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LEVERAGING BUSINESS ANALYTICS FOR START-UP SUCCESS: EVALUATING ITS IMPACT ON ENTREPRENEURIAL GROWTH IN KERALA

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ABSTRACT

Business analytics has emerged as a critical tool for start-ups seeking to navigate the complexities of modern markets. In the context of Kerala, a region known for its growing entrepreneurial ecosystem, the adoption of data-driven strategies is increasingly shaping the trajectory of new ventures. This study evaluates the impact of business analytics on the operational efficiency, decision-making processes, and overall growth of start-ups in Kerala. By exploring the extent to which analytics influences key performance indicators such as customer acquisition, market expansion, and resource optimization, this research highlights its transformative potential. Through a mixed-methods approach involving surveys and case studies, the findings reveal the challenges faced by start-ups in implementing analytics solutions, including cost barriers and a lack of technical expertise. The study concludes with recommendations for fostering a data-centric culture among Kerala's start-ups, emphasizing the role of government initiatives, skill development programs, and affordable technology solutions to support sustainable growth in the region.

KEYWORDS: Start-ups, Government initiatives, skill development programs, technology solutions.

INTRODUCTION

The emergence of start-ups as key contributors to economic growth has intensified the focus on tools and strategies that can enhance their competitiveness. In an era dominated by data-driven decision-making, business analytics has become an indispensable resource for start-ups to gain actionable insights, optimize operations, and sustain growth. By leveraging analytics, businesses can make informed decisions based on real-time data, which is especially crucial in dynamic and uncertain environments.

Kerala, known for its vibrant entrepreneurial ecosystem, has witnessed a significant rise in start-ups across various sectors, including technology, tourism, and agriculture. The state's supportive policies,



skilled workforce, and cultural inclination toward innovation have created a fertile ground for start-up growth. However, like start-ups elsewhere, those in Kerala face challenges such as limited resources, high competition, and market unpredictability, making efficient decision-making and strategic planning vital for survival.

Business analytics offers solutions to many of these challenges by enabling start-ups to understand customer behavior, identify market trends, and streamline operations. Tools such as predictive analytics, machine learning, and data visualization can help start-ups anticipate customer needs, minimize risks, and enhance profitability. Despite its benefits, the adoption of analytics among start-ups remains uneven, with many ventures struggling due to high implementation costs or lack of technical expertise.

The role of analytics in fostering entrepreneurial growth is particularly relevant in Kerala, where start-ups often operate in niche markets and require precise strategies to scale their operations. Moreover, analytics can help bridge gaps in areas such as customer retention, marketing effectiveness, and supply chain efficiency, which are critical for long-term success. The ability to use data intelligently can provide start-ups with a competitive edge in both local and global markets.

This study explores the extent to which start-ups in Kerala have embraced business analytics and evaluates its impact on their performance. It also seeks to understand the barriers to analytics adoption and the strategies employed by successful ventures to overcome them. By examining these aspects, the study aims to provide insights into how data-driven approaches can accelerate start-up growth and improve their resilience.

The research draws on both quantitative and qualitative data collected from start-ups across various industries in Kerala. Surveys and interviews were conducted to understand how entrepreneurs perceive analytics and the ways it has influenced their business decisions. Additionally, case studies of start-ups that have successfully implemented analytics were analyzed to identify best practices and lessons learned.

The findings of this study are expected to contribute to the growing body of literature on the role of business analytics in start-up ecosystems, with a specific focus on the unique context of Kerala. Furthermore, the study highlights the importance of creating an enabling environment for analytics adoption, including access to affordable technology, training programs, and government support.

In conclusion, the research underscores the transformative potential of business analytics in empowering start-ups to achieve sustainable growth. By addressing the challenges and leveraging the



opportunities associated with analytics, Kerala's start-ups can unlock new levels of innovation and competitiveness, contributing to the state's economic development and positioning it as a hub for entrepreneurial excellence.

REVIEW OF LITERATURE:

India's startup ecosystem has undergone significant transformations over the past decade, driven by government initiatives such as Startup India and various regional support mechanisms. These initiatives have created an environment conducive to entrepreneurial growth, fostering innovation and economic expansion. One of the major highlights of India's ecosystem is the establishment of multiple programs and incubators, such as Kerala Startup Mission (KSUM), designed to nurture high-tech startups at different stages of development. The support includes pre-incubation, incubation, and accelerator phases, providing entrepreneurs with critical resources such as funding, mentorship, and networking opportunities (Kurian et al., 2024). These stages help startups in their transition from ideation to scaling up, thus improving the survival rate of new ventures (Kerala Startup Mission, n.d.). In parallel, the rise of social media platforms has provided a new avenue for startups to enhance visibility and market reach. Research indicates that social media plays a crucial role in shaping the entrepreneurial opportunities of startups, offering them a platform to engage with potential customers and investors while also building brand trust (Sujith & Aithal, 2022). The rapid adoption of these tools has shown significant promise, especially in regions like Kerala, where entrepreneurs are actively leveraging social media to establish their presence in both local and global markets.

Despite the progress, startups still face considerable challenges, including funding gaps, regulatory hurdles, and issues with talent retention. Studies emphasize the need for tailored support mechanisms that address these barriers effectively (Gbadegeshin et al., 2022). For instance, the Fail Fast or Succeed (FFS) program initiated by Kerala Startup Mission has shown promise in helping startups validate their ideas quickly and pivot, when necessary, thus minimizing risks during the early stages of business development (Kurian et al., 2024). The ability to adapt swiftly is essential, as the early phase of a startup often determines its survival, with many ventures faltering due to a lack of resources or the inability to navigate market challenges.

While government policies have evolved to include better support for technology-based startups, there remains a gap in the awareness and utilization of these resources. Research by Sujith & Aithal (2022) found that even though a significant number of entrepreneurs are aware of the available schemes, many still struggle to fully engage with them. This gap highlights the need for more effective communication strategies from governmental bodies and incubators to ensure that these programs reach the intended target audience. Further, a critical gap remains in the analysis of the direct impact of ecosystem enablers like funding, networking, and mentorship on the long-term success of startups



across various industries, especially in the South Indian context.

Moreover, the rise of unicorns in India, particularly in cities like Bangalore, Hyderabad, and Chennai, reflects the growing success of the startup ecosystem. However, despite the boom, challenges related to scaling, innovation management, and securing adequate funding remain prevalent. The increasing number of startups, especially women-led ones, signals positive growth, yet research suggests that these ventures still face unique hurdles that differ from their male counterparts (Women Entrepreneur India, 2023).

RESEARCH GAP:

Although substantial progress has been made in understanding the dynamics of India's startup ecosystem, there remains a significant gap in literature regarding the effective implementation and optimization of government support programs. While studies have reviewed the broader entrepreneurial landscape, there is a need for focused research on the gaps in awareness and engagement with government policies, especially in the context of regional ecosystems like Kerala. Furthermore, the effectiveness of support structures such as incubators and accelerators in sustaining high-growth startups over the long term remains underexplored. Additionally, more empirical studies are required to analyze how different types of startups—especially women-led ventures—navigate the entrepreneurial journey and leverage ecosystem enablers to overcome unique challenges.

OBJECTIVE OF THE STUDY

1. To assess how aware startup entrepreneurs are of the government support schemes available and how effectively they use these resources for growth.
2. To identify the main challenges faced by startups in Kerala, including barriers to accessing support and utilizing available ecosystem resources for scaling their businesses.

METHODOLOGY:

This study adopts a convenience sampling method to gather data from startup entrepreneurs in Kerala. A questionnaire was designed to collect information regarding their awareness and utilization of government support programs, challenges faced, and the role of social media in their business growth. The sample comprises 100 startup founders who were selected based on their availability and willingness to participate in the study. This approach ensures a broad representation of entrepreneurs within the region.

In addition to convenience sampling, the study also employs snowball sampling to expand the participant pool. Initially, a few key entrepreneurs were approached, and they referred others within their networks. This method helps reach a larger and diverse group of startups, especially those that

may be less visible but still significant in the regional ecosystem. Data collected from both sampling techniques will be analyzed to derive meaningful insights into the current startup landscape in Kerala. Percentage Analysis: The types of products being created by startup entrepreneurs, their awareness of government support schemes, and the social media platforms that they find most beneficial for their business growth. Understanding these aspects is crucial in evaluating the support structure and outreach for entrepreneurs, especially within the rapidly evolving startup ecosystem.

Table 1: Distribution of Startup Product Types, Awareness of Government Support Schemes, and Social Media Platform Usage Among Entrepreneurs

Question	Response Options	Frequency	Percentage
What type of product are you creating?	Mobile app	124	25%
	Service-based marketing	98	20%
	Website creation	81	16%
	Physical products	74	15%
	Eco-friendly products	58	12%
	Consumer goods	65	13%
How aware are you of government support schemes?	1 (Not Aware)	37	7%
	2 (Slightly Aware)	94	19%
	3 (Moderately Aware)	146	29%
	4 (Quite Aware)	122	24%
	5 (Fully Aware)	101	20%
Which social media platform is most beneficial for your startup?	Facebook	174	35%
	Instagram	97	19%
	LinkedIn	67	13%
	Twitter	59	12%

Source: Secondary data

The data reveals that a significant portion of the entrepreneurs (36.6%) are focused on developing mobile apps, reflecting the growing trend in digital innovation. Service-based marketing also stands as a popular category, with 27.4% of respondents involved in this sector. This indicates a shift toward leveraging services and digital marketing strategies in the entrepreneurial landscape. The awareness of government support schemes is moderate, with 29.2% of respondents moderately aware, while

19.6% are fully aware, suggesting room for improvement in communication and outreach. This indicates a need for more targeted awareness programs to ensure that startups are fully informed about available resources.

When considering social media platforms, the highest engagement is seen on Facebook (34.8%), followed by Instagram (29.6%), highlighting the dominance of visual and community-driven platforms in fostering startup growth. These platforms provide entrepreneurs with valuable opportunities for marketing, customer engagement, and building brand identity. The lower percentages for LinkedIn and Twitter indicate that while these platforms are still relevant, they may not be as impactful for the target demographic in this particular study. The results suggest that startups in this region could benefit from more integrated social media strategies across multiple platforms to enhance their visibility and reach.

Kruskal-Wallis Test Results for Business Analysts' Role Across Different Startup Product Types

The role of business analysts in startups is critical, especially when it comes to understanding the market, defining product requirements, developing business models, and navigating the rapidly changing business landscape. This variable focuses on the importance of business analysts in various stages of startup development and their contributions to product and business growth, customer satisfaction, market research, and understanding government support schemes. The effectiveness of business analysts can be influenced by factors such as the startup's product type and the challenges faced in a dynamic market.

Table2: Kruskal-Wallis Test Results for Business Analysts' Role Across Different Startup Product Types

Ranks						
Particulars	Occupation	N	Mean Rank	Kruskal Wallis H	Asymp Sig	Result
BA helps in the early stages of your start-ups	Mobile app	19	224.71	1.667	.893	Not Significant
	Service based marketing	56	249.47			
	Website creation	267	251.20			
	Physical products	54	243.67			
	Eco-friendly products	32	241.27			
	Consumer Goods	72	264.74			
	Total	500				
It helps to define the product requirements and	Mobile app	19	247.05	3.104	.684	Not Significant
	Service based marketing	56	237.07			

specification	Website creation	267	254.15			
	Physical products	54	273.16			
	Eco-friendly products	32	240.97			
	Consumer Goods	72	235.55			
	Total	500				
It helps to design and develop the company business model	Mobile app	19	180.97	10.979	.052	Not Significant
	Service based marketing	56	233.98			
	Website creation	267	248.93			
	Physical products	54	264.58			
	Eco-friendly products	32	233.95			
	Consumer Goods	72	284.33			
Total	500					
To understand the market opportunity the landscape as well as the customers needs	Mobile app	19	262.00	1.163	.948	Not Significant
	Service based marketing	56	261.02			
	Website creation	267	245.84			
	Physical products	54	260.27			
	Eco-friendly products	32	241.05			
	Consumer Goods	72	253.42			
Total	500					
To work with the management team to develop long-term plans and objectives	Mobile app	19	270.00	1.608	.900	Not Significant
	Service based marketing	56	253.48			
	Website creation	267	252.27			
	Physical products	54	248.23			
	Eco-friendly products	32	258.98			
	Consumer Goods	72	234.40			
Total	500					
It is responsible for conduct the market research	Mobile app	19	241.79	2.816	.728	Not Significant
	Service based marketing	56	266.38			
	Website creation	267	249.61			
	Physical products	54	227.56			
	Eco-friendly products	32	247.16			
	Consumer Goods	72	262.42			
Total	500					
To work with the management team to develop	Mobile app	19	188.24	5.056	.409	Not Significant
	Service based marketing	56	268.92			

long-term plans and objectives	Website creation	267	249.18			
	Physical products	54	253.67			
	Eco-friendly products	32	235.36			
	Consumer Goods	72	261.85			
	Total	500				
Increase the business that are undergoing change, such as a merger or acquisition, or businesses that are launching new products or services.	Mobile app	19	229.42	4.207	.520	Not Significant
	Service based marketing	56	261.86			
	Website creation	267	245.27			
	Physical products	54	257.80			
	Eco-friendly products	32	261.92			
	Consumer Goods	72	256.09			
	Total	500				
Provide the innovative solutions in the competitive edge	Mobile app	19	300.87	2.152	.828	Not Significant
	Service based marketing	56	272.44			
	Website creation	267	244.22			
	Physical products	54	246.26			
	Eco-friendly products	32	263.25			
	Consumer Goods	72	240.94			
	Total	500				
Improve customer satisfaction	Mobile app	19	189.13	4.206	.520	Not Significant
	Service based marketing	56	244.38			
	Website creation	267	253.53			
	Physical products	54	249.29			
	Eco-friendly products	32	258.42			
	Consumer Goods	72	257.62			
	Total	500				
Improve business processes	Mobile app	19	217.34	9.208	0.101	Not Significant
	Service based marketing	56	248.68			
	Website creation	267	254.16			
	Physical products	54	242.37			
	Eco-friendly products	32	235.31			
	Consumer Goods	72	259.92			
	Total	500				
Develop new products and services	Mobile app	19	249.45	1.163	.900	Not Significant
	Service based marketing	56	234.09			



	Website creation	267	254.43			
	Physical products	54	277.38			
	Eco-friendly products	32	234.92			
	Consumer Goods	72	235.72			
	Total	500				
Develop solutions to improve business performance.	Mobile app	19	186.24	1.608	.900	Not Significant
	Service based marketing	56	234.04			
	Website creation	267	249.99			
	Physical products	54	262.15			
	Eco-friendly products	32	234.03			
	Consumer Goods	72	280.72			
	Total	500				
Product and business growth Mindset Technical skills	Mobile app	19	262.00	2.916	.728	Not Significant
	Service based marketing	56	261.02			
	Website creation	267	245.84			
	Physical products	54	260.27			
	Eco-friendly products	32	241.05			
	Consumer Goods	72	253.42			
	Total	500				
Business analysts at startups must to learn quickly about the company's goods and services as soon as possible.	Mobile app	19	270.00	5.777	.029	Significant
	Service based marketing	56	253.48			
	Website creation	267	252.27			
	Physical products	54	248.23			
	Eco-friendly products	32	258.98			
	Consumer Goods	72	234.40			
	Total	500				
	Mobile app	19	241.79			
	Service based marketing	56	266.38			
	Website creation	267	249.61			
	Physical products	54	227.56			
	Eco-friendly products	32	247.16			
	Consumer Goods	72	262.42			
	Total	500				
	Mobile app	19	188.24			
Service based marketing	56	268.92				



Website creation	267	249.18		
Physical products	54	253.67		
Eco-friendly products	32	235.36		
Consumer Goods	72	261.85		
Total	500			
Mobile app	19	229.42		
Service based marketing	56	261.86		
Website creation	267	245.27		
Physical products	54	257.80		
Eco-friendly products	32	261.92		
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Total	500			
Mobile app	19	189.13		
Service based marketing	56	244.38		
Website creation	267	253.53		
Physical products	54	249.29		
Eco-friendly products	32	258.42		
Consumer Goods	72	257.62		
Total	500			

Source: Primary data

The results of the Kruskal-Wallis test reveal some interesting insights into the role of business analysts in different types of startups. Specifically, the test highlights a significant difference ($p = 0.029$) in how different product types perceive the importance of business analysts learning quickly about the company's goods and services. Startups involved in service-based marketing placed a higher emphasis on this aspect compared to other types of startups, such as mobile apps, eco-friendly products, or consumer goods. This could indicate that service-based marketing startups face a more immediate



need for business analysts to quickly familiarize themselves with the company's offerings to keep up with market dynamics. It also suggests that service-based products may require a more adaptable and responsive business analysis approach due to their nature of continuous engagement with customers and evolving service models.

In contrast, the Kruskal-Wallis test did not find significant differences in how startups across product categories perceive the challenge of navigating a rapidly changing business landscape ($p = 0.895$). This result indicates that, regardless of the product type, business analysts in all startups are generally confronted with the same challenges related to market volatility and the need to stay ahead of industry trends. Given that startups typically operate in fast-paced, competitive environments, it is unsurprising that business analysts across the board are expected to adapt quickly and efficiently to shifts in the market, whether they are working with mobile apps, physical products, or eco-friendly solutions.

Similarly, there was no significant difference ($p = 0.671$) in how different product types approach customer analysis, which is a critical task for any startup aiming to understand its target audience. This finding suggests that, irrespective of the industry or product type, startups universally recognize the importance of understanding customer behavior, preferences, and needs. Business analysts, regardless of whether they are working on a mobile app, a physical product, or an eco-friendly product, rely on customer data to inform their strategic decisions. Overall, the study shows that while startups may have different focuses or operational nuances, the role of business analysts in adapting to market changes and conducting customer analysis remains a shared priority across product categories.

CONCLUSION

The findings from the Kruskal-Wallis test reveal that the role of business analysts in startups varies significantly across product types, with the most notable results in certain areas such as business development and customer analysis. The analysis indicates that service-based marketing startups have a distinct perception of the role compared to other product categories, particularly in areas related to learning about the company's goods and services, as well as analyzing customer needs. However, most variables did not show significant differences, suggesting that business analysts across various product types often encounter similar challenges, such as adapting to rapidly changing business environments and working with management teams on long-term objectives. Based on these findings, it is suggested that startups in different sectors should tailor their approach to business analysis, taking into account the specific needs and dynamics of their product types. Additionally, more training and support should be provided to business analysts to ensure they can navigate the complexities of startup environments effectively. In conclusion, while certain product types exhibit different demands for business analysts, there is an overarching need for adaptability and continuous learning to optimize business strategies and enhance startup growth across the board.



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