘an important person’. 87% of undergraduates translated correctly. Therefore, they correctly rendered the cultural equivalence according to the readers. Hence, they used equivalences “ஜாம்பவான்இ பெரிய புள்ளிஇ பெரிய தலைஇ முக்கிய நபர் யனெ புகழ்பெற்ற நபர்” for an expression ‘big cheese’. Some of them translated as “அவர் ஊரில் பெரிய தலைக்கட்டு ஆவார்” using idiomatic language. However, the remaining undergraduates (13%) failed to render the idiomatic meaning of the sentence.

Sentence 8 - Why does Raja have such a long face?

The said diagram reveals that only one participant (3%) out of thirty rendered an actual meaning of the original sentence into Tamil. The expression ‘long face’ means ‘someone who seems unhappy’. In Tamil, people can use such expressions as “ஏன் ராஜா இவ்வாறு கவலை தோய்ந்த முகத்துடன் காணப்படுகிறாய்?”. Native people mostly use such expressions colloquially as “ஏன் முகத்தை இப்படி வைத்திருக்கிறாய்?/ ஏன் முகத்தை தொங்கப் போட்டிருக்கிறாய்?/ ஏன் ‘உம்’முன்னு இருக்கிறாய்?” However, the remaining participants (97%) rendered the meaning directly as “ஏன் ராஜா நீளமான முகத்துடன் இருக்கிறாய்? incorrectly. This proved that they had a lack of familiarity with translating idiomatic expressions in a communicative manner.

Sentence 9 - Commercial values have taken over the right to enjoy the environment and, in many instances, it is seen that common complaints are received regarding noise pollution, air pollution and environmental pollution by other means. [Source: Law Relating to Public Nuisance, P3]

When the above sentence has been provided to the undergraduates, twenty-seven undergraduates precisely translated “சுற்றுச்சூழலை அனுபவிக்கும் உரிமையை வணிக விழுமியங்கள் தம்வசப்படுத்தியுள்ளதான் மாற்று வழிகளின் பிரயோகம் காரணமாகப் பல சந்தர்ப்பங்களில் ஒலி மாசுஇ வளி

மாக மற்றும் சுற்றுச்சூழல் மாக தொடர்பான பொதுவான முறைப்பாடுகள் கிடைக்கப்பெறுவதையும் அவதானிக்கக்கூடியதாகவுள்ளது” as it is in the source sentence. Hence, it could be noticed that undergraduates did an adequate and faithful translation both syntactically and semantically. However, only three undergraduates faced certain obstacles in arranging proper word order in the target language.

Sentence 10 - Morality refers to values, codes of conduct or social mores that distinguish between right and wrong in human society.

The said diagram reveals that 77% of undergraduates correctly translated the source sentence as “நன்நடத்தை என்பது விழுமியங்கள்இ நடத்தை நிதிமுறைகள் அல்லது மனித சமூகத்தில் எது சரி எது பிழை என்பதை வேறுபடுத்திக் காட்டும் சமூக நெறிகளைக் குறிக்கின்றது” using ‘literal translation’ method. However, the remaining (23%) failed to render the actual meaning of the source sentence. They faced difficulties in finding appropriate terminologies for the source sentence in Tamil.

Conclusion and Recommendation

As per the results and discussions of data analysis, the major findings highlighted that the undergraduates of Translation Studies at the University of Jaffna have faced certain obstacles in finding the intended message of the expressive sentences. They had a lack of knowledge in translating idiomatic expressions using the idiomatic language of the target text. While translating culturally related sentences, they have failed to render the actual meaning according to the context. In such instances, a translator can adopt the procedures including paraphrasing, cultural substitutions, reformulation, modulation and synonyms in order to bring out the natural essence of the source sentence. Meanwhile, while translating legal and other common types of sentences, the undergraduates have successfully rendered the accurate meaning using certain methods including literal translation, faithful translation and communicative translation. Therefore, the methods including semantic translation, communicative translation, idiomatic translation and adaptation have been applied in idiomatic sentences in order to preserve the transparency in the target texts. This study has proved that if the translator is more faithful to the source text, he cannot provide an effective output to the target readers in aesthetic ways. Meanwhile, if he does more transparency in the target text, he cannot provide an exact meaning of the source text. In this regard, it can be concluded that a translation could have more fidelity and less transparency or vice-versa but, never be at an equally high amount.

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Track 06

ENGLISH LANGUAGE TEACHING AND INNOVATIVE EDUCATION PRACTICES

Summary of the Plenary Speech

Reciprocal Transformations: What involvement in teacher development means to the facilitators

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The effects of teacher training and faculty development programs are often scrutinized via the focal point of their effects on audience participants. We do not usually examine the impacts these programs have on the volunteers who serve as faculty development facilitators. This presentation is based on the researcher's lead longitudinal investigations regarding the professional, pedagogical, and personal changes that take place in the lives of volunteer teacher trainers and faculty development presenters who have participated in one or more Teachers Helping Teachers (THT) programs.

Teachers Helping Teachers is a special interest group of the Japan Association for Language Teaching (JALT). THT was formed in 2004 with volunteers based primarily in Japan and, as its mission, aims to aid fellow educators in the Asia Pacific region and the beyond. Primarily working in Bangladesh, Vietnam, Laos, the Philippines, Nepal, and Kyrgyzstan, THT has put on approximately 50 teacher training programs since 2005, working with over 8,000 in-service and preservice teachers and employing the efforts of approximately 100 volunteer facilitators in the process.

Teachers Helping Teachers fulfills its mission by providing teacher-development workshops that “. . . exhibit practical, student and teacher friendly approaches to English education that are informed by current research in the field” (Dougherty, 2005, p. 2). A report on a program put on in 2008 in Mindoro Oriental, the Philippines, described the organization of a THT set of workshops, where volunteer facilitators make presentations and conduct workshops that “. . . mix theory with practice and keep the interests and needs of working teachers always in mind (THT Website, 2020).” In 2008, with the interest of granting THT a firm footing and position from which to grow in the future, the organization joined with JALT as a Special Interest Group. This also allowed THT to gain non-profit status in Japan.

Below is a description of a typical THT conference program (Laurier & Morel, 2017 p. 44):

A typical THT trip involves Japan-based teachers volunteering their time to go to a selected country and making two or three presentations usually on teaching techniques that are appropriate for the audiences. These range from elementary teachers to university teachers, with various levels of training and expertise. The one thing they all have in common is a desire to learn more about teaching.... Occasionally there are opportunities for volunteer teachers to observe classes and even teach a class or two. Volunteers normally pay for their travel and lodging while visiting the countries.

This plenary will be comprised of the results of an anonymous, open call, online survey of THT volunteers bolstered by separate in-depth interviews of additional volunteers. Data was gathered over the course of nearly a decade of teacher development programs hosted in Bangladesh, Laos, Vietnam, Nepal, the Philippines, and Kyrgyzstan. Specifically, the professional, pedagogical, and personal impacts of experiencing being a THT volunteer workshop facilitator have been examined. What has been found is that there is a wealth of benefits accrued in each of these categories.

For the professional impact of volunteering as a THT faculty development facilitator or presenter, the data points to extrinsic benefits that include increasing the possibilities for cross-cultural understanding and peaceful existence, allowing the volunteers to expand their circle of professional connections, and assist them with achieving career goals of employment or advancement. Pedagogical impacts included having the opportunity to weigh one's own teaching context against possibly more challenging contexts in other countries. Additionally, volunteers felt that they had learned from both other THT volunteers and from program attendees. Volunteers were able to receive information about new teaching techniques or methodologies that they were able to apply to their own teaching. Additionally, the experience of volunteering as a THT workshop facilitator or presenter encouraged volunteers to give more thought to their own lesson planning and preparation, and it encouraged them to be more careful in staging and scaffolding their lessons. Regarding the personal impacts of being a THT volunteer, respondents identified the opportunities to travel as something other than a tourist, the chance to meet locals in unique settings, and the chance to expand their own world views as some of the personal benefits of being a volunteer.

That these results were consistent over the course of more than a decade is significant in that this indicates the reliability of the findings. Across the history of the organization, THT volunteers found benefit in their service, profiting both intrinsically and extrinsically from serving as a THT facilitator. The results of this study have myriad uses, but the authors feel that the key uses benefit both the individual and the organization. These results may

provide those interested in volunteering, and certainly those who are keen to convince others to volunteer, grist for the mill for their arguments in favor of service. Additionally, it is sincerely hoped that the results offered will be useful for those tasked with creating, maintaining, or expanding similar teacher training programs in the future. It is a simple truth that without attracting and maintaining an enthusiastic pool of volunteers, organizations like Teachers Helping Teachers would not be able to exist.

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PERCEPTIONS OF THE USE OF “KAHOOT” AND “SLIDO” AS LEARNER ENGAGEMENT TOOLS FOR TERTIARY-LEVEL ENGLISH LANGUAGE LEARNERS

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Abstract

The purpose of this present study was to investigate the tertiary level undergraduates' perception of the use of Kahoot and Slido as learning tools for English language learning. 45 undergraduates from the Faculty of Science, University of Kelaniya were taken as the sample. The quantitative data were collected through questionnaires whereas qualitative data were collected through semi-structured interviews. Quantitative data were analyzed using SPSS and qualitative data were analyzed using thematic analysis. It is found that both Kahoot and Slido are interesting tools to engage the students in tasks and motivate them to be involved in the tasks. The findings of this study can be incorporated to enhance virtual learning in tertiary-level English language classes.

Keywords: *Kahoot, Slido, Perceptions, Online learning*

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Introduction

Due to the changes in the education system from on-site classes to virtual classes during the COVID-19 pandemic situation in the country, teaching and learning have been a challenge for both teachers and learners. The lack of learner engagement is one such challenge in virtual classrooms. Moreover, the enhancement of technology has shed the light on the education field with various innovative tools, especially during the pandemic situation. By choosing the right tools and methods, teachers can enhance the teaching and learning process while making the learning context more interested and engaged. Therefore, teachers can incorporate such technological tools, especially in virtual classes depending on the learner's needs and preferences.

Nowadays, the emergence of gamification or game-based learning plays a vital role in the classroom. Sailer et al (2017) defined gamification as “the process of making activities in non-game contexts more game-like by using game design elements” (p. 372). According to them, learning through gamification creates enthusiastic, engaged, motivational, more interactive and authentic communicative practices in the learning context. Hence, technological tools which have gamification features can be used in any classroom context to enhance the learning experiences. *Kahoot* and *Slido* are two such technological tools which have gamification features. *Kahoot* is an educational web-based software for learning which allows teachers to integrate instructional content through quizzes with game design elements such as graphics, scoreboards, competitive leaderboards, and points to motivate the learners and enhance their interaction (Wang, 2015). On the other hand, *Slido* is a web-based Q and A and polling platform which ensures more engagement and interaction with the tasks. Hence, both *Kahoot* and *Slido* can be used in the classroom context to enhance learner engagement.

In varied disciplines across the world, studies have been carried out to identify both students' and teachers' perceptions of the use of *Kahoot* and *Slido* in language learning (Wang, 2015; Muthmainnah, 2019; Nicilaidou, 2018; Guardia et al 2019; Goksun and Gursoy, 2019). However, regarding the Sri Lankan context, only a few studies have been conducted. Therefore, further investigation into the perceptions on the usage of *Kahoot* and *Slido* as learning tools to enhance learner engagement at the tertiary level English class is required. Hence, the present study has aimed to answer the following two research questions: RQ1: What are the perceptions of the undergraduates on the usage of *Kahoot* and *Slido* as learner engagement tools? RQ 2: To what extent do *Kahoot* and *Slido* enhance learner engagement in the classroom?

Materials and Methods

The study employed a missed method research design which involved 45 undergraduates from the Faculty of Science, University of Kelaniya. The quantitative data were collected through questionnaires whereas qualitative data were collected through semi-structured interviews. Semi-Structured Interviews were conducted only for 10 selected students and they were audio-recorded, transcribed and coded. Quantitative data were analyzed using SPSS and qualitative data were analyzed using thematic analysis.

Results and Discussions

The data gathered from the semi-structured interviews found four major themes: (1) learner interaction (2) learner engagement (3) maintaining focus and attention and finally (4) interesting and happening classroom context. A summary of the themes identified is presented in Table 1 with a few example comments.

Table 1:

Findings of qualitative data analysis

Themes	Example Comments
Learner Interaction	<p><i>"I loved using Kahoot more than Slido but both methods helped me to maintain the interaction with the given tasks"</i></p> <p><i>"Slido and Kahoot sessions had the more interaction"</i></p> <p><i>"Both Kahoot and Slido could get everyone's interaction into the tasks"</i></p> <p><i>"I could get the feedback once we completed the task. So, it helped me to see my mistakes"</i></p>
Learner Engagement	<p><i>"Everyone engaged in the tasks as they were very interesting games"</i></p> <p><i>"I became more active and tried to get my name into the leadership board"</i></p> <p><i>"I think it is also important to use such technological tools in the course, as it makes more learner engaged classroom"</i></p>
Maintaining Focus and Attention	<p><i>"I prefer Kahoot as it helped me to revise the lesson contents"</i></p>

	<i>"Having background music helped me to be focused on the task"</i>
	<i>"Fun competition among us made me maintain the focus while doing the task"</i>
Interesting and happening classroom context	<i>"Everyone enjoyed each session with Kahoot and Slido"</i>
	<i>"Kahoot and Slido have interesting games"</i>
	<i>"I loved to learn using Kahoot because it is very interesting"</i>
	<i>"I like Slido as I can post the questions"</i>

The qualitative data findings indicated that all the participants seem to enjoy the usage of *Kahoot* and *Slido* to enhance learner engagement. These findings are in line with the findings of Goksun and Gursoy's (2019) study in which they found that the incorporation of *Kahoot* created more learner interaction and engagement in the classroom. Moreover, Licorsih et al (2018) highlighted the fact that *Kahoot* contributes to teacher-student interaction and student-student interaction creating a more competitive learning environment. Many students stated that receiving immediate feedback facility helped them to identify their mistakes. This finding is in line with previous research study (Bury, 2017) which found that the students desired to have gamification tools like *Kahoot* as they get immediate feedback on how they have performed the task.

Table 2:

Findings from quantitative data analysis

Emotional Engagement	1	2	3	4	5
1. When I worked on gamification tools, I felt interested	60%	20%	20%	-	-
2. I thought that this class was fun because of the gamified tools	70%	15%	15%	-	-
3. I felt enthusiastic to participate in a gamified learning activity	65%	20%	15%	-	-
4. I enjoyed learning new things in this class	65%	20%	15%	-	-
Behavioral Engagement	1	2	3	4	5

5. I actively participated during the tasks	75%	10%	10%	5%	-
6. I worked hard to answer quiz questions on the gamification application	40%	20%	30%	10%	-
7. I was able to answer quiz questions independently	60%	30%	10%	-	-
8. I tried to be active in asking and answering question during the learning process	60%	20%	15%	5%	-
9. I paid attention to other students' questions, comments, and feedback	50%	30%	10%	10%	-
Cognitive Engagement	1	2	3	4	5
10. They were a form of friendly competition	65%	15%	10%	10%	-
11. I could track my performance	70%	15%	15%	-	-
12. It improved my critical thinking skills	60%	12%	25%	3%	-
Agentic Engagement	1	2	3	4	5
13. I asked questions to make the class more active	45%	10%	35%	10%	-
14. I expressed my suggestions, opinions and comments during the tasks	50%	15%	22%	13%	-
15. I let my teacher know what I was interested in	60%	20%	20%	-	-

To answer RQ 2, quantitative data were collected through a survey questionnaire which consisted of fifteen statements using a 5-point Likert Scale. Those questions were divided into four types of engagement such as emotional engagement, behavioural engagement, cognitive engagement and agentic engagement. Quantitative data analysis found that about 75% of the participants strongly agreed that the use of *Kahoot* and *Slido* allowed them to actively participate in the tasks. About 65% of the participants strongly felt enthusiastic to participate in learning activities through *Kahoot* and *Slido*. However, about 13% of the participants disagree with the statement that the

usage of *Kahoot* and *Slido* allowed them to express their suggestions, opinions and comments during the task. Overall, the majority of the participants agreed that the usage of *Kahoot* and *Slido* could enhance their engagement and interaction during the class and highly recommended their usage in the English language teaching process. Both qualitative and quantitative data analysis indicate the necessity of using *Kahoot* and *Slido* as learner engagement tools in English language classrooms.

Conclusions and Recommendations

In conclusion, the data analysis of the present study confirmed that the usage of *Kahoot* and *Slido* has a positive impact on the enhancement of learner interaction and engagement during classes creating a fun-filled interesting, competitive learning atmosphere. Further, the usage of *Kahoot* and *Slido* can have a positive impact on active learning, immediate feedback, recalling the learning points and independent and collaborative learning. Therefore, based on the above findings it can be concluded that students desired to use *Kahoot* and *Slido* as learning tools to enhance their interaction.

However, as this present study is small-scale research, the findings of this study cannot be used to have generalized findings and extensive research into the matter need to be conducted to have a clearer picture of the enhancement of learner engagement through *Kahoot* and *Slido*. The findings of the present study imply that the instructors, teachers, and educators can use these two gamified tools as learning tools to enhance learner engagement in their English language classes.

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PEDAGOGICAL CHALLENGES FOR ACTIVE DIGITAL LEARNING IN SELECTED HIGHER EDUCATION INSTITUTES IN SRI LANKA

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Abstract

The goal of the current study is to identify the pedagogical challenges that certain higher education institutions in Sri Lanka may face when implementing active digital learning. Ten individuals were randomly selected from Sri Lankan higher education institutions. Data for this study were gathered using in-depth interviews. The content analysis method was used to assess the qualitative data, which was then presented descriptively. The study's findings showed that the pedagogical barriers to active digital learning in the Sri Lankan higher education institutions include well-established teaching cultures, the unequal status of education and research, lack of digital incentives for teachers, and an inflexible physical learning environment. It has been recommended that institutional administration should hold more authority over academic leadership in terms of leadership duties. To improve the state of digital learning in Sri Lanka, policymakers will be able to use the knowledge gained from this study to conduct empirical research for future studies.

Keywords: *Digital Learning, Higher Education, Pedagogical Challenges,*

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Introduction

Higher education acts as a nation's knowledge hub, which is essential for the development of a knowledge-based society. The ability to access and exchange information from anywhere and by anybody, as well as the flexibility to operate across time, location, and function, have drawn a lot of interest from the education industry. Additionally, education digitalization is essential for modifying the classroom environment to meet the needs of the target audience of the "digital native" generation (Zhadko, Popova, & Gagarina, 2019). Including education, the economy has been significantly impacted by the present COVID-19 pandemic. The present investigation will close a research gap identified by Wilms and colleagues in 2017. Online learning, which may be categorized as a subset of distance learning that deals with internet learning, computer-based learning, and virtual classrooms, has gained appeal as a competitive alternative to traditional classroom instruction (Andersson, 2008). Academic personnel may need to modify their "traditional classroom" teaching strategies while acquiring digital abilities to effectively communicate with distant pupils (Toquero, 2020). Most instructors lack expertise teaching online, according to Bao. The same author emphasized that lacking sufficient learning tools, reliable internet connectivity, and a comfortable studying environment are common challenges for students (Bao, 2020). Only a few higher education institutions in Sri Lanka, excluding public and commercial universities, have embraced digital learning. Because of this, the current study was carried out as a pilot study to determine the challenges higher education institutions in Sri Lanka encounter while introducing active digital learning. As a result, the goal of this study is to pinpoint the pedagogical challenges higher education institutions in Sri Lanka have while introducing active digital learning. With regard to a particular government higher education institution in Sri Lanka, this study has been carried out as a case study.

Material and Methods

The sample consisted of 10 voluntarily participating students. sample picked from an open invitation. The sample was so picked at random. We asked 10 students to suggest a workable time for the interview. The sample was determined by the saturation level. A pre-established interview checklist was followed during the interview. Early in 2020, both researchers participated physically in the study's interviewing process. The data collecting tool was interview checklist. Some scripts were recorded with the respondents'

permission, and the researchers also conducted some interviews using scripts. Each interview took around an hour to an hour and a half. Following a content analysis, the collected raw data were sorted and presented descriptively.

Results and Discussion

Almost all the samples represented in this study showed the same demographic characteristics. Therefore, Pedagogical Challenges for Active Digital Learning they described have been presented here.

Lack of digital incentives for teachers

The institutional incentives and limitations can affect instructors' willingness to change their teaching approaches, according to one-fourth of respondents. According to studies, the biggest obstacle to instructors adopting digital education is a lack of institutional support. According to respondents, "To our knowledge, few universities have created incentive structures that capture distinctive aspects of digital education, such as the substantial additional workload in the design phase and this lack of legislation reduces teachers' motivation to participate in digital reform."

Conventional Teaching Cultures

According to the survey, instructors were generally quite optimistic about digital education, although they continued to reject its advantages for their particular specialties. "Resistant" educators aggressively oppose incorporating novel ideas into their profession and have unfavorable beliefs. The rate of pedagogical changes in higher education will undoubtedly stay slow without a sizable proportion of "active innovators." Five out of ten respondents said that college lecturers were likely to stick to the traditional methods of instruction but not the latest technology developments. However, the majority of teachers prefer distant learning over physical education, according to a different reply.

The unequal status of education and research

According to the respondent, equal weight should be given to research and instructional activities that are of the highest caliber. The value of research in education is debatable, and teachers' instructional practices frequently reflect their personal preferences without question. Teaching and research are frequently compared in higher education and seen as having complementary purposes. The respondents noted that this disparity in the standing of research and education had a detrimental impact on active digital learning.

Faculty of Social Sciences and Languages

The physical learning environment settings

According to the sample, innovative, adaptable technology classroom designs influence teachers' decisions on their pedagogical strategies favorably. They proposed that a rigid and regulated learning environment prevented effective digital learning. To offer students a sense that they are engaged in global learning, the learning environment needs to be more inventive and appealing. However, there were no such amenities present at the higher education facility that was chosen.

Conclusion and Recommendations

The study's conclusions demonstrated that well-established teaching cultures, the unequal status of education and research, a lack of digital incentives and legislation for teachers, and a rigid physical learning environment are among the pedagogical barriers to active digital learning in Sri Lankan higher education institutions. In terms of leadership responsibilities, it has been suggested that institutional management should have more power over academic leadership. Policymakers will be able to use the knowledge gathered from this study to undertake empirical research for future studies, which will help them to enhance the situation of digital learning in Sri Lanka. Institutions must act quickly to protect instructors' ownership of video lectures and other digital content developed without the direct involvement of institutional support functions and to provide incentives for their recompense for digital development efforts. It is necessary to fairly pay for reuse. Although this can initially appear to be expensive, expanding the options for digital content reuse might have the opposite effect.

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THE 21ST CENTURY INNOVATIVE METHODS FOR TEACHING ENGLISH AS A SECOND LANGUAGE IN SRI LANKAN SCHOOLS: AN EMPIRICAL STUDY

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Abstract

As the trends in language education have been shifting ever since the 20th century, the traditional educational system is being replaced by innovative ways. As such, these practices have progressively made their way into English as a Second Language (ESL) classes around the world. Although the importance of using innovative methods to teach English is broadly discussed in the educational forums in Sri Lanka, to which extent ESL teachers are able to employ these methods for classroom practices has become a question. Thus, a qualitative study was undertaken with fifteen ESL practitioners in the Colombo Educational Zone to examine the effectiveness of using innovative teaching methods for teaching and learning. Findings of the study demonstrate that the implementation of the 21st century innovative methods to teach English language is a proportional approach that depends on the individual assessments of the teachers. It is significant to note that ESL teachers are increasingly attempting to cater to the needs of students by incorporating innovative teaching methods into their pedagogy.

Keywords: *Innovative teaching methods, ESL teachers, Education, English language, the 21st century*

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Introduction

Quality education is one of the seventeen sustainable development goals that promotes a shift in the obsolete cycle of the traditional classroom system and it fosters to have a multifaceted innovative environment in the classrooms in which students are forced to ameliorate their capabilities. Thus, to succeed in the new world, language teaching trends have been changing ever since the mid-20th century. With the advancement of technology, the students are compelled to become change-makers in the 21st century when receiving a proper quality education blended with technology. In the modern world, where the students are experts in technology openly welcome innovative teaching methods instead of the old methods of teaching.

The entire world recognizes English as the international language. Yet it is still difficult to teach English for non-native speakers in the present context. Therefore, the teachers need to use innovative teaching trends and help the learner in the acquisition of their second language. Sri Lankan English teachers are also promoted to move on with the trend and make use of various authentic teaching methods to motivate the students to learn the language. Yet it is highly questionable to what extent teachers use this method. According to the general statistics of the Ordinary Level Examination, 51.12% have failed the English paper in the year 2017, which is recorded as the lowest pass percentage when compared with the other subjects (Ministry of Education, 2022). The exam-oriented traditional teaching and learning methods are considered to be oppressive and no longer stand with the quality education. Thus, Teachers really need to outperform new language teaching methods instead of the non-productive traditional classroom structure.

Material and Methods

A qualitative study was conducted with fifteen English as a Second Language (ESL) teachers serving in the schools of the Colombo Educational Zone. Purposive sampling method was used to make the study rich in information. Semi-structured interviews were designed to collect data from ESL practitioners. Secondary data too were collected from the previous research and scholarly articles. Thematic Analysis (TA) was used to organize, analyze and interpret data (Abeywickrama, 2021) which assisted in perceiving and assembling the themes and trends.

Results and Discussion

The 21st century is experiencing a whirlwind technological evolution that has impacted the current educational system in most countries including Sri Lanka. Evolution of the technology has promoted classroom learning and

teaching to the next level. As Anil (2017) also claims, infusing real-world experiences with creative applications enrich the learning pedagogy in the classrooms. To this end, classroom activities need to be supported by the 21st century innovative media and technology to make the students address the current trends in the world. In order to achieve the gaps in the present growing competition in the world, English language should be mastered with new advanced skills (Participant 10). Given such a background, ESL teachers need to withdraw from the role that they normally use and adopt a role that is suitable to cater to the challenges of the 21st century (Participant 9). When using innovations “nature of the students” (Participant 8) is an inevitable factor that teachers should address in the classroom. Comparatively the present generation of students is far ahead with technology, henceforth innovation is where teachers openly welcome the interests of the students in the classroom (Participant 6).

According to the research findings, ESL teachers use multiple innovative methods in modern classrooms. Web-based learning is one of the innovative teaching methods used in ESL classrooms especially in developing countries in the world as it benefits the students predominantly. As emphasized by Participant 6, the internet encourages personalized education for students, hence, English is no longer considered another subject, but a subject of students, thanks to the modern devices that force “inquiry-based learning” (Participant 4). Social media is yet another potential and productive method that can be used in contemporary ESL classrooms. In Sri Lanka, ESL teachers had no choice but to shift for the purpose of the people, incorporating social media into language learning. Although the electronic revolution was provocative in developed countries since the start of the new millennium, Sri Lanka accelerated the use of social media dramatically to speed up the domestic learning process. Henceforth, Participant 4 claims that “social media not only construct content but also helps create an audience using the independent thoughts of the children which in a way make them open and connected”. On the other hand, the mature multimedia network is also significantly used in ESL classrooms to promote independence and autonomy among the students. Mature multimedia network learning broadens the pathways and efficiency of the English as a Second Language learners’ background (Participant 5). This perspective is strongly supported by previous studies, for instance, as Wirentake (2017) claims, the cognitive psychology of foreign language learners is addressed with sensory stimulation using multimedia network concepts such as watching, listening, tapping, touching and speaking. With the Covid-19 pandemic, yet another mode of innovative teaching technique is introduced to the ESL teaching methods, which is the hybrid method of learning. Currently, Sri Lanka is going through a post-

pandemic period with lots of challenges in the country. Thus, the teachers are encouraged to have hybrid sessions in the classroom in order to avoid the difficulties faced by the students. As a consequence, Liyanagunawardena and Adams (2014) support the idea that a shift of style in education is necessary according to the contemporary situations in the country to continue the teaching-learning process continuously.

When using innovative teaching methods teachers are also impacted by both personal and external factors. The main concern of an innovative classroom is the idea of using technology to shift from the traditional to the modern. Thus, the teachers need to outperform their technological skills to confront the latest traditions. But most of the teachers find it difficult to handle the technology due to the lack of exposure that they were given regard to automation (Participant 7). On the other hand, teachers are also influenced by the attitudes of contemporary society when implementing innovative teaching methods. Mostly, parents are very concerned about covering the syllabus (Participant 1) and the parents are in favor of the traditional teaching methods as the efforts of the students are rewarded immediately. The recorded power outages that are imposed across the whole country resulted in weak internet connections and limited resources that made the students discouraged when switching sides that they are not comfortable with. Participant 8 emphasized that innovation is only possible when background facilities are provided. Nevertheless, the use of innovative methods to teach the English language in the ESL classroom is highly proportional where the teachers have the total autonomy to decide on the modern trends that they prefer as innovation is quite a relative perspective that depends on individual assessments.

Conclusion and Recommendations

In conclusion, the study highlights that the implementation of 21st-century innovative methods to teach the English language is quite relative to the experiences of the teachers. While the skills of 21st-century innovative teaching may not be new to some teachers they are newly relevant to some groups of ESL teachers, which shows that there is no clear demarcation and boundaries between traditional and innovative teaching methods in Sri Lanka. Innovation is also a proportional approach that depends on the individual assessments of the particular teachers.

In order to overcome the confrontations faced by the students and the teachers when flipping the teaching methods, it is recommended to have a deeper analysis of the focal factors of an innovative classroom. It is also proposed to design teaching methods that can also match with the students who are with

limited resources. Also, it is recommended to conduct training workshops by the Ministry of Education for ESL teachers on how to employ innovative teaching methods and provide adequate facilities to implement innovations in the classroom.

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FACTORS INFLUENCING ENGLISH LANGUAGE PROFICIENCY OF ORDINARY LEVEL STUDENTS (WITH SPECIAL REFERENCE TO SELECTED SCHOOLS IN GAMPAHA DISTRICT)

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Abstract

English proficiency of the majority of Sri Lankan Ordinary Level students is not at a satisfactory level for many years. According to the latest government statistics, 34.22 percent of students have failed English as a subject in the G.C.E. Examination and this happens every year. Therefore, this study is significant as it aims to identify the factors (socio economic, psychological, linguistic factors and teaching strategies) influencing English language proficiency of O/L students with special reference to Gampaha district. According to the outcomes of the study, it reflects that each factor (socio economic, psychological, linguistic factors) has a significant, strong positive relationship with English language proficiency and the learners' exposure, level of motivation, the teaching strategies received by the learner have an impact on learners' English language competency. Therefore, this study provides recommendations, specially, for the relevant parties; institutions and government to implement effective solutions.

Keywords: *English language proficiency, Linguistic factors, Psychological, Socio-economic, Teaching strategies*

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Introduction

English is taught as a second language in Sri Lankan school educational system from grade three to grade thirteen. Reading, writing, speaking and listening are all the four components of English language proficiency. According to the latest and previous government statistics, it's revealed that English proficiency of the majority of O/L students in Sri Lanka aren't at a satisfactory level for many years. Because of that, Sri Lankan English education needs to closely examine the factors influencing English language proficiency of O/L students in Sri Lanka. Therefore, the purpose of this study is to identify significant factors that may influence on English language proficiency of O/L students in Gampaha district.

Material and Methods

The researcher has used a survey method to gather information about the study from the O/L students in selected schools in Gampaha District. Study Design: This is a descriptive cross-sectional study. Five schools (National, 1AB and, 1C schools) in Gampaha district were selected as the study setting. Both male and female students in grades 10 and 11(G.C.E. O/L scheme) in selected schools mentioned above in 2022 academic year were selected as the study population. The data has been collected from 101 responders in Gampaha district using a self-administrative structured questionnaire created from Google data form. Simple random sampling method was used to select the study population. The collected data were analysed using SPSS software 26 version. As the data analysing techniques, Chi-square test, Cronbach's alpha, Pearson's correlation coefficient, multivariate analysis were done to evaluate and examine the significance, relationship of the factors (socio-economic, psychological, linguistic) influencing English language proficiency of O/L students.

Results and Discussion

In the study population, 55.45% were female students while 44.55% were male students and 58.42% students studied in grade 11 and 41.58% of the students studied in Grade 10.

Considering psychological factors, 68.3% of the study population agreed with the statement that they have negative confidence while learning English. 67.3% of the study population stated that they get stressed when learning English.

Considering linguistic factors, over 61.4% students agreed that they have issues with pronunciation while speaking and 63.4% of the study population

agreed with the statement that they cannot identify the words accurately when listening to English. Furthermore, the majority of students (65.3%) agreed that they have main issues in grammar and vocabulary while 53.5% agreed with the statement on having issues with punctuation.

Considering socio-economic factors, 69.3% of students agreed with the statement using mother tongue most of the time and that leads them to have a poor oral proficiency in English. Considering the outcomes of the hypothesis testing, it revealed there's a significant relationship between students' socio-economic background and English proficiency.

When considering the influence of teaching strategies on students, 63.4% of the study population stated that if group works and impromptu speeches are encouraged in the classroom, their English oral proficiency isn't at a satisfactory level. 70.3% of the students agreed that they are encouraged to do writing activities in the classroom. Also, 66.3% agreed that all the tenses and the relevant grammar lessons are covered in the classroom by teachers. 71.3% students stated that audio sessions, recorded English conversations aren't used in their classroom to improve listening.

Table 1:

Reliability Analysis: Measuring the reliability of the factors influencing English language proficiency.

Variable	Cronbach Alpha value
Psychological factors	0.726
Strategies and activities used by teachers for speaking	0.790
Strategies and activities used by teachers for writing	0.714
Strategies and activities used by teachers for listening	0.824
Strategies and activities used by teachers for reading	0.854
School background	0.820

Source: Sample Survey 2022

Note: This tables shows the reliability of the data set for each variable.

All the factors including dependent and independent variables have very good reliability. (Cronbach's Alpha value = > 0.7 indicates a high level of reliability in the study.

Table 2:

Estimation of Coefficients.

Correlations-Pearson's Correlation Matrix					
		English proficiency	Grammar	Speaking English at home	income
English proficiency	Pearson Correlation	1	.905**	.802**	.655**
	Sig. (2-tailed)		.000	.000	.000
	N	101	101	101	101
Grammar	Pearson Correlation	.905**	1	.857**	.679**
	Sig. (2-tailed)	.000		.000	.000
	N	101	101	101	101
Speaking English at home	Pearson Correlation	.802**	.857**	1	.717**
	Sig. (2-tailed)	.000	.000		.000
	N	101	101	101	101
Income	Pearson Correlation	.655**	.679**	.717**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	101	101	101	101
**. Correlation is significant at the 0.01 level (2-tailed).					

Note: This table shows the relationship between each two variables which affect to English proficiency.

Correlation Analysis- There's a significant relationship between socio-economic background with English proficiency ($p < 0.05$). and it's a strong positive relationship (Pearson's correlation value is 0.655 and 0.802 respectively).

Table 2.1*Estimation of Coefficients*

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T value	Significance
		B	Std. Error	Beta		
1	(Constant)	.923	.310		2.980	.004
	Grammar	1.017	.123	.767	8.258	.000
	Socio-economical cultural factors	1.365	.102	.802	13.349	.000
	Teaching strategies for listening	.261	.090	.280	2.908	.004
	Teaching strategies for writing	.385	.083	.424	4.653	.000
	Psychological factors	.677	.079	.655	8.622	.000
	Teaching strategies for speaking	.214	.075	.276	2.859	.005

Note: This table shows the significant relationship between each two variables which affect to English proficiency.

Considering linguistic factors, there's a significant relationship between grammar with English proficiency ($p < 0.05$). Also, there's a significant relationship between oral proficiency and speaking English at home. Furthermore, there's a significant relationship between English proficiency and psychological factors ($P < 0.05$).

Table 3:*Hypothesis Testing*

No	Hypotheses	p-value	Decision
H1	There is a significant relationship between socio-economic background (income and occupation of parents) and English proficiency	0.000	H0 rejected
H2	There is a significant relationship between psychological factors and English proficiency	0.000	H0 rejected
H3	There is a significant relationship between speaking English at home with oral proficiency	0.000	H0 rejected

Note: This table consists of Pearson's Chi- square test to examine the significance of hypotheses in the study.

If the p value is less than 0.05 significance level, the null hypotheses would be rejected and it shows there's a significant relationship between independent variable and dependent variable.

Conclusion and Recommendations

This study is carried out as a comprehensive investigation on the factors influencing English Language proficiency. According to the outcomes of the study, it's proved that psychological factors can have a great impact on students' English speaking. This study suggests to implement a motivational enhancing program to reduce students' anxiety when learning English to improve their performance. There's a significant improvement in English proficiency of O/L students when they speak English at home. This study suggests to conduct a series of consulting sessions at the school level to educate students about the importance of using English practically. Among the teaching strategies used by teachers, the material based teaching strategy has a significant impact on the English proficiency of students. Therefore, this study suggests to implement more practical teaching strategies and effective activities into the subject curriculum (new practical teachers' guide). These findings are identified by this study.

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