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**National Center for Advanced Studies in
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(NCAS)

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Foreword

We are happy to present the Vol. 12. No. 1 of the Sri Lanka Journal of Advanced Research Studies in Humanities and Social Sciences (SLJARS) with the commencement of the year 2022, as part of the mammoth task of the National Center for Advanced Studies in Humanities and Social Sciences (NCAS) to mark the continuation of the Academic tasks undertaken by the NCAS. With the belief that the ongoing dialogue within the realms of Humanities and Social Sciences is to be continued beneath the idealistic understanding of intellectual curiosity and critical examination, we present the continuation of our esteemed journal. The vibrant knowledge always dealing with resolving the complexities of human existence, culture, and society, especially in an era of technological advancements and involvements, to overcome the global challenges, the insights and perspectives offered by the humanities and social sciences have become more crucial than ever, as we highlighted in our previous volume.

In this edition, we have endeavored to include a wide array of research that reflects the interdisciplinary nature of these fields. The contributions span across disciplines such as geography, sociology, history, philosophy, and economics, among others. This diversity not only highlights the interconnectedness of different areas of study but also demonstrates the multifaceted approaches required to address complex questions about humanity and society.

The National Center for Advanced Studies in Humanities and Social Sciences (NCAS) being the only Research Institute of Sri Lanka governed by the Universities Act No. 16 of 1978, is happy to thrive and embark novel studies in Humanities and Social Sciences under its broader objectives to enhance the capacities and the equilibrium of such studies. Thus, the Annual Research Journal of the NCAS aims to be a beacon for scholars, researchers, and practitioners who delve into these profound and diverse areas of inquiry. Established in 2005, the NCAS commenced its first Journal in 2007, and continues to publish every year in two (02) Parts, with the blind review by the local and overseas subject experts. We are happy to announce that the Sri Lanka Journal of Advanced Research Studies in Humanities and Social Sciences (SLJARS) has been recognized by the 'Sri Lanka Journals Online' since 2007.

A special note is endorsed with regard to the Vol. 12. No. I & II which was expected to be published in 2022. Due to the COVID-19 pandemic, the routine work and tasks were collapsed, and many of us joined on virtual platforms and accepted the virtual reality at its zenith. The research collaborations and field research are not exempted in the particular setting. The NCAS continued its tasks and performances at its

best and obtained the research articles remotely from the scholars and researchers. However, the process was not that efficient due to certain other hindrances i.e. the Wi-Fi facilities and the economic crisis, yet we are happy to announce that now in 2023, we are ready to publish the Vol. 12. No. I & II, consecutively after publishing Volume 11, also following the same review process. SLJARS is peer reviewed and follows double blind review process.

I extend my deepest gratitude to the authors, reviewers, and editorial team whose dedication and hard work have made this edition possible. Their commitment to scholarly excellence ensures that this journal continues to be a vital platform for intellectual exchange and discovery. I am confident that the insights and findings presented in these pages will inspire and inform future research, contributing to the ongoing dialogue that shapes our understanding of the world.

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Mind Mapping: A Strategy To Enhance Essay Writing Skills of Learners of English as a Second Language

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Abstract

Essay writing is a challenging task for learners of English as a Second Language (hereafter ESL). The tasks usually involve gathering ideas to be written, planning the outline, focusing on sentence structure, choosing the appropriate expressions, and focusing on organization. These tasks can demotivate students and result in negative attitudes towards essay writing. This study investigates the impact of adopting mind mapping as a strategy in essay writing for intermediate level Second Language learners of English and an analysis of their perceptions on the efficacy of using mind mapping as a medium for writing. A mixed method research design was implemented and data was collected through a pre-test, post-test, semi-structured interviews, and a questionnaire. A random sample of 30 intermediate level ESL learners from a state school from Maharagama participated in the study. The pre-test and post-test along with the interviews were conducted using the Zoom platform. Both the control group and experimental group were expected to practice and engage actively with lessons. Findings revealed that there were statistically significant differences between scores of the experimental and controlled groups in favour of the experimental group exposed to the mind mapping strategy. Moreover, mind mapping is an effective learning setting that is appealing, motivating and an adaptable strategy that could be incorporated in teaching English.

Keywords: Mind mapping, Writing skills, ESL learner

Introduction

Writing is one of the most significant skills in education, especially in English as a second language, as it shows a student's ability to master writing techniques, to compose, and to present his or her ideas. Writing in English is complex (Kroll, 1990) and to effectively convey their

ideas, students must be aware of writing as a practical and productive process, as well as abide by writing rules and conventions such as knowledge, management, and control of techniques (Anwar, 2000). However, some experts today assert that many students lack basic writing skills (Dean, 2010). Essays are the tool of assessment and play a key role in gauging a student's standard during coursework. Unfortunately, students are only given the training to overcome the challenges of essay writing at a young age, and therefore, the techniques deemed useful to writing essays in the intermediate level are lost on some students. As a result, teachers have a responsibility to produce students competent in critical thinking, writing with coherence, linking paragraphs and capable of organizing their thoughts to write essays effectively.

Review of Literature

The skill of essay writing for a student at the intermediate level has been recognized as imperative to their academic success, as it is constantly being used as a means of assessment. According to Richards and Schmidt (2002), writing is viewed as a result of complex processes of planning, drafting, reviewing and revising. Writing is a complex cognitive skill and is one of the most difficult skills to acquire especially for ESL learners (Welsh & Bivens-Tatum, 2008); therefore, it is understood that essay writing, with its own exclusive set of rules of language manipulation requires the mastery of a distinct set of sub-skills.

Writing is one of the productive skills that should be developed in instructional activities. The teaching of writing for intermediate learners is still hampered by several issues. There is a wealth of research that highlights the issues faced by students in mastering writing skills. A study conducted by Kusumaningtyas (2005) reveals that the students' lack of skill in writing is a result of their inability to organize ideas and sentences into coherent paragraphs. Another study was conducted by Jafaruddin (2006) aimed at identifying and evaluating students' ability to write unified and coherent essays. The findings showed that most of the essays had poor coherence and unity. In addition, Nirwani (2007) found that the students' pieces of writing were overwhelmed with errors due to lack of vocabulary; besides, they did not have sufficient skill in organizing ideas into a text. Hence, students' writing ability directly affects their performance in assessments and getting good grades. In relation to the students' difficulties in writing, Mukminatien (1991) states that the difficulties are not merely students' lack of skill in writing but also caused

by the unvaried techniques of teachers when teaching writing. The lack of variety in teaching writing skills also has been identified as a cause for reduced motivation in students to improve their own skills.

Oshima and Hogue (2006) stated that an essay is a piece of writing several long paragraphs. According to him, it is important to organize and plan before beginning to write an essay. It is important to recognize that to write an effective essay, the writer must commit themselves to a process (Starkey, 2004). Writing for academic purposes is necessarily prepared since there are many aspects to be concerned. Langan (2008) defines an essay to be a relatively short piece of nonfiction in which a writer attempts to develop one or more closely related points or ideas. Essays are shorter pieces of writing that often require the student to improve several skills such as close reading, analysis, comparison and contrast, persuasion, conciseness, clarity, and exposition. As is evidenced by this list of attributes, there is much to be gained by the student who strives to succeed at essay writing.

Mind maps are also known as concept maps, semantic mapping, knowledge mapping, think-links, graphic organizers or cognitive maps (Svantesson, 1989). According to Buzan (1993), mind maps attempt, visually and graphically, to portray a relationship of ideas or concepts. It is seen as a powerful tool to help students overcome problems with the organization of their ideas and thoughts (McGriff, 2007). According to McGriff (2007, p. 9) "mind maps are an excellent way to help learners organize knowledge, to empower themselves to better comprehend the key concepts, and principles in lectures, readings, or other instructional materials". Buzan (1993) describes mind maps as a representation of cognition and comprehension in the learner, and as an excellent way to help learners to express themselves both verbally and visually. Indeed, in their mind map, learners may use graphic representation, which may help in the brainstorming process. This shows the potential importance of using this technique in writing classes, and it seems it is a useful strategy to support students during writing tasks.

Several studies have addressed the unique relationship between drawing and writing and their use during the planning phase of children's writing. A good example is a study by Norris, Mokhtari & Reichard (1998) which explored the relationship between drawing and writing. The study revealed significant differences between the treatment and the control group on all measures used. Students who drew before writing tended to produce more words, sentences, and idea units and their overall writing

performance and the writing achievement were higher. Additionally, the result showed that drawing became an effective planning strategy for the students who appeared to rely on their drawings as a reference point to prompt them toward what should come next in their writing. Integrating drawing and writing may also be used as a way of motivating students to write and the process of writing. Using mind maps to organize, generate ideas, and make associations between different topics through drawing has been investigated to test its effect on writing.

There are several advantages in using the mind map technique in writing. Zaid (1995) argued that mind mapping is an outline for the writing of a short essay on the topic, or that a segment of the map is used in the writing of a paragraph. Moreover, Mercer (2002) argued that mind mapping helps students to see the relationship among ideas and connect known information with new information. He added that mind mapping has proven useful before, during and after writing. He also mentioned that mind mapping can help writers stick to the topic by having their ideas in front of them as they are writing. It also helps the writer to write in the correct sequential order.

Therefore, mind mapping is recognized as a tool that can guide students through the four stages of the writing process namely prewriting, drafting, editing and revising (Seow, 2002, p. 316). This study finds evidence where unlike most writing processes, mind mapping supports and even encourages nonlinear thinking. It allows the map maker to be more flexible and follow their interests.

Research Questions

This study attempts to analyze the impact of mind mapping on improving essay writing skills of learners of English as a Second language and will seek to answer the following research questions

- To what extent does mind mapping affect a student's essay writing skills?
- What are the difficulties students face when writing essays?
- What are the students' attitudes towards mind mapping and essay writing?

Research Methods

Participants

The participants of this study were 30 male and female grade 10 (age range 14-15) students from state schools in Maharagama. The study

was conducted with 25 female students and 05 male students whose first language is Sinhala and second language is English. This sample was divided into two groups as experimental and control. All the students belonged to the same level of proficiency. Prior to this study each student was contacted by the researcher and all students received marks between 50-65 for their last two English term papers.

Instruments

In this research study, the researcher used a combination of approaches including tests, semi- structured interviews, and a questionnaire as data collection tools. The researcher used a quantitative approach to analyze the test marks and a qualitative approach to analyze semi- structured interviews. As a result, a mixed approach of data collection was used.

Since, the purpose of this study is to observe how mind mapping has an impact on essay writing skills of students, the performance of students is measured by using the marks they have scored from pre-test and post-test before and after the intervention and from the semi-structured interviews conducted. Therefore, this study deals with quantitative and qualitative data, making this study a mixed data research.

Research design

The research design of this study is an experimental research design. Ross & Morison (2003) stated that experimental research design makes a comparison between a control group and an experimental group on the dependent or outcome variable in a controlled environment. This study falls under experimental design, to test the impact of using mind maps to enhance essay writing skills. This study used the experimental design with the intervention of mind mapping with the experimental group while the control group was taught using strategies other than the mind mapping strategy.

Analysis

Both quantitative and qualitative methods were used to analyze the respective sections of the questionnaire.

Quantitative analysis

Fancher (2013) stated that “pre-test-post-test designs are very common in scientific studies”. Subjects within each group receive a treatment of interest, no treatment, or a neutral treatment. Budia,

Ohoiwutun, & Wahyudin (2013) used pre-test and post-test in their research. They used a pre-test to measure the students' prior knowledge and it was conducted before the treatment while the post-test was given to the students to measure the changes after getting the treatment.

A pre-test was given for both groups to examine their current essay writing skills before the intervention. Then the experimental group had the intervention with the focus on mind mapping strategy while the control group was given regular essay writing tactics without teaching mind mapping explicitly. The time frame for teaching was two months. The teaching sessions were conducted online giving the students a break during the intervention so that they can practice using mind maps to write essays effectively. At the end of the session, a post-test is re-administered to both groups to analyze the achievement after the intervention. Song (1998) used the original paper for both pre-test and post-test. The same essay topic was given to all students. Further he stated that the rationale for using exactly the same test for both pre- and post-testing was to assure a comparable test, thus avoiding the issue of equating different forms of tests.

Qualitative analysis

The semi-structured interview consisted of 10 questions and it was given to the experimental group in order to identify the perceptions of students' when using mind mapping. Before the final interviews with the selected sample, a pilot test was conducted with five randomly selected students. This was conducted in order to achieve validity of the interview questions and to substantiate the findings.

The semi-structured interview was designed with five teachers and ten selected students based on post-test marks; 10 students who scored the highest marks for the post test. Hence, Yin (2011) defines purposeful sampling as "the selection of participants or source of data to be used in a study, based on their anticipated richness and relevance of information in relation to the study's research questions" (p.311).

Doyle (2019) states that a semi- structured interview is a meeting in which the interviewer does not strictly follow a formalized list of questions. It involves a series of open-ended questions based on the topic areas the researcher wants to cover. The open-ended nature of the question defines the topic under investigation but provides opportunities for both interviewer and interviewee to discuss some topics in detail. If the interviewee has difficulty in answering a question or provides only a

brief response, the interviewer can use cues or prompts to encourage the interviewee to consider the question further. Lelisari (2017) used semi-structured interviews in his research to make the interview more comfortable to share their thoughts. Considering the above facts, this study used semi-structured interviews to obtain factual data. Through this, perceptions of mind mapping strategy on essay writing skills qualitatively and quantitatively were analyzed.

Results

The findings of this study show that mind mapping is closely associated with statistically significant positive influence on students' essay writing skills. The students' essays were scored for the correct use of grammar, range in their vocabulary and for maintaining a level of organization in terms of how they structure their essays. Using mind mapping students had written phrases and words to be included, they also designed their mind maps using appropriate vocabulary and finally the researcher witnessed how each paragraph discussed individual points and was void of repetition. The findings support the findings of Mercer (2002), Nurlaila (2013), and Scarcella and Oxford (1992), who found that using mind mapping strategy as a prewriting activity can enhance the essay writing skills of ESL students. The positive impact on writing achievement may be due to the ability of mind maps to support knowledge acquisition and retrieval through the aid of visual clues such as colors, lines and images (Keles, 2012).

Quantitative results

This study used thematic analysis after transcribing the interviews conducted and even maintained information from the questionnaire. There was a difference between pre-test scores and post test scores within the control group. That is because the students were given feedback on their essays in the classroom thus creating a significant value lower than p- value. Similarly, the experimental group also showed a significant difference between pre-test and post-test marks. That is because they are given exposure to using mind mapping when writing essays, creating the p-value $0.000 < 0.05$. Although the results are quite similar, the experimental group scored higher marks than the students in the control group.

Analysis of the pre-test and post-test

The quantitative data is analyzed using paired sample T-Test available in SPSS. In this section, the mean value and significant value is analyzed. In analyzing the test marks, two comparisons are made;

- a. Within group comparisons of marks from two tests.
- b. Comparison is made to find out the differences in marks gained by control and experimental groups

Figure 1 illustrates the percentage of overall marks obtained by the participants of the control group for the pre-test and post-test. Evidently, the results obtained by the participants of the control group for the pre-test is 42.07% while the results gained by the participants of the control group for the post-test is 53.93%. Accordingly, when comparing these two results, it is clear that there is an improvement of students from pre-test to post-test.

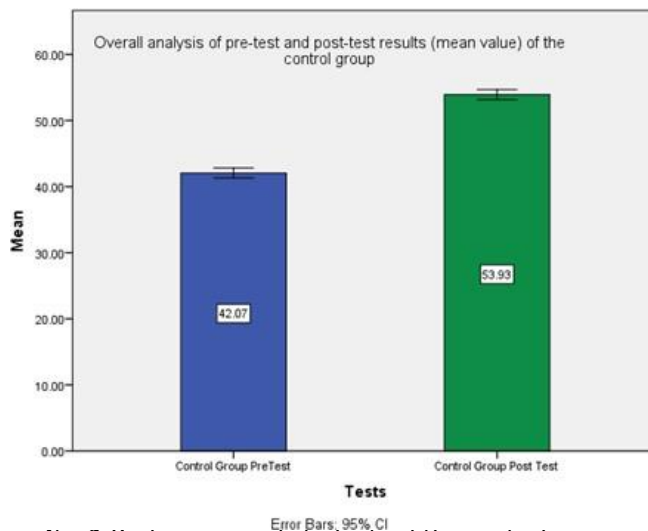


Fig.1 Performance of students of the control group in the pre-test and post-test

Descriptive statistics of the control group in relation to pre-test and post-testmarks

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Cont_Pre Test	42.07	15	3.654	.943
	Cont_Post Test	53.93	15	4.431	1.144

Table 1 Descriptive statistics of the control group in relation to pre-test and post-testmarks

Based on **Table 1**, the mean value of the control group in relation to pre-test is 42.07 while the mean value of the control group in relation to post-test is 53.93. Hence, it is visible that there is an increase in mean value. Therefore, it can be said that there is an improvement of students' marks in the control group from the pre-test phase to the post-test phase.

Significant difference of the control group in relation to the pre-test and post-test marks

		Paired Differences					t	df
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower	Upper		
Pair 1	Cont_Pre Test -	-	2.72	.703	-	-	-	-
	Cont_Post Test	11.867	2	-	13.374	10.359	16.884	14

Table 2 Significant difference of the control group in relation the pre-test and post-test marks

According to **Table 2**, there is a difference between the control group's pre-test marks and post-test marks. It is proved from the significant value as the $p\text{-value} < 0.05$, there is a difference between the pre-test marks of the control group and the post-test. Depending on the results of Table 2, the significant value is 0.000. That means the significant value is lower than $p\text{-value}$. Therefore, there is enough evidence to prove that there is a difference between the results.

Analysis of the pre-test and post-test results of the experimental group

Figure 2 illustrates the percentage of the overall marks obtained by the participants of the experimental group in relation to the pre-test and post-test marks. The participants of the experimental group scored an average of 43.67% for the pre-test while they scored an average of 66.13% for the post-test. Thus, it is evident that students' marks improved from the pre-test to the post-test. Accordingly, it is discovered that after the intervention there was a significant difference in the marks. Yet, when having compared the percentage of the experimental group with the control group the results of the experimental group indicate a higher percentage than the control group.

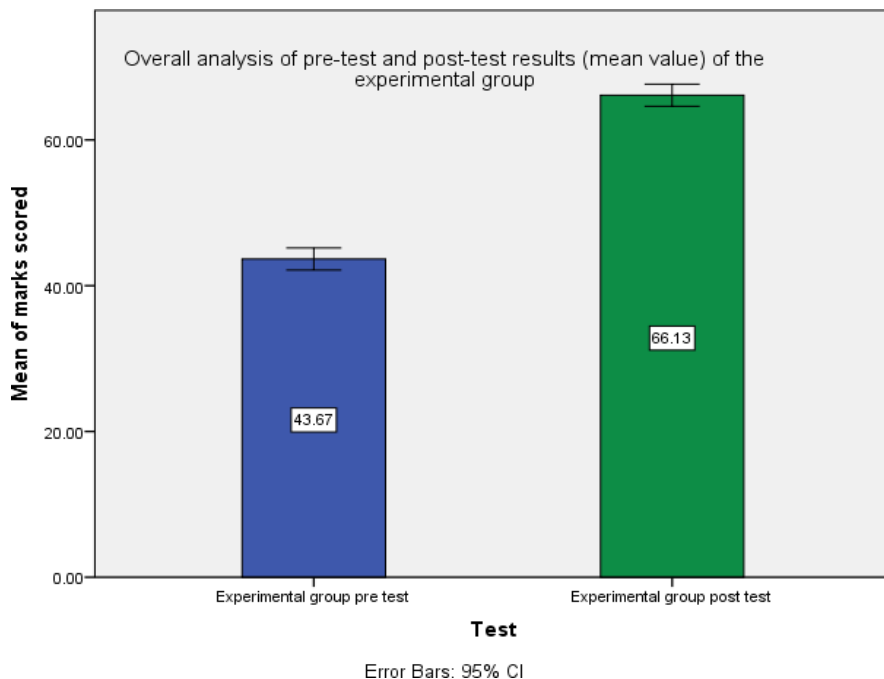


Fig. 2 Performance of the students of the experimental group in relation to the pre-test and post-test

First, the pre-test marks were analyzed between the control and experimental group thus creating no significant difference in their marks. It proves that the proficiency levels of the students in both the groups are equal before the intervention. According to the results of the post-test, there was a significant difference in experimental and control groups. Although the post-test marks of the control group increased, those marks are less than the post-test marks of the experimental group.

Descriptive statistics of the experimental group in relation to the pre-test and post-test marks

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Exp_Pre Test	43.67	15	3.867	.998
	Exp_Post Test	66.13	15	7.990	2.063

Table 3 Descriptive statistics of the experimental group in relation to the pre-test and post-test marks

It is evident from **Table 3** that there is an increase of the mean value from pre-test to post-test in the experimental group. The mean value of the experimental group in relation to the pre-test is 43.67 while mean value of the experimental group in relation to the post-test is 66.13. Hence, it is visible that there is an increase in the mean value.

Significant difference of the experimental group in relation to the pre-test and post-test marks

Exp_Pre Test - Exp_Post Test	Paired Differences					t	df	Sig.(2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
				-22.467	5.502	1.420	-25.513	-19.420
	-15.816	14	.000					

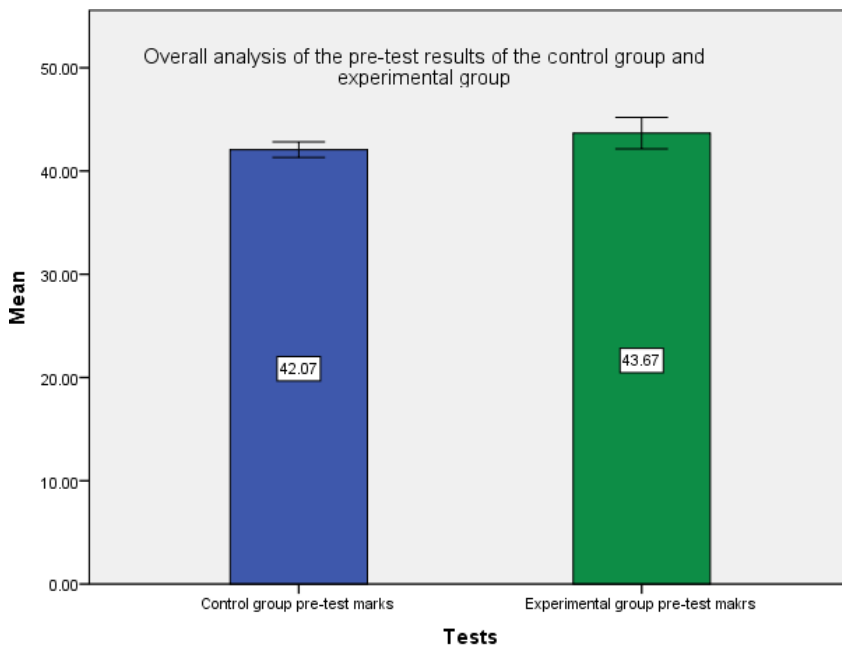
Table 4 Significant difference of the experimental group in relation to the pre-test and post-test marks

If the p-value is < 0.05 , there is a difference between pre-test and post-test marks in the experimental group. Depending on the results in table 4.4, the significance value is 0.000. That means the significance value is lower than p-value. Therefore, there is substantial evidence to validate the statistical difference between the pre-test and post-test marks. Thus, the proficiency levels of two groups were the same before the intervention of the research.

Figure 3 illustrates the percentage of the overall marks obtained

by the participants in the control and experimental groups in relation to the pre-test marks. The participants in the control group got 42.07% while the participants in the experimental group obtained 43.67% in the pre-test. Accordingly, it is evident that there is no major difference between both groups. Thus, it indicates that the participants' proficiency level was similar before the intervention.

Analysis of the pre-test results of the control group and the experimental group



Error Bars: 95% CI

Fig. 3 Performance of the students in the pre-test of the control group and the experimental group

Descriptive statistics of control and experimental group in relation to pre-testmarks

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Cont_PreTest	42.07	15	3.654	.943
	Exp_Pre Test	43.67	15	3.867	.998

Table 5 Descriptive statistics of control and experimental group in relation to pre-testmarks

According to **Table 5**, the mean value of the control group in relation to pre-test is 42.07 while the mean value of the experimental group in relation to the pre-test is 43.67. Hence, it is visible that there is a slight increase in the mean value.

Significant difference of control group and experimental group in relation to pre-test marks

		Paired Differences					t	df	Sig. (2-detailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Cont. Pre Test Exp_Pre Test	-1.600	3.719	.960	-3.659	.459	-1.666	4	.118

Table 6 Significant difference of control group and experimental group in relation to pre-test marks

If the $p\text{-value} < 0.05$, there is a difference between the pre-test marks of the control group and experimental group. Depending on the results in Table 5.6, the significant value is 0.118. It indicates that the significant value is higher than $p\text{-value}$. Therefore, it implies that there is no significant difference between the marks of both groups. This means that the difference is not statistically significant, and it may be postulated that the proficiency levels of both groups are similar before the intervention.

Figure 4 illustrates the percentage of the overall marks obtained by the participants in the control and experimental groups in relation to the post-test marks. The participants in the control group received 54% while the participants in the experimental group obtained 66% in the post-test. Hence, it is evident that when comparing the results of the two groups the participants of the experimental group have obtained a higher percentage than the participants of the control group. However, it is observed that the marks obtained for the post-test in the control group also improved. Yet, when comparing both groups it is evident that the intervention participants of the experimental group were given, improving their essay

writing comprehension. Percentage of the experimental group is higher than the percentage of the control group. Accordingly, this indicates that with the intervention the participants of the experimental group have improved their essay writing.

Analysis of the post-test results of the control group and the experimental group

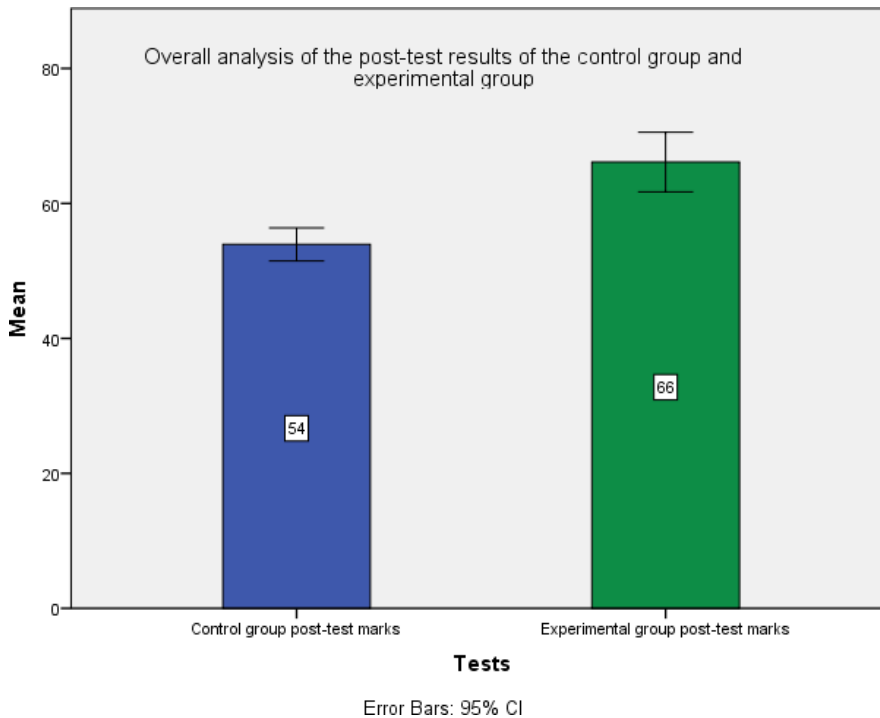


Fig. 4 Performance of the students in the post-test of the control group and experimentalgroup

Descriptive marks of the experimental and control groups in relation to thepost-test

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Cont_Post Test	53.93	15	4.431	1.144
	Exp_Post Test	66.13	15	7.990	2.063

Table 7 Descriptive marks of the experimental and control groups in relation to the post-test

According to **Table 7**, the mean value of the control group in relation to the post-test is 53.93 while the mean value of the experimental group in relation to the post-test is 66.13. Hence, it is visible that there is an increase in the mean value. Accordingly, there is a significant difference between the post-test marks of both groups.

Although the post-test marks of the control group also increased, those marks show a lesser increase than the post-test marks of the experimental group. Therefore, it can be highlighted that there is a significant improvement in the experimental group after the explicit reading strategy instruction.

Significance value of experimental group and control group in relation to post-test marks

		Paired Differences				t	df
		Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
				Lower	Upper		
Pair 1	Cont_PostTest - Exp_PostTest	8.082	2.087	-16.676	-7.724	-5.847	14

Table 8 Significance value of experimental group and control group in relation to post-testmarks

Therefore, the results show that mind mapping assists students, especially beginners, to manage different processes while writing. Sturm, Rankin & Erickson (2002) also assert that mind maps can help students break down writing tasks and deal with sub-processes and writing skills more explicitly. A writing mind map, as was designed in this study, has the ability to help students organize and clearly think about different aspects while writing independently. It helps them not only to manage information related to the topic, but in addition, it can help them manage linguistic information to help them with problems as fundamental as sentence structure.

Qualitative results

Semi structured interviews were conducted and a questionnaire was administered in order to gather data for this category. Based on the data, this study discovered three main themes, as follows.

- i.) Lack of awareness in relation to mind mapping strategies prior to the intervention
- ii.) Difficulties students face when writing essays
- iii.) Importance of mind mapping in essay writing

The findings of the study show that the mind mapping strategy has significantly improved the students' attitudes towards writing in English in terms of ease, enjoyment, competence and strategy use. These findings support some previous studies on the same subject. Studies by Noris, Mokharti and Reichard (1998), Bharambe (2012) and Elftorp (2007) contain confirmation on the positive effect mind mapping has on students' attitudes towards essay writing in English. The authors mentioned above investigate students' attitudes in terms of ease, enjoyment, competence and general interest towards writing in English.

Data collected from interviews and the questionnaire showed that most students who scored high marks from the sample group had problems related to ideas and organization. On the other hand, interviews done with the students who achieved low marks revealed that they had more concerns about the grammatical aspects of the writing task. These findings support the conclusions of several studies including those of Jones (1982), in that skilled writers mainly focus and adjust ideas while poor writers are mostly concerned about making adjustments related to form. These observations reinforces the findings in Raimes' (1985) study on unskilled writers, where he concludes that there is no relation between the students' linguistic proficiency and their writing proficiency, and hence, that writing is not simply a reflection of students' linguistic competence.

Discussion

The results show that the students' post-test marks have increased after the intervention in the experimental group. When students were familiarized and accustomed to the mind mapping strategy they were able to obtain more marks for their essays. Accordingly, it was discovered that by implementing the above strategy, the students' essay

writing ability has improved. This corroborates with the findings of Mercer (2002) and Norris, Mokhtari & Reichard (1998).

Mercer (2002) conducted a similar study to observe the impact mind mapping has on essay writing skills of ESL learners and concluded that mind mapping helps students to see the relationship among ideas and connect known information with new information. He added that mind mapping has proven useful before, during and after writing. Norris, Mokhtari & Reichard (1998) conducted another study which explored the positive impact of drawing mind maps to enhance students' writing abilities.

The study revealed significant differences between the treatment and the control group on all measures used. Students who drew before writing tended to produce more words, sentences, and idea units and their overall writing performance and the writing achievement were higher. This study reinforces the concept that integrating mind maps and essay writing contributes to increase the motivation of students' when producing texts in their second language.

Nurlaila (2013) observes the importance of the use of mind mapping technique in writing a descriptive text. The results showed a significant improvement in the ability of students to write after being introduced to mind mapping. Not only did she prove that there was a significant difference in their text after the intervention, but also how students had a positive attitude in using the mind mapping strategy as it enabled them to be creative and made writing enjoyable. Supporting the above studies, this study asserts the findings of Keles (2012) who also claimed that mind mapping can assist learning by providing an opportunity for visual stimuli, assessment, checking understanding, elaboration, note-taking, summarizing, illustrating sequence of events and other creative ways of instruction. Besides that, Bharambe (2012) also mentioned that mind mapping provides a useful focus for students to organize their thoughts and ideas to present information clearly and attractively.

According to Scarcella and Oxford (1992) mind mapping is an effective strategy that could be used in the pre-writing stage as students are given an opportunity to generate, gather and arrange related ideas while enhancing their own. Through the interviews conducted in the present study as well, this was a finding which was prominently stated by many students. Similarly, Khajavi & Ketabi (2012) conducted a study on 60 second-year university students enrolled in an English descriptive

writing course. The participants, 21 males and 39 females, ranged in age from nineteen to twenty-three years. The participants were divided equally into a control and an experimental group. Prior to the treatment, both groups took a pre-test in essay writing and a attitudes questionnaire. For ten weeks, the experimental group was trained to use mind mapping for descriptive writing. At the end of the training, both groups received the post-test and the attitudes questionnaire to evaluate the influence of the mind mapping program. The results of data analyses were encouraging, since the experimental group results showed greater improvement in not only their essay writing skills but also their attitudes towards the strategy. The findings of the present study also confirmed positive results as proven using both quantitative and qualitative data.

The results show that students have positive perceptions towards the mind mapping strategy, and they agreed that they could improve their essay writing skills using those strategies. It can be highlighted that after the exposure to the mind mapping strategy, students are interested to use the above strategy when writing essays especially at their upcoming Ordinary Level examination. Simultaneously, students hope to use this strategy in their examination and when they are required to produce English texts. Furthermore, they acknowledged that this research was the first time they were introduced to concepts of topic sentences and using mind maps to organize ideas prior to attempting the essay.

Several other researchers continue to prove the effectiveness of the mind mapping strategy and its usefulness to second language learners. Mind mapping strategy is successfully used as a pre-writing strategy to help students plan and organize ideas and knowledge for the writing task. As asserted by Fiktorius (2013) mind mapping strategy is an effective method used to improve writing in foreign language classes. Supporting this, Elftorp (2007) states that students begin to write their own ideas on a particular subject and then draw a mind map that illustrates the main idea of writing and the secondary ideas that emerge from it. This is another finding of the present study as well. Students in the present study claimed that this method helps them formulate ideas while expanding them during the mind mapping process which helps them in writing. Additionally, this study observed that when the teacher plays an active role during the initial stage, the students get motivated, and this creates an atmosphere suitable for writing essays. This feature was further established by Anokhin (1973) in his research explaining that teachers can select on how

to use mind mapping in language classes as a pre-writing activity and for developing learners' writing ability and their proficiency levels.

Another finding of the present study was that students preferred to memorize sentences for their essays. However, after the intervention the teacher used this memory retention ability of the students and combined this skill with the mind mapping strategy. According to Tayib (2016), mind mapping is used as a method of memory usage. It relies on visual memory in an easy-to-read illustration and diagram that clearly shows ideas in the form of relationships. This study observed later how students when given the same topic at the post-test wrote several memorized subtopics on their mind maps instead of simply writing off sentences from their memory. This can be supported by Davies (2011) who noted that the mind map increases learning efficiency by using both the left and right sides of the brain. He further asserts that mind maps consisting of the branches, words and lines represent how the human mind thinks, where the words and meanings are linked to the original thought.

Moreover, Fiktorius (2013) explored the integration of mind mapping in the ESL¹ classroom. He concluded that mind mapping is an effective way to take notes and share ideas. The strategy seems particularly appropriate in helping students plan their writings and encouraging them to reach a deeper level of understanding of writing topics, implying that mind mapping may affect students in terms of the ability to plan and organize their ideas for writing assignments under exam conditions. The present study conducted affirms this as well since most students disclosed that mind mapping helped achieve creativity, organization, productivity, as well as stimulate memory. The results also indicated that mind maps are most valuable when the main objective is to develop a comprehensive understanding of all basic concepts' participation in the subject area.

Irrespective of the sample group, duration of the studies conducted and essay writing strategies most commonly used by students, the findings of these studies are proved similar to the present study as both quantitative and qualitative data of these research studies discovered that mind mapping strategy improved students' essay writing abilities.

¹ English as a Second Language

Conclusion

This research attempted to explore the effect of using a mind mapping strategy to enhance essay writing skills of grade 10 students and improve their attitudes towards writing in English. The control and experimental groups were both tested for writing achievement and surveyed to determine their attitudes towards writing. The experimental group received instruction with mind mapping, whereas the control group received traditional instruction without mind mapping. Data was collected using a mixed research method and the data was analyzed both quantitatively and qualitatively. Results from the present study will contribute to research in strategies used to teach ESL writing in general, and in the context of essay writing. The findings will also shed light on the applicability and usefulness of using mind mapping to teach different skills inside the ESL classroom in general, and specifically, writing skills.

The findings of the current study show that using the strategy of mind mapping is closely associated with statistically significant positive influence on students' essay writing skills. The students' essays scored for grammar, vocabulary and organization. The findings support the findings of Mercer (2002), Nurlaila (2013), and Scarcella and Oxford (1992), who found that using mind mapping strategy as a prewriting activity can enhance the essay writing skills of ESL students. The positive impact on writing achievement may be due to the ability of mind maps to support knowledge acquisition and retrieval through the aid of visual clues such as colors, lines and images (Keles, 2012).

The sample size of this study is only limited to thirty students. Thus, this study only utilized students of grade 10. Therefore, the results cannot be generalized to all grade 10 students in Sri Lanka. The length of the intervention was another limitation. One-month intervention may not be sufficient for further essay writing abilities to develop within a student.

This study emphasizes the importance of implementing the use of mind maps to write essays in ESL classrooms, by confirming that, instead of teaching the students what to write, teaching them how to write had a positive effect on their writing achievement and their attitudes towards essay writing. The positive effect could be because students using the mind mapping strategy have more control over the process of writing. The study also confirms the applicability and likability for the strategy of mind mapping in the ESL classroom, to teach different skills in general, and essay writing skills. The main advantage of the mind mapping strategy's

ability to display words, images, along with sub-topics, it can help students process, store, and recall information. The mind mapping strategy allows students to break down writing tasks and enables them to make decisions, both consciously and unconsciously, regarding each aspect of the essay writing task. In addition, the strategy was positively perceived by the students as being enjoyable, and a creative way to teach and to learn essay writing.

Further research on the effect of using the mind mapping strategy to teach the specific skills of vocabulary, grammar and reading would enrich current literature and give more precise uses for the strategy. Additionally, while this study is limited to the use of the strategy of mind mapping with grade 10 students, research is needed into its applicability with younger students such as those learning in English as well in their curricular. Finally, the relationship between learning styles and the strategy of mind mapping can be investigated to determine if its success is limited to visual learners.

This study emphasizes the effect of integrating grammatical clues while incorporating relevant vocabulary and language within the mind maps, to help low-level learners apply grammatical rules while writing. Furthermore, the study sheds light on the issues faced by students at the intermediate level from grade 10 when writing in English. The results show that while high achievers may encounter issues related to ideas and organization, low achievers are more concerned on form at the sentence level. The interviews with students from the sample group selected from the experimental group, also revealed that students have misconceptions regarding concepts of essay writing strategies and settled for simply memorizing sentences even for the examination essay questions. Overall, the findings reveal that the strategy of mind mapping is positively perceived by students, especially by lower-level students.

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Settlement Pattern of Ancient Ports of Western Maharashtra – An Archaeological Perspective

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Abstract

The western coast of Maharashtra seems to be cut-off from the rest of the region because of the geographical blockade by the Western Ghats, also known as the Sahyadri mountain range, which covers an area of 1,60,000 square kilometers in a stretch of 1600 kilometers parallel to the western coast of India. However, the natural passes along the Western Ghats created the routes of exchange between the coast and the Deccan Plateau. This led to rise of a number of ports along the western coast of Maharashtra right from the ancient times. In this paper, an attempt is made to study the settlement pattern of the early ports of the western Maharashtra.

Keywords: *Archaeology, History, Konkan, Maharashtra, Sahyadri, Western Ghats*

Geo-ecological Settings:

Settlements of ports in ancient times were largely determined by the geo-ecological settings. The western coast of Maharashtra, often referred as the Konkan, covers the estuaries of the river Narmada and the river Tapti as well as the coastal belt of the Konkan (**Fig. 1**). Its altitude varies from almost 0 to 100 meters above mean sea level (AMSL), except for the hilly portion near the Sahyadri range. The coastal plain is about 50 kilometers in width in the north and narrowing down towards the south upto 30 kilometers in width. It has a rugged hilly topography, which is more rugged in the south than in the north. The coastal plain is divided by the Thana creek into two parts: the north Konkan and the south Konkan. The rugged profile of the Konkan is shaped by the outliers of the Sahyadris which at several places often reaches out to the sea as headlands, and this makes land transport in the coastal region very difficult.

Konkan receives heavy rains with an annual average of 200 centimeters, and this together with steep slope causes severe soil erosion

in the region. The area has a number of small but rapid flowing rivers and streams which running through the Sahyadri ranges fall into the Arabian Sea (Fig. 2).

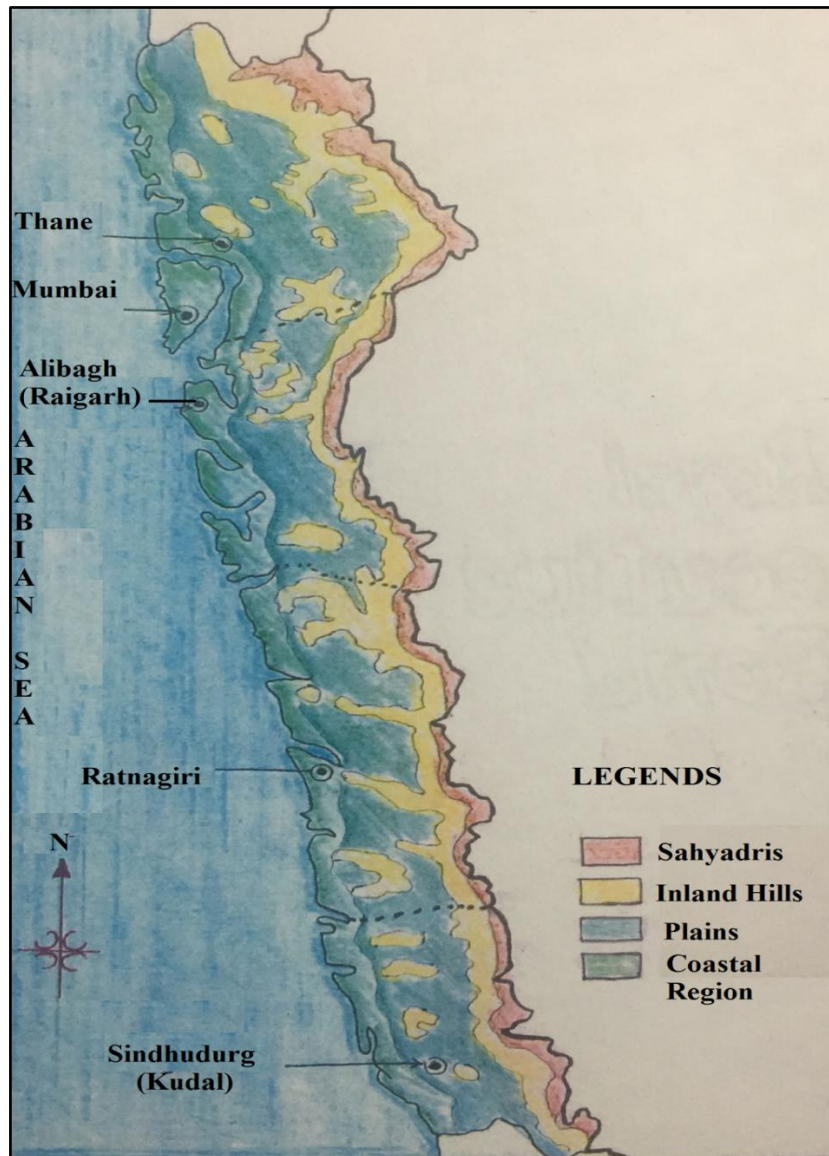


Fig. 1: Physical Features of the Western Coastal Region
(Adapted from Sarang, G., 2010)

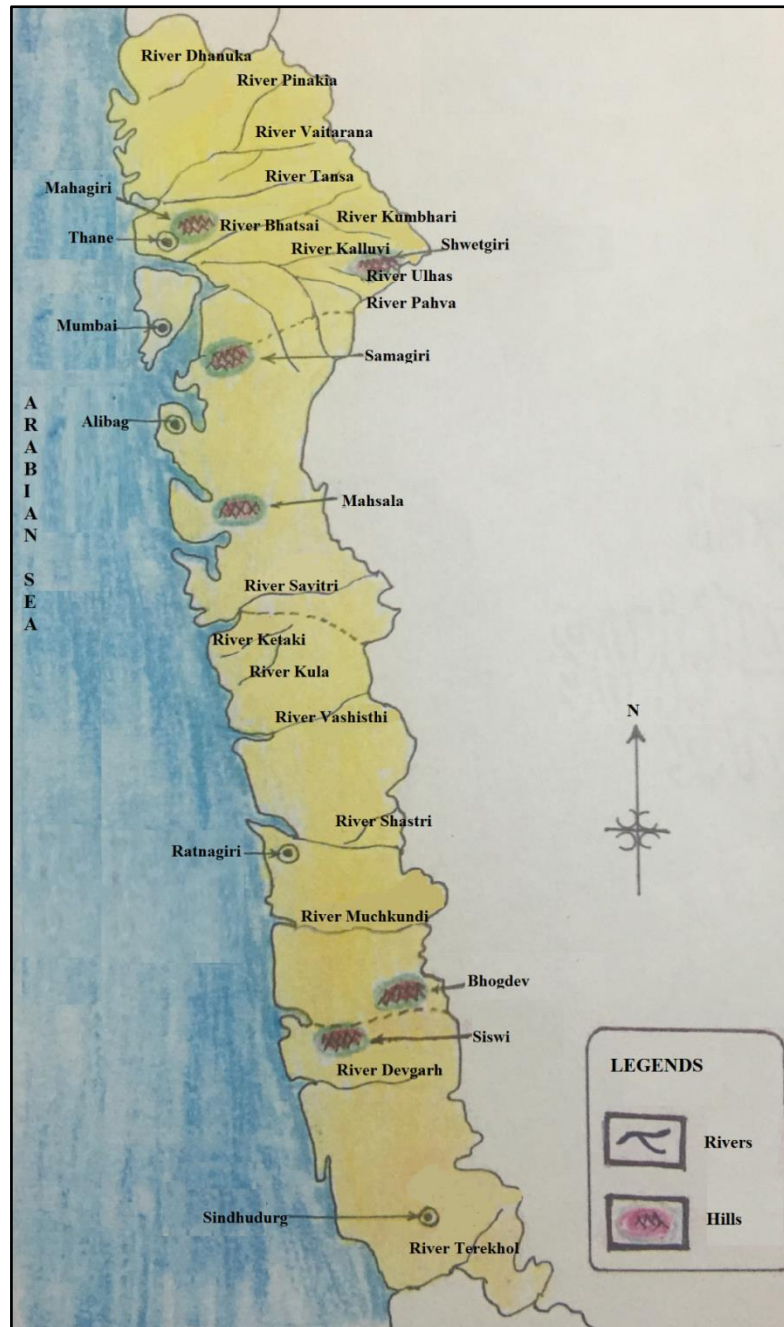


Fig. 2: Hill Ranges and Rivers of the Western Coastal Region
 (Adapted from Sarang, G., 2010)

Resource Potential:

The resources that are available in a region and could be exploited economically to satisfy human needs constitute the resource potential of

that region. The geo-ecological settings as well as resources of Maharashtra in general and the western coast of Maharashtra in particular offer several advantages that felicitated the settlement of ports on the western coast.

1. **Navigation:** The coastal plains of Maharashtra are drained by a number of short but fast flowing rivers having sharp bends, such as the Vashishthi, Savitri, Shastri, Kundalika, Amba, Ulhas, and Vaitarna (**Fig. 3**). These rivers originate from the Sahyadris. They flow through narrow and deep ravines, seldom covering upto 60 kilometers, and finally fall into the Arabian Sea. (Imperial Gazetteer of India, II, 1909:143-4). Due to their sudden sharp turns, navigation beyond 30 kilometers, from the mouth of these rivers, is a challenge. Consequently, the harbours are positioned on the estuaries as they provide safe anchorage for the ships.



Fig. 3: A coastal river (Vashishthi) having sharp bends

2. **Anchorage:** The coastal plain rivers deposit the eroded material, which they bring along with them, in their lower reaches, particularly in their estuarine tracts. As a result, the estuaries not only provide fertile tracts but also they are able to offer safe anchorage to the ships.

3. **Harbour potential:** The west coast also provides tidal inlets and creeks, some of which enter inland upto 50 kms. (Imperial Gazetteer of India, II, 1909:110). Generally, every safe creek and estuary was a potential harbour site. However, their success depended on their connectivity with the hinterland. It is important to note here that the success of the harbours fluctuated due to other factors such as the silting up of inlets or the opening up of new routes. For instance, the Bassein creek was navigable upto Bhiwandi and Kalyan in the seventeenth century but this is not possible now due to silting. Similarly, the silted channel on which Sopara is located now was navigable over a long distance. The Thana creek was also navigable all the way through its course.
4. **Irrigation:** The coastal plain rivers are not suitable for irrigation as they are not perennial. They contain passable water only during the monsoon season and during the rest of the year, they have a very low water levels and sometimes they even become dry (Joshi and Bopardikar, 1972:48).
5. **Soil:** The north Konkan possesses a patch of alluvial soil, separated from the inland by the Kaldurg ranges, in north-south direction (Deshpande, 1948:161). In the South Konkan, laterite soil covers a large area, and because laterite is poor in retaining moisture, the region is agriculturally poor (Brown and Dey, 1955:687). Consequently, we notice that most settlements are located along the alluvial river valleys (Deshpande, 1948:183).
6. **Precipitation:** Rains in the Konkan coast are confined to south-west monsoon, from June to October. Rainfall averages between 190 to 250 cms and between 100 and 175 cms in the south Konkan and north Konkan respectively (ibid.:159). Post-south-west monsoon, rest of the year, the region is dry, though some rains are caused in the east by the withdrawing north-east winds.
7. **Climate:** The climate is generally hot and humid. The mean daily temperature in coastal belt is above 22°C throughout the year with relatively high humidity. Rice is well suited to this climate and is grown in the coastal plains.

8. **Minerals:** Iron ore is found in South Konkan's lateritic region. There are also references to the extraction of gold near Phondaghat at the foot of the Sahyadris (Imperial Gazetteer of India, II, 1909:153), especially in the neighbourhood of the harbour of Malvan.
9. **Miscellaneous:** Other resources that could be trapped from the region were pearls, coconut, salt, dry fish, and oil from coconut, sesamum, and groundnut (Das, 1969:169). Chert, dolerite dykes, crypto-crystalline silica and quartzite could be also exploded in the north Konkan region to manufacture tools.

Settlement Analysis:

Though the Konkan coast appears to be cut-off from the rest of Maharashtra because of the barrier made by the Western Ghats, the passes along the Western Ghats provided the routes of exchange between the coast and the plateau. As recently as the late 20th century, products were brought from beyond the Western Ghats to the coast on pack animals and as headloads and were exchanged for coastal produce.

Prehistoric settlements

It was K.R.V. Todd who first started a systematic survey of the prehistoric sites in the Konkan region. The first Palaeolithic discovery from the region was made by Todd (1932: 35–42) at Worli Point, Kandivli, Mumbai. This was a surface site from where he collected Acheulian stone tools. Later, he also discovered Mesolithic tools at a number of sites in Mumbai and Salsette (Ibid.: 1939:257–272, 1950: 4–17). Much later, it was S. C. Malik (1959, 1963) who carried forward further investigations in the area and discovered handaxes at Ghodbundar and Nala Sopara. Guzder (1975) also carried out her study of Stone Age cultures of the coastal Maharashtra region and discovered Palaeolithic sites around Malvan in southern Konkan.

Joshi and Bopardikar (1972: 47–57) also explored the region around Kolaba and Ratnagiri districts. They located Mesolithic cave sites at Pachad in Raigadh district and Hatkhamba in Ratnagiri district. Lower and Middle Palaeolithic finds were made at surface sites in Mahad in Raigadh district. After a gap of about three decades, A. R. Marathe (2006: 1538-1544) reported surface finds of two early Acheulian cleavers from a laterite cave at Susroni in Palshet (17°26'N, 73°15'E), 12 km south of

Guhaga, on the banks of a small perennial stream, near a waterfall, at a height of 85 m above mean sea level (AMSL) and 2 km inland from the Arabian Sea shore. It is important to note that several minor streams originate on the lateritic plateau and meet the main stream near Palshet; and finally drain into the Arabian Sea. An excavation was carried out at the site and 54 artefacts were discovered, containing handaxes, cleavers, picks, choppers, scrapers, flakes, and cores. Marathe reports that the cave was occupied by early man during the early Late Pleistocene (approximately earlier than 90 Ka BP) when the sea level was slightly higher than that today. He has also reported surface finds of a few early Acheulian choppers and a cleaver from a cave at Mandavkarwadi in Palshet. However, despite genuine works of several scholars ever since the discovery of the first Palaeolithic site by Todd (1932: 35–42) at Kandivli in Mumbai, Marathe's discovery of the Late Acheulian cave occupation is the only convincing discovery on the long coastline of Konkan. The Konkan region, with limited surface finds, seems to be archaeologically poor as far as the prehistoric settlements are concerned.

The Konkan region seems to be not preferred by the Prehistoric humans for their settlements, and this could be due to lack of perennial rivers and streams and acute shortage of water during the six months before the monsoon season. This would have made the estuary water saline.

Proto-historic and Early Historic settlements

For similar reasons, no protohistoric site, representing Megalithic or Chalcolithic cultures, have been noticed so far in the Konkan, though, we do notice Harappan and Late Harappan settlements in Gujarat on the west coast. There are encouraging evidences of the Early Historic settlements from the west coast of Maharashtra, which included both North Konkan and South Konkan. The *Periplus* refers to the several harbours from the Konkan region (**Fig. 4**).

North Konkan

The Mahabharata refers to north Konkan as *Aparanta* (Drona parva.9.40; Sabha parva.47.24) and the sacredness of *Surparaka* (Sopara), the *tirtha* (Aranyaka parva. 118.8). However, the Ramayana does not refer to any settlement in the west coast. The fifth rock edict of Asoka also refers to the people of *Aparantaka*. According to the Mahavamsa (XII.5) and the Dipavamsa (VIII.7), Ashoka sent missionaries to Aparanta after the Third

Council. In *Arthasatra* (II.11.90), Kautilya refers to the fine quality cotton cloth of Aparanta. Milindapanho (II: 121) refers to a special grain called *kumudabhandika* which was harvested within a month and was eaten by slaves and workers, while rice took about five or six months to ripe.

Sopara:

The first archaeological evidence of an Early Historic settlement from the west coast of Maharashtra comes from Sopara which yielded fragments of the eighth and ninth As'okan edicts (Chakraborti 1966:101; Chakravarti 1956-57:107-8). Excavations at Sopara have yielded the remains from the Satavahana period (Contractor 1957:47), and a brick *stupa* which is dated to the second century CE (Journal of the Bombay Historical Society, 1939:187). Mahavamsa (VI .46,47) suggests that King Vijaya, who led the first settlement of Sri Lanka, boarded the ship from Sopara. Sopara, along with another key harbour city, Bharuch, continued to flourish in the Satavahana period. Bharuch was a key city, in the whole scheme of exchange network. Located at the northern tip of the west coast, it acted as a connecting center for the settlements of the Deccan as well as northern India, such as Ujjain, Vidisha and Mathura (Chakraborti, 1966).

Kalyan

The *Periplus* also mentions about yet another market town named Kalliena (Kalyan) and highlights the importance of foreign trade in the region by talking about the underlying rivalry between the rulers of Barygaza and Kalliena to capture the foreign trade. The *Periplus* mentions "*Kalliena (Calliena), which in the time of the elder Saraganes (probably Satakarni I) became a legal mart; but since it came under Sandanes (perhaps a viceroy of Nahapana) (the trade) has been much hindered, and Greek ships which by chance enter these places are sent under guard to Barugaza*" (Huntingford, 1980:sec.52).

Donors from Kalyan are also often referred in the epigraphical records of the western Deccan. Early Historic Red Polished Ware have been reported from archaeological field explorations in Kalyan (Indian Archaeological Review (IAR), 1957-58:67).

Kalyan lies at the centre of the Ulhas basin, which makes it an attractive agricultural zone. In addition, Kalyan is strategically located to dominate three natural passes - the Thalghat (19°40'N 73°29'E), also called as Thul Ghat or Kasara ghat, near the modern town of Kasara; Naneghat (19.3064°N 73.6799°E), which facilitates a trade route between

Kalyan and Junnar, and Bhorphat. These passes had been the major routes of exchange between the Konkan coast and the plains of the Deccan plateau (Deshpande, 1948:177).

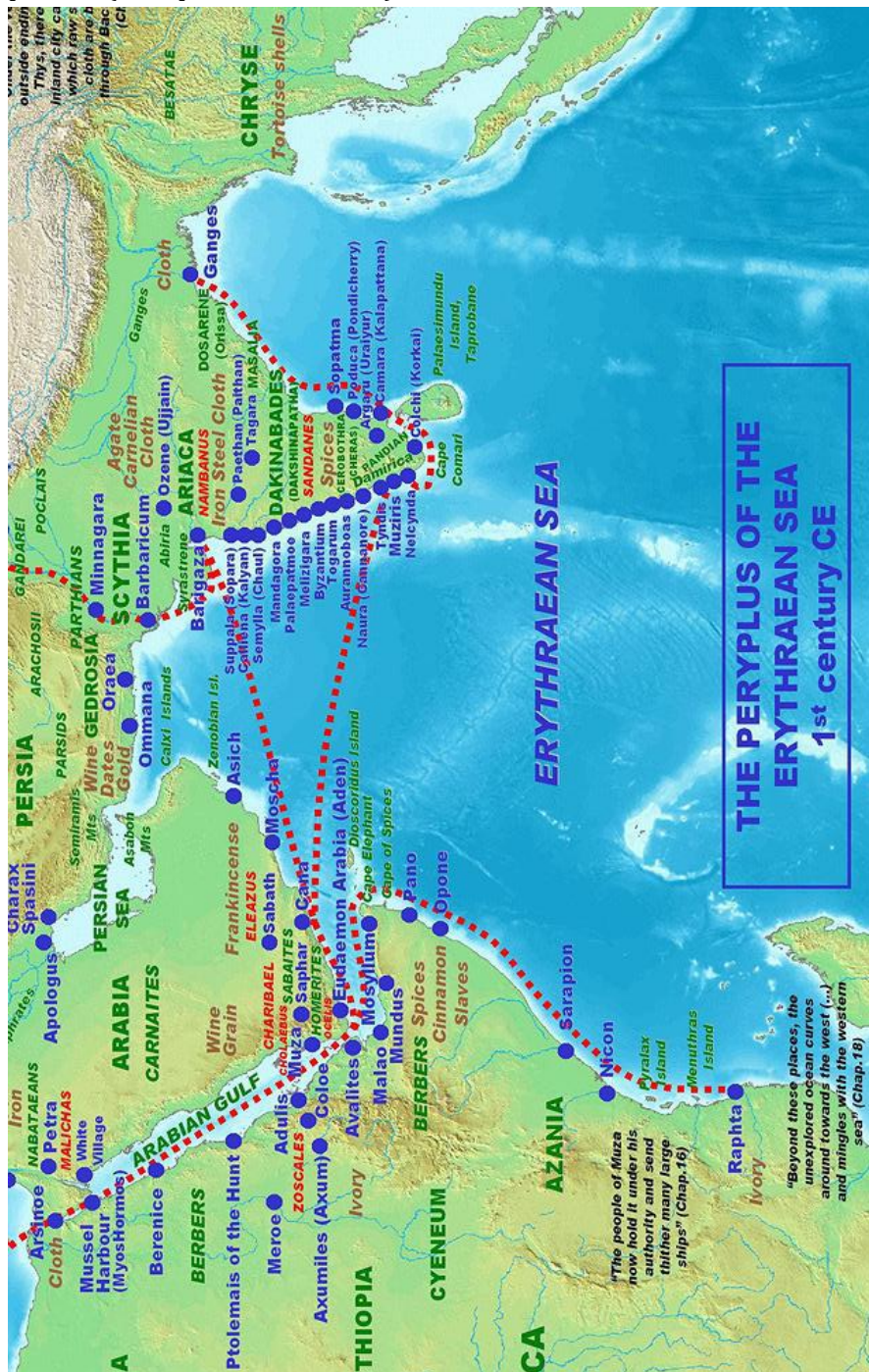


Fig. 4: Locations, names and routes of the *Periplus of the Erythraean Sea* (1st century C.E.)

(Source: https://commons.wikimedia.org/wiki/File:Map_of_the_Periplus_of_the_Erythraean_Sea.jpg last accessed on 1st June, 2012)

Chaul

Towards the south of Mumbai, the *Periplus* refers to yet another harbour of Semylla (modern Chaul). It is located on the right bank of the river Kundalika and at the top of the Roha creek, thereby making it a useful harbour (da Cunha, 1876-7:57).

South Konkan

The *Periplus* refers to the several harbours from the south Konkan region. These harbours are near the mouths of the rivers. It seems that due to the poor agricultural potential of the lateritic soils in the southern region of the Konkan, settlements are confined to fertile zones beside the mouths of the rivers. For example, Mandagora (Bankot) on the mouth of the river Savitri river, Palaepatme (Dabhol) on the northern bank of the Vashishti River, Malizigara (Rajapur) at the mouth of a creek, Byzantium (Vijayadurg), and Turannoboas (Malvan) situated in a bay.

Buddhist Cave Sites near Konkan Harbour Sites

Within a radius of few kms from the harbour sites of both north Konkan and south Konkan, innumerable Buddhist cave sites are found. In the North Konkan region, within a radius of few kms from the harbour sites of Sopara, Kalyan and Chaul, there are about several Buddhist caves, such as, Kanheri, which alone has more than 100 caves; Magathana (6 km. south-west of Kanheri). On the outskirts of the Magathana village, the Poinisar rock cut caves are found. Next to these caves, in a small hamlet known as *Devi-ka-para*, loose stone artefacts with Buddhist symbols discovered. Several of these artefacts are dated to the sixth-seventh centuries C.E., however, it is suggested that some of the artefacts are from much earlier date (Dikshit, 1942:500-4); Maandapeswar; Marol; and Kondivate (1.5 km. to the north of Marol). Kondivate is suggested as the earliest *chaitya* in the western Deccan region (Dehejia, 1972:153).

In the South Konkan region, similarly, Buddhist caves are also located near the harbour sites in the south Konkan region. For instance, at Bankot, two small groups of Buddhist caves are located at Kol across the river Savitri (Burgess, 1885: 74). At Kuda 45 to 60 m. above sea level and looking down on the Rajapur creek, 26 Buddhist caves have been found (Burgess and Indrajai, 1976, reprint: 3). At Mhar, 45 kms to the south-east of Kuda, 28 Buddhist caves have been found on the Savitri river (Fergusson and Burgess, 1880:209).

Concluding Remarks

The geo-ecological settings as well as resources of Maharashtra in general and the western coast of Maharashtra in particular offer several advantages that facilitated the settlement of ports on the western coast, North Konkan as well as South Konkan, right from the ancient times. Although the Konkan coast appears to be cut-off from the rest of Maharashtra because of the barrier made by the Western Ghats, the passes along the Western Ghats provided the routes of exchange between the coast and the plateau. The modern city of Mumbai, also often referred as the financial capital of India, is a testimony to the geographical advantages of the region. In this research paper, an attempt to study the settlement pattern of the ancient ports of the western Maharashtra region. The study suggests that in the background of the lack of archaeological excavations in the region, settlement pattern studies can help in broadly understanding the nature and functions of ancient sites.

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‘Culture’ as Breaking Barriers: India’s Evolving Diplomacy during Pandemic

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Introduction

Systemic theories of international politics represent arguments that the international system generates constraints that influence the behaviour and exercise of foreign policy of all states. As a consequence of the constraints generated on physical movement and direct interaction with the world on account of COVID Pandemic, countries across the world had to re-orient their strategy to promote their foreign policy objectives. In reinventing foreign policy instruments for sustained and uninterrupted interactions with the world, India under the leadership of Prime Minister Narendra Modi remained one of the most active actors adapting to the systemic changes brought by the pandemic in international milieu.

The most significant transformation was visible in the promotion of ‘Cultural diplomacy’, an important ‘soft power’ element of India’s foreign policy, in promoting linkages with people across countries and civilizations. For centuries, Indian art and culture have fascinated people from around the world, and attracted them towards Indian tradition and culture. However, the interruption in continued interaction with the world remained a major challenge during the times of COVID Pandemic.

To strengthen and foster India’s cultural diplomacy Modi government has revitalised its delivery mechanisms, particularly amidst the constraints posed by the COVID Pandemic. Such efforts by India have facilitated in the generation of hope among millions to wade through the tough times thrown up by COVID situation as well as enabled sustained connections with people confined within the four walls of their homes.

From Ayurveda to Yoga: Providing an ‘Alternate Health Care System’

The time-tested wisdom embedded in Indian traditional knowledge has come to be reckoned by international community as an alternate health care provider during Covid Pandemic. Consequence to such recognition and in a determined move to revive and promote the traditional Indian medicine system, the All-India Institute of Ayurveda

(AIIA) and UK's London School of Hygienic and Tropical Medicine (LSHTM) collaborated and signed a Memorandum of Understanding (MoU) to conduct study on health benefits of 'Ashwagandha' as a treatment to prevent infection from COVID19.

Similarly, the Ministry of AYUSH signed an MoU through virtual mode between the Pharmacopoeia Commission for Indian Medicine and Homeopathy (PCIM&H) and American Herbal Pharmacopoeia to help develop standards in the field of Ayurveda and other traditional medicine. Similarly, the age-old Indian practice of Yoga has assumed popularity as an alternate health care since time immemorial. Considering the multifaceted benefits of Yoga, the 7th International Day of Yoga (IDY) held in 2021 saw various programmes, including webinars and virtual events. The overwhelming participation of 491 million people worldwide in these events bears testimony of such health benefits of Yoga. In view of the restrictions imposed by countries on movement of people, PM Modi launched the 'WHO mYoga' app during the 7th IDY to enable easy learning of Yoga and training practices based on Common Yoga Protocol in many languages for continued access to its benefits to millions.

Consistent with the vision of PM Modi, and to provide access to the benefits of Yoga, ICCR as part of its regular exercise, organised an International Yoga Conference in 2021 on 'Yoga for Universal Well-being: Finding Commonalities between Indian and African Traditions' with the support of Consulate General of India in Durban, South Africa. More than 78,000 African healers from traditional Healers Organisations in South Africa and students of IKS-Africa and Yoga worldwide attended this Conference.

In similar vein, the Ministry of AYUSH also launched a unique programme 'Surya Namaskar for vitality' in January 2022 as part of the celebration of *Azadi Ka Amrit Mahotsav*. more than 75 lakh people from all over the world, including India, performed Surya Namaskar to ensure a healthy mind and body to protect themselves during the COVID pandemic.

Improvising Cultural Connect

Many good Indian cultural practices were also recognized and endorsed by countries across the world. The most significant is the usage of 'Namaste', practised as part of Indian culture to greet persons with reverence. On account of social distancing during pandemic, many global

leaders and heads of states, including Prince Charles of Great Britain, French President Immanuel Macron, German Chancellor Angela Merkel and Benjamin Netanyahu of Israel changed their mode of greeting from handshake to 'Namaste'.



To complement and promote the widespread use of good Indian cultural practices a number of programmes have been organised to restore cultural connection across the world. The most innovative way to connect to the world through culture during the challenging times of COVID pandemic is the '*Kala Vishwa*' Programme, initiated by ICCR. The main objective of the programme is to provide opportunities and financial support to the traditional folk artists from India to showcase their talents, especially providing platforms to artists from rural/remote areas. As uncertainty seeped in the economy of countries across the globe due to COVID Pandemic, such initiative motivated local artists in sustaining their livelihood. ICCR's foreign students/scholars are also invited to the programme to gain knowledge on Indian art and culture and help disseminate the rich repository of Indian art and culture in their respective countries.



Photo Credit: Economic Times²

Continuing to invoke the essence of cultural practices edified in Indian spirituality, an interactive session on the theme 'Spirituality as Soft Power' was organised by ICCR on 9 November 2021 with the assistance of representatives of the 19 internationally acclaimed spiritual organisations of India, to spread knowledge in the field of values and traditions of Indian spirituality and Vedic knowledge across the globe.

It can be observed that in the wake of the global pandemic, various initiatives undertaken by India are a testimony to the global reach and impact of Indian cultural diplomacy. Notwithstanding the systemic constraints imposed by COVID Pandemic, India under the leadership of PM Modi has evolved Indian diplomacy in the most ingenious way. The multi-pronged strategy to make accessible the multifaceted benefits of ancient Indian tradition and culture to the world reflects the vision of '*Vasudhaiva Kutumbakam*' (*World as one family*). It also shows that systemic constraints can be overcome by leaders through, in the words of Joseph Nye, 'contextual intelligence' i.e. 'the ability of a leader to understand changing environments, capitalize on trends, and use the flow of events to implement strategies.'

(Views expressed are personal)

²<https://economictimes.indiatimes.com/magazines/panache/the-royal-diaries-charles-meets-modi-camilla-roams-delhi-in-a-taxi/hello-primeinister/slideshow/61577743.cms>

Exploring the Uniqueness of American Aboriginal Culture in Louis Erdrich's *The Antelope Wife*

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Abstract

The goal of this study is to investigate and analyze the various cultural aspects of Native Americans in Louis Erdrich's novel *The Antelope Wife*, as well as to examine how the novel challenges the marginalization of Native American culture by mainstream Western culture. The novel is analyzed using a qualitative approach through close reading and interpretation of the text. The analysis is supported by theoretical insights from Native American thinkers such as Gerard Vizenor, George Elias, and Anna Secco. The research finds that *The Antelope Wife* portrays the complexity and plurality of Native American culture caused by different customs, language, rituals, and religion. The novel highlights the valorization of Native American culture through the lifestyle, clothing, behavior, attitudes, and values of the protagonist Scranton Roy and other Native American characters. The research also shows how the novel challenges the relative marginalization of Native American culture by mainstream western culture by foregrounding Native American culture. The research concludes that *The Antelope Wife* is a significant contribution to Native American literature as it provides a nuanced and complex portrayal of Native American culture. The novel challenges the marginalization of Native American culture by mainstream western culture by highlighting the richness and diversity of Native American culture. The research emphasizes the importance of recognizing and valuing diverse cultures and calls for greater respect and appreciation for Native American culture.

Keywords: *Native American culture, plurality, marginalization, mainstream western culture, diversity*

Introduction

This research focuses on the issue of how Native American culture is valued in *The Antelope Wife* by Louise Erdrich. Also, the study focuses on developing a greater knowledge of the richness and diversity

of Native American culture, which is reflected in the actions, attitudes, beliefs, clothing, and way of life of the novel's characters. The specific cultural and sociopolitical realities of Native American locations are the subject of this study. The current thesis explores the aspects of Native American culture's valorization that have been hidden by mainstream western culture across its three chapters. The strength of Native American studies philosophers like Gerlad Vizenor, George Elias, Anna Secco, and others is used to advance Native American culture through study.

Through the inclusion of Native American culture, mysticism, issues of salvation, and the triumph of Native American cultural practices in the novel *The Antelope Wife*, which demonstrates the Americans' steadfast devotion to their culture, Erdrich has challenged the relative marginalization of Native American society with the negative stereotypes from the west. The protagonist Scranton Roy and other Native American characters in the book illustrate this. Throughout the story, the distinctive language and culture of Native Americans are used to highlight the distinctiveness of the American aboriginal people.

Louise Erdrich, who was born in Little Falls, Minnesota, in 1954, grew up in Wahpeton, North Dakota, where her parents were employed by the Bureau of Indian Affairs. In 1979, she graduated with a master's degree from John Hopkins University. Her Chippewa heritage is reflected in Erdrich's literary work, which spans fiction, poetry, short stories, essays, and literary criticism. These works explore the complicated sexual and family relationships that Native Americans of mixed and full bloodlines experience as they struggle with issues of identity in a white, European-American culture. Erdrich is considered as one of the most important authors of the second wave of the Native American Renaissance and is an enrolled member of the Turtle Mountain Band of Chippewa Indians, a band of the Anishinaabe (also known as Ojibwa and Chippewa). She examines the idea of baptism by blood, water, or the essential desire for redemption in Roman Catholic tradition in her critically acclaimed book of poetry, *Baptism of Desire*. In her book *The Beet Queen*, Erdrich delves into the enduring enigma of the human condition with empathy, humor, and strength while weaving a vivid and emotionally powerful tale of desertion, sexual infatuation, jealousy, and undying love.

In *The Antelope Wife*, Louise Erdrich continues to explore the lives of the families found in her earlier novels, using her characteristic unsentimental and honest style to capture the Native American experience

of despair, magic, and humor. The story is set in contemporary Minneapolis but draws on mythic elements, following the mysterious and enigmatic character known as *The Antelope Wife* over the course of a century. *The Antelope Wife* is portrayed as a graceful woman who remains elusive and silent, with a mystical connection to nature. Her journey to find love and survive has a profound impact on the lives of those around her. Erdrich weaves together themes of ancestry, fate, tragedy, and redemption to create a tapestry that is both modern and timeless, leaving a lasting impression on the reader.

A post-Civil War cavalry attack on an Indigenous community sets the tone for *The Antelope Wife*. When a newborn girl was born in the community, Blue Prairie Women tied her to a dog's back, which the dog subsequently jumped off of in panic. Scranton Roy, one of the troops, dismounted and started after the infant. She was taken into his arms, nursed by him, given the name Matilda, and nurtured as his own daughter. The Matilda's teacher, who Scranton Roy married, gave birth to a boy after their union. Augustus was his given name. Blue Prairie Woman, a female, became pregnant through her husband Shawano, a male, and gave birth to twin girls called Josephette (Zosie) and Mary; nevertheless, she was compelled to leave the infant twin behind in order to look for her first-born kid. She found Matilda and gave her directions, but she quickly died from a condition common to white people. She changed the name of her daughter to Other Side of the Earth and made plans for an antelope herd to watch over her till she passed away.

The narrative then discusses the lives of Scranton Roy, Matilda, Augustus, and Zosie and Mary Shawano's contemporary children. Beads by Cally Whiteheart Roy is the narrator and imaginative re-enactor of their lives. Roy is a descendant of some of those characters. Although though she tended to focus more of her narration on the life of her mother, Rozin, she is unquestionably a crucial character in the story. The Antelope Wife's core is centered on Rozin's violent conflicts with Cally's father Richard White heart Beads and her handsome lover and eventual second husband Frank Shawano.

The Antelope Wife is narrated by the stereotypical narrator Cally, who combines several tales to shed light on the background of persons and situations that strike her as odd. For instance, Cally imagines the history of Sweetheart Calico, a character with unusual behavior who may be partially antelope based on Cally's perception of her conduct. Moreover, chapters told by a dog are inserted between Cally's narratives.

The novel has comedy throughout and is both tough and humorous. The two ladies, Sweetheart Calico and Rozin, ultimately find happiness by emancipating themselves from tyrannical husbands.

Objective of the study

1. To investigate and analyze the various cultural aspects of Native Americans portrayed in Louis Erdrich's novel *The Antelope Wife*.
2. To examine how the novel challenges the marginalization of Native American culture by mainstream Western culture.
3. To provide a nuanced and complex portrayal of Native American culture and to emphasize the importance of recognizing and valuing diverse cultures, specifically Native American culture.

Review of Literature

Since its release, *The Antelope Wife* by Erdrich has garnered several critical reviews. This exceptional book is both a complex tale of mysterious individuals and a brazenly unsettling reflection on the struggle to create a future full of promise and hope out of the remnants of the past. The work has been examined by different reviewers from various angles. Native Peoples' emotionally uprooted existence as they attempt to uphold tribal customs while yielding to the temptation of the larger civilization are the topic Erdrich explores. Across time and across bloodlines, family stories seem to repeat themselves in patterns and waves. She presents the narrative of Native Americans who are uniquely valorizing their culture in a wonderfully written tale of intricate interactions among future generations. Ken Kessey states the following under this circumstance:

The intricate craft of Native American beadwork is the central metaphor upon which Erdrich strings her multiple, intertwined narratives. Everything is all knotted up in a tangle. Pull one string of this family and the whole web will tremble. Family -- both immediate and ancestral -- is a tensile bond that links the novel's characters, as much a hangman's noose as a lifeline. (4)

Hence it can be seen that the author has the best success when writing about his own people, whether they are interacting with one another or having chaotic connections with the English or Americans. Kessey (2006) goes on to discuss the narrative elements of Erdrich's works, which she uses to illustrate the Native American cultures and customs. The characters in the story, which is completely alien to western culture,

vividly show the family nexus and its obligation upon the members and society.

The novel, *Keplom* (2005) opinion, is smart and fascinating. The narrative begins like a nightmare with an American cavalry attack on an Ojibwa village, the death of an elderly woman who utters a critical phrase, the unintended kidnapping of a child, and a mother's agonizing quest. The progeny of the white soldier who kidnaps the newborn and the bereaved Ojibwa mother are connected by a dramatic mingling of tragedy, farce, and spiritual revelation. Over time, a kidnapping, a suicide, and a child's death all happen. He receives a blitzkuchen recipe, a strip of lover's calico, and a blue bead necklace as signs of his fate:

Erdrich's novel contains many stories, but its emotional white heat is generated by two complementary tales of troubled marriages. *Sweetheart Calico*, silent and wrathful, is the "antelope wife" of the title, named for the fabric that ties her to Klaus Shawano, the man who abducts and enchants her away from the open places where land meets sky. She languishes in the urban prison of Gakahbekong (contemporary Minneapolis, where much of the novel's action takes place). Even more affecting is the story of Rozin -- one of a number of twins who populate this populous novel -- and her husband, Richard Whiteheart Beads, the charismatic, self-destructive man for whom she feels a "hopeless mixture of tenderness, hatred, exhaustion. (23)

In Erdrich's story, there are a lot of inexplicable disappearances, mythical stories, and human frailties. It also has a dog that cracks sexist jokes and a lady that is bare-chested when her anniversary is approaching. The contrasts of daily existence are highlighted by Erdrich, such as braided grandmothers who adhere to tradition but don eyeliner and sneakers. Love, desire, and longing have the power to seduce both men and women, who become slaves to alcohol, secrets, or hope.

Derek Wright claims that the concept of freedom may be viewed as a scientific metaphor. Thus, the phrase "free state" seems to refer to the ad hoc movement of electrons about the atomic nucleus, whose speed and position may be detected, but never simultaneously, and which are said to be "in a free state" since their movement cannot be exactly charted. Like the characters in the narrative, particles move in unexpected, unsuspected ways. He asserts:

All of our actions have in their doing the seed of their undoing,"
Cally observes as she thinks of her mother. She "marvels" that

those actions are "knit and unknit by one same needle. That in her creation of her children there should be the unspeakable promise of their death, for by their birth she had created mortal beings. That in her love there should be failure to love. That in the sudden hatred she developed toward our father there should be the split cotyledon, the tongue, the trembling shoot of a sunless white passion. (21)

The work eventually honors the bravery of pursuing one's predetermined route in the world and overcoming fate's trials, even though the plot occasionally sags under an excess of emotional complexity. It is a convincing illustration of Erdrich's narrative prowess. Like the chaotic motion of subatomic particles, the narrative's flow has a wandering, associative form of logic that encourages a variety of potentially false correspondences between its episodes.

Family stories pass down from one generation to the next through recurrent patterns. In a sensual novel, Erdrich returns to the emotionally uprooted lives of Native Americans who struggle to maintain tribal customs while falling prey to the pull of larger culture. An Ojibwa village is besieged by American cavalry in the opening scene of the novel, which reads like a fever dream and ends with the death of an elderly lady who is heard saying a vital line. The progeny of the white soldier who kidnaps the newborn and the bereaved Ojibwa mother are connected by a dramatic mingling of tragedy, farce, and spiritual revelation.

Over time, there is a further kidnapping, a child dies, and a person commits suicide. A blue beaded necklace, a piece of sweetheart calico, and a recipe for blitzkuchen are used to predict fate. A nude wife surprises her husband on their anniversary while the dog delivers naughty jokes in front of onlookers. Men and women are enslaved to alcohol, closely held secrets, or the alluring force of hope in every generation. They are enchanted by love, desire, and longing. This demonstrates Erdrich's narrative talent through several narrations. Erdrich strives to address all the many facets of Native American life by developing several story strands. In this regard, Aime Larsen explains:

The intricate craft of Native American beadwork is the central metaphor upon which Erdrich strings her multiple, intertwined narratives: Everything is all knotted up in a tangle. Pull one string of this family and the whole web will tremble. Erdrich's novel contains many stories, but its emotional white heat is generated by two complementary tales of troubled marriages. Sweetheart Calico,

silent and wrathful, is the "antelope wife" of the title, named for the fabric that ties her to Klaus Shawano, the man who abducts and enchants her away from the open places where land meets sky. (59)

According to Aime Larsen, Erdrich effectively portrays Native People's cultural position by using diverse and entwined narrative styles. This story has a heavy emphasis on topics related to marriage, love, and sexuality in order to illustrate various family structures. By combining two parallel tales of unhappy marriages with a complicated familial nexus, the work is special in its own right, claims Aime Larsen.

In *The Antelope Wife* by Louise Erdrich, the story takes place in Minneapolis, but there are connections to the ancestral land where three families, white, Ojibwa, and mixed blood, were brought together. According to Vanessa Guignery, Erdrich's writing style is a blend of geographical, human, and literary elements that create a complex narrative weaving together both Native American storytelling and post-modern literature. This hybrid technique establishes a liminal territory that appears to be "cracked apart." *The Antelope Wife*, according to Vanessa Guignery, is a complicated book that combines ancient Native American tribal culture with postmodern literature. Examples of hybridization include the combination of several Native American tales into postmodern literary forms.

The literature review provides a comprehensive overview of the critical reviews of *The Antelope Wife* by Erdrich. The reviewers discuss the themes and elements of the novel, such as family ties, Native American culture and traditions, troubled marriages, mythic legends, and personal weaknesses. But they haven't touched the issue of uniqueness of aboriginal culture of Native Americans in the novel *The Antelope Wife*. For that reason this research is unique as a novel issue has been raised by the author in this paper.

Methodology

This study employs a library-based approach and utilizes a rigorous discursive analytical method that draws upon Native American vocabularies and authentic sources. The research is founded upon the examination of texts related to the Native American cultural issue, and the application of these texts from the perspective of Native American culture is used as a tool. Specifically, the hypothesis of this research is supported by using Vizenor (1968) in his writings on the issue of Native American

culture, as well as the theories of other Native American cultural theorists such as George Elias and Anna Secco (1992) . Various excerpts from novels are analyzed to provide evidence for the hypothesis.

- Texts journals and novels related to the issue of Native American culture, which are used as tools to apply the perspective of Native American culture to the analysis.
- Writings by theorists on the issue of Native American culture, such as Gerald Vizenor, George Elias, and Anna Secco have been used.
- Library-based research, which would involve searching for and gathering relevant sources from various academic databases, archives, and libraries.
- Discursive analytical method, which involves closely examining and analyzing the texts and sources to identify and interpret key themes and patterns related to the research question.
- Close reading, which involved analyzing specific excerpts from the novels to provide evidence for the hypothesis.
- Application of the Native American perspective, using the vocabularies and cultural perspectives of Native American culture to analyze and interpret the texts and sources.

The field of Native American Studies has seen an increased interest in hybridity, transnationalism, and diaspora, leading to mixed reactions. Arnold Krupat was one of the first critics to view Native American literature as a form of resistance against efforts to establish imperial hegemony and essentialist definitions of Native identity, using cultural translation, hybridity, and interstitial spaces. Gerald's research in "Recovering American Indian Intellectual Traditions" focuses on Native American culture and how they have been "othered" by mainstream Western culture. These theoretical issues have been used for the analysis of th novel.

Native Americans have unique clothing and eating habits that are steeped in tradition. Different tribes in North America had their own distinct styles of dress, headdresses, and ornamentation. Native Americans are indigenous people who settled in parts of the United States, Canada, Alaska, and Hawaii, and are believed to have arrived in North America thousands of years ago. It's estimated that there were up to two million indigenous people living in the United States and Canada at the time of European discovery. Many researchers believe that Native

Americans migrated from Asia and parts of Europe by crossing the Bering Strait and traveling across oceans.

Textual Analysis

In her 1998 novel *The Antelope Woman*, Erdrich integrates a wide range of motifs, symbols, and viewpoints pertaining to the cultural renewal processes occurring in modern Native American society. These elements have been mythologically crafted to mirror the experiences, problems, events, and contradictions that many Native Americans confront as they try to unite their various cultural features and inheritances into a coherent and successful identity. A perceived divide between Native American and non-Native American civilizations is depicted through the primary pictures and characters. This division appears in a variety of dualistic pictures, such as twins, gender ambiguity, and connections between humans and animals. Resolving these divisions, bringing disparate realities together, and serving as brokers to bring order to the universe are the main goals of the protagonists. The novel's diversity of people, lifestyles, and viewpoints highlights the wide-ranging implications of cultural renewal and heightens its complexity. *The Antelope Wife* is a tale that depicts pictures and symbols of Native American culture's resurgence and makes recommendations for how to preserve traditions while thriving in the contemporary world.

The Antelope Wife by Erdrich prominently includes mixed-blood characters, including the author herself, whose German and Chippewa ancestry impacted the book's investigation of the intricacies and misunderstandings of being "mixed" or "split." The narrative takes identity into account in light of current Indian, American, and human experiences. In a 1987 interview, Erdrich stressed the importance of identity issues and the challenges associated with blending non-Indian and Indian cultures. Her book does, however, imply that negotiating the difficulties of divided, mixed, or blended worlds is possible. Lorena Stookey contends that the novel's depiction of characters surviving a tragedy and celebration of the life-affirming force of the resolve to endure make perseverance in the face of apparent incompatibility an important issue.

Erdrich switches her attention in *The Antelope Wife* from the North Dakota town that served as the setting for her prior books to a fresh group of people and issues in Minnesota. The Roys, the Whiteheart Beads, and the Shawanos are three intricate, interconnected extended

families at the center of this book, which spans generations and nationalities. The three families are represented by the protagonist, Cally, who exemplifies heroic traits. She is a young, educated Native woman. Those who, on the other hand, are unable to let go of the past (or perceive it honestly) or who are too deeply ingrained in the negative facets of contemporary Western civilization, are those who in this novel experience existential failure. The individuals and their way of life sensitively portray the Native Americans' current fight for cultural identity.

The Antelope Wife goes beyond being a simple book since its themes are similar to the twin tales that are common in Native American cultures. Myths, which are accounts of a culture's distant past or origin, can operate as a benchmark for moral behavior. It is appropriate that there be a legendary representation of the resurgence of Ojibwe culture. The writings of Claude Lévi-Strauss and Paul Radin, which explore Native American twin myths that relate to Erdrich's story, are helpful in illuminating the mythological aspects of *The Antelope Wife*. Native American myths are best exemplified by twin tales, which Lévi-Strauss and Radin both believe to be "common" and "fundamental," respectively. They are so common and well-liked among American Indians that they inevitably draw notice. Erdrich's work, which closely follows the twin tale pattern, shows how they have affected him.

In his paper titled "The Fundamental Myth of the North American Peoples," Radin acknowledges myth as a flexible storytelling structure. Folktales, myths, and legends, he claims, "pour into each other ceaselessly and continuously" (19). The "shape and substance" of myths, according to Radin, "is not set," which would be impossible given the ongoing flow of new influences and goals that permeate all human groups (370). Radin's concept of the genre's flexibility better explains the genuine stories that he and other fieldworkers frequently encounter. It's true, he says, that every age tries to "rewrite" its folktales (370). Similar to this, Franz Boas, one of the pioneers of anthropology in the United States, notes the diversity of generic form and content in his analysis of Northwest Coast Indian myths: "It would seem that mythological worlds have been built up only to be shattered again, and that new worlds were built from the fragments" (18).

Erdrich commences the novel by depicting the twins engaged in sewing, and this introductory scene serves as a formal indicator of the book's themes. The imagery in the opening passage confirms the idea of a

divided and polarized world. The novel portrays the difficult circumstances faced by Native Americans who have lived in America since ancient times, and highlights their strained relationship with mainstream Americans, who consider them outsiders in their own land. The fragmented nature of human existence, particularly for Native Americans, is symbolized by the lines:

Ever since the beginning these twins are sewing. One sews with light and one with dark. The first twin's beads are cut-glass whites and pales, and the other twin's beads are glittering deep red and blue-black indigo. One twin uses an awl made of an otter's sharpened penis bone, the other uses that of a bear. They sew with a single sinew thread, in, out, fast and furious, each trying to set one more bead into the pattern than her sister, each trying to upset the balance of the world. (1)

The aforementioned statement indicates how the book's basic ideas of balance and division are made plain very once. Native Americans' "fast and furious" labor on a complicated pattern of "bright and dark" is unequivocal proof of their dualistic existence. *The Antelope Wife* emphasizes these underlying social issues of conflict or division as fundamental and enduring aspects of myth by highlighting the legendary trait of twins. The one thread here relates to humanity, through which we may dissolve all of the distinctions between Native and mainstream Americans, as has been done from ancient times. As it characterized as the condition of light and dark, humanity's solitary danger might stitch the hierarchy between them.

In *The Antelope Wife*, the split-apart world is most obviously represented by identical twins. Twins are frequently the heroes of mythology. According to Lévi-Strauss, all tales in South America or North America include this separation between two people who are first shown as twins, either genuine twins or analogues to twins (15).

Despite the main character, *The Antelope Wife*, exhibits a divide between a woman and a hoofed one, the twin hero Cally finds a replacement for her lost twin sister Deanna. According to Levi-Strauss (1966), incipient twin hood, such as anything that has physical characteristics like a cleft palate or cloven hooves that give the appearance that it is going to split apart, is just as important as genuine twins in reflecting the underlying duality that is typical of myth. As seen by the fact that Erdrich frequently refers to "hooved ones" rather than

merely deer or antelope, she is aware that the distinctive characteristic of antelope and deer is their split hooves.

In addition, when So Hungry marries a deer, she unites with all creatures with hooves. It is permitted for antelope (the hooved ones of the Plains where she is taken) to take care of Matilda, the daughter of their cousin hooved ones, the deer, and the ancestor of the antelope wife. Lévi-Strauss (1966) asserts that a twin, whether possible or actual, is always linked to and represents inborn dualities that need to be symbolically resolved or mediated (99). In *The Antelope Wife*, several characters have problems that need to be fixed or managed. These crises make up the novel's climactic scenes.

Native American language is used to elevate the cultural heritage of Native People in *The Antelope Wife*. The novel's opening section uses Native American language to highlight Native American culture. The following words demonstrate that the character Matilda Roy, who was imprisoned by Scranton Roy and later ties with a dog, spoke in her own tongue:

He braced himself against her to pull free, set his boot between her legs to tug the blade from her stomach, and as he did so tried to avoid her eyes but did not manage. His gaze was drawn into hers and he sank with it into the dark unaccompanied moment before his birth. There was a word he uttered in her language. *Daashkikaa. Daashkikaa.* A groan of heat and blood. He saw his mother, yanked the bayonet out with a huge cry, and began to run. (50)

The lines that were extracted, demonstrate that the association between the signifier and the signified, which is defined by our cultural rules, is not unalterably fixed.

After spending years healing in the forest in the wake of the devastation, he "saves" the baby and raises it to become Matilda Roy, Scranton Roy's daughter. Matilda seems pleased in the white world, the new society, with a schoolteacher she likes as a friend, then sister, and who would have become her stepmother. She may be aware that she is in a foreign country, but her true mother, Blue Prairie Woman, cannot bear to lose her child and longs to be reunited with her. A Blue Prairie woman's close relationship with Shwano led to the birth of twins. The following sentences demonstrate how marriage in Native American tradition is only seen as a component of sex:

They got teased too much and moved farther off, into the brush, into the nesting ground of shy and holy loons. There, no one could hear them. In solitude they made love until they became gaunt and hungry, pale windigos with aching eyes, tongues of flame. Twins are born of such immoderation. By the time her husband left again with his sled of traps, she was pregnant and calm. (13)

The woman spends each day scanning the horizon in search of her daughter, causing her to be referred to as "Other Side of the Earth," further emphasizing the idea of a division. In American culture, the conversation around marriage often centers on sex, but for Native Americans, sex did not hold such a central role in marriage. Rather, it was expected that young people engage in sexual activities prior to getting married, and sex was not necessarily restricted to marriage.

Other Side of the Earth is mourning the loss of a daughter to this strange white society, just like so many Indian parents before them. As the death of her daughter "cracks apart" her life, she leaves her twins and travels west till she meets her first daughter. The twins were left with their grandmother, who was feeding them. They become ill while traveling with their grandparents and receive medical attention from the healers. Native American cultural practice explicitly emphasizes the healing provided by healers, as seen by the following lines:

Those old ladies? Sure! They're healers, bead workers, tanners of hides. They make cedar boxes. Or they work as language consultants in the school system. Maybe one's a housekeeper for a priest. The other dances. I hear she won the Senior Ladies Traditional twelve years in a row. Bums, they roam the streets. Windigos, they ate a husband. Oh, too bad, one or the other died and was buried the month before. Tough luck, I missed her. (71)

Many Native Americans still follow their ancestral faiths and use conventional medicine. The high newborn mortality rate is a result of both a harsh physical environment and a high frequency of diarrhea. Native American culture is inherently rooted in the ritual practice of spiritual healing. In the commercial society of today, this practice may seem important and out of the ordinary, but for Native Americans, it is an integral part of daily existence. These customs have been followed from the beginning of time.

Matilda Roy, age 7, may appear satisfied in her current situation with her teacher, who would later wed Scranton Roy, and her "father"

Roy. She can sense her mother's presence and is aware of the allure of another realm. She eventually departs with the sound of clattering beads and a brief message that reads, "She came for me, I left with her," taking the blue beads that were on her cradle board when Scranton saved her. The mixed feelings that many Native American kids experienced when they were taken away and integrated into the white world, whether through boarding schools or other institutions, are reflected in Matilda's story. They felt a great tug towards their old culture and family even if they did not completely understand it, despite the fact that they had grown to love some parts or people in the new environment. As Matilda doesn't know her mother's language, she is unable to converse with her, but she is still drawn to her and her culture.

Klaus Shawano, a trader who works at contemporary powwows and is fixated with the fabled Antelope Woman, is introduced in the book. By receiving medication from an elder, he wants to win her over. Both an antelope and a woman, The Antelope Wife is thought to be a direct descendent of Matilda Roy, who was abandoned to live among antelope. The mother of Cally, Rozina Roy, struggles with her identity and lives in the neighborhood where Klaus returns with The Antelope Wife. The novel's mythological aspects are enhanced by two episodes of hunger and thirst: In contrast to Blue Prairie Woman, who gets fulfillment for her hunger by finding beauty in the animal who becomes her, Klaus cannot slake his thirst until he drinks from the Mississippi.

Cally's grandmother's grandma, Blue Prairie Woman, taught her "The Deer Husband" story, which she has treasured and retold. As a young lady, this ancestor enters the woods to make a full lunch for herself. Despite eating "the entire rabbit. She's curious to learn more. She wanted to swallow her own arm whole. Such a Hunger. Her name was given by them. Such a Hunger. Bakaday, Ajigo (56). With her hatchet in hand, she approaches the deer with the idea that she will eat him once he joins her. Nonetheless, she finds it fascinating when she stares into his eyes since she can detect sincere yearning in addition to qualities of calm and tranquility. Instead of eating him, she shares her stew with him. Following that, she is finally:

Unafraid. She had this feeling. Full. So this was what other people felt. She looked over at the deer. His eyes were steady and warm with a deep black light ... Who he is. No different. Of course, too bad that he's a deer. Still, she made a bed out of young hemlock branches and curled against his short, stiff pelt. She began to live

with him, stayed with him out in the woods, and traveled with him on into the open spaces. Became beloved by his family, too. (56) With her spouse the deer, So Hungry is happy. She makes a decision in her kinship idiom that is typical of Native American tales of her relationship to nature. Instead of consanguinity, the structural relationship is based on an affinal link. This illustrates how nature is viewed as a possible companion in Native American cosmology, where there is a reciprocal relationship.

She thus perceives the deer as "no different." In actuality, Indians in North America have a long tradition of creating tales about a husband and wife who are animals. That indicates a better and healthier connection with nature than modern Americans have, who, like Richard, are more likely to destroy the environment or kill and eat nature than to see it as a partner. The Native American society hasn't always had a harmonious connection with nature, which makes sense. And So Hungry was quite keen to eat the deer before she understood he may be her spouse (similarly other characters in the novel are willing to eat puppies in soup). In mythical stories about animal weddings, nature is not romanticized; rather, it is depicted as a partner, one that we must make an effort to get along with, just as we do with spouses. So Hungry succeed in her quest despite the assistance from her family, but Klaus and Richard fail.

The truth is that her family drags her from this world (her brothers kill her husband). But So Hungry, an adult, "was not hungry any more" (57). She still maintains close ties to "the hooved ones," who twice saved her kid. They first warn her of the approaching attack, giving her time to cling to a dog's back and save her child. She eventually recommends Matilda to the hooved ones after she has passed away. It's likely that Matilda is the deer husband's daughter, which would explain why she's able to coexist among animals with hooves and give birth to a line of descendants who would turn into "antelope women" like the title character. It's important that this story and the other traditional tales it alludes to demonstrate that even among traditional Native Americans, the concept of mixed blood was not unusual. Her own experience proves that it is okay to mix different racial groups, cultures, and species. She plays a symbolic role resembling that of a bricoleur.

Because he is thirsty, Klaus notices an image that represents the strange and dangerous longing he has for his antelope wife: "he couldn't stop his imagination from changing his sweetheart into a Disney

character a blue fairy. Her radiance increased. Her words were as cold as a river, and her smile ultimately turned into a jagged expression of sympathy (94). He confuses his love for the mythical fairies from his childhood with his love for this "magical" being, which is made up of an antelope and a lady. This vision of her overwhelms him in the same way that his love for Sweetheart Calico did. He feels that he must give in to his want to drink since his desires outweigh his sensitivities. In his mind's eye, she torments his thirst:

His lady love was still there in the back of his mind, standing in a ball of blue light. "I'd like a drink of water," he said to her. She had a glass of water in her hand, too, Sweetheart Calico, but she poured it out in front of his eyes. The molecules dissolved all around him and did nothing for his thirst. (94)

His Sweetheart is still seen by Klaus as the Disney fairy that is shown as "standing in a ball of blue light." Sweetheart Calico is unable or unwilling to satisfy his desire, however much he needs and wants her to. The nutrients the fairy delivers is just as enigmatic as the molecular-looking dust it produces with her wand.

So Hungry's acute appetite is satisfied by developing a close relationship with nature with the help of her deer husband. Traditional stories usually include descriptions of these exceptional cravings and the methods used to satiate them, which might be confusing to modern readers. If this story had been left untold, it may have become a forgotten allusion to an earlier time without any bearing on the current narrative. Its resurrection, however, is extensive and all-encompassing in scope. Hence, Hungry's deeds have consequences and parallels for her descendants in contemporary Minneapolis. One of these offspring is Sweetheart Calico, The Antelope Wife, the result of So Hungry's marriage to her deer partner.

Furthermore, So Hungry's extreme hunger and Klaus's never-ending thirst are complementary. While less blatantly or entirely animalistic than So Hungry's deer husband, Klaus also marries a non-human. It is logical to assume that Klaus's animal partner will also have some diluted traits given the loss of both his ancestry and his connection to the traditional customs (i.e. half-human). His connection with her is as modern as he is, including a kidnapping in a van, a wedding night spent in a hotel, and a terrible hunger brought on by alcohol-induced dehydration.

Klaus Shawano has a thirst that rivals So Hungry's voracious appetite in intensity. Klaus's hunger seems unquenchable while she

observes customs, communes with nature, and finds fulfillment there. His wife shares his desire for freedom. According to Lorena Stookey, who writes of their yearning, both characters are imprisoned, trapped by the spell of their unfulfilled desires, and as a result, they spend their days in a state of waiting (1999, 135). When Richard learns Klaus is ill as the two of them are binge drinking, he rejects his repeated screams for help: "Klaus observed, 'I'm poorly. 'Water'" (94). (94). (94). He can't help but be drawn to Sweetheart Calico. This is undoubtedly the root source of both problems.

Cultural studies of Native Americans mostly interpret the culture. In order to understand cultures throughout the world, it is vital to look for fundamental absolute values. Without a foundational set of values, the "this is my/our culture" defense may end up being the strongest one, forcing the other side to either concede or respect it. The promotion of Native American culture depends heavily on cultural knowledge. This is particularly crucial because one of the objectives is to elevate the culture and spread it around the world, yet we have a tendency to perceive most civilizations as patriarchal.

Conclusion

In Edrich's novel, the problem of Native American culture is made explicit. Scranton Roy, the protagonist, and other Native American characters act as mediums for Edrich's depiction of Native American culture. Native People are "othered" from mainstream American society while being Native Americans and the novel explores this by focusing on the distinctive language, culture, rituals, and religion of Native Americans. Characters are the finest way to illustrate how the culture is divided between the past and the present. In terms of Native American culture and how it has evolved in the modern world, Antelope Wife represents the link between the past and the present. She represents Native American culture by being both an antelope and a woman/wife. This book contains enough stories, subplots, characters, activities, and performances to understand Native American culture. When describing Native American culture, Edrich emphasizes the distinctiveness of words like "Daashkikaa," the practice of spiritual healing, the culture of tobacco, clothing, and other rituals, as well as the pastoral setting and relationships that Native Americans have with their animal companions.

By having her main character reflect both past and current Native Americanness, Edrich protects the identity and culture. Edrich succeeds

in keeping her cultural stance as comparable to that of current Americans while preventing Native Americanism from being incorporated into mainstream American history. Native American culture is strengthened when Native American terms like "Daashkikaa Daashkikaa" are used.

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Locational Suitability for Residential Development in Kandy District: GIS-Based Multi-Criteria Evaluation

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Abstract

The research was carried out with the main objective of evaluating the locational suitability of the residential development in Kandy District using Geographic Information Systems (GIS) integrated Multi-Criteria Evaluation (MCE). Therefore, eight criteria, namely slope, landslide vulnerability, land use, population density, proximity to town centres, proximity to roads, proximity to schools and proximity to hospitals were used to achieve the said objective. Mainly secondary data that were used for the study were acquired from the Kandy District Secretariat, the National Building Research Organization (NBRO), the Provincial Department of Education Central Province, the Office of Regional Director of Health Services of Kandy and the Survey Department of Sri Lanka. The suitability maps were generated for individual criterion using ArcGIS 10.5 software. The weights for each map were assigned based on the Analytic Hierarchy Process (AHP) method considering the recommendation of the experts of relevant fields. Finally, all the map layers integrated using weighted overlay analysis method, and the suitability map was generated. According to the results of the analysis, 512 km² of land extent is highly suitable while 666 km² of area is suitable for residential development. In addition, another 390 km² area could be identified as moderately suitable. On the other hand, 78 km² and 260 km² of areas are identified as unsuitable and extremely unsuitable for residential development respectively. Hence, the 82.2% of the total land area in the Kandy District is suitable (26.8% highly, 34.9% generally and 20.5% moderately suitable) for residential development, which 17.8% area is not suitable (13.7% unsuitable and 4.1% extremely unsuitable).

Keywords: *Locational suitability, Residential development, Geographic Information Systems, Multi-Criteria Evaluation*

Introduction

Locational suitability of residential development plays a vital role in procuring better living standards for all human beings who live in every

corner of the globe. Particularly, environmental and socio-economic factors of the residential area strongly influence to decide the quality of lives of the people.

However, at present, the situation has revolutionarily changed with a high demand of land, occurring as a result of increasing of the population, induces people to settle down where they can find plots to build houses without considering its consequences. These unplanned residential developments reversibly influence to make environmental and socio-economic problems such as increasing deep-seated poverty, increasing level of under-education, health problems and inability to existing resources in the area in the long term. As a result, identifying suitable land areas for residential developments is becoming an essential practice in the context of regional planning and development. Therefore, this study was carried out on locational suitability for residential development in Kandy District, where records the second highest population in Sri Lanka, using Geographic Information Systems (GIS) based on Multi-Criteria Evaluation (MCE) method.

Locational suitability analysis involves a large set of feasible alternatives and multiple and conflicting evaluation criteria. "The residential developments required to focus on the affordability of the residents to live and work with accessibility, infrastructural facilities, environmental quality, financial ability etc." (Ekanayake and Weerakoon, 2009). As a result, the need for MCE emerges as an essential requirement in locational suitability analysis. Selected criteria for evaluating the locational suitability are weighted with the relative importance accordingly.

Many spatial decision problems give rise to the GIS-based MCE. On the one hand, GIS techniques play an important role in spatial decision making contexts. On the other, MCE provides an invaluable set of techniques to structuration the problem and design, analyse, evaluate and prioritize the criteria.

This study is theoretically and philosophically integrated with the central concepts of Spatial Science and inclines in the direction of how phenomena are organized in the space. Any phenomenon takes places and unfolds at a particular space and at a particular time. Interactions with these physical and human phenomena at individual places and their interaction tend to emerge patterns over the space, which is known as the organisation of space. The organisation of space depends on location, distribution, the arrangement of the phenomenon, the association of the

phenomenon, structures, interaction and interrelations. This study focused on the Kandy District as the location. The locational suitability for residential development in the Kandy District was analysed using the generated maps in terms of land cover, slope, landslide vulnerability and population density which were shown the spatial distribution patterns of the area.

“Everything is related to everything else, but near things are more related than distance things” (Tobler, 1974). According to Nystuen (1963), abstract spatial analysis has three elements as direction, distance and connectivity. Even though it may happen unconsciously, humans excessively behave rationally, according to their ontological and epistemological experiences. People always expect to fulfil their needs from a short distance rather than a long distance. Therefore, when they establish residences, they obviously consider the distance for accessibility such as to roads, town centres and other public places to fulfil their needs in an easy and comfortable manner. As Morrill (1970) argued in his book of Spatial Organization of Society, five qualities are relevant in understanding human spatial behaviour, namely distance, accessibility, agglomeration, size and relative location. According to the spatial theory, societies try to achieve two spatial efficiencies. The first is to use every piece of land to the greatest profit and the second is to achieve the highest possible interaction with the least possible cost. Therefore, it is very important to use the criteria of proximity to town centres, roads, hospitals and schools when analyzing the locational suitability for residential development.

In addition, Haggett (1965) argues that there are six elements in the schema for studying spatial systems as movements, channels, nodes, hierarchies, surfaces and diffusion. The process of creating spatial patterns starts with movements, and in a causal relationship, it leads to others. In this study, the road network, which was one criterion, can be considered as channels, and intersection of these roads, as nodes. Hierarchies are clearly identified with the distance from the main towns to these nodes and the areas which are at the top of the hierarchy are the most suitable places to live in terms of proximity to the roads. These hierarchies are created surfaces, and helps to identify the pattern of suitable areas for residential development through the diffusion.

The purpose of this study was to identify suitable areas for residential development in the Kandy District. Eight different criteria in terms of slope, landslide vulnerability, land use, population density, proximity to town centres, proximity to roads, proximity to schools and

proximity to hospitals were selected to identify the suitability area. Secondary data sources were mainly used to acquire the data and a field survey was carried out to do the verifications. While weights were assigned for each criterion following the Analytic Hierarchy Process (AHP) method which is on the pairwise comparison, the weighted overlay method was used to integrate all the weighted layers and generate the final suitability map.

Statement of Problem

The demand for the lands has increased with the increase in population by an alarming rate during the last few decades. In addition, due to the unawareness of residents regarding the suitability of the land for residential developments, they unconsciously build houses and settle the places where they can find a plot of land. As a result, several socio-economic and environmental problems such as disasters, poverty, inability to access the infrastructure and other facilities have emerged.

In most cases, the areas are suitable in one aspect but unsuitable in others. Therefore, various criteria which represent several aspects should be used to identify suitability and unsuitability of areas for residential development.

Research Objectives

Primary Objective

- To evaluate the suitable areas for residential development in the Kandy District using GIS integrated Multi-Criteria Evaluation (MCE).

Specific Objectives

- To map suitable areas for individual criteria
- To develop a GIS integrated MCE model to identify suitable areas for residential development
- To identify the suitable and unsuitable areas for residential development in the Kandy District

Research Methodology

This study was carried out with the main objective of evaluating the locational suitability of residential developments in the Kandy District in terms of slope, proximity to roads, proximity to town centres, proximity to schools, proximity to hospitals, landslide vulnerability and population density.

Data Collecting Methods

The secondary data sources were obtained from the Kandy District Secretariat, the National Building Research Organization (NBRO), the Provincial Department of Education Central Province, the Regional Director of Health Services of Kandy and the Survey Department of Sri Lanka. Population data in 2016 was taken from the Kandy District Secretariat. A base map on landslide-prone areas of the Kandy District was received from NBRO while land use, contours, town centres and roads of the district were extracted using the 1:50,000 topographic maps published by the Survey Department of Sri Lanka and updated using the Google images. The locational data related to the schools and the hospitals were taken from the Provincial Department of Education Central Province and the Regional Director of Health Services of Kandy respectively. Expert knowledge was used in order to assign the weights for generated maps using above base maps.

Data Quality and Reliability

Data quality refers to the “fitness for use” of data for the intended application. Therefore, data must be accurate in order to consider them as usable to do a reliable analysis. In this study, 1:50,000 scale topographic maps were initially generated using several technical methods such as photogrammetry. According to the accuracy standard, the 1:50,000 scale maps have ± 25 m effective resolutions (Lo and Yeung, 2005). In fact, all the base maps and data used for the study have been published by government institutes and organizations namely, the Kandy District Secretariat, the National Building Research Organization (NBRO), the Provincial Department of Education Central Province, the Regional Director of Health Services of Kandy and the Survey Department of Sri Lanka.

Furthermore, the weights for each map were assigned based on the AHP method considering the recommendation of the experts of relevant fields.

Software Selection

To calculate the weights for the individual classes of the maps and the map layers, and to conduct the quantitative analysis, Statistical Package for Social Sciences (SPSS) 20 software version was used. The ArcGIS 10.5 version was used to conduct slope analysis, calculate density of population, Euclidean distance from town centres, roads, schools and

hospitals, and finally to integrate all the map layers using the weighted overlay method assigning weights.

Data Processing and Analysing

After collecting the data using the above methods and sources, data processing and analysing were conducted using GIS and AHP method. Slope analysis was done using the contour layers, whereas Euclidean distances were calculated for the road network, town centres, schools and hospitals. Based on the map from the NBRO, the landslide-prone area map was created. Population density was calculated based on the tabular population data, which was taken from the Kandy District Secretariat. A land use map was created using topographic maps and Google Images.

In addition, class maps related to slopes, landslide vulnerability, road network, town centres, schools, hospitals, population and land use types were obtained using created map layers. In order to assign the weights for the individual classes and map layers according to their relative importance. Accordingly, weights for eight main criteria and each sub-criterion of the main criterion were calculated based on the AHP method, which is a pairwise comparison matrix. This method was specifically used for this study due to its theoretical basis than rating or ranking methods. It is also widely used to identify locational suitability in previous studies. Table 1 shows a pairwise comparison matrix for eight main criteria and Table 2 to **Table 9** show the pair-wise matrixes for individual main criteria and its sub criterions.

Criteria	Landslide vulnerability	slope	Land use	Proximity to the roads	Proximity to the hospitals	Proximity to town centres	Proximity to the schools	Population density	Weight
Landslide vulnerability	1	1	3	5	5	7	7	7	0.2893
Slope	1	1	3	5	5	7	7	7	0.2893
Land use	1/3	1/3	1	3	3	3	5	5	0.1407

Proximity to the roads	1/5	/5	/3	1	3	3	3	5	0.0953
Proximity to the hospitals	1/5	1/5	1/3	1/3	1	3	3	5	0.0758
Proximity to town centers	1/7	1/7	1/3	1/3	1/3	1	3	3	0.0496
Proximity to the schools	1/7	1/7	1/5	1/3	1/3	1/3	1	3	0.0357
Population density	1/7	1/7	/5	1/5	1/5	1/3	1/3	1	0.0239

Table 1: Pair-wise comparison matrix for the main suitability criteria

Slope	0-10	10-20	20-30	30-40	>40	Weight
0-10	1	1	1	5	7	0.2994
10-20	1	1	1	5	7	0.2994
20-30	1	1	1	3	7	0.2712
30-40	1/5	1/5	1/3	1	5	0.0942
>40	1/7	1/7	1/7	1/5	1	0.0355

Table 2: Pair-wise comparison matrix for slope

	1	2	3	4	Weight
1	1	3	7	9	0.5490
2	1/3	1	5	9	0.2914
3	1/7	1/5	1	7	0.1202
4	1/9	1/9	1/7	1	0.0361

Table 3: Pair-wise comparison matrix for landslide vulnerability

	0-1	1-2	2-3	3-4	>4	Weight
0-1	1	3	5	7	9	0.4785
1-2	1/3	1	3	5	9	0.2538
2-3	1/5	1/3	1	5	7	0.1555
3-4	1/7	1/5	1/5	1	7	0.0822
>4	1/9	1/9	1/7	1/7	1	0.0278

Table 4: Pair-wise comparison matrix for proximity to roads

	0-2	2-4	4-6	6-8	>8	Weight
0-2	1	3	5	7	9	0.4483
2-4	1/3	1	5	7	9	0.2842
4-6	1/5	1/5	1	7	9	0.1623
6-8	1/7	1/7	1/7	1	9	0.0839
>8	1/9	1/9	1/9	1/9	1	0.0259

Table 5: Pair-wise comparison matrix for proximity to hospitals

	0-2	2-4	4-6	6-8	>8	Weight
0-2	1	3	5	7	9	0.4785
2-4	1/3	1	3	5	9	0.2538
4-6	1/5	1/3	1	5	7	0.1555
6-8	1/7	1/5	1/5	1	7	0.0822
>8	1/9	1/9	1/7	1/7	1	0.0278

Table 6: Pair-wise comparison matrix for proximity to town centres

	0-1	1-2	2-3	3-4	>4	Weight
0-1	1	3	5	7	9	0.4785
1-2	1/3	1	3	5	9	0.2538
2-3	1/5	1/3	1	5	7	0.1555
3-4	1/7	1/5	1/5	1	7	0.0822
>4	1/9	1/9	1/7	1/7	1	0.0278

Table 7: Pair-wise comparison matrix for proximity to schools

	< 300	300-1000	1000-2000	2000-3000	>3000	Weight
< 300	1	5	7	9	9	0.4888
300-1000	1/5	1	7	9	9	0.2615
1000-2000	1/7	1/7	1	9	9	0.1485
2000-3000	1/9	1/9	1/9	1	9	0.0749
>3000	1/9	1/9	1/9	1/9	1	0.0253

Table 8: Pair-wise comparison matrix for population density

Consistency Ratio (CR) related to the suitability criteria and sub-criteria was calculated using the following equation:

$$CR = \text{Consistency Index (CI)} / \text{Random Consistency Index (RI)}$$

Saaty (1980) proved that for consistent reciprocal matrix, the largest Eigenvalue is equal to the number of comparisons, or $\lambda_{\max} = n$. Then he gave a measure of consistency, called Consistency Index as deviation or degree of consistency using the following formula.

$$CI = (\lambda_{\max} - n) / (n - 1)$$

λ_{\max} is the Principal Eigen Value; n is the number of factors

$\lambda_{\max} = \Sigma$ of the products between each element of the priority vector and column totals

Source: Saaty (1980)

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49
n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49
n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49
n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49
n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49

Random Consistency Index (RI)

Source: Saaty (1980)

As shown in **Table 10** below, the CR values are calculated in relation to the overall context, and sub-criteria are less than 0.1. Fulfilling the condition of $CR < 0.1$ proves that the assigned weights are within the acceptable range.

Finally, the weighted overlay method was used to integrate all layers into one and generate the suitability map for residential development in Kandy District. In this case, the calculated weights using AHP method were multiplied by 100 to convert the decimal values to integers. That is because the weighted overlay method only accepts integer values. The weights used for the study are shown in **Table 11** below.

Land use	Coconut	Chena	Forest	Home garden	Paddy	Tea	Rubber	Reservoir	Scrub	Stream	Tank	Rock	Other	Weight
Coconut	1	1/3	9	1/5	1	1	1	9	1/7	9	9	9	9	0.0875
Chena	3	1	9	1	3	5	5	9	1/3	9	9	9	9	0.1472
Forest	1/9	1/9	1	1/9	1/7	1/5	1/5	1	1/5	1	1	1	1	0.0166
Home garden	5	1	9	1	5	7	7	9	1/3	9	9	9	9	0.1753
Paddy	1	1/3	7	1/5	1	3	3	9	1/7	9	9	9	9	0.0966
Tea	1	1/5	5	1/7	1/3	1	1	9	1/7	9	9	9	9	0.0770
Rubber	1	1/5	5	1/7	1/3	1	1	9	1/7	9	9	9	9	0.0770
Reservoir	1/9	1/9	1	1/9	1/9	1/9	1/9	1	1/7	1	1	1	1	0.0145
Scrub	7	3	5	5	7	7	7	7	1	7	7	7	7	0.2505
Stream	1/9	1/9	1	1/9	1/9	1/9	1/9	1	1/7	1	1	1	1	0.0145
Tank	1/9	1/9	1	1/9	1/9	1/9	1/9	1	1/7	1	1	1	1	0.0145
Rock	1/9	1/9	1	1/9	1/9	1/9	1/9	1	1/7	1	1	1	1	0.0145
Other	1/9	1/9	1	1/9	1/9	1/9	1/9	1	1/7	1	1	1	1	0.0145

Table 9: Pair-wise comparison matrix for land use

Criteria	CR Value
Overall suitability criteria	0.095
Slope	0.053
Landslide Prone Areas	0.023
Proximity to Roads	0.019
Proximity to Hospitals	0.038
Proximity to Town Centres	0.019
Proximity to Schools	0.019
Population Density	0.060
Land Use	0.017

Table 10 Consistency ratio related to criteria and sub-criteria

During the weighted overlay analysis, the following steps were followed.

- i. Select an evaluation scale: The evaluation scale was from 0 to 100 in increments of 1 as 0 for extremely unsuitable areas and 100 for the most suitable areas.
- ii. Set scale values: The cell values for each input raster in the analysis were assigned values from the evaluation scale. This made it possible to perform arithmetic operations on rasters that originally held dissimilar types of values. Values from 0 to 100 were assigned to each range according to suitability.
- iii. Assign weights to input rasters: Each input raster was weighted a percentage influence based on its importance. The total influence for all rasters was equal to 100% as required.
- iv. Run the weighted overlay tool: The cell values of each input raster were multiplied by the raster's weight or per cent influence. The resulting cell values were added to produce the final output raster.

No.	Criteria	Weight on each criteria	%	Sub Criteria	Weight	%
i	Landslide vulnerability	0.29	29%	1	0.55	55%
				2	0.29	29%
				3	0.12	12%
				4	0.04	4%

ii	Slope	0.29	29%	0-10	0.30	30%
				10-20	0.30	30%
				20-30	0.27	27%
				30-40	0.09	9%
				>40	0.04	4%
iii	Proximity to roads	0.10	10%	0-1	0.48	48%
				1-2	0.25	25%
				2-3	0.16	16%
				3-4	0.08	8%
				>4	0.03	3%
iv	Proximity to hospital	0.08	8%	0-2	0.45	45%
				2-4	0.28	28%
				4-6	0.16	16%
				6-8	0.08	8%
				>8	0.03	3%
v	Proximity to town centers	0.05	5%	0-2	0.48	48%
				2-4	0.25	25%
				4-6	0.16	16%
				6-8	0.08	8%
				>8	0.03	3%
vi	Proximity to schools	0.04	4%	0-1	0.48	48%
				1-2	0.25	25%
				2-3	0.16	16%
				3-4	0.08	8%
				>4	0.03	3%
vii	Population density	0.02	2%	< 300	0.49	49%
				300-1,000	0.26	26%
				1,000-2,000	0.15	15%
				2,000-3,000	0.07	7%
				< 300	0.49	49%
viii	Land use	0.13	13%	Coconut	0.09	9%
				Chena	0.15	15%
				Forest	0.02	2%
				Home garden	0.18	18%
				Coconut	0.09	9%
				Paddy	0.10	10%
				Tea	0.08	8%
				Rubber	0.08	8%
				Reservoir	0.01	0%
				Scrub	0.25	25%
				Stream	0.01	0%
				Tank	0.01	0%
				Rock	0.01	0%

Table 11: Weights for each criterion

Finally, a model was created to identify suitability areas for residential development in the Kandy District. The map indicates the highly suitable areas, suitable areas, moderately suitable areas, unsuitable areas and extremely unsuitable areas. Furthermore, a comparison was conducted in terms of the DSDs (**Figure 1**).

Results and Discussions

Suitability for Residential Development based on Slope

According to the Digital Elevation Model (DEM) generated using contours, the elevation varies from 61 m to 1,859 m. The highest elevation records from the knuckles mountain region lie in the northern part of the eastern half of the district. Despite this, the Southwestern part of the district shows a comparatively higher elevation (**Figure 2**).

The slope calculated through the DEM varies from 4.78° to 64.93° . Similar to the elevation, the highest degree of the slope can be seen in the direction of Knuckles Mountain region. Slope less than 10° has distributed 728 km² (38.20%) and slope within 10° - 20° distributed in 684 km² (35.89%) while 19.41% of the district (370 km²) covered from the slope within 20° - 30° . Only 101 km² (5.30%) is covered with the slopes within 30° - 40° , and 1.20% (23 km²) of the land area shows more than 40° of slope distribution (**Figure 3**).

According to DSDs, high slope areas belong to Ududumbara DSD, and most of the low slope areas belong to Harispaththuwa, Kundasale, Yatinuwara, Poojapitiya and Udunuwara DSDs. In this context, the lowest slope areas are considered as the most suitable areas for residential development, whereas the high slope areas are considered unsuitable for residential development.

Suitability for Residential Development based on Landslide-prone Areas

As shown in **Figure 4**, the edge line of the Eastern Kandy District and middle part of the district delineated the areas which have no vulnerability while most of the areas in the eastern part of the district and southwestern region fell into the category of high and very high vulnerability.

In addition, the most vulnerable areas belong to Ududumbara, Medadumbara, Panwila and Ganga Ihala Korale DSDs. On the other hand, the less vulnerable areas belong to Pathadumbara, Kundasale, Yatinuwara, Udunuwara and Pathahewaheta DSDs. The eastern part of the Minipe DSD shows no vulnerability while the western part of the Minipe DSD shows high potential for landslide occurrences.

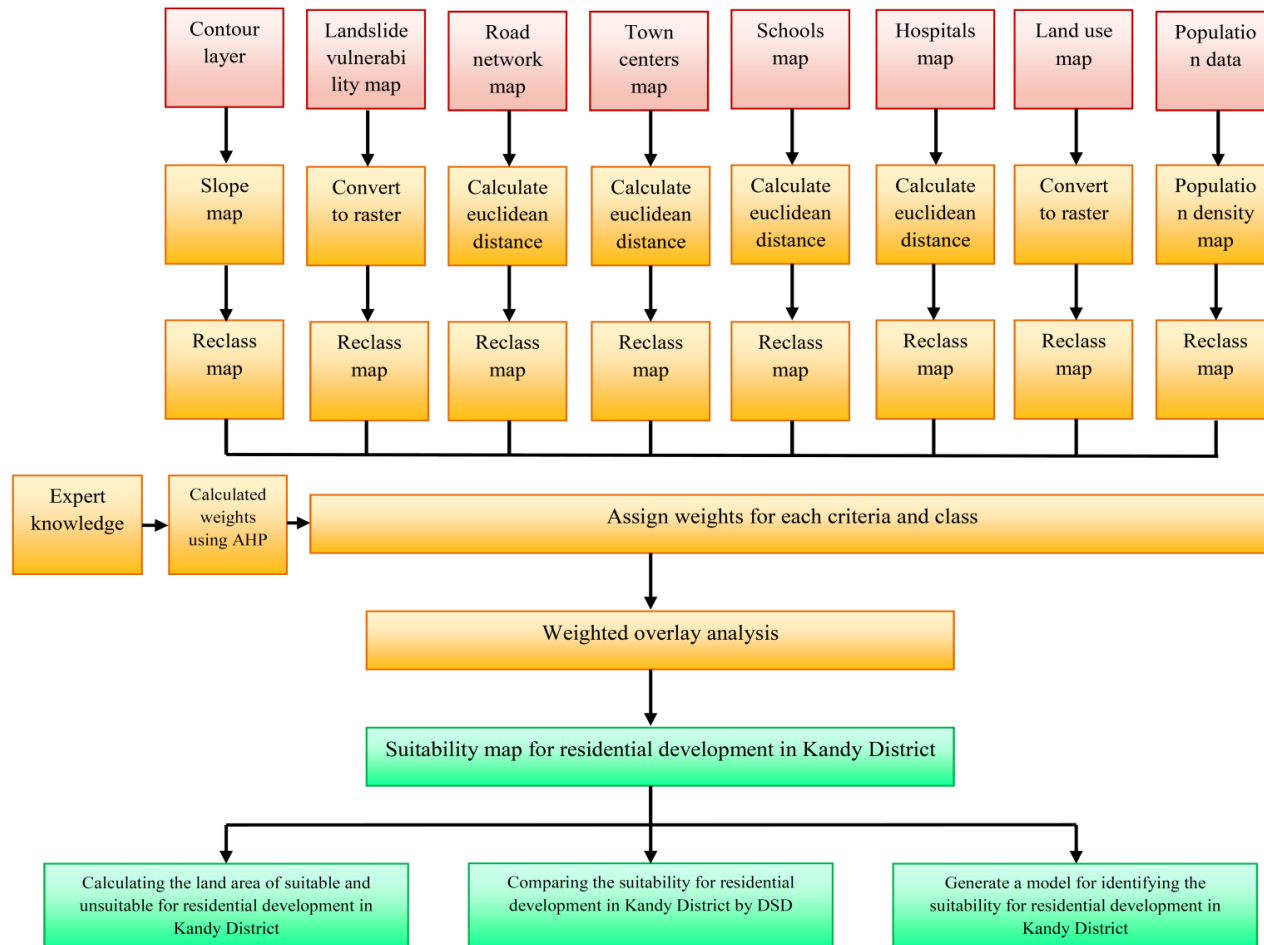


Figure 1: Data processing and analysing the method of the study

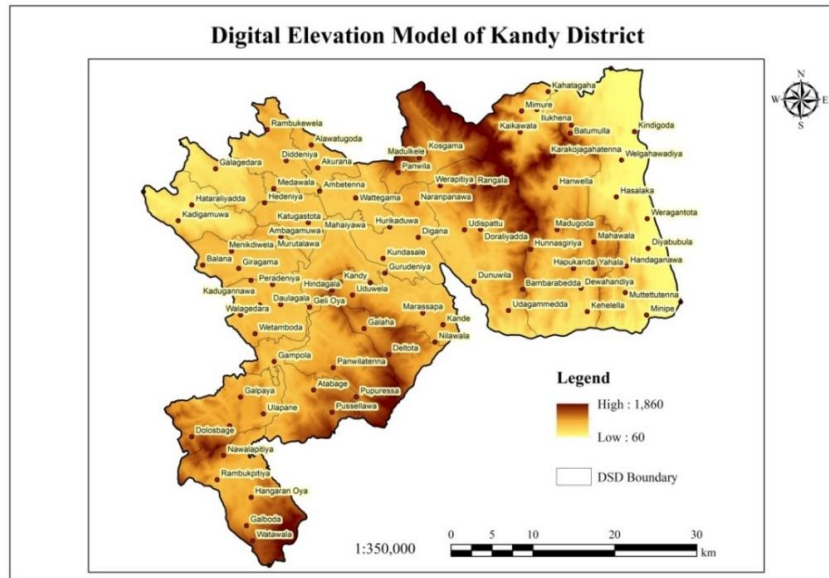


Figure 2: Digital elevation model of the Kandy District

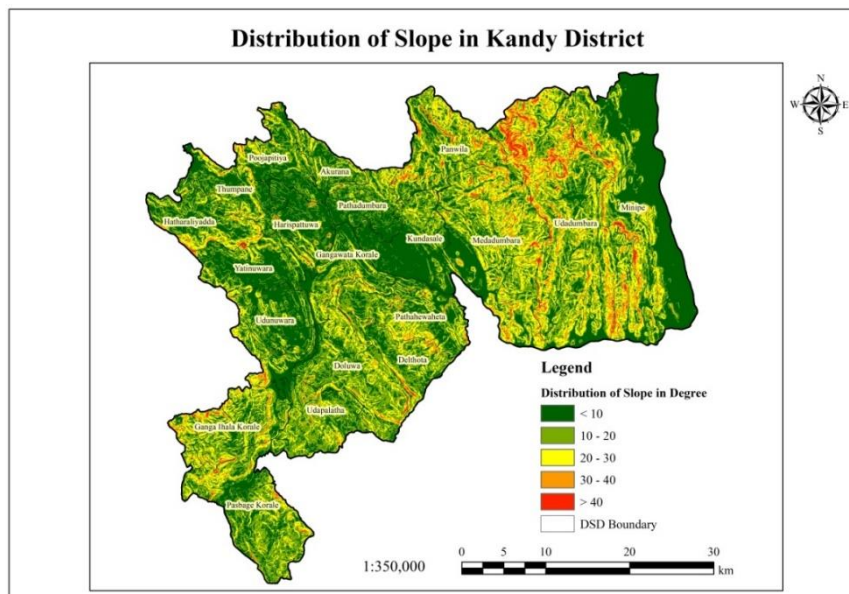


Figure 3: Distribution of slope in the Kandy District

Furthermore, there is no vulnerability of occurring landslides for 561 km² (29.43%) of the land extent of the district. However, only 185

Suitability for Residential Development based on Proximity to Hospitals

There are 85 government hospitals in the Kandy District, including teaching hospitals, district hospitals, base hospitals and central dispensaries. When distribution patterns of hospitals are considered, more hospitals are located in the central and northwestern parts of the district in comparison with others. As a result, almost all the people who live in the western side of the district are able to find a hospital within 2 km diameter area. The people who live in 1,548 km² (81%) land extent of the district can access a hospital within a 2 km area. At the same time, 67 km² (3.52%) of the area, it is difficult to find a hospital unless one travels up to 6 to 8 km. In addition, 23 km² (1.2%) of the area cannot access a hospital even after going 8 km of distance **(Figure 6)**.

According to the DSDs, Ududumbara, north and eastern parts of Panwila, the Northeastern part of Medadumbara, northern and southern parts of Minipe DSDs have a problem to access a hospital, and the people who live in these regions have to travel more than 4 km in search of hospital. Therefore, these areas can be considered as less suitable for residential development.

Suitability for Residential Development based on Proximity to Schools

For this study, only the government schools were considered as schools when analysing proximity to schools. There are 666 government schools situated in Kandy District. Except in the eastern areas of the district, schools are distributed in all other areas. Schools can be found within 1 km in 1,126 km² (58.93%) of the area in the district. The schools lie within 1 to 2 km distance range in 538 km² (28.15%) of land extent.

Similar to hospitals, schools cannot be found within a 4 km distance in the Southwestern area, and some parts of the Ududumbara, Minipe and Pasbage Korale DSDs face this problem **(Figure 7)**.

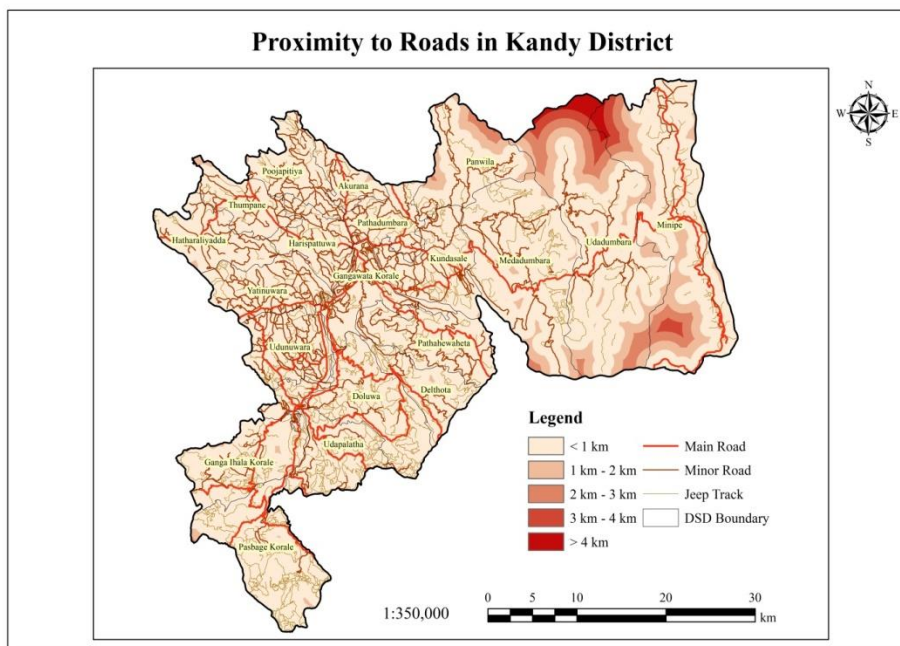


Figure 5: Proximity to roads in the Kandy District

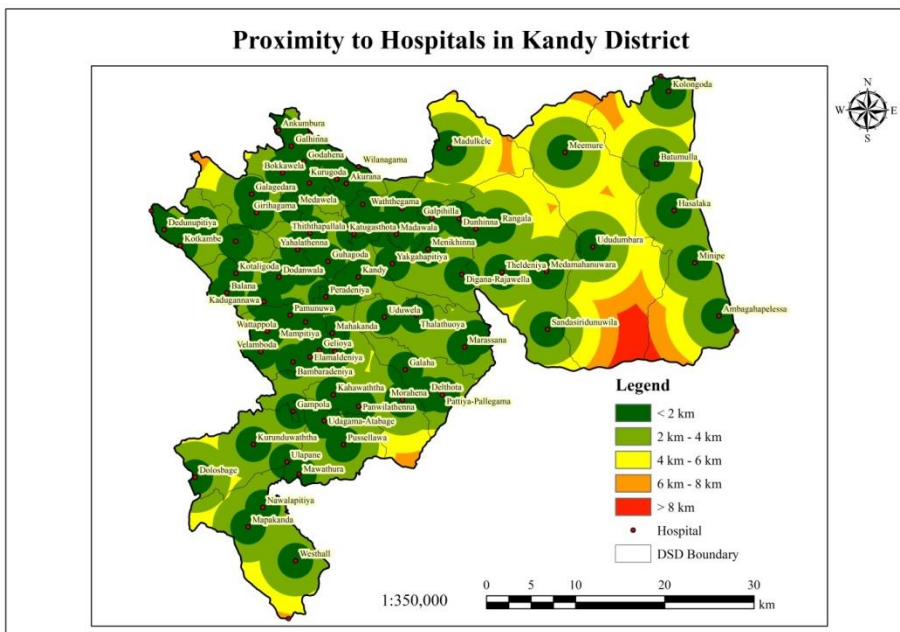


Figure 6: Proximity to hospitals in the Kandy District

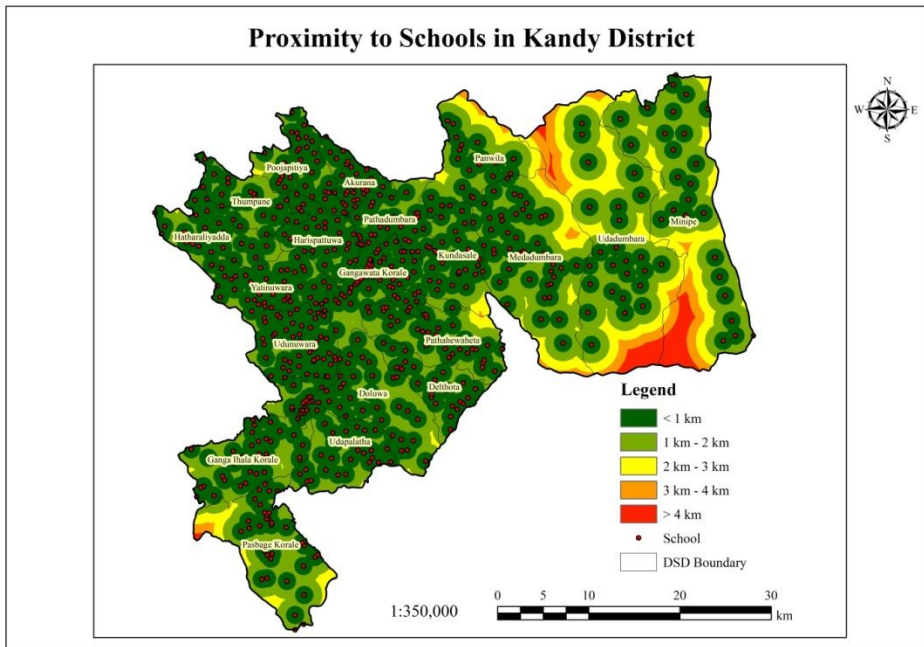


Figure 7: Proximity to schools in the Kandy District

Suitability for Residential Development based on Proximity to Town Centres

91 town centres have been considered in this study for calculated proximity. 906 km² (47.42%) of the area situated in less than 2 km diameter from the town centres while 861 km² (45.04%) of the area situated within 2 km to 4 km distance. However, only the people who live in 20 km² (1.06%) of the area have to travel more than 6 km to find a town mostly in Panwila, Medadumbara, Ududumbara and Minipe DSDs (**Figure 8**). Therefore, the areas located in a distance less than 2 km from town centres were considered as the most suitable for residential development and the areas that deviated from town centres by more than 8 km, as the least suitable areas.

Suitability for Residential Development based on Land Use

In the Kandy District, several land-use patterns were found such as forest, scrubs, chena, coconut, tea, rubber, home garden, paddy, reservoir and tanks. As the major land usage type, home gardens cover 34.2% (655 km²) of the area from the total land extent, tea is cultivated in 22.6% (433 km²) while paddy covers 9.9% (189 km²) of land extent. In addition, forest and scrubs cover 14.3% (273 km²) and 13.6% (261 km²) of area respectively.

Scrubs and home gardens were considered as the most suitable areas for residential development because scrublands are mostly situated in lowlands and kind of potential areas to use for development while the residential development can be already seen associated with home gardens. Chena and paddy areas were considered as moderately suitable since these areas are gradually being converted to landfills, and coconut, rubber and tea were considered as low suitable areas for residential development. Streams, tanks, reservoirs and other areas were considered as unsuitable areas for residential development due to legal and practical barriers of converting as residential areas (Figure 9).

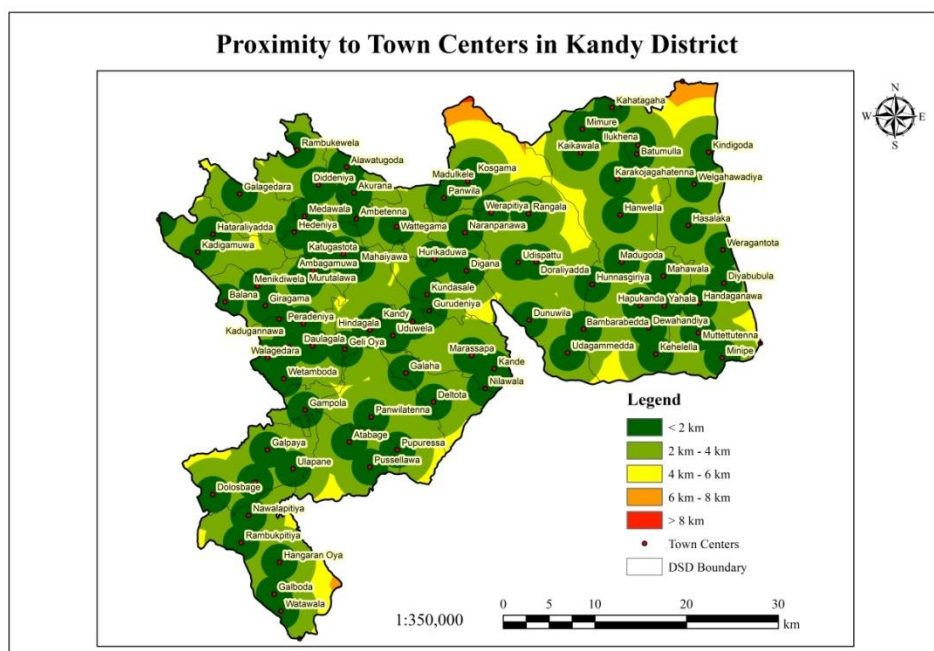


Figure 8: Proximity to town centres in the Kandy District

Suitability for Residential Development based on Population Density

There are 20 DSDs and 1,188 GNDs in Kandy District. According to the statistics in 2016, the total population of the Kandy District was 1,347,612. Gangawata Korale is the most populated DSD in the Kandy District. It records a population of 148,343, and 11.01% from the population living in this DSD. As same as Kundasale, Udunuwara and Yatinuwara DSDs record 127,070 (9.43%), 110,905 (8.23%) and 99,088 (7.35%) of population respectively. On the other hand, Ududumbara,

Panwila and Hatharaliyadda record the least number of population as 22,505 (1.67%), 26,294 (1.95%) and 29,520 (2.19%) respectively

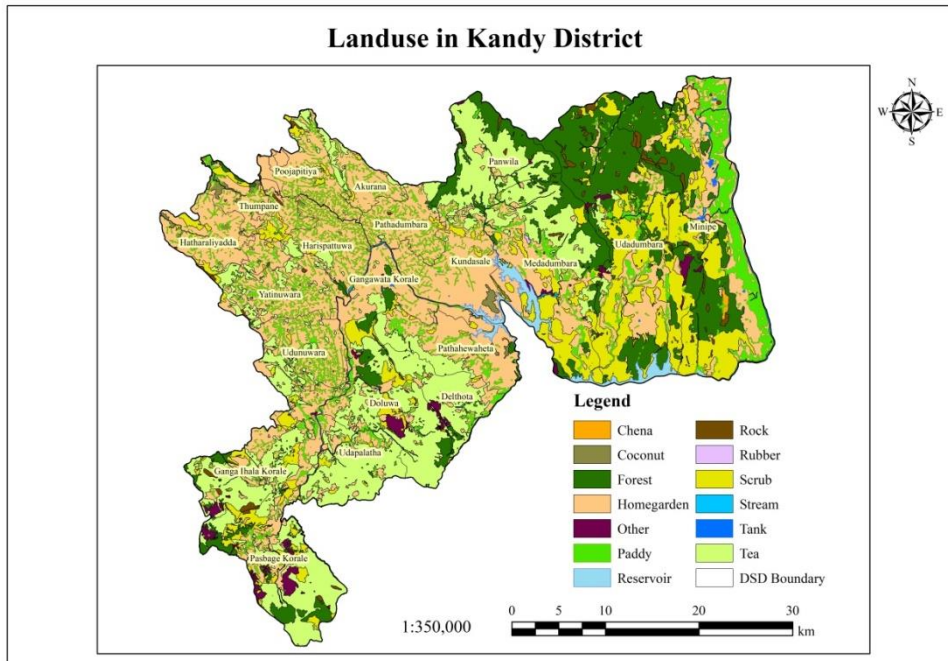


Figure 9: Land use in Kandy District

According to GNDs, Kundasale South is the most populated GND in Kundasale DSD in Kandy District recording 7,040 of population. The second and third populated record Thennekumbura GND in Gangawata Korale DSD and Pussellawa GND belongs to Udapalatha DSD. They record 6,195 and 5,878 of the population, respectively. Imbulpitiya GND belongs to Pabage Korale has the least number of population recording as only 54 people. As same as the Imbulpitiya, Eriyagasthenna GND in Pathadumbara DSD has 60 population, and Karambaketiya belongs to Udadumbara DSD and has 76 of population.

In terms of the population density, Gangawata Korale DSD shows the highest population density as 4,541 people per 1 km². On the other hand, it is the biggest DSD in the district. However, when we look at it on a more micro-scale, according to GND, there is a huge variation in population density. While Bowala GND records 92.49 people per 1 km² as the minimum population density in Gangawata Korale DSD, Poorna Watta West GND records 21,270 people per 1 km² as the maximum population density in Gangawata Korale DSD, as well as the entire district. The second and third highest population density are recorded from Akurana and

Udawalatha DSDs. They record 3,481 people per 1 km² and 2,660 people per 1 km² respectively.

The lowest population density is recorded in Udumbara DSD as 183 people per 1 km². The maximum population density within the DSD is recorded from Bambarabedda East GND as 691 people per 1 km² and the minimum population density within the DSD and within the entire district is recorded from Karambaketiya GND as 6 people per 1 km². Minipe and Panwila DSDs also records the second and third-lowest density (**Figure 10**).

For the purpose of identifying suitable areas for residential development, the densest GNDs considered as least suitable and the low dense GNDs considered as suitable areas.

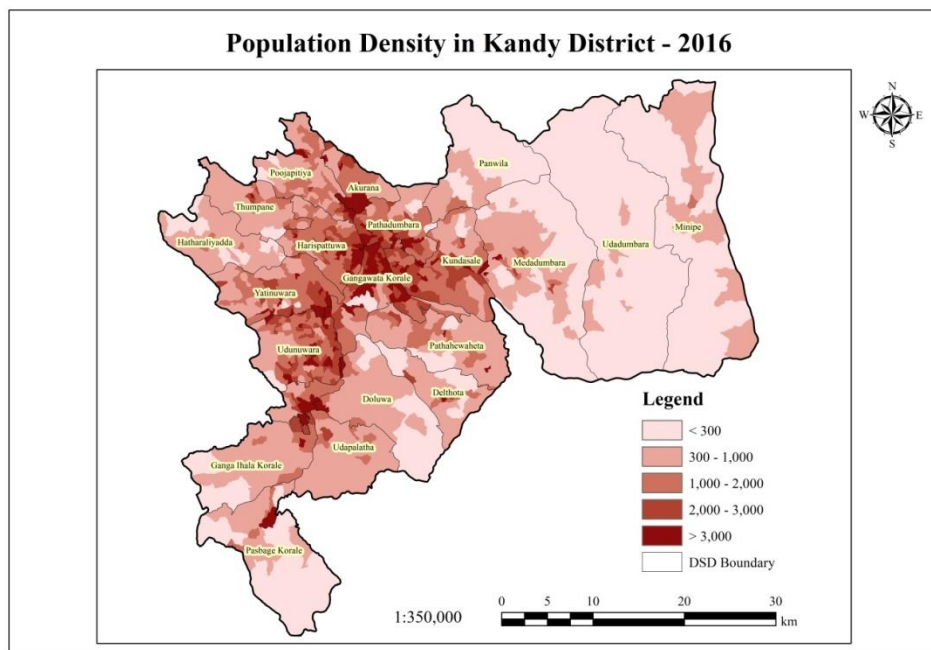


Figure 10: Population density in Kandy District - 2016

Suitability Areas for Residential Development

Based on the above eight criteria, the final suitability map was created for identifying the areas which are suitable for residential development in Kandy District. Results of the analysis indicate that 512 km² of land extent is highly suitable while 666 km² of area is suitable for residential development. As well as, another 390 km² area could be identified as moderately suitable. On the other hand, 260 km² and 78 km²

of areas are unsuitable and extremely unsuitable for residential development respectively (**Figure 11**).

According to the percentage of the total land area of the Kandy District, 26.8% of highly suitable areas and 34.9% of suitable areas for residential development are available in Kandy District. 20.5% of the land area is moderately suitable for residential development. In contrast, 13.7% of the land area is unsuitable, and 4.1% of the area is extremely unsuitable for residential development. Therefore, 82.2% is suitable while 17.8% is unsuitable.

In addition, as the findings indicate, the western part of the district is more suitable for residential development than the eastern part, and most of the unsuitable areas lie in the north eastern part of the district. Figure 11 illustrates the highly suitable, suitable, moderately suitable, unsuitable and extremely unsuitable areas for residential development. As the map indicates, most of the highly suitable areas belong to Minipe, Kundasale, Yatinuwara and Pathadumbara DSDs. In contrast, the highest amount of extremely unsuitable areas for residential development belongs to Ududumbara DSD. Although Minipe DSD records the highest amount of land extent of highly suitable, it records a high amount of extremely unsuitable land extent as well.

According to the DSDs, Minipe DSD has the largest number of highly suitable areas as 95 km² while Kundasale, Yatinuwara and Pathadumbara have 40 km², 36 km² and 35 km² of highly suitable land areas respectively. Harispaththuwa and Panwila DSDs show a very limited number of highly suitable land extent for residential development as 3 km² and 9 km² respectively. For the total of highly suitable areas, Minipe DSD contributes 18.5% and Kundasale, Yatinuwara and Pathadumbara DSDs contribute 7.8%, 7.1% and 6.8% respectively. In addition, Harispaththuwa DSD records 0.6% while Panwila and Delthota DSDs record 1.7% by each.

According to the second category - the suitable areas for residential development-, Ududumbara and Medadumbara record the greatest extent of land area as 75 km² and 61 km² respectively. Minipe DSD has 52 km² of suitable area while Pasbage Korale DSD has 43 km² of suitable areas. Pathadumbara DSD has very few land areas (8 km²) suitable for residential development. Akurana DSD also has 9 km² of suitable land area. When we consider the total, Ududumbara DSD contributed 11.3% while Medadumbara DSD contributes 9.1%. In contrast, Pathadumbara DSD contributes only 1.1% of the total suitable areas.

From 390 km² of moderately suitable areas, 83 km² (21.2%) belongs to Udadumbara DSD and 62 km² (15.9%) of land area is recorded from Medadumbara DSD. Minipe has 42 km² (10.7%) of moderately suitable land area for residential development while Doluwa has 28 km² (7.3%). However, Akurana, Pathadumbara and Harispaththuwa DSDs have the lowest land extent, and belong to a moderately suitable category. Statistically, they record 2 km² (0.5%), 4 km² (1.0%) and 4 km² (1.1%) land extents respectively.

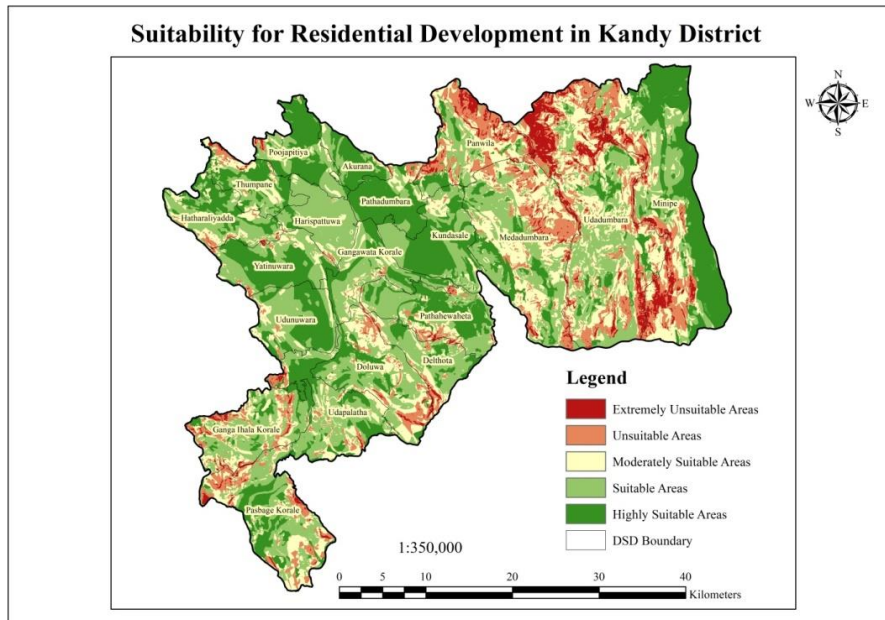


Figure 11: Suitability area extents for residential development in Kandy District

In addition, the highest amount of unsuitable land areas is recorded from Udumbara DSD as 66 km². It is one fourth from the total unsuitable areas. Minipe, Medadumbara, Panwila and Pasbage Korale DSDs also records a high amount of unsuitable conditions for residential development and the land extents are 42 km², 39 km², 30 km² and 22 km² respectively. From the total unsuitable areas, they record 16.1%, 14.8%, 11.3% and 8.3% respectively. Akurana, Kundasale and Harispaththuwa DSDs have less than one square kilometre of unsuitable land areas.

Furthermore, when considering extremely unsuitable land areas for residential development, Udumbara records the highest extremely unsuitable land areas as 36 km². It is 45.7% of the total extremely unsuitable lands. Also, Minipe DSD has 16 km² and Panwila DSD has 9 km² of extremely unsuitable land areas for residential development. Kundasale

DSD does not have any land area that belongs to the extremely unsuitable category while all other DSDs have less than 5 km² area which can be considered as extremely unsuitable for residential development.

Pathadumbara DSD records the highest percentage (71.6%) of its total land area is highly suitable for residential development while Akurana, Poojapitiya and Yatinuwara DSDs record more than 50% of land as highly suitable. The statistics show 59.8%, 55.1% and 52.2% respectively from the total land area of the DSD. On the other hand, Harispaththuwa and Udadumbara have less than 10% of land areas from the total. Harispaththuwa has very few highly suitable land areas and has 83.8% of suitable land areas. When considering highly suitable and suitable lands, more than 90% of areas suitable for living are available in Harispaththuwa DSD. Delthota DSD also has 53.3% of suitable areas from its total land extent. Although Pathadumbara DSD shows the highest percentage of highly suitable land areas, it has only 15.4% of suitable land areas. Except for Pathadumbara DSD, more than 20% of suitable land areas are available in all other DSDs in the Kandy District.

The percentage of moderately suitable land areas from the total land area of each DSD varies from 6.6% to 32.7%. While 6.6% is recorded from Akurana DSD, 32.7% is recorded from Medadumbara DSD. Only 6 DSDs record less than 10% of moderately suitable land areas from the entire land and 7 DSDs record more than 20% of moderately suitable land areas from the total land of each DSD.

Moreover, when considering the unsuitable land areas as a percentage of the total land of each DSD, it varies from 0.8% to 32.3%. A percentage of 0.8% is recorded from Kundasale DSD and 32.3% is recorded from Panwila DSD. In 13 DSDs, less than 10% of unsuitable land areas exist while only 3 DSDs namely Panwila, Udadumbara and Medadumbara show 20% unsuitable areas.

Finally, only Panwila and Udadumbara DSDs record more than 10% of extremely unsuitable land for residential development from its total land area and all other DSDs indicate less than 7% as extremely unsuitable land areas. Harispaththuwa, Kundasale, Udunuwara, Gangawata Korale, Akurana, Hatharaliyadda, Pathadumbara, Poojapitiya and Yatinuwara DSDs have less than 1% of extreme land areas from their total land.

Conclusions

Most of the highly suitable areas for residential development in the Kandy District belongs to Minipe, Kundasale, Yatinuwara and

Pathadumbara DSDs. In contrast, the highest amount of extremely unsuitable areas for residential development belongs to Udadumbara DSD.

Recommendations

Firstly, it is important to consider the areas where highly suitable, suitable, moderately suitable, unsuitable and extremely unsuitable identified through this study when planning and developing the residential places for Kandy District to avoid and minimize the problems occur through unplanned settlements,

Secondly, the DSDs, especially the DSDs identified as which have more unsuitable and extremely unsuitable areas for residential development in Kandy District, should be avoided to plan or develop any residential places in the unsuitable or extremely unsuitable areas without proper planning.

Thirdly, when conducting residential planning and development programmes in Sri Lanka, it will be more effective to minimize long term problems if a suitability study can be conducted based on relevant criteria and the residences can be placed based on the results of the study.

Finally, to convert unsuitable areas to suitable areas for residential development, infrastructure facilities, accessibility to schools and hospitals have been increased while following landslide prevention and mitigation measures, especially focusing most vulnerable areas.

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Examining the role of advertising value perceptions in driving engagement: A framework for assessing hotel/restaurant advertising effectiveness on Facebook

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Abstract

Drawing on the uses & gratifications theory (UGT) and Ducoffe's advertising value model, this study provides a comprehensive framework for assessing Facebook advertising effectiveness, incorporating antecedents of Facebook advertising value and the effect of this advertising value on engagement. The data were collected through an online questionnaire survey, and the final sample consisted of 290 young respondents in Sri Lanka. The conceptual framework was tested with a structural equation modeling (SEM) approach using AMOS 21.0. The results indicated that perceived informativeness, entertainment, credibility, and interactivity of hotel/restaurant Facebook advertising were positively related to advertising value, which in turn affected advertising engagement. Interestingly, the findings highlighted that credibility was the strongest predictor of advertising value, with interactivity in second place. While providing novel insights into both academics and Facebook marketers, this study highlights the importance of determining Facebook advertising campaign success with respect to its ability to influence both customer perceptions and online behaviours.

Keywords *Advertising engagement, advertising value, informativeness, entertainment, credibility, interactivity*

Introduction

Social networking sites (SNSs) are an effective tool for marketers to reach the audience with their advertising content, and in fact, now they have become an integral part of the marketing strategy across diverse industries. As the cost associated with delivering advertising messages to a mass audience has become excessive, marketers have begun shifting away from the sole use of traditional media (Logan, Bright, & Gangadharbatla, 2012; Murillo, Merino, & Núñez, 2016) and started to invest in SNSs (Cheung, Pires, Rosenberger, & De Oliveira, 2020). Social media advertising is viewed as a low-cost model (Hamouda, 2018),

enabling companies to reach and personally integrate with millions of their customers through advertising programs (Logan et al., 2012) in minimum time possible (Saxena and Khanna, 2013). Unsurprisingly, therefore, there has been a global tendency that companies are allocating more of their advertising budgets on social media (Duffett, 2015; Knoll, 2016). Among various SNSs, Facebook is considered to be a less expensive advertising medium relative to high paying offline mediums (Wiese, Martínez-Climent, & Botella-Carrubi, 2020), and hence, it has undoubtedly become the most popular SNS for both marketers and customers (de Silva, 2021).

Given the proliferation of social media advertising, there had been an increasing academic attention to analyze the effectiveness of this new means of advertising over the recent past. Nevertheless, there is still a dearth of research and a little understanding of the social media advertising effectiveness (Gaber, Wright, & Kooli, 2019), calling for more studies to better gauge the social media advertising effectiveness (Wiese et al., 2020). The past studies that attempted at analyzing the online advertising effectiveness highlighted that factors such as informativeness, entertainment (Ducoffe, 1996; Brackett and Carr, 2001; Logan et al., 2012; Saxena and Khanna, 2013; Van-Tien Dao, Nhat Hanh Le, Ming-Sung Cheng, & Chao Chen 2014; Dehghani, Niaki, Ramezani, & Sali, 2016; Hamouda, 2018), personalization/customization (Xu, Liao, & Li, 2008; Dehghani et al., 2016) irritation (Ducoffe, 1996; Saxena and Khanna, 2013; Logan et al., 2012; Dehghani et al., 2016) and credibility (Brackett and Carr, 2001; Van-Tien Dao et al., 2014; Murillo et al., 2016; Hamouda, 2018) could predict overall advertising value perceptions. While the aforementioned studies were of importance for gauging customer online advertising value perceptions, they failed to provide insights into subsequent online customer behaviours. However, to leverage social media advertising, marketers should understand not only customer perceptions, but also how these customer perceptions lead to subsequent engagement behaviours (Wiese et al., 2020).

In practice, social media campaign success is largely measured with the available online metrics linked to engagement behaviours (de Vries, Gensler, & Leeflang, 2012; Ashley and Tuten, 2015; Voorveld, van Noort, Muntinga, & Bronner, 2018), suggesting the vital role of customer engagement behaviours in determining campaign success. Despite a need to investigate the advertising effectiveness on Facebook in terms of both customer perceptions and subsequent engagement behaviours (Wiese et al., 2020), there is a lack of scholarly investigation to understand how

customer's mindset and perceptions lead to engagement behaviours (Schivinski, 2019). Moreover, the literature highlights that most of the past work in the area has focused on Europe and the United States although there has been a growing SNS usage in emerging markets (Duffett, 2015; Wiese et al., 2020), warranting further investigation into Facebook advertising effectiveness in emerging markets.

Accordingly, given the context-specific nature of engagement construct (Hollebeek, 2011; Voorveld et al., 2018), this study focuses on the hospitality sector, particularly hotel/restaurant Facebook advertising in Sri Lanka to fill the aforementioned gaps. Sri Lanka is considered to be an emerging market, where the engagement with hotel/restaurant Facebook advertising content generally remains at a low level (de Silva, 2019) although Facebook has become the mostly used SNS by marketers (de Silva, 2021). Globally, almost every hotel/restaurant brand tends to maintain a Facebook account as young consumers use Facebook to receive product-related information (Gruss, Kim, & Abrahams, 2020) and to interact with like-minded others (de Silva, 2019). Despite its importance, there is still a dearth of research for understanding Facebook advertising effectiveness in hospitality sector (Hamouda, 2018), setting a foundation for focusing on hotel/restaurant Facebook advertising with this study. Accordingly, understanding what leads to overall Facebook advertising value perceptions and the resulting engagement behaviours in an underexplored context will be of paramount relevance for both marketers and scholars.

Ducoffe's advertising value model (1996) is a widely used model among the scholars who endeavored to analyze the advertising effectiveness in the online context (Logan et al., 2012; Saxena and Khanna, 2013; Shareef, Mukerji, Dwivedi, Rana, & Islam, 2019), and is linked with uses & gratifications theory (UGT). Although Ducoffe's advertising value model (1996) has been mainly applied in social media advertising research, the model is yet to be applied to investigate the engagement with brands on social media (Florenthal, 2019). Accordingly, building on the UGT and Ducoffe's advertising value model (1996), this study aims to provide an integrative framework for assessing Facebook advertising effectiveness, consisting of antecedents of Facebook advertising value and the resulting advertising engagement. As such, the objectives of this study are twofold; to identify the antecedents of advertising value, and to examine the effect of advertising value on advertising engagement in the context of hotel/restaurant Facebook advertising.

The remainder of the manuscript is as follows. First, the paper reviews the relevant literature to develop the study hypotheses. Second, the paper presents the research methods, followed by the data analysis and findings of the study. Next, the paper discusses the results of this study together with implications, followed by limitations and future research directions. Finally, the paper provides a general conclusion.

Literature Review and Hypotheses

Social Media Advertising

Social media advertising refers to all forms of explicit and implicit advertising delivered via SNSs (Taylor, Lewin, & Strutton, 2011), and it mainly includes organic advertising, that appears on friends' newsfeeds (Noguti and Waller, 2020); and paid advertising, which appears as sponsored posts on users' newsfeeds (Wiesea et al., 2020). On Facebook, after joining a particular brand page, organic content will appear on customers' newsfeed (Xue, 2019), allowing brands to communicate with customers at no cost. On the other hand, paid advertising content involves a cost to the advertiser, and it includes sponsored content, pay-per-click, carousel and video advertisements (Wiesea et al., 2020). In general, whether it is organic content or paid advertising, both are capable of providing customers with informative and entertaining content (Hamouda, 2018; Noguti and Waller, 2020), enabling brands to engage customers on social media (Wiesea et al., 2020). Despite its importance, studies on both organic and paid social media advertising is scant (Xue, 2019; Wiesea et al., 2020).

Advertising Value

As noted by Ducoffe (1995,1996), advertising value refers to consumers' perceptions of the relative worth or utility of advertising, which is mainly caused by three main consumer beliefs associated with advertising content; informativeness, entertainment, and irritation. Ducoffe's advertising value model is linked with UGT (Logan et al., 2012). The UGT suggests that media users actively seek to gratify certain needs from the media content, which determine their subsequent attitudes and behaviours (Gan and Wang, 2015; Katz, Blumler, & Gurevitch, 1974). UGT has been widely used in communication research (Ruggiero, 2000; Calder, Malthouse, & Schaedel, 2009; Gan and Wang, 2015) to understand underlying customer motives for choosing a particular media over others. In the context of social media, a growing stream of work applied UGT to explain why customers use social media (Whiting and Williams, 2013; Gan

and Wang, 2015), engage on social media brand communities (de Silva, 2019) and, engage with online brand-related content (Muntinga, Moorman, & Smit, 2011). Drawing on the UGT, past research highlights that information, entertainment, and credibility serve as the predictors of advertising value (Murillo et al., 2016) and customer attitudes toward social media advertising (Gaber et al., 2019). The interactive nature of online platforms requires customer to play an active role (Luo, 2002), and hence, there is a necessity of including 'interactivity' in the UGT framework (Ruggiero, 2000).

Notably, antecedents in Ducoffe advertising value model (1996) relate to consumers' experience with advertising while traditional advertising effectiveness measures emphasize advertising outcomes (Logan et al., 2012). Moreover, the interactive nature of Facebook advertising has shifted the control from marketer to consumer, and hence, Ducoffe's model (1996) is more appropriate in investigating advertising effectiveness in the realm Facebook. Furthermore, Ducoffe (1996) stressed that the model could be applied in the online advertising and television advertising contexts as well, proposing that the measure is media-agnostic in nature.

Accordingly, in subsequent research, the model was used in the realm of web advertising (Brackett and Carr, 2001; Xu et al., 2008; Sun, Lim, Jiang, Peng, & Chen, 2010), social media advertising (Taylor et al., 2011; Logan et al., 2012; Saxena and Khanna, 2013; Van-Tien Dao et al., 2014; Dehghani et al., 2016; Murillo et al., 2016; Hamouda, 2018; Shareef et al., 2019), and television advertising (Logan et al., 2012). Brackett and Carr (2001) validated Ducoffe's advertising value model, incorporating credibility as an additional driver of advertising value. Additionally, the literature highlights the importance of understanding role of perceived interactivity as a driver of Facebook advertising value (Logan et al., 2012; Hamouda, 2018). In recent work, however, irritation was identified as a non-robust predictor of advertising value construct (Logan et al., 2012; Murillo et al., 2016). As such, drawing on UGT and Ducoffe advertising value model, this study focuses on informativeness, entertainment, credibility and interactivity in predicting customer Facebook advertising value perceptions.

Informativeness

According to Ducoffe (1995, 1996), informativeness refers to the extent to which the ads assist consumers in acquiring product-related information that they need. Information acquisition is one of the primary

motivations for using SNSs (Raacke and Bonds-Raacke, 2008). A survey conducted by Whiting and Williams (2013) found that 90 % of the participants in the sample revealed that they were using SNSs to acquire information, signaling the importance of information acquisition motive among the SNS users.

Taylor et al. (2011) noted that perceiving SNS advertising as informative will positively influence attitudes toward advertising. They further stressed that younger adults were more likely to appreciate informativeness than entertainment in assessing the value of advertising on SNSs. Nevertheless, consumers sometimes feel overwhelmed by the vast amount of online information (Powers, Advincula, Austin, Graiko, & Snyder, 2012). Savvier the online advertising, then consumers' overall response tends to be increasingly negative and the values of such advertisements are skeptical (Cho and Cheon, 2004; Coulter, Zaltman, & Coulter, 2001). However, although the advertising on SNSs is technically online advertising (Logan et al., 2012), the interactive nature of SNS distinguishes information delivered through SNSs advertising from traditional web advertisements (Saxena and Khanna, 2013; Wiese et al., 2020). Therefore, the study hypothesizes,

H1: Perceived informativeness of Facebook advertising is positively related to advertising value perceptions.

Entertainment

The extent to which the ads satisfy the audience's needs of escapism, diversion, aesthetic enjoyment, or emotional release is referred to as entertainment (Ducoffe, 1995, 1996). If the advertising is perceived as entertaining, it will also be evaluated as informative (Ducoffe, 1996; Saxena and Khanna, 2013), suggesting the pivotal role of entertainment value. Moreover, the importance of entertaining ads in generating positive brand attitudes is well documented in the extant literature (Shavitt, Lowrey, & Haefner, 1998).

The advertisements embedded on SNSs can entertain the audience (Saxena and Khanna, 2013), and the increased entertainment value associated with advertising can increase the worth of the advertisement (Ducoffe, 1996). The literature provides further evidence on the relationship between entertainment value and social media advertising (Logan et al., 2012; Saxena and Khanna, 2013; Van-Tien Dao et al., 2014; Dehghani et al., 2016). Hence, the study hypothesizes,

H2: Perceived entertainment of Facebook advertising is positively related to advertising value perceptions.

Credibility

Expression of consumers' expectations about the fairness and factualness of advertising is referred to as advertising credibility (Logan et al., 2012). Younger generation tends to perceive online advertising as more credible (Johnson and Kaye, 1998), especially if the information is convincing and confirming (Johnson and Kaye, 2014). The extant literature provides evidence on the relationship between credibility and advertising value (Brackett and Carr, 2001; Prendergast, Liu, & Poon, 2009; Van-Tien Dao et al., 2014; Gaber et al., 2019).

The past studies provide some insights into the role of message source in customer evaluation of SNS advertising. The literature suggests that consumer-generated SNS brand messages tend to be more persuasive than marketer-generated SNS brand messages (Lee, Kim, & Kim, 2011; Shareef et al., 2019, de Silva, 2021). Chatterjee (2011), however, suggests that the source of the message may not produce greater persuasiveness, although it can produce more responses. Although the source of the message can play an important role, Facebook advertisements are designed in a way that makes it difficult for customers to distinguish them from those of the other user-generated content (Wiese et al., 2020). Additionally, on Facebook, customers are able to access opinions of their close contacts for respective advertisements (Van-Tien Dao et al., 2014), so that credibility perceptions are likely to be enhanced, resulting in favorable customer evaluations. Accordingly, the study hypothesizes,

H3: Perceived credibility of Facebook advertising is positively related to advertising value perceptions.

Interactivity

The interactive nature of online advertising has changed the way consumers perceive advertising (Yaakop, Anuar, & Omar, 2013). The literature suggests that interactivity plays a vital role in influencing customer perceptions (Brackett and Carr, 2001), attitudes (Yaakop et al., 2013), and engagement behaviours (Gutiérrez-Cillán, Camarero-Izquierdo, & San José-Cabezudo, 2017; Cheung et al., 2020). Different media are attributed with different levels of interactivity, which can be expressed in terms of the extent to which the media permits its users to influence the nature and form of the content (Steuer, 1992). Compared to banner advertising, Facebook allows consumers to interact with advertising content with 'likes', 'comments', and 'shares' (Duffett, 2015). Hence, given the more interactive nature of Facebook advertising (Yaakop et al., 2013;

Van-Tien Dao et al., 2014), interactivity can effectively be managed to positively influence customer advertising value perceptions. This study therefore hypothesizes,

H4: Perceived interactivity of Facebook advertising is positively related to advertising value perceptions.

Advertising Engagement

Customer engagement literature suggests that engagement is a multidimensional construct, which includes cognitive, affective/emotional and behavioural components (Brodie, Hollebeek, Jurić, & Ilić, 2011). The behavioural component of engagement has been of greater emphasis for scholars (de Vries et al., 2012; de Silva, 2021) and, is expressed as consumer's energy, time, and effort exerted in the brand/brand elements (Brodie et al., 2011; Hollebeek 2011). The behavioural component can include any type of activity in the advertising context (Brodie, Ilic, Juric, & Hollebeek, 2013), which would go beyond the usual buyer-seller transactions (van Doorn et al., 2010). The typology introduced by Muntinga et al. (2011) can be used to better understand the activities included in the behavioural component of engagement. Behavioural engagement describes customer interactions with the content in the form of consumption, contribution and creation (Muntinga et al., 2011; Schivinski, Muntinga, Pontes, & Lukasik, 2019). Consuming activities describe the lowest level of behavioural engagement, which include behaviours such as reading and watching content. Contribution includes activities such as 'liking' and 'commenting', and it represents a moderate level of engagement. The highest form of engagement is referred to as creation, which includes behaviours involving changing the form and nature of the content. Contribution and creation describe an active engagement and, are of more importance than the passive consuming activities (Muntinga et al., 2011). In practice, marketers are more likely to measure the social media campaign success in terms of contributing activities, where they rely on measures such as 'likes', 'comments', and 'shares' (Ashley and Tuten, 2015; Voorveld et al., 2018; Schivinski, 2019; Schivinski et al., 2019) in deciding if the campaign was successful. Accordingly, building on the aforementioned facets of behavioural engagement, this study focuses on 'likes', 'comments', and 'shares' in measuring engagement with Facebook advertising content.

The literature suggests that both user evaluations/perceptions and behaviours are of importance for enhancing advertising effectiveness (Calder et al., 2009). Martínez-Navarro and Bigné (2017) highlighted that

advertising value could spur electronic word-of-mouth behaviours (e-WOM), supporting the notion that advertising effectiveness should be determined based on its ability to influence both perceptions and behaviours. Additionally, Schivinski et al. (2019) argued that engagement with brand-related content was driven by their overall perceptions and evaluations about the brand. Hence, it is argued that the advertising value can lead to engagement with the advertisement. Thus, the study hypothesizes,

H5: Facebook advertising value is positively related to advertising engagement.

The hypothesized relationships are depicted in Figure 1.

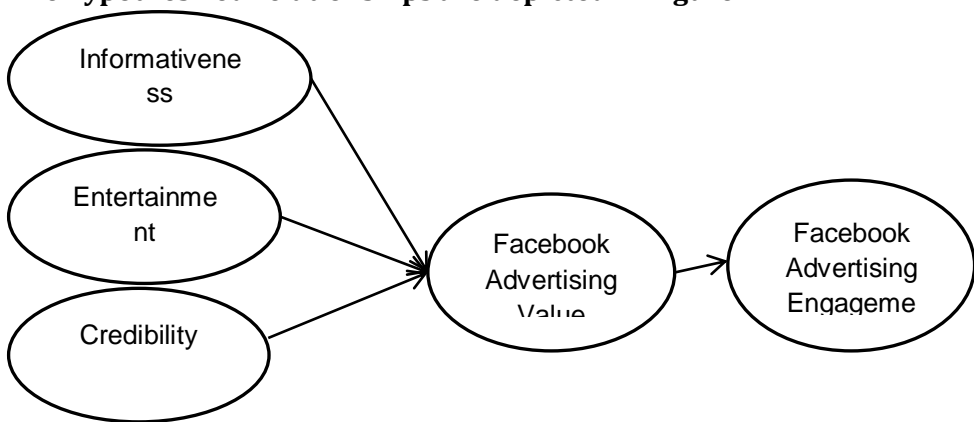


Fig. 1. Conceptual framework

Research Methods

Sample Design and Data Collection

Given the fact that young adults (Florenthal, 2019), particularly students are the main users of Facebook (Van-Tien Dao et al., 2014; de Silva, 2019), with this rationale, undergraduates at state universities (de Silva, 2021) in Sri Lanka were considered as the sample respondents. Before collecting the data through an online questionnaire survey, the questionnaire was pretested among 50 undergraduates at the University of Ruhuna, Sri Lanka, who had experience of at least one year of using Facebook. Additionally, the content validity of the survey instrument was ensured with the inputs from three academics in the field. After incorporating their suggestions, the questionnaire design was finalized, ensuring the logical flow of the survey instrument. Due to there was no access to a sampling frame, consistent with the majority of the past studies in the context of Facebook (Van-Tien Dao et al., 2014; de Silva, 2021), the

convenience sampling technique was employed to collect the data. Respondents were invited to take part in the questionnaire survey with a link sent via Facebook messenger, resulting in 345 responses. Respondents' eligibility to participate in the survey was initially ensured with two questions that asked if they were using Facebook for the past year and were exposed to hotel/restaurant-related Facebook advertising content, respectively. If any respondent was not exposed to hotel/restaurant-related Facebook content in the past year, they were not qualified to proceed to the remainder of the questionnaire (see Figure 2).

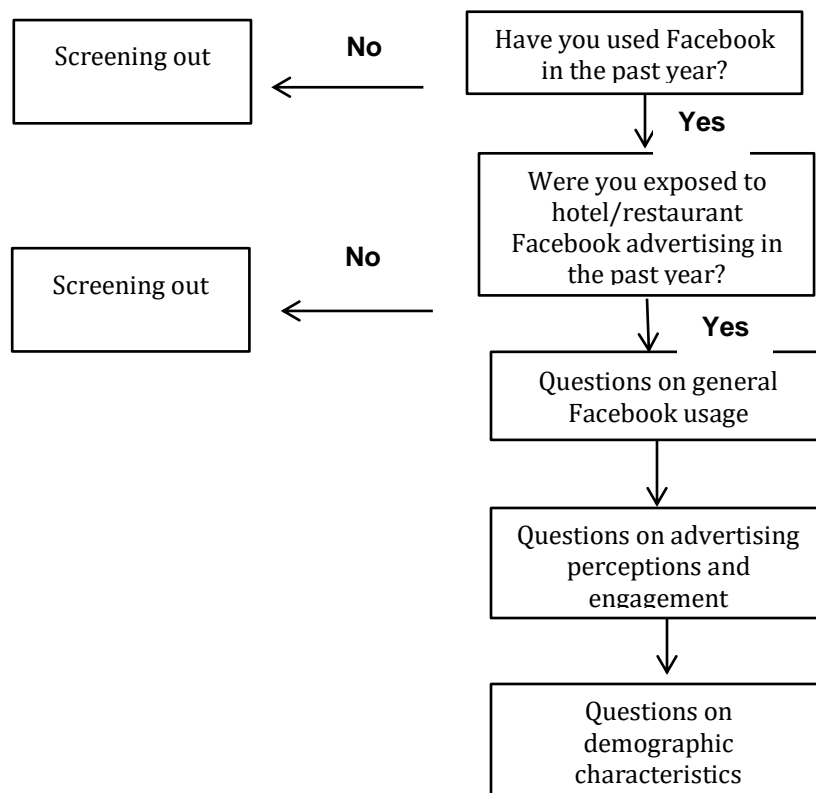


Fig. 2. Survey instrument design

To supplement the undergraduate sample, snowball technique was also used, where respondents were asked to share the link with their close undergraduate friends after completing the questionnaire survey. Nonresponse rate computation was infeasible in this study, mainly due to online tools do not assist in capturing the number of users who accessed the survey link (Schivinski, 2019). Deutsdens, De Ruyter, and Wetzels (2006), however, highlight that online data collection tools increase the response rates, ensuring that the nonresponse is effectively handled in this study using an online tool.

Respondents were instructed to respond to the scale items in the questionnaire by considering their perceptions and behaviours toward hotel/restaurant Facebook advertising content. After removing unusable responses (questionnaires with missing responses), 290 questionnaires remained for further analysis, which met the minimum sample size requirement specified in the literature (Hair, Black, Babin, & Anderson, 2014). To further ensure that nonresponse bias is not an issue in the data of the final sample, sample respondents were divided into two separate groups (> 15 days and < 15 days), depending on the time taken to return the questionnaire. Homogeneity of variance was then tested with Levene's test, and the results highlighted that it was not significant ($p > 0.05$), suggesting that nonresponse bias does not exist in the sample data. Of the sample of 290 respondents, males comprised 60 per cent of the respondents, whereas 40 per cent were females. The majority of the respondents ranged in age from 22 to 24 years (50.7 per cent), and logging on Facebook daily (53.8 per cent). The detailed respondent characteristics are presented in **Table 1**.

Respondent characteristics	Frequency (<i>n</i>)	Per cent
<i>Gender</i>		
Male	174	60.0
Female	116	40.0
<i>Age</i>		
18-21	77	26.6
22-24	147	50.7
25-29	66	22.8
<i>Facebook log-in frequency</i>		
Daily	156	53.8
2-4 times a week	78	26.9
Once a week	32	11.1
2-4 times a month	15	5.2

Table 1. Respondent characteristics

The study adapted already validated measures from the existing literature with slight modifications, ensuring the scales fit the context. A five-point Likert type scale, ranging from 1 – 'strongly disagree' to 5 – 'strongly agree' was employed to measure each construct. The study measured the informativeness construct using five items adapted from the scales developed by Ducoffe (1996) and Logan et al. (2012). Entertainment was measured with a three-item scale adapted from Ducoffe (1996) and Logan et al. (2012). The construct of credibility was operationalized with the existing scale of Brackett and Carr (2001). Interactivity was measured with a three-item scale, in which the items

were borrowed from Cheung et al. (2020). A three-item scale adopted from Ducoffe (1996) was used to measure the advertising value construct while the advertising engagement was operationalized with three items borrowed from Gutiérrez-Cillán et al. (2017) and Schivinski (2019).

Data Analysis and Results

Data Screening

Construct	Factor loading	Mean	SD
<i>Informativeness</i>			
FB paid advertising is a good source of product information	.661	3.233	.904
FB paid advertising supplies relevant product information	.767		
FB paid advertising provides timely information	.780		
FB paid advertising is a good source of up-to-date product information	.672		
FB paid advertising is a convenient source of product information	.654		
<i>Entertainment</i>			
FB paid advertising is entertaining	.828	3.652	.826
FB paid advertising is enjoyable	.775		
FB paid advertising is pleasing	.714		
<i>Credibility</i>			
FB paid advertising is credible	.760	3.435	.939
FB paid advertising is trustworthy	.867		
FB paid advertising is believable	.610		
<i>Interactivity</i>			
FB paid advertising facilitates two-way communication	.845	3.038	.952
FB paid advertising is an easy way to interact with others	.853		
FB paid advertising provides a smooth interactive experience	.736		
<i>Advertising value</i>			
FB paid advertising is valuable	.734	3.195	.991
FB paid advertising is useful	.833		
FB paid advertising is important	.861		
<i>Advertising engagement</i>			
I contribute to FB paid advertising content with 'likes'	.774	3.284	.789
I comment on FB paid advertising content	.687		
I share FB paid advertising content with	.840		

Table 2. Factor loading, mean, and standard deviation

First, multivariate assumptions; normality, linearity, homoscedasticity and multicollinearity of data were assessed with SPSS 21.0. Normality of the data was ensured with skewness and kurtosis values, in which the values within the range of -2.00 and +2.00 suggest that data are normally distributed. Curve estimation and scatterplots were used to test the linearity and homoscedasticity, respectively, and the results met the requirements specified by Hair et al. (2014). Next, with variance inflation factor (VIF), multicollinearity was assessed, and the results revealed that the maximum value was 1.422 between constructs, suggesting that multicollinearity was not a pervasive issue in the data (Hair et al., 2014). After that, an exploratory factor analysis (EFA) using the principal component method with Varimax rotation was performed to understand the structure of the constructs. The items loaded separately on respective constructs, with no evidence of cross-loading at the suppressed value of 0.5 (Hair et al., 2014). The results of the EFA highlighted that the Kaiser-Meyer-Olkin measure was 0.834, and Bartlett's Test of Sphericity was significant ($p < 0.001$), so that the factor analysis was satisfactory. **Table 2** shows factor loading, mean, and standard deviation (SD) for all six

Common Method Bias

Due to the existence of common method bias (CMB) can lead to incorrect conclusions; the CMB was assessed with Harman's one factor test. In here, an unrotated factor solution was derived to see the amount of variance explained by all the items loaded on a single factor. The results highlighted that a single factor with all items accounted for 36 per cent of the total variance, suggesting that CMB did not exist in the data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Confirmatory Factor Analysis

As data met the multivariate assumptions and minimum sample requirements, by following the suggestions of Hair et al. (2014), covariance-based structural equation modeling with AMOS 21.0 was employed for subsequent data analysis. Due to all the items used to measure respective constructs were centered upon a common theme, they were treated as reflective models (Ford, 2017).

Before testing the hypothesized relationships, a confirmatory factor analysis (CFA) was performed to assess if the model fitted the data.

The result of the CFA indicated a satisfactory model fit to the data with $\chi^2/df=1.341$, GFI= 0.933, AGFI= 0.909, NFI= 0.923, IFI=0.979, TLI=0.974, CFI=0.979, RMSEA=0.034, SRMR= 0.057. As Portrayed in **Table 3**, Cronbach's alpha (> 0.7), composite reliability (> 0.7), and average variance extracted (AVE) values (≥ 0.5) of all constructs met the threshold levels (Bagozzi and Yi, 1988), establishing the reliability and the convergent validity of the study constructs. Moreover, as shown in Table 3, discriminant validity was also established because the square root of

	α	CR	AVE	MSV	(1)	(2)	(3)	(4)	(5)	(6)
Informativeness (1)	0.800	0.801	0.501	0.356	0.708					
Entertainment (2)	0.752	0.754	0.505	0.356	0.514*	0.711				
Credibility (3)	0.723	0.729	0.503	0.465	0.431*	0.596*	0.709			
Interactivity (4)	0.799	0.808	0.588	0.268	0.518*	0.246*	0.342*	0.767		
Advertising value (5)	0.880	0.880	0.711	0.465	0.597*	0.593*	0.682*	0.510*	0.843	
Advertising engagement (6)	0.806	0.812	0.590	0.394	0.477*	0.465*	0.538*	0.412*	0.628*	0.768

Path	Hypothesis	Estimate	S.E.
Informativeness → ad value	<i>H1</i>	0.231**	0.085
Entertainment → ad value	<i>H2</i>	0.248*	0.116
Credibility → ad value	<i>H3</i>	0.526***	0.116
Interactivity → ad value	<i>H4</i>	0.279**	0.089
Ad value → ad engagement	<i>H5</i>	0.668***	0.053
Path	Hypothesis	Estimate	S.E.
Informativeness → ad value	<i>H1</i>	0.231**	0.085
Entertainment → ad value	<i>H2</i>	0.248*	0.116
Credibility → ad value	<i>H3</i>	0.526***	0.116
Interactivity → ad value	<i>H4</i>	0.279**	0.089
Ad value → ad engagement	<i>H5</i>	0.668***	0.053

Notes: * $p < .001$, α - Cronbach's alpha; CR - composite reliability; AVE - average variance extracted; MSV - maximum shared variance; bold diagonal values are the square root of AVE; inter-construct correlations are on the off-diagonal.

Table 3. Reliability and validity

Hypotheses Testing and Mediation Analysis

The fit indices for the proposed structural model revealed an acceptable overall model fit: $\chi^2/df=1.371$, GFI=0.930, AGFI=0.908, NFI=0.919, IFI=0.977, TLI=0.972, CFI=0.976, RMSEA=0.036, SRMR=0.058. For hypotheses testing, the results supported *H1*, *H2*, *H3*, and *H4* that propose a direct relationship between informativeness and advertising value ($\beta = 0.23$, $p < .01$), entertainment and advertising value ($\beta = 0.25$, $p < .05$), credibility and advertising value ($\beta = 0.53$, $p < .001$), interactivity and advertising value ($\beta = 0.28$, $p < .01$), respectively. Additionally, the results revealed that advertising value was positively related to advertising engagement ($\beta = 0.61$, $p < .001$), supporting *H5*. The hypotheses testing results are summarized in **Table 4**.

Path	Hypothesis	Estimate	S.E.	Supported?
Informativeness → ad value	<i>H1</i>	0.231**	0.085	Yes
Entertainment → ad value	<i>H2</i>	0.248*	0.116	Yes
Credibility → ad value	<i>H3</i>	0.526***	0.116	Yes
Interactivity → ad value	<i>H4</i>	0.279**	0.089	Yes
Ad value → ad engagement	<i>H5</i>	0.668***	0.053	Yes

Table 4. Hypotheses testing results.

Additionally, this study further analyzed the mediating role of advertising value between its four antecedents and advertising engagement, with 2,000 bootstrapped samples (Hayes, 2009). As outlined in **Table 5**, the results revealed that advertising value fully mediates the relationships between its four antecedents and advertising engagement.

Path	Direct effect	Indirect effect	Mediation
Informativeness → ad value → ad engagement	0.059	0.202*	Full
Entertainment → ad value → ad engagement	0.079	0.223*	Full
Credibility → ad value → ad engagement	0.147	0.465**	Full
Interactivity → ad value → ad engagement	0.068	0.243**	Full

Table 5. Mediation analysis

Discussion

Having analyzed the hotel/restaurant-related Facebook advertising value perceptions and engagement among Facebook users in Sri Lanka, this study yielded novel insights into a topic that is important for both practitioners and scholars. The concept of advertising value and its antecedents have been tested for various types of advertisements in previous work in different contexts; however, past work had not attempted at analyzing the advertising effectiveness on Facebook in terms of both perceptions and online engagement behaviours. The existing literature calls for more research to understand the effects of advertising on customer perceptions and resulting subsequent actual behaviours (Knoll, 2016), in particular on Facebook (Wiese et al., 2020), in developing countries (Duffett, 2015). Florenthal (2019) further highlights the need for extending the Ducoffe's advertising value model (1996) to examine the engagement with brands on social media. Accordingly, integrating both antecedents of advertising value and the resulting

advertising engagement, this study provides a comprehensive framework for understanding Facebook advertising effectiveness in a developing country context, focusing on hotel/restaurants brands in hospitality sector.

Consistent with the past studies, this study found that customer perceptions of advertising informativeness and entertainment (Logan et al., 2012; Van-Tien Dao et al., 2014; Dehghani et al., 2016; Hamouda, 2018) could increase the overall worth of advertisements embedded on Facebook. Notably, this study highlights that although informativeness, entertainment, and interactivity are of importance in forming customer advertising value perceptions in the context of Facebook, credibility perceptions play the most significant role in influencing advertising value. Accordingly, hotel/restaurant Facebook advertisers should endeavor to come up with strategies to develop the credibility perceptions as it will lead customers to perceive the overall advertising as trustworthy, which in turn resulting in advertising engagement behaviours. On Facebook, customers are able to see the 'likes', 'comments' and opinion of other customers (Xue, 2019; Wiese et al., 2020), and this information from other like-minded customers is likely to be perceived as more credible (Xue, 2019; de Silva, 2021). On this ground, it is therefore possible for customer credibility perceptions to serve as the most important antecedent of overall Facebook advertising value.

Moreover, this study highlights the role of advertising value in influencing advertising engagement in the context of Facebook advertising. Accordingly, those customers who perceive Facebook advertising as valuable are more likely to engage with the advertising content via liking, commenting and sharing behaviours. The past research found that perceptions could lead to behavioural outcomes (Luo 2002; Martínez-Navarro and Bigné, 2017; Schivinski, 2019; Schivinski et al., 2019; Wiese et al., 2020). As such, this study confirms the relationship between advertising value perceptions and advertising engagement in an underexplored area; hotel/restaurant Facebook advertising.

Theoretical Implications

Florenthal (2019) highlights the necessity of extending the Ducoffe's advertising value model (1996) to explore the engagement with brands on social media. Accordingly, from the theoretical perspective, this study highlights the role of informativeness, entertainment, credibility, and interactivity in determining customer perceptions toward Facebook advertising value, which in turn leads to hotel/restaurant Facebook

advertising engagement. Accordingly, instead of merely analyzing the antecedents of Facebook advertising value, this study focuses on the role of advertising value in influencing advertising engagement as well, resulting in developing an integrative framework for analyzing the effectiveness of Facebook advertising. Although past studies attempted at analyzing the drivers and consequences of advertising value, they tend to focus on attitudinal outcomes (Logan et al., 2012) and behavioural intentions (Van-Tien Dao et al., 2014; Dehghani et al., 2016) while ignoring the actual online behavioural outcomes. However, Wiese et al. (2020) highlight that actual customer behaviours should be given more prominence than those of the mere behavioural intentions when measuring the social media advertising effectiveness. As such, given the importance of developing a framework incorporating both customer perceptions and online behaviours, this study links the Facebook advertising value to an online behavioural outcome, which is, advertising engagement. In this way, this study contributes to the literature with some novel insights, which has not been drawing the attention of past work.

Second, this study analyses the mediating role of Facebook advertising value in the relationships between its antecedents and advertising engagement, which has never been a focus of any of the previous studies in the area. The findings of the mediation analysis highlight the importance of advertising value perceptions in the linkages between customer perceptions and their engagement behaviours, extending the current literature on Facebook advertising.

Third, despite the availability of mixed findings in terms of the effects of credibility on customer advertising evaluations (Brackett and Carr, 2001; Chatterjee, 2011; Van-Tien Dao et al., 2014), this study reveals that credibility is the strongest predictor of Facebook advertising value, suggesting its pivotal role in influencing customer overall advertising value perceptions. Finally, given the interactive nature of SNSs and calls for more research (Logan et al., 2012), this study highlights that when Facebook advertising is perceived as interactive, which can positively lead to overall advertising value perceptions, adding a novel insight to the body of literature on Facebook advertising.

Practical Implications

From the practitioners' point of view, this study sheds light on the importance of addressing customer perceptions through their respective Facebook advertising strategies, which sets the foundation for achieving Facebook advertising campaign successes. Due to customer credibility

perceptions associated with Facebook advertising was the strongest predictor of advertising value, marketers are advised to design Facebook advertisements in a way that supports customer beliefs and interests. For instance, marketers can feature credible information sources on the surface of the content or as a separate link beneath or above the content, leading to the establishment of believability of the advertisement. Moreover, given the fact that customers are more likely to perceive the advertisements endorsed by influencers as credible (de Silva, 2021), marketers can include influencing figures in their Facebook advertising content. Additionally, marketers should ensure that they are responsive to customer opinions made via Facebook, so that customers will tend to perceive advertisement as trustworthy, which in turn affects overall advertising value perceptions and engagement.

While ensuring customer credibility perceptions, marketers should design more interactive content to influence overall advertising value perceptions and engagement. Given the ability of designing and distributing rich-media Facebook advertisements, marketers can benefit from this while immersing customers in a captivating experience. Hence, marketers are encouraged to design rich-media ads, instead of relying solely on static ads, leading to more customer-to-brand interactions. Moreover, since this study highlights the role of informativeness in influencing advertising value and resulting engagement, marketers should provide customers with reliable and up-to-date product-related, brand-related and offer-related information with Facebook advertisements. However, due to information overload can badly affect customer responses (Cho and Cheon, 2004), marketers should ensure that the advertisements are rich with only the necessary information, rather than with a large volume of information.

Based on the findings of this study, Facebook marketers are also advised to incorporate entertainment aspect to their advertising content, so that customers will be more likely to evaluate the advertisements as valuable, which will subsequently drive them to engage with the advertisement. It is possible, for example, to integrate trending topics into Facebook brand-related advertising content to make advertisements more entertaining. Moreover, brand managers can develop Facebook advertisements using various forms (e.g., video) and formats/types (e.g., memes) to ensure that advertisements are rich in entertainment. Finally, given the pivotal role of Facebook advertising value in driving advertising engagement, brand managers should stay active on Facebook with frequently uploading informative, entertaining, credible, and interactive

advertising content to influence customer advertising perceptions and subsequent engagement behaviours.

Conclusion

The study aimed to identify the drivers of advertising value and the resulting advertising engagement, focusing on hotel/restaurant Facebook advertising in Sri Lanka. Accordingly, drawing upon the UGT and Ducoffe's advertising value model, this study developed an integrated framework to achieve the study objectives. In responding to study objectives, the study proved that customer perceptions of Facebook advertising informativeness, entertainment, credibility and interactivity were positively related to Facebook advertising value, in which the credibility was the strongest predictor of advertising value among young customers in Sri Lanka. Moreover, the study found that Facebook advertising engagement served as an online behavioural consequence of advertising value construct. Additionally, this study investigated that if Facebook advertising value mediated the relationships between antecedents and advertising engagement, and the results highlighted full mediation effects of advertising value between tested relationships. Accordingly, this study presents some valuable insights into Facebook advertisers, who are in an effort to achieve advertising success on Facebook with their advertising programs.

Limitations and Future Research

Notwithstanding the implications, this study is still subject to some limitations. First, due to the inability to access a sampling frame, this study used a convenience student sample. However, as non-probability student samples are likely to be affected by alleged bias (Peterson and Merunka, 2014), future work can use random student samples or convenience nonstudent samples to overcome the possibility of being affected with alleged bias.

Second, this study attempted at identifying a single online behavioural consequence of advertising value. In future, studies can incorporate additional online behavioural consequences, for instance, e-WoM (Martínez-Navarro and Bigné, 2017), to come up with a more comprehensive framework. Third, although this study did not attempt at analyzing the moderating role of categorical variables, the literature suggests the moderating role of demographic characteristics (Sun et al., 2010) and cultural characteristics (Van-Tien Dao et al., 2014) in the

relationships between customer perceptions and evaluations, so that future work can include some other categorical variables as moderators to the model. Fourth, Voorveld et al. (2018) argue that social media advertising engagement behaviours are dependent upon the engagement with the platform. As such, future research can replicate this framework across different social media platforms to investigate if there are differences in the findings. Finally, this study focused on four antecedents of Facebook advertising value; however, future work is encouraged to include more antecedents (de Silva, 2019), extending the UGT literature on Facebook advertising.

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