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An Exploration on Utilization of Business Analytics in Sri Lankan Banks

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ABSTRACT

In this era of data evangelism, organizations are evolving with a paradigm shift from intuition-driven decision making to evidence-based decision making. Thus, business analytics has become a popular buzzword in modern business. Banking is a lavish industry that generates massive amounts of data and has copious opportunities for the utilization of business analytics to reap its maximum return. Therefore, the significance of business analytics in banking cannot be ignored. Though some international studies have indicated the utilization of business analytics in banks, studies on Sri Lankan banks are quite scarce. To fill this gap, this paper investigates the current utilization of business analytics in the Sri Lankan banking industry. The paper adopted a qualitative approach with multiple case studies, interviewing five professionals from different private commercial banks who are well-versed in business analytics. The paper covers eight aspects of business analytics utilization: duration of use, delegation, beneficiaries, technological aid, essentiality, value realization, perceived usage, and future direction. It was found that most banks have started using business analytics during the last three to four years, mainly for digital banking and card operations with basic technologies such as Power BI and Tableau. Further, it was also found that most banks have realized the importance and potentiality of business analytics, but neither integrated it fully with their core business nor achieved the expected value creation. The paper concludes that Sri Lankan banks are still in the early stages of business analytics maturity. Thus, there is a need to overcome the challenges and implement strategies to leverage business analytics for their benefit. Importantly, this study will contribute to the body of knowledge in the field of business analytics and the Sri Lankan banking industry where related studies are scarce.

Keywords: Banking Industry, Business Analytics, Sri Lanka, Utilization.

INTRODUCTION

The popularity of business analytics is rocketing to the top of the corporate agenda due to its promising perks proclaimed to business growth day by day. With this emerging trend for business analytics, many organizations are looking for employees who are capable of analyzing the data to support decision making (Power, Heavin, McDermott, & Daly, 2018). In most simple terms, business analytics refers to generating insights (actionable

information) from existing data using sophisticated mathematical, statistical, machine learning and network science methods along with expert knowledge to support faster, better, and timely decision making (Delen & Ram, 2018). Therefore, business analytics function as a major enabler for effective decision making. The use of business analytics for decision making is not a recent phenomenon, but business analytics tools and technologies are continuously evolving (Delen & Ram, 2018). Globally, many industries have now started using business analytics. Banks are obviously at the top of the list.

Doubtlessly, banking is a sector that would benefit from business analytics (Daniel, 2015). Banks produce an enormous amount of data. Hence, the benefits that the banking industry could reap are immense. According to the Deloitte Center for Financial Services (2019), a key step in the digital transformation journey of the banks is getting a better handling of data analytics. Advanced business analytical capabilities along with predictive modeling techniques that combine both internal and external data will be critical and ultimately provide a robust view for the banking business (KPMG Sri Lanka, 2020). Therefore, it is apparent that banking is a potential industry that could utilize business analytics as a strategic endeavor to thrive.

According to the Deloitte Center for Financial Services (2019), global banking industry has started using business analytics platforms. 30% have fully deployed business analytics platforms, 33% are in the trialing phase and 26% are still in the planning stage. Furthermore, 7% are considering using business analytics platforms. Apparently, there is a zest for banks to embrace business analytics. According to Banerjee (2021), the top five applications of business analytics in the banking or finance industry are customer analytics, risk and financial management, new business model development, operational optimization, and employee collaboration. Although the significance of business analytics in banking and finance is massive, the studies conducted are inadequate (Al-lozi, Alfityani, Alsmadi, Al_Hazimeh, & Al-Gasawne, 2022).

Sri Lanka is way behind the big data and analytics curve, but the country will catch on fast (Daniel, 2015). Although few studies (e.g., Bolonne & Wijewardene, 2020; Lasanthika & Wickramasinghe, 2021) were conducted to investigate the readiness of accepting business analytics for various organizational settings in Sri Lanka, there is no clear evidence on the existing utilization of business analytics, particularly among banks. Consequently, this study intends to dig deeper and broadly explore the current utilization of business analytics in the Sri Lankan banking industry. Furthermore, the study will contribute to the body of literature in the field of business analytics and banking, where the related studies and analyses are lacking.

LITERATURE REVIEW

Business Analytics

Business Analytics is a combination of all mechanisms that are used to transform data into insightful information for better and faster decision making (Delen & Ram, 2018). Although business analytics as a name is new, the use of business analytics has been around for several decades. With the present hyper-competitive business environment, the need for business analytics has become more crucial. Importantly, business analytics could leverage its tools and techniques to provide solutions to complex problems (Whitelock, 2018).

Business Analytics is composed of mainly three types: Descriptive Analytics, Predictive Analytics and Prescriptive Analytics. Descriptive Analytics interprets historical and present data. The process includes digging down into available data to

explore details such as the value of operations, event occurrence and failure mode, etc. (Lee, Cheang, & Moslehpour, 2022). Predictive Analytics is more concerned with forecasting future trends, possibilities and allows what-if analysis (Haas, Maglio, Selinger, & Tan, 2011). Prescriptive Analytics assists in deciding what actions lead to maximize the good outcomes and minimize bad outcomes with computational techniques. It is a very valuable and promising type of analytics for businesses though it is difficult to implement (Whitelock, 2018).

Implications of Business Analytics

Adoption of business analytics is moreover an organizational activity rather than a technology-based activity (Kumar & Krishnamoorthy, 2020). According to the Big Data and Artificial Intelligence Executive Survey conducted by New Vantage Partners (2018), 73.2% of the executives claimed that their companies have achieved measurable results from business analytics investments, whereas in 2017 the amount was 48.4%. According to Duan and Xiong (2015), top performing organizations use business analytics almost five times more than the lower performers. Further, they stated that business analytics and business strategy must be tightly linked together to gain better analytics driven insights. Organizations that use business analytics are 36% more likely to outperform their competitors in revenue generation and operating efficiency (Marshall, Mueck, & Shockley, 2015). Today, given the enormous benefits, business analytics is unhesitatingly embraced by almost every industry. Banking, healthcare, retailing, airlines, leisure, entertainment, education, insurance, etc. are among notable industries using business analytics extensively.

Business Analytics in Banking Industry

Business Analytics in the banking industry does a massive value creation leading to benefits such as 360-degree view of the customer, optimize and streamline internal processes, enhance cyber security, and reduce risks (Shalimov, 2019). According to HSBC Holdings PLC (2019), the bank is leveraging advanced analytics to enhance the effectiveness of financial crime identification processes such as money laundering. JPMorgan Chase and Co. (2021) stated that the bank is using enhanced data analytics when extending credit and risk management. In addition, the bank is working on improving the means to provide insightful analytics, business forecasting and benchmarking to the bank clients (JPMorgan Chase and Co., 2021). According to Standard Chartered (2021), the bank's financial crime investigatory team uses data analytics to identify the clients and cases that lead to financial crimes. The Central Bank of Sri Lanka (CBSL) Annual Report (2019) highlighted several use cases of business analytics at Central Bank of Sweden, Central Bank of Armenia, Central Bank of Germany, European Central Bank, Central Bank of United Kingdom, and Central Bank of France. McKinsey and Company (2018) stated that sharpening efforts of leveraging business analytics could approximately raise $1 trillion annual earnings in the global banking industry. According to McKinsey and Company (2022), banks have more room to exploit business analytics. The report further stated that the leading banks are already having a clear data analytics strategy.

Business Analytics in Sri Lankan Banking Industry

According to Sampath Bank PLC (2016), the bank's IT division was leveraging novel technologies in business analytics to tap into new business opportunities with the aim of creating a leading edge in the market.

Furthermore, the report stated that the bank was planning to work on process improvements to reduce costs by using the customer insights gathered through business analytics. Sampath Bank PLC (2017) stated that the bank's digital strategy focuses on innovation and competitive use of business analytics to lead the market in reshaping the future of banking in Sri Lanka. Similarly, as per Hatton National Bank PLC (2017), the bank's digital vision was to mainly incorporate business analytics. Commercial Bank of Ceylon (2021) reported that the bank focuses on contemporary technologies such as business analytics to strengthen its business in the future. They use business analytics to segment customers, thus enabling them to identify and serve unique banking services, ultimately providing personalized user experience. Furthermore, they facilitate predictive capabilities through an early warnings system to maintain the overall credit quality of the lending portfolio. DFCC Bank PLC (2020) announced that they were planning to use business analytics particularly to identify optimum offerings for specific customers. In addition, the Potential Fraud Monitoring Unit established under the Internal Audit division of the bank conducts testing and uses analytics to detect potential fraud risks continuingly. Furthermore, as proclaimed by DFCC Bank PLC (2021), business analytics is a main pillar in its digital transformation strategy. According to Nations Trust Bank PLC (2016), the bank achieved a profit growth of 10% with a strategy driven by insightful analytics. The report stated that the business analytics division commenced in 2015 has helped the branch network to get a clear understanding of customer requirements. In addition, the bank employed business analytics to improve governance and risk management with the aim of accelerating innovation and revenue.

METHODOLOGY

This study intended to deeply explore the current utilization of business analytics in Sri Lankan banks. Researchers adopted a qualitative approach, and the findings were based on the experience shared by banking professionals. This research employed multiple case study method (where each bank was considered as a single case) and an individual from each bank who is well-versed in business analytics practices was considered for the data collection. Purposive sampling was used, enabling researchers to select the most appropriate cases that contribute to the findings, and the study was equipped with semi-structured interviews. Being an employee in executive or above grade with a minimum of two years of service in the same bank and having direct exposure to business analytics processes in the bank were the main criteria used when selecting respondents from each bank. Researchers conducted one-on-one interviews via the ZOOM platform using the interview guide prepared. Anonymity was promised to the participants and obtained the consent to record the interviews. As the interview procedure was transparent, participants were comfortable with the interviews leading to no conflicts and withdrawals. After the interviews were conducted, the transcripts were shared with the respective individuals to validate and given the autonomy to suggest any changes as an action to enrich the credibility of the content gathered.

FINDINGS

The data collected were probed through the content analysis method with the intention of generating more meaningful insights to the research. After conducting interviews with five different banks, researchers realized some common grounds and repetition. Therefore, five Sri Lankan private commercial banks were considered as the final sample upon reaching the saturation point. Table 01 consists of

information on participants interviewed from each bank.

Table 01: Information on participants

Bank	Designation	Industry Experience	Exposure to Business Analytics
Bank S	Executive	5 Years	Yes
Bank P	Manager	7 Years	Yes
Bank N	Senior Manager	17 Years	Yes
Bank SN	Executive	10 Years	Yes
Bank D	Senior Manager	28 Years	Yes

Source: compiled by the authors

To explore the current utilization of business analytics in-depth, researchers used a semi-structured interview guide with questions covering eight different aspects.

Duration of Use

According to the below responses (Table 02), the majority have already started using business analytics since 3 to 4 years back. However, Bank N is more experienced and mature at using business analytics compared to others. Apparently, most banks are at the early stages of the business analytics maturity level.

Table 02: Duration of Use

	How long your bank has been using business analytics?
Bank S	"3 Years"
Bank P	"4 Years"
Bank N	"Over 17 Years. But modified with technology around 8 years back"
Bank SN	"3 Years"
Bank D	"4 Years"

Source: Compiled by the authors based on findings

Delegation

As per the below responses (Table 03), the majority have a separate unit/team assigned to drive the business analytics. Hence, implies the fact that most banks have given prominence to business analytics. Perhaps, other banks might be seeking a more appropriate structure to plug in the business analytics.

Table 03: Delegation

	Is there a separate unit assigned to business analytics in your bank? If not, what departments are involved in it?
Bank S	"Yes, there is a data science team involves in doing business analytics and data visualization"
Bank P	"No, no proper structure. Separate MIS Assistants are there for other departments for data analysis"
Bank N	"Yes, we got a separate BI team"
Bank SN	"Yes, and when it comes to the process, there is a data engineering team and there is a separate BI team"
Bank D	"No, no proper structure, but we have some data engineers assigned under IT team"

Source: Compiled by the authors based on findings

Beneficiaries

The below responses (Table 04) depict the specific functions of the banks that are employing business analytics. It was noted that the majority use business analytics for departments, mainly digital banking, and cards. Bank N, being the most experienced entity, uses business analytics for overall operations to a certain level. These findings highlight the fact that currently there is a

limited usage of business analytics among the banks in comparison to its full potential.

Table 04: Beneficiaries

	What banking operations currently use business analytics?
Bank S	"IT, Branch Banking, Marketing, Card Centre, Operations and Digital Banking"
Bank P	"Digital Banking Department"
Bank N	"Specifically, Cards and Digital Banking. But overall operations use this to certain extent"
Bank SN	"Cards and Digital Banking"
Bank D	"Cards, Digital Banking and Liabilities"

Source: Compiled by the authors based on findings

Technological Aid

The below information (Table 05) presents the key technologies used by the banks in executing business analytics. The most popular technology used is Microsoft Power BI followed by Tableau, Oracle SQL, and MySQL. Evidently, the banks got the basic technologies in line to enable business analytics.

Table 05: Technological Aid

	What are the key technologies that are used in the current business analytics process of your bank?
Bank S	“Oracle SQL, MySQL, Power BI, SharePoint, Tableau”
Bank P	“Tableau, MySQL”
Bank N	“Microsoft SSIS, Power BI and Tableau”
Bank SN	“Oracle SQL, Python, Power BI, or Tableau”
Bank D	“Power BI, Tableau, Google Data Studio, Google Sheets, Google Slides”

Source: Compiled by the authors based on findings

Essentiality

Respondents (Table 06) mentioned that the banks they represent have realized that business analytics should be an integral part of the core business. The majority are still looking forward to making it an integral part of the business. Notably, Bank N is ahead of the other banks as they have integrated business analytics to a greater extent with its core banking operations.

Table 06: Essentiality

	Do you think business analytics has become an integral part of the bank now?
Bank S	"Yes, now it is becoming. Now we are trying to improve this further"
Bank P	"Yes, it is becoming now"
Bank N	"Yeah, definitely, because now, as I told you, we are a data driven bank and all our decisions will be based on data"
Bank SN	"So actually, I would say this depends. When it comes to our bank, we understand the importance of business analytics, I would say to a certain extent it has become an integral part. But there is more space for improvement"
Bank D	"Well. Is it an integral part? across all business lines? I will say no. But some business lines, yes"

Source: Compiled by the authors based on findings

Value Realization

All the respondents (Table 07) highlighted that they have realized the potential of business analytics (i.e., how the analytics could be utilized for value creation in overall banking operations). But most of the banks are still in the phase of discovering the appropriate technological capabilities

and the perfect structures to equip. Hence, value creation has not reached its expected level. Therefore, although the banks perceive value creation through business analytics, they are still figuring out the ways for successful implementation leading to better value creation.

Table 07: Value Realization

	Do you think that your bank has realized the full potential of business analytics to leverage your business growth?
Bank S	"Yes, we are in the process of improving this further"
Bank P	"Yes, correct. Because if you see any job vacancies relevant to like a product manager, or like, internet banking officer or else like a banking assistant, every advertisement will carry a line saying good with Excel, good with analytics, good with presentations, these things. So basically, they are going into data-driven product development right now. It's, I mean, 100% come through a contrast to what banking was in the last 10 years before. But in practice this will take more time for the bank to get maximum benefits"
Bank N	"Well, I mean, yes obviously we have realized but when it comes to practice, we are in the process of getting to that stage improving further"
Bank SN	"They have realized the potential, but still that has not become the priority. Still, I would say there is more room for realization of the real value"
Bank D	"So, we understand the importance and we discuss it at different forums. But the challenge is, I think, enhancing the data literacy level among business users"

Source: Compiled by the authors based on findings

Perceived Usage

The majority have responded (Table 08) by mentioning that currently, their business analytics utilization level is low compared to their expectation. The typical reason may be that most banks are still in the early stages of adoption (according to Table 02). Nevertheless, Bank N being a mature entity, perceived business analytics utilization is at a moderate level. Findings imply that banks are very hopeful to use business analytics considering its immense benefits.

Table 08: Perceived Usage

	How do you mark the level of use of business analytics in your bank? (Low, Medium, or High)
Bank S	"Low"
Bank P	"Low"
Bank N	"Moderate"
Bank SN	"Low"
Bank D	"Low"

Source: Compiled by the authors based on findings

Future Direction

The majority (Table 09) stated that they have plans to scale up the use of business analytics. Therefore, it is apparent that Sri Lankan banks have realized the importance of business analytics and are enthusiastic to elevate its usage in the future to achieve strategic objectives.

Table 09: Future Direction

	Does your bank planning to scale-up the usage of business analytics in the future?
Bank S	"Yes, there are plans to increase the use of business analytics"
Bank P	"Yes, of course"
Bank N	"Yes, actually, now, at the moment we are focusing on something. We are doing data visualization, we are analysing historical data, but we are not

	very much focusing into the predictive analytics. So, now we are looking at all these possibilities we have and we can enable the predictive analytics"
Bank SN	"To be honest they do not have a very definite plan on this to leverage the usage"
Bank D	"So, I think a lot of discussions are going about this; the need to democratize data and used by all business lines. So yes, we do have plans"

Source: Compiled by the authors based on findings

CONCLUSION

Motivated by the growing global demand for business analytics and banking being a potential industry that could reap the benefits of business analytics with the massive data they generate, this study was conducted focusing on the Sri Lankan banking industry. The main aim of this research study was to explore the current utilization of business analytics in Sri Lankan banks as it was inevident. Responses gathered were assisted in creating a lucid picture on the business analytics utilization of the interviewed banks. This research work would be a good eye opener for the banking industry to realize the value of business analytics and to achieve future goals.

The findings revealed and verified the fact that there is a low utilization of business analytics among the banks. However, selected private commercial banks have started using business analytics and the majority are at the early stages of the maturity cycle. It was identified that some banks are rapidly adapting business analytics and geared for more value creation to the banking business. Yet, they are seeking to adapt the advanced capabilities of business analytics. The study conducted by Lasanthika and Wickramasinghe (2021), had a similar finding that the utilization of business analytics in Sri Lankan organizations is low. Further, researchers' findings attest to the Central Bank of Sri Lanka's (2019) claim; that the journey of migrating to business analytics by Sri Lankan banks is at the early stage of its life cycle. Therefore, strategies followed by actions are imperative to boost the utilization of business analytics in Sri Lankan banks leading to an exceptional return to their business. Sri Lankan banks should take actions now itself to have the right data and analytical tools which will be essential for the future market to survive (KPMG Sri Lanka, 2020).

Despite the interviewed banks having started using business analytics over a considerable period, the current utilization level is still low. Hence, as a future research direction, it is important to investigate the challenges encountered by organizations (including banks) that are impeding greater utilization of business analytics. Further, irrespective of the industry, studies are essential to investigate the return on investment of business analytics at the present level.

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