

# The Impact of Organizational Culture on the Use of Business Analytics in Sri Lankan Companies

Organizational  
Culture

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## Abstract

Business analytics is an extremely popular topic at present, and it helps to invest past business performance to gain insights and predict business performances. This study intends to investigate the impact of organizational culture on the usage of business analytics across Sri Lankan companies. The research addresses the question, “what is the impact of organizational culture on the usage of business analytics?” The main identified independent variable of the study is organizational culture to measure the dependent variable of “use of business analytics”. This research has used a quantitative approach and survey method to test the hypothesis. A total of 311 numbers of Sri Lankan companies have been selected through a simple random sampling to collect primary data. Collected data has been analyzed through descriptive statistics, correlation analysis, and linear regression analysis to achieve the research objectives. According to the results, there is a significant positive relationship between organizational culture and the use of business analytics. The overall conclusion is that there is a significant impact from organizational culture on the use of business analytics in Sri Lankan companies. The main recommendation is that the organizations need to develop a culture, in terms of analytics, to improve the applicability of business analytics.

**Keywords:** Business analytics, Use of business analytics, Analytic culture.

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## **Introduction**

Business analytics is still an evolving concept, and it does not have a single, commonly accepted, authoritative definition (Power et al., 2018). Business analytics is simply identified as the collection of competencies, technologies, methods and, practices for progressive algorithmic studies and investigation of past business performance to obtain insights and predict business performances.

### ***Background of the Study***

Business analytics is useful to determine datasets that result in increased efficiency, productivity, and revenue. Business analytics consists of data mining, predictive analytics, applied analytics, and statistics which is presented as a business-friendly application. These analytic solutions frequently include prebuilt industry knowledge aimed at a certain industry, business process or a regulatory requirement (Kohavi et al., 2002). Business analytics is helping businesses to make their overall collection of data into useful business insights and filter out the noise of unwanted data. In most cases, business analytics act as the main role in decision-making processes (Sharma et al., 2014). The main aspects of business analytics are predictive analytics, prescriptive analytics, diagnostic analytics, and descriptive analytics (Karim et al., 2016).

Presently, businesses are using analytical tools and techniques to examine how their data can be influenced on problem-solving, create Key Performance Indicators (KPI) dashboards, decision-making, and increase efficiency and earnings. In recent times, the formation of big data and business analytics is being used in various industries, and it is established in both private and public sectors (Chen et al., 2012). Business analytics may be used in a variety of ways that are both intriguing and unique. Coca-Cola Amatil, the largest bottler, and distributor of non-alcoholic bottled beverages in the world, is one particularly intriguing example. The finance department of Unilever has developed a data dashboard as best practices of business analytics (Power et al., 2018).

Further, Amazon, Netflix, Starbucks, and Shell are some giants in the business world that use business analytics for their operations successfully. Netflix is using predictive analytics to improve insights for customers by recommending the movies that they are most likely to watch. Amazon also uses predictive analytics in suggesting things in parallel with the customers' exact requirement. All these companies become successful in business analytics through a proper organizational analytic culture (Evans, 2016). In comparison to that, the prevailing statistics and literature about the usage of Business Analytics in Sri Lanka with the focus of organizational analytics culture reveal a limitation in its behavior. Accordingly, this research will be a focus on the impact of organizational analytic culture on the use of business analytics in Sri Lankan companies.

### ***Scope of the Study***

This study focused on the companies which are registered under the Sri Lanka Accounting and Auditing Standards Monitoring Board (SLAASMB) as the scope. The needed

data has been collected from a general manager, an operations manager, or an IT manager from the respective organization. In addition to that, this research considers the usage of business analytics in the Sri Lankan context.

### ***Significance of the Study***

This study will address the advantages of businesses that utilize business analytics in comparison to the previous research studies done in the Sri Lankan context and help to identify the area where business analytics needs to be improved in their operations. The findings would be of great interest to the employees in companies (in each hierarchical level), customers, relevant partners in policymaking, as well as for job seekers who are interested in the business analytics field.

When considering the empirical significance of the study, this study will provide the literature on the usage of business analytics in the Sri Lankan context. Business analytics is extremely new and updated within Sri Lanka and it will influence future investigators as well. Consequently, this research will certainly reflect the significance of the term “Business Analytics” for Sri Lankans and be a precious determinant in their companies’ success story.

### ***Research Problem***

The use of analytics in Sri Lanka is getting deeper and broader. Many companies have the habit of analyzing data. There were few studies conducted on the use of business analytics in the Sri Lankan context with a focus on several industries, not as a whole. Some research has been conducted specifically for the apparel industry, supermarket sector, and a few other sectors. Nevertheless, the overall use of business analytics has not been measured and it is also ambiguous of the term “analytics” in the context of the Sri Lankan corporate world.

Further, few studies have been conducted on business analytics-related research of Sri Lankan companies (Madhavika et al., 2021; Wijayasiriwardane & Rajapakse, 2018). Madhavika et al. (2021) conducted a research focused on the usage of business analytics in the apparel sector and Wijayasiriwardane and Rajapakse (2018) conducted their research on the Supermarket sector in Sri Lanka. The rest of the sectors have not been explored as per the available literature.

Business analytics had become a well-known term in the business world. However, there is a particular question of whether the Sri Lankan companies use these analytics through a better organizational culture in their operations. Hence, this research seeks to focus on this incomprehension and investigate the impact of organizational culture in the aspect of analytics on the usage of business analytics in the Sri Lankan companies. This research will evidently strengthen literature for the impact of organizational culture, specifically from the perspective of analytics on the usage of business analytics for their businesses incorporating practical scenarios.

### ***Research Objective***

The main objective of this study is to identify the impact of organizational culture (in terms of analytics), on the usage of business analytics in Sri Lankan companies and addresses the

question, ‘what is the impact of organizational culture on the usage of business analytics?’ Moreover, this emphasizes on the nature of culture prevailing in the organization and whether it has an impact on the usage of business analytics for day-to-day operations in the organization. If there is an effect, its relationship has distinguished through this study.

## **Litreature Review**

A literature review is a piece of academic writing that demonstrates knowledge and mastery of academic literature on a certain topic. A literature review differs from a literature report in that it includes a critical evaluation of the material. A literature review is frequently one of the first activities completed after settling on a topic in a bigger piece of written work, such as a dissertation or project. Reading and critical analysis can aid in the refinement of a topic and the formulation of research questions. Before beginning a new investigation, a literature review builds familiarity with and comprehension of current research in a certain topic.

### ***Business Analytics***

Business analytics can be defined as “the broad use of data, statistical analysis, quantitative analysis, predictive models, and fact-based decision to drive management” (Cao et al., 2015). According to Lepenioti et al. (2020), business analytics attempts to help organizations make better, faster, and more informed decisions to generate revenue. Frequent data analysis using business analytics will increase the efficiency of business operations, minimize errors, help to identify new market opportunities, increase potential growth, and surge the profitability of the business. The literature highlighted that the domains like manufacturing, sales/marketing, education/research, health/social policy, human resources, transport, business strategy, data engineering, information systems mainly use business analytics (Lepenioti et al., 2020).

Owing to the advanced usage of business analytics, managers are in a good understanding to make wise and effective decisions that result in a competitive advantage for their firms because of handling massive amounts of data housed in databases, data marts, and data warehouses, as well as improved data analysis tools. Many different operations and tasks are covered by business analytics and using business analytics in decision-making appears to influence the business outcomes (Sharda et al., 2013). Managers must keep track of data related to business analytic projects, progress monitoring, and increase the usage of analytics regularly. Today, the job description of every manager has been updated with business analytics. Business analytics is the application of models, methodologies, and tools to data analysis in obtaining insight and making educated decisions Mikalef et al. (2019).

Business analytics is a systematic way of thinking that uses qualitative, quantitative, and statistical computational tools and methodologies to analyze data, acquire insights, inform, and assist decision-making (Power et al., 2018). The stated implication has a direct link with the main research question and the objective of this study as understanding the current trends in business analytics help to measure the use of business analytics in the Sri Lankan context.

Similarly, some applications of business analytics are dashboards and scorecards and can be used to produce and display numerous details which are necessary for company conformity

and identifying KPIs. A proper KPI monitoring system enables real-time decision support and customer relationship data analysis (Raghupathi & Raghupathi, 2021). Installing a business analytics system entails establishing resources and infrastructure. A majority of business analytics implementations are interrupted due to inadequate change management environment for a cultural change (Fouladirad et al., 2018).

Some authors have concluded that business analytics is more than just data analysis. It combines descriptive, predictive, diagnostic, and prescriptive analytics to generate modern, exclusive, and important information that improves measurable business performance (Kwon et al., 2014). Potancok et al. (2021) introduced 15 factors to describe the importance of business analytics from the business, company, and market environment perspectives. The goal of monitoring and evaluating business environment aspects is directly linked with business analytic needs. From the managers' perspective the company size and industry type and company culture, are taken into consideration to select the use of business analytics.

According to the Xavier et al. (2011), he explored the main factors to measure the use of business analytics in the Indian context as the size of the company, familiarity, and the number of years of investment. The mentioned factors have a direct applicability with the business analytics and showcase the significance of having an analytical culture in their organizations. Correspondingly, the Indian context is quite familiar with the Sri Lankan context as both are the nearest Asian countries and can get insights straightaway for businesses even though it differs in economical facet. In addition to that, as explained in previous sections in the literature review, most of the studies must use analytical culture as a critical success factor and challenges in implementing business analytics and measurement of the use of business analytics in a company. Therefore, the use of business analytics will be directly impacted by the organizational culture.

### ***Organizational Culture***

Organizational culture is a collection of shared and strongly held values, beliefs, knowledge, attitudes, tasks, habits, morals, customs, and norms among members of an organization. It serves as a frame of reference for organizational practices, behaviors, and goals. Analytic culture is one aspect of corporate culture as the attitude towards the usefulness, use, and benefits of analytics. Furthermore, firms with a strong analytic culture should spend more on data analytic skills in terms of tools, processes, and people. Considering the culture, despite the prevailing tools and techniques, is regarded to be a precious and steady weapon to be used for its long lasting competitiveness and the major component of being data-driven is analytical culture (Thirathon et al., 2017).

Culture which combines data from external and internal sources help in the decision making process for managers to derive for well-informed decisions (Laureano et al., 2016). The formation of a new organizational culture and considerable change management is needed to transform any organization (Loon & Peing, 2019). Most organizations have to face obstacles from internal and external environment when changing existing organizational culture. A data-driven culture is one facet of the analytic culture and is represented by the perceptions, attitudes, and opinions concerning data-driven decision-making which is an intangible resource (Klee et al.,

2021). A culture that regularly associates data is an intangible concept that refers to the employees in the organization as beliefs, attitudes, and opinions on using data to make decisions (Loon & Peing, 2019). The presence of a data-driven culture would make it easier for businesses to make data-based decisions and thereby to develop new products and services rooted on facts. Organizations with advanced analytic capabilities will not be able to extract their true essence of value without being successfully integrated into the business decision-making process (Cao et al., 2015).

Engagement of the implementation team and top management support are considered to be crucial factors in real-world case studies. Organizations cited culture and management issues as major roadblocks to analytics adoption despite technological and data quality concerns. Business and IT leaders must collaborate and develop new strategies and roles, such as Chief Data Officers and Data Scientists, to satisfy technological and business objectives while establishing transformational big data analytical skills (Arunachalam et al., 2018).

As mentioned by Abai et al. (2016), the type of management, company culture, and development direction are all prerequisites or limitations in using business analytics. The level of management is assessed based on the availability of HR for management, organizational settings, and communicative maturity (Dremel et al., 2017). The managements' perspective on analytics is still an element that influences support and responsibility for the success of solutions. Standardization and formalization in the workplace are common strategies for improving business operations, particularly in management, manufacturing, sales, and IT (Domino et al., 2021).

The ultimate goal of an analytic culture of an organization is to outgrow intuition, gain management commitment, and ensure that business analytic insights respond immediately. A mindset of evidence-based problem recognition and resolution must encompass a culture of the organization and philosophy. One of the prominent difficulties faced by businesses is creating a culture that prioritizes evidence-based decisions and actions and fosters data gathering, analysis, and information sharing (Omar et al., 2019). Developing a clear analytical strategy (whether top-down, bottom-up or a hybrid of the two) is a critical first step in the business analytics revolution through a cultural change (Vidgen et al., 2017).

An analytical culture brings business and technology together to achieve a single purpose through a set of behaviors, attitudes, decision-making standards, and outcomes. Decision-making standards in some companies do not support the use of analytics in decision-making, particularly if the data contradicts the view of senior management. That does not happen in an analytical culture as decision-making norms, behaviors, values, and outcomes are all linked to ensure that analytical insights truly deliver value (Kiron et al., 2014).

The development of an effective analytical culture necessitates a change in how businesses think and function. Senior management commitment is necessary to accomplish such a change. Companies that have a top-down mandate for all employees to make fact-based decisions are seeing considerably more success with analytics than other companies.

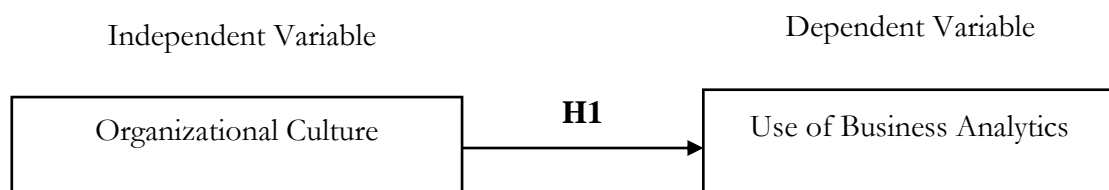
### *Use of Business Analytics*

Usha (2020) investigated the possibilities of business analytics in the three domains of finance, HR, and marketing. Business analytics leads to understand the latest trends and predicting the future in the aspect of marketing. Marketing analytics use to maintain competitiveness in the long-term and the effect of benchmarking, digital marketing compares data within the organization and outside the market. Effective models can be made regarding the business sector can decide on the appropriateness of major investments.

Omar et al. (2019) presented five domains in manufacturing which can benefit from business analytics to derive insights, enhance productivity, maintain competitiveness, and boost innovation and value capturing incorporating timely information. The domains of manufacturing; logistics, sales, marketing, after-sales support, production, supply chain management, research, and design can enhance efficiency with the utilization of business analytics. Further, it is revealed that effective use of analytics can be gained by lifting challenging barriers, standardization, aggregation, and storage of data. Thereby, the data-driven decision is embraced creating the perfect ecosystem for business analytics.

The measuring use of business analytics should be done from the perspective of whether the organizations are using specific business analytics tools and techniques in their organizations (Xavier et al., 2011). The main tools and techniques are considered as, statistical analysis, strategic reporting, operational reporting, forecasting, future preparation via scenario analysis, query analysis, predictive modeling, optimization, model management, simulation, scenario development, web analytics, social media analytics, text, audio, video analytics, workforce analytics, supply chain analytics, customer relationship management, dashboards/ KPI/ Business reporting/ Scorecards. The main methods to measure the use of business analytics are real-time information monitoring, utilizing tools and techniques based on the decisions, organizations decision-making capabilities in each level (operational, tactical, and strategic levels), increasing robustness of demand forecasting, data-driven culture, and improving analytics in the business environment (Xavier et al., 2011), (Cao et al., 2015), (Arunachalam et al., 2018), (Sutton et al., 2020). These measurement indicators have been used to measure business analytics in the Sri Lankan context.

### *Conceptual Framework*



**Figure 1.** Conceptual Framework

Fig. 1 above represents the conceptual framework for this study. According to this, the main independent variable is organizational culture, and the dependent variable is the use of business analytics. The relationship between these two variables will be tested by hypothesis 1 (H1).



## ***Hypotheses Statements***

According to the conceptual framework, the hypothesis for selected variables can be developed as follows.

H<sub>10</sub>: There is no significant impact of organizational culture on the use of business analytics.

H<sub>11</sub>: There is a significant impact of organizational culture on the use of business analytics.

## **Methodology**

### ***Research Design***

This research intends to investigate the impact of culture on the usage of business analytics across Sri Lankan companies. The research will use a mono-method with a quantitative approach. Quantitative research studies are about a series of techniques concentrating on the methodical investigation of social phenomena by using numerical data and statistical methods (Watson, 2015).

### ***Population and Sampling***

#### *Population*

A population is a total set of individuals with a specialized set of characteristics, and a sample is a subset of the population (Barreiro & Albandoz, 2001). The population for this study is the companies across Sri Lanka. This study will focus only on the companies which are registered under the SLAASMB. Currently, there are 1609 companies registered in the SLAASMB and therefore the total population of this study is 1609.

#### *Sample Design*

To perform the research forward, a random sampling method is chosen under the probability sampling method. The random sampling method can be defined as every individual in the population having an equal chance of being included in the sample (Barreiro & Albandoz, 2001). According to the table developed, the sample size is 311 for the population size of 1609.

### ***Data Collection Methods***

Data gathering methods can be classified as secondary data collection methods and primary data collection methods. The research collected both primary and secondary data. The secondary data has been collected by eBooks, Journals, articles, Google Scholar, Emerald Insight. There are two types of primary data collection methods as quantitative and qualitative (Williams, 2007).

The primary data has been collected by a survey questionnaire which is with Likert scale questions to test the developed hypothesis based on the operationalization. The main objective of the study has been measured by the 311 organizations. The questionnaire consists of two nominal scale questions and five-point Likert scale questions. The five points of the scale included the



range of “strongly agree-5” to “strongly disagree-1”. The questionnaire has two sections as section A to gather demographic information such as the business sector of the company, the age of the organization, and job title. Section B is to measure the usage of Business Analytics in Sri Lankan companies. The questionnaire has been distributed among the managing director, chief executive level officer, general manager, operations manager, or IT manager in a firm by concerning the ease of accessibility. The questionnaire has only been distributed as a google form due to the lockdown composed with the Covid19 pandemic situation.

### *Operationalization of Variables*

The research output is dependent on the independent and dependent variable analysis. This study is to measure the impact between independent variables and the dependent variable by testing a hypothesis using statistical methods.

**Table 1. Operationalization of the Study**

Variable Type	Variable Name	Indicators	Measurements	Reference
Independent variable	Organizational Culture	<ul style="list-style-type: none"> <li>▪ Fact-Based Decision Making</li> <li>▪ Easy to Convince of Analytics Value</li> <li>▪ Seeking Advice from Analysts</li> <li>▪ Committed management support</li> <li>▪ A balanced team composition</li> <li>▪ User-oriented change management</li> <li>▪ Flexible technical framework</li> <li>▪ Implement the BA to allow business improvements</li> </ul>	<ul style="list-style-type: none"> <li>▪ Five-point Likert scale questions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Thirathon et al. (2017)</li> <li>▪ Maryam Fouladirad et al. (2018)</li> <li>▪ Cao et al. (2015)</li> </ul>
Dependent variable	Use of BA	<ul style="list-style-type: none"> <li>▪ Statistical analysis</li> <li>▪ Utilization of tools and techniques</li> <li>▪ Decision-making capabilities at each hierarchical level</li> <li>▪ Strategic and operational reporting</li> <li>▪ Real-time information monitoring</li> <li>▪ Forecasting and scenario analysis</li> <li>▪ Query and analysis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Five-point ranking questions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cao et al. (2015)</li> <li>▪ Matthew et al. (2015)</li> <li>▪ Xavier et al. (2011)</li> <li>▪ Chen et al. (2012)</li> <li>▪ Arunachalam et al. (2018)</li> <li>▪ Sutton et al. (2020)</li> </ul>

- 
- Optimization
  - Simulation & scenario development
  - Web oriented analytical techniques
  - Model based analytical techniques.
  - Enterprise Resource Planning
  - Customer Relationship Management (CRP)
  - Dashboards
  - Scorecards
- 

Source: Authors' survey

### ***Validity and Reliability of the Questionnaire***

#### *Validity of the Questionnaire*

Reliability and validity are the concepts used to evaluate the quality of the research study. The validity of the data was assessed through Pearson product-moment correlation and the KMO Bartlett's test.

#### *Reliability of the Questionnaire*

Reliability is the concept used to evaluate the quality of the research study. The results from the pilot run have been measured under the reliability concept. The pilot run has been carried out to an average of 30 sample size firstly and test the statistical reliability from that before going to collect the rest of the data. This is called test-re-test reliability, and it will be applied to verify the reliability of the research data. Cronbach's Alpha has been used to measure the reliability of the questionnaire.

**Table 2. Cronbach's Alpha Reliability Statistics for 30 Sample size (Pilot Study)**

Variable	No of Items	Cronbach's Alpha
Organizational Culture	8	0.909
Use of Business Analytics	11	0.857

Source: Authors' construction

Organizational culture has (08) measurements and Cronbach's alpha value is 0.909. It is above 0.07 which is the standard value. Therefore, the organizational culture scale is reliable. The use of business analytics was determined by applying eleven (11) questions. Cronbach's alpha value for the use of business analytics is 0.857. The Cronbach's alpha value of use of business analytics is above the acceptable value of 0.70. Therefore, the use of the business analytics measurement scale is reliable.

### *Data Analysis Techniques*

Researchers utilize research data analysis to reduce data to a story and interpret it to gain insights (Rosenthal & Rosnaw, 2008). The collected primary data will be analyzed over the Statistical Package for the Social Sciences (SPSS) version 23 software to generate accurate results. The objective of the study is to examine the impact of the independent variable (organizational culture) and the dependent variable (use of business analytics). Firstly, the study conducted a descriptive analysis for the collected data to understand the statistical behavior of the sample. Then Pearson correlation has been conducted to measure the inter-correlation between the variable. The main analysis of the study is linear regression analysis and was conducted to investigate the impact of the independent variable on the dependent variable.

### **Results and Discussion**

The results section of a research paper contains a description of the primary findings, whereas the discussion section interprets the findings for readers and discusses their importance. The purpose of the Results section is to portray major findings objectively, without interpretation, and in a logical and orderly manner, utilizing both illustrative materials (Tables and Figures) and text. The discussion summarizes the findings and places them in perspective with the rest of the study. It connects all the previous sections and lets the reader to see the links between each area of the research paper. The author completes three processes in a discussion section: interpretation, analysis, and explanation. A good discussion section will explain why the research findings are relevant and how they fit into the current literature, as well as be self-critical and open about the study's flaws.

### *Data Preparation for Analysis*

This study has received a 100% response rate by collecting the 311 questionnaires from the companies which are registered under the SLAASMB. First, the collected data has been scanned for precision and accuracy, and then the cleaning process was conducted to remove the outliers and provide treatment on missing values.

The data has been analyzed by SPSS software to identify the outliers and common outliers were not found. Later, missing values have been analyzed and there were no missing values. After the data cleaning process, the study was continued with all 311 respondents.

### *Descriptive Statistics for Demographic Data*

**Table 3. Descriptive Statistics for Demographic Data**

Gender			
Business Sector	Frequency	Valid Percentage	Cumulative Percentage
Manufacturing	139	44.7	44.7
Service	172	55.3	100
Total	311	100	
Age of the Company			
Category	Frequency	Valid Percentage	Cumulative Percentage

Less than 10 years	146	46	46.0
11-50 years	66	21.2	67.2
51-100 years	59	19	86.2
More than 100 years	43	13.8	100
Total	311	100	

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Job Title			
Category	Frequency	Valid Percentage	Cumulative Percentage
CEO/MD	27	8.7	46
General Manager	107	34.4	67.2
IT manager	136	43.7	86.2
Operation Manager	41	13.2	100
Total	311	100	

Source: Authors' construction

According to Table 3, the sample has 44.7% respondents from the manufacturing sector while 55.3% from the service sector. It means most of the respondents are from the service sector. When considering the age of the companies of the sample, 46% are less than 10 years, 21.2% are between 11-50 years, 19% are from 51 to 100 years and 13.8% are established before more than 100 years. It means many companies in the sample have less than 10 years of experience. According to the results of job title, 43.7% of the sample are IT managers, 34.4% are general managers, 13.2% are operation managers while the rest 8.7% is CEO/MD level. The sample highly consists of IT managers because contacting CEO/MD level employees were difficult with their busy schedules.

### *Descriptive Statistics for Variables*

Table 4 below explains the descriptive statistics on the main two variables of the study.

**Table 4. Descriptive Statistics for Main two Variables**

Variable	Mean Value	Standard Deviation
Organizational Culture	2.84	0.879
Use of Business Analytics	2.84	0.818

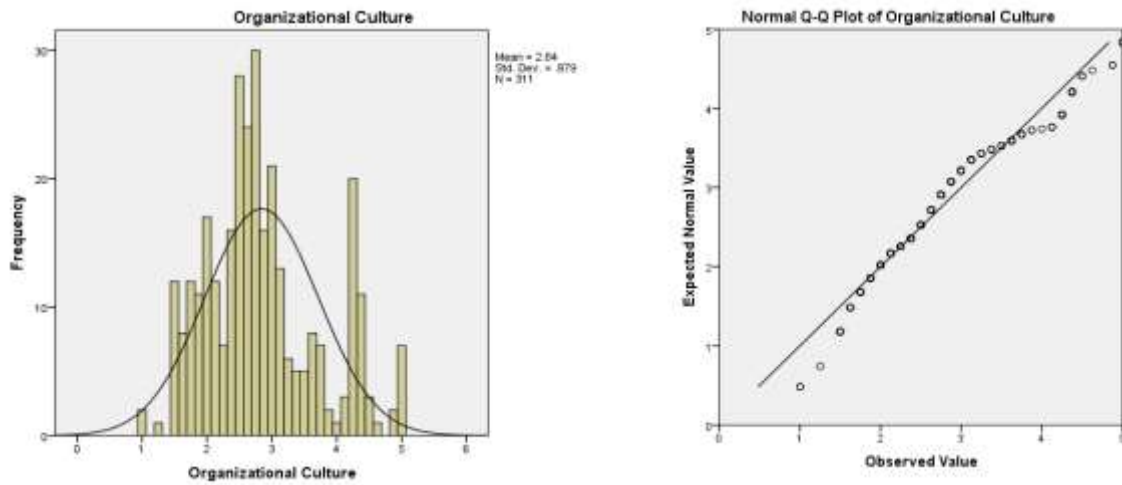
Notes: Five-point Likert scale, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Source: Authors' construction

According to Table 4 above, the organizational culture variable has a mean value of 2.84 with a standard deviation of 0.879. It means that most of the respondents responded about the organizational culture in-between “disagree” and “neutral”. The use of business analytics has a mean value of 2.84 with a standard deviation of 0.818. It indicates that the majority of the respondents have responded that the use of business analytics in-between “disagree” and “neutral”.

### *Normality Testing*

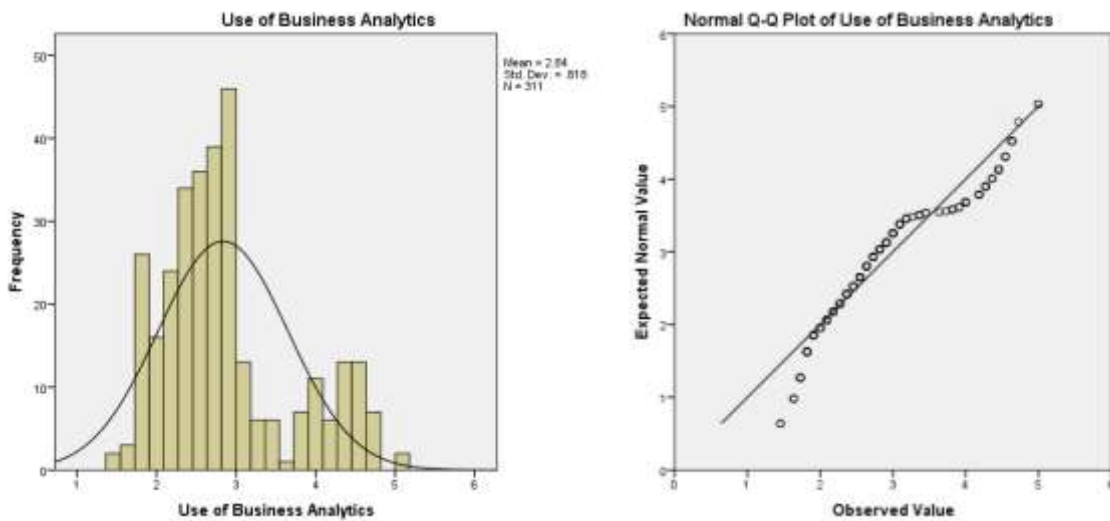
This study will simply use a histogram of the data and a Q-Q plot to get the normal curve.



**Figure 2.** Histogram and Normal Q-Q Plot For Organizational Analytic Culture

The histogram in Fig. 2 shows the distribution of responses for the organizational culture variable. If the data within the histogram have been distributed like a bell-shaped curve, it can be identified as a normally distributed variable. According to the above histogram, the data set has been distributed closer to the bell-shaped curve and it can be accepted as a normally distributed variable.

The Q-Q plot is the next measure which use for the measurement of normality level for the organizational culture variable. In the Q-Q plot, if the variables are moving closer to the centerline of the study, it can be measured as a normally distributed variable. As per Fig. 2, all variables have been moving closer to the centerline and it can be measured as a normally distributed variable.



**Figure 3.** Histogram and Normal Q-Q Plot for Use of Business Analytics

The histogram in Fig. 3 shows the distribution of responses for the use of the business analytics variable. According to that, data set in the histogram have been distributed closer to the bell-shaped curve and it can be accepted as a normally distributed variable. Additionally, Fig. 3 shows that all variables have been moving closer to the centerline and it can be measured as a normally distributed variable.

### *Validity of the Questionnaire*

The validity of the instrument has been proven by using Pearson product-moment correlation using SPSS. The validity test of Pearson product-moment correlation was carried out by correlating each item questionnaires scores with the total score.

**Table 5. Pearson Correlation Value for each Item Score with a Total Score**

Variable	Item No	Pearson Correlation	Sig.
OC	OAC 1	0.608	.000
	OAC 2	0.822	.000
	OAC 3	0.639	.000
	OAC 4	0.755	.000
	OAC 5	0.758	.000
	OAC 6	0.607	.000
	OAC 7	0.678	.000
	OAC 8	0.443	.000
UBA	UBA 1	0.505	.000
	UBA 2	0.713	.000
	UBA 3	0.687	.000
	UBA 4	0.716	.000
	UBA 5	0.697	.000
	UBA 6	0.646	.000
	UBA 7	0.595	.000
	UBA 8	0.632	.000
	UBA 9	0.677	.000
	UBA 10	0.600	.000
	UBA 11	0.599	.000

Notes: Organizational Culture defined as OAC, Use of Business Analytics defined as UBA

Source: Authors' presentation

Since the significance values for all items are less than 0.05 in Table 5, all items from both variables are valid.

The Kaiser-Meyer-Olkin Sampling Adequacy Measure is performed to see if there are any sample issues in the study. The results should be greater than 0.5 to pass the tests without any sample problems. This organizational culture data has a high validity of 0.810, use of business analytics has a high validity of 0.833 and shows that there is no sample problem according to Table 6. Bartlett's test of Sphericity has a significant p-value of 0.000, which is less than 0.05, which means the significant interrelationship between variables.

**Table 6. KMO and Bartlett's Test of Sphericity**

Variable	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
		Approx. Chi-Square	df	Sig.
Organizational Culture	0.810	1366.051	28	.000
Use of Business Analytics	0.833	1517.990	55	.000

Source: Authors' construction

### *Reliability of the Questionnaire*

The reliability of the questionnaire has been checked by conducting Cronbach's Alpha analysis as discussed in the pilot run. The internal reliability of the scale is confirmed by Cronbach's alpha value, which is greater than 0.70. The Cronbach's Alpha for a 311-size sample is described in Table 7.

**Table 7. Cronbach's Alpha Reliability Statistics for 311 Sample Size**

Variable	No of Items	Cronbach's Alpha
Organizational Culture	8	0.842
Use of Business Analytics	11	0.873

Source: Authors' estimation

Cronbach's alpha value for organizational culture is 0.842 for 8 items, which is higher than the acceptable value of 0.70. As a result, the researcher believes the organizational culture scale is valid. Cronbach's alpha score for use of business analytics was measured using 11 items and it is 0.873. The use of business analytics has a Cronbach's alpha value that is higher than the permissible level of 0.70 and it is also acceptable.

### *Correlation Analysis*

The Pearson correlation between organizational culture and use of business analytics is 0.872 as depicted in Table 8. It means organizational culture and the use of business analytics have a strong positive relationship. Since the p-value is .000 and less than 0.05, the two variables have a statistically significant relationship.

**Table 8. Correlation between Organizational Analytic Culture and the Use of Business Analytics**

Independent Variable	Dependent Variable	Pearson Correlation	Sig.
Organizational Culture	Use of Business Analytics	0.872	.000



Source: Authors' estimation

### ***Regression Analysis***

A regression model has been used to test the study's hypotheses that have been generated.

**Table 9. Model Summary**

<b>Model Summary</b>	
R	0.872
R Square	0.761
Adjusted R square	0.760

Source: Authors' estimation

The R-value for simple correlation is 0.872, indicating that there is a significant degree of correlation. The R<sup>2</sup> number reflects how much the independent variable can explain the overall variation in the dependent variable. Organizational culture can explain 76.1% of the total variation in the use of business analytics in this study, which is a significant proportion. The adjusted R square is 0.760, indicating that adding a new variable reduces the use of business analytics.

**Table 10. ANOVA Table**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	157.682	1	157.682	983.197	.000
Residual	49.556	309	.160		
Total	207.238	310			

Source: Authors' estimation

Table 10 indicates that the regression model significantly predicts the dependent variable. The statistical significance of the regression model is indicated by the significant value in Table 10. The regression model statistically strongly predicts the use of business analytics with a value of  $0.000 < 0.05$ .

**Table 11. Coefficient Table**

	Unstandardised Coefficients B	Standardized Coefficients Beta	t	Sig.
Constant	0.529		6.874	.000
Organizational Culture	0.813	0.872	31.356	.000

Source: Authors' estimation

As indicated above Table 11, provides the necessary information to predict the use of business analytics from organizational culture. Since the p-value is less than 0.05, the prediction of the use of business analytics by the organizational culture is statistically significant.

### ***Hypothesis Testing***

*H1<sub>0</sub>: There is no significant impact of organizational culture on the use of business analytics.*

The significance value of organizational culture is .000 and it is less than 0.05 (0.000<0.05) according to (Table 11). The beta coefficient value is 0.872, which means there is an 87.2% impact of the organizational culture towards the use of business analytics. As per the result, H1<sub>0</sub> is rejected. That means there is a significant impact of organizational culture on the use of business analytics in Sri Lanka.

Regression Model for the Study,

Use of Business Analytics = 0.53 + 0.82 (Organizational Culture)

### **Discussion and Implications**

This research is to identify the impact of organizational culture in the use of business analytics in Sri Lankan companies. This research used a quantitative deductive approach. The primary data was collected from the companies which are registered under the SLAASMB through a questionnaire. As per the demographic data of the sample, most respondents consist of service sector companies from the business sector, less than 10 years from the company age, and IT managers from the job title.

The main objective of the study is to identify the impact of organizational culture on the usage of business analytics. The literature review provided findings of past studies to apply in this research. Then hypothesis has been developed and tested by using multiple regression analysis. The questionnaire has high reliability since the Cronbach's Alpha for variables was more than 0.7.

The relationship between the independent variable and the dependent variable is a significant positive relationship. The null hypothesis of the study has been rejected. The overall conclusion is that there is a significant impact from organizational culture on the use of business analytics in Sri Lankan companies. The organizational culture in the aspect of analytics will increase the usability of business analytics (Duan et al., 2020). However, Thirathon et al. (2017) discovered that culture is the primary driver of analytics-based decision making. They argue that enterprises which have analytic culture can use this resource as a competitive weapon. The findings from Upadhyay and Kumar (2020) also summarized that culture plays the role of balancing mediation between analytics and positively impacts on firm performance.

According to these findings, the study can suggest some recommendations for Sri Lankan companies. Establishing of data-driven analytic related culture in the organization certainly aid to improve the effective usage of business analytics. The commitment of top management to the use of business analytics is obviously significant and the management should focus only on fact-

based decision-making in an analytic culture. A properly developed analytic culture provides an environment with ease of convenience of analytics value. A remarkable characteristic of organizations that has analytical culture is that they constantly seek for advice from analysts. The analytic culture needs to consist of a balanced team composition with the user-oriented change management process and also should incorporate a flexible technical framework. A well-established analytic culture will enable businesses' improvement through proper use of business analytics.

### Areas for Future Research

As mentioned in the literature review, there are many factors that effect on the use of business analytics. Moreover, future studies can focus on these factors and can use multiple factors which influence in use of business analytics. A future researcher can apply the same study to a different geographical area. Further, this study can be selected as the scope for all Sri Lankan companies as the population with the purpose of generalization.

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