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Accelerating Growth: Unleashing the Power of Accelerator Programs as Strategic Investments for Startups in Pakistan

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ABSTRACT

This research aims to assess the impact of accelerator programs on the innovation performance of participating firms, particularly emphasizing the roles played by peers, mentors, and investors. The study delves into how connections with others may inspire creative actions and propel new businesses forward. The data was collected using a standardized survey questionnaire, and the results were organized using statistical analysis. The results show that accelerator programs substantially affect company success, with mentors and investors showing a real correlation but peers showing no relevant association. These findings demonstrate the robust correlation between accelerator programs and successful outcomes for businesses in Pakistan. However, the results show that peers are not the only factor in determining the success or failure of a firm. Although startups play a critical role in bringing new technologies to market and stimulating economic development, their success is often predicated on drawing on the expertise of others outside the company.

Keywords: Incubator Initiatives, Development Outcomes, Peers, Mentors, Investors; Pakistan.

1. INTRODUCTION

It is difficult for startups to succeed due to the high risks of becoming an entrepreneur. To get through these stumbling blocks, many company owners enroll in accelerator courses (Kiradoo, 2023; Acheampong et al., 2023). Startups may benefit significantly from the seed money, coworking space, networking opportunities, mentoring, and instructional materials made available via these temporary programs (Cohen & Hochberg, 2014; Font-Cot et al., 2023). By offering novel technology to the market, startups significantly contribute to economic growth. However, many factors—including the startup's internal knowledge and connections to the outside world—contribute to whether the company succeeds. Accelerator programs (Colombelli & Quatraro, 2019) and innovation capability (Sahlman, 1990; Sievers et al., 2013; Yang, Y., & Zhou, 2023) have been studied by academics to determine their effects on firm value. Accelerators provide budding business owners with the tools they need to succeed by providing a safe space for experimentation and feedback. These courses also produce internationally-minded business owners equipped to undertake overseas investments (Liu et al. 2017; Owen et al. 2023).



Accelerator programs reduce the likelihood of company failure and create prosperous entrepreneurs who add to economic development (Battistella et al., 2017; Gonzalez-Uribe & Leatherbee, 2017; Haagett, 2023) via a combination of peer support, mentoring, and investor finance. Like accelerator programs, business angels provide financial support and assistance to nascent enterprises, and many successful startups have benefited from their early investments (Pinch & Sunley, 2009; Park & Kim, 2023). In conclusion, business angels and accelerator programs are essential tools for businesses aiming to thrive in the competitive world of entrepreneurship. By offering vital resources and support, these programs help businesses overcome internal knowledge gaps and achieve their entrepreneurial ambitions. The study's research questions are as follows:

- I. How can startups participating in accelerator programs benefit from the knowledge transfer offered by the accelerators' informal networks, and how does this help them improve their innovation performance? (Del Sarto et al., 2022)
- II. To what extent do startups value business accelerators? (Lange & Johnston, 2020)
- III. What factors contribute to the success or failure of businesses, leading to either prosperity or bankruptcy? (Hyder & Lussier, 2016)

Based on the given knowledge, the main objectives of the study can be stated as follows:

1. To evaluate the influence of accelerator programs on companies' innovation performance.
2. To assess the perceived value of business accelerators by startups, examining the extent to which they consider these programs beneficial.
3. To identify the factors that contribute to the success/failure of businesses, aiming to understand why some businesses thrive while others face bankruptcy.

Altogether, the study aims to examine the significance of external relationships, such as those with peers, mentors, and investors, in fostering inventive behavior and contributing to the overall success of startups. It seeks to provide insights into the role of accelerator programs in enhancing business performance and their correlation with positive outcomes, particularly in the context of startups in Pakistan.

2. LITERATURE REVIEW

In recent years, there has been a growing body of knowledge regarding accelerator programs, with numerous studies focusing on their structure, effectiveness, and impact on business success. Miller & Bound (2011) conducted one of the initial comprehensive studies on accelerator programs, examining their development, organizational structure, and associated benefits. Cohen & Hochberg (2014) compared critical aspects of accelerator programs with those of incubators and angel investors. Isabelle (2013) explored how the distinctions between these programs influence the decision-making process of new entrepreneurs considering participation. Furthermore, studies have demonstrated that proximity to incubators enhances innovation performance (Eftekhari & Bogers, 2015; Rothaermel & Thursby, 2005; Scillitoe & Chakrabarti, 2010; Iacobucci & Perugini, 2023). Although accelerators are often seen as a new generation of incubators, the impact of open innovation facilitated by accelerators on innovation performance must be addressed (Pauwels et al., 2016; Wise & Valliere, 2014; Kramer et al. 2023). Startup programs, designed to provide seed funding and structured entrepreneurial support, have become integral components of entrepreneurial ecosystems worldwide, particularly in regions like Pakistan, where aspiring entrepreneurs face challenges in accessing financial resources (Brown et al., 2019). Accelerators, in particular, have garnered significant attention due to their perceived ability to foster entrepreneurship and drive profitable growth (Phan et al., 2016; Passavanti et al. 2023).

Accelerator programs assist creative enterprises in reducing time to market by leveraging existing networks and implementing scarcity management techniques to inspire senior management teams (Stayton & Mangematin, 2019). From a Resource-Based View (RBV), accelerators are considered effective in acquiring the necessary competencies and resources to compete successfully (Barney et al. 2001). On the other hand, signaling theory focuses on human capital aspects such as education, founder and managerial experience, and qualifications and how these factors influence an entrepreneur's likelihood of securing accelerator funding (Colombo, 2021; Fisher et al., 2017). This theory explains why certain investments appeal to investors and help them interpret different signals to make informed investment decisions. Entrepreneurs can bridge the information gap by providing investors with positive intellectual capital (IC) signals (Spence, 2002; Maalaoui et al. 2023; Wu & Yu, 2023). Overall, research on accelerator programs suggests they can serve as valuable tools in promoting entrepreneurship and supporting startup development, particularly in regions with limited financial resources. However, further investigation is necessary to fully understand the effects of open innovation facilitated by accelerators on innovation performance and how accelerator programs can be effectively utilized to assist companies in their growth and success. The following research hypotheses has been emerged with the given literature, i.e.,

H1: Start-ups participating in accelerator programs that facilitate knowledge transfer from informal networks will exhibit higher levels of innovation performance compared to those without access to such networks.

H2: The perceived value of business accelerators among start-ups will positively influence their decision to join and actively engage with these programs, leading to enhanced entrepreneurial outcomes.

H3: The success or failure of businesses can be attributed to a combination of factors, including internal expertise, external resources, and the effective utilization of accelerator programs, with the presence of these factors positively impacting the likelihood of business prosperity and reducing the risk of bankruptcy.

Multiple additions to the current body of knowledge are anticipated based on the available data from this investigation:

- I. **Practical Contribution:** The study's results will be helpful for entrepreneurs, startup accelerators, and legislators, so it has a real-world impact. Business owners need to know how accelerator programs affect innovation performance to make educated choices about whether or not to enroll in one. Startup accelerators may also use the study's results to improve the services they provide entrepreneurs. The study's findings may also help policymakers create and enact measures beneficial to developing entrepreneurial and startup ecosystems.
- II. **Theoretical Contribution:** This research fills a need in the literature by analyzing how accelerator programs affect innovators' ability to generate and commercialize new ideas. This research contributes to our understanding of how startups use external information sources by examining these connections' role in inspiring creative behavior and propelling them to success. This research adds to the existing literature by examining accelerator programs in Pakistan and the distinct possibilities and problems that companies in this area face.
- III. **Methodological Contribution:** This work contributes by collecting and analyzing large amounts of data using a standardized survey questionnaire and applying statistical analysis. The study contributes to the methodological rigor of research on accelerator programs and innovation performance by using a rigorous research approach, increasing the validity and trustworthiness of its results.

The findings of this research have important implications for entrepreneurs, startup accelerators, and politicians that want to promote innovation and increase the likelihood of venture success.

3. METHODOLOGY

This study examines the effectiveness of accelerator programs as a financing strategy for startups in Pakistan. The study employs a quantitative research strategy and a survey questionnaire to collect data. The target population for this study is Pakistani startups that have participated in accelerator programs. A non-probability sampling method, specifically purposive selection, ensures the participants meet the study's requirements. The survey questionnaire gathers information on accelerator programs' impact on business development, success, and funding prospects. The questionnaire consists of closed-ended questions, including Likert scale and multiple-choice questions. The relationship between the dependent variable, the impact of accelerator programs as a startup investment tool, and the independent factors are examined using multiple regression analysis. Statistical tools such as SPSS are utilized for data analysis. The data presents tables and graphs, and the conclusions have been presented about the study's objectives and research questions. Alternative statistical techniques are used to analyze the data and test hypotheses. Here are some statistical tests used in the study:

- I. T-test: This statistical test assesses whether the means of the two groups significantly differ. For example, a t-test can be used to determine if there is a significant difference in the average revenue between firms that have participated in accelerator programs and those that have not.
- II. Analysis of Variance (ANOVA): ANOVA is a statistical method for comparing the means of three or more groups. It can be employed, for instance, to compare the income of businesses that have participated in different types of accelerator programs (e.g., tech-focused vs. socially-driven programs) and determine if there is a statistically significant difference.
- III. Chi-squared test: This test examines whether there is a significant relationship between two categorical variables. For example, a chi-squared test can be conducted to investigate if there is a significant correlation between the type of accelerator program a firm has undergone and its likelihood of receiving a follow-on investment.
- IV. Descriptive statistics: It is used to summarize and describe a dataset's attributes. Statistics commonly include the mean, median, mode, range, and standard deviation. Before diving into more detailed statistical studies, a quick summary of the data using descriptive statistics may be helpful.
- V. Correlation Matrix: The correlation coefficient determines the degree of association between two continuous variables and the direction in which that association points. For instance, the strength of the link between a company's financing and its

sales growth may be measured by a correlation coefficient.

- VI. Regression Analysis: It determines the relative importance of the independent and dependent variables. It helps determine how strong a connection is and how much it means and lets anticipate and explain one variable based on another.

The research uses these statistical tools to examine the efficacy of accelerator programs as a strategy for supporting Pakistani startups. The study will utilize the following equation to examine the relationship between startup participation in accelerator programs and various independent variables:

$$\text{Start-ups} = \beta_0 + \beta_1\text{PEERS} + \beta_2\text{MENT} + \beta_3\text{INV} + \varepsilon \quad (1)$$

In this equation:

- ❖ Startups represent the dependent variable, the impact of accelerator programs as a startup investment tool.
- ❖ β_0 is the intercept, representing the constant term in the equation.
- ❖ β_1 , β_2 , and β_3 are the coefficients for the independent variables X1 (PEERS), X2 (MENT), and X3 (INV), respectively. These coefficients indicate the strength and direction of the relationship between each independent variable and the impact of accelerator programs.
- ❖ PEERS represents the influence of peers as an external information source in accelerator programs.
- ❖ MENT represents the influence of mentors as an external information source in accelerator programs.
- ❖ INV represents the influence of investors as an external information source in accelerator programs.
- ❖ ε represents the error term, accounting for unexplained variation in the dependent variable.

Figure 1 shows the conceptual framework of the study for ready reference.

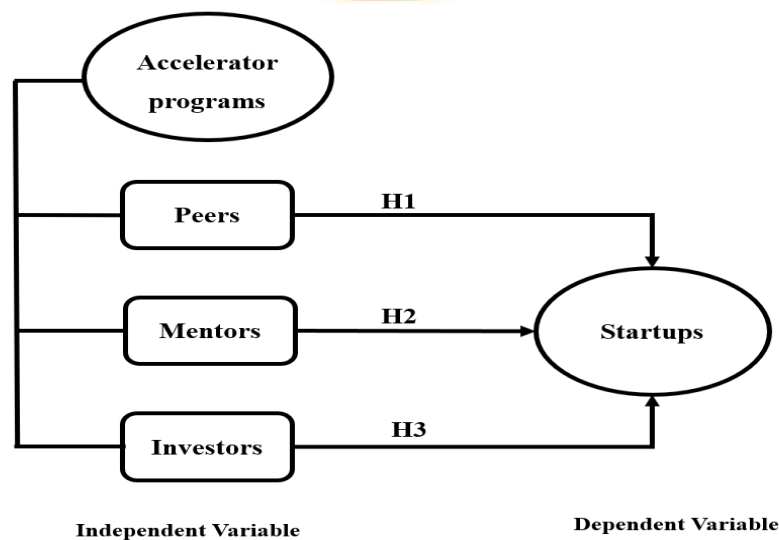


Figure 1: Conceptual Framework

Source: Author's extract.

The multiple regression analysis help determine the extent to which the presence of peers, mentors, and investors in accelerator programs affects the impact of these programs on startup performance. By utilizing equation (1) and conducting the multiple regression analysis, the study aims to provide quantitative evidence of the influence of accelerator programs and specific external information sources on the success and performance of startups in Pakistan.

4. RESULTS

Table 1 presents the descriptive statistics for the startup and peers, mentors, and investors. The sample size for this research consists of 15 startups. The startup variable's mean is 23.39. Mentors and peers have the same average value of 6.20, while investors have a mean of 6.11. For mentors, the median value is 5.67; for investors, it is 6.33; for peers, it is 6.00; and for startups, it is 24.44. The mode for mentors is found to be 5.67; for investors, it is 6.33; for peers, it is 5.33; and for startups, it is 24.44. The standard deviation is 2.61 for mentors, 1.276 for investors, 1.646 for peers, and 2.730 for startups. The variance for mentors is 6.83; for investors, it is 1.63; for peers, it is 2.711; and for startups, it is 7.45. These values indicate that the data points for mentors are more spread out than in other accelerator programs. Mentors are found to be slightly positively skewed (0.111), while investors (-1.114), peers (-0.392), and

startups (-0.233) are negatively skewed. Investors are leptokurtic (1.105), mentors (-1.076) and startups (-0.615) are platykurtic, and peers (0.244) are mesokurtic. The range for mentors is 7.67 (max = 28.44, min = 2.33); for investors, it is 4.67 (max = 7.67, min = 3.00); for peers, it is 6.33 (max = 9.0, min = 2.67); and for startups, it is 9.22 (max = 28.44, min = 19.22). Since mentors exhibit the highest range among the accelerator programs, it indicates that the responses from different startups vary more widely for mentors than the other accelerator programs.

Table 1: Descriptive Statistics

Methods		Mentors	Investors	Peers	Startup
N	Valid	15	15	15	15
	Missing	0	0	0	0
Mean		6.200	6.111	6.200	23.392
Std. Error of Mean		.6751	.3296	.4251	0.705
Median		5.666	6.333	6	24.444
Mode		5.670	6.330 ^a	5.330 ^a	24.440
Std. Deviation		2.614	1.276	1.646	2.730
Variance		6.838	1.630	2.711	7.457
Skewness		0.111	-1.114	-0.392	-0.233
Std. Error of Skewness		0.580	0.580	0.580	0.580
Kurtosis		-1.076	1.105	0.244	-0.615
Std. Error of Kurtosis		1.121	1.121	1.121	1.121
Range		7.670	4.670	6.330	9.220
Minimum		2.330	3	2.670	19.220
Maximum		10	7.670	9	28.440
Sum		93	91.670	93	350.890
a. Multiple modes exist. The smallest value is shown					

Table 2 presents the correlation analysis among the independent variables to determine their significance and relationship with accelerator programs. This analysis aims to identify which determinant of the accelerator program holds more significance compared to others during operation. The results indicate that mentors correlate significantly and highly positively with accelerator programs. This suggests that mentors play a crucial role and strongly impact the effectiveness of accelerator programs (Becker & Enderich, 2023). Furthermore, investors also show a significant relationship with accelerator programs; although the correlation is highly positive, it is slightly lower than mentors. This implies that investors contribute significantly to the success of accelerator programs, but their impact may be slightly less pronounced than that of mentors. However, a modest and statistically negligible positive link exists between peers and accelerator programs. This indicates that peers' impact on accelerator programs is likely less than that of mentors and investors. The correlation study highlights the significance of mentors as a determining factor of accelerator programs. They contribute significantly and significantly to the accomplishment of accelerator programs. Similarly important, albeit to a lesser extent, are investors. While there is a favorable association between Peers and accelerator programs, the two are not statistically significant.

Table 2: Correlations between Regressors

Variables		Mentors	Investors	Peers	Accelerator Program
Mentors	Pearson Correlation	1	.533*	.187	.892**
	Sig. (2-tailed)		.041	.504	.000
	N	15	15	15	15

Variables		Mentors	Investors	Peers	Accelerator Program
Investors	Pearson Correlation	.533*	1	-.072	.625*
	Sig. (2-tailed)	.041		.799	.013
	N	15	15	15	15
Peers	Pearson Correlation	.187	-.072	1	.497
	Sig. (2-tailed)	.504	.799		.060
	N	15	15	15	15
Accelerator Program	Pearson Correlation	.892**	.625*	.497	1
	Sig. (2-tailed)	.000	.013	.060	
	N	15	15	15	15

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

The relationships between the company and its mentors, investors, and peers are analyzed in Table 3. This investigation aims to ascertain which factor has the most bearing on new ventures. There is a very substantial and favorable relationship between mentors and companies, as shown by the data. As a result, having mentors on board is crucial to a startup's success. Similarly, a strong positive and substantial connection exists between investors and new businesses. This shows that the assistance and money supplied by investors play a vital role in the establishment and success of companies (Schaberg, 2023). However, a weak positive association exists between peers and new businesses. This suggests that there may be little correlation between peer pressure and the success of companies. In conclusion, the results of the correlation study show that mentors and investors have a substantial favorable effect on the success of companies. Peers, however, show a weak association, which may indicate that their influence on new businesses is muted.

Table 3: Correlations between Regressors and Regressand

Variables		Mentors	Investors	Peers	Startup
Mentors	Pearson Correlation	1	.533*	0.187	.603*
	Sig. (2-tailed)		0.041	0.504	0.017
	N	15	15	15	15
Investors	Pearson Correlation	.533*	1	-0.072	.548*
	Sig. (2-tailed)	0.041		0.799	0.034
	N	15	15	15	15
Peers	Pearson Correlation	0.187	-0.072	1	0.477
	Sig. (2-tailed)	0.504	0.799		0.072
	N	15	15	15	15
Startup	Pearson Correlation	.603*	.548*	0.477	1
	Sig. (2-tailed)	0.017	0.034	0.072	
	N	15	15	15	15

*. Correlation is significant at the 0.05 level (2-tailed).

Summary information about the regression model's key components is shown in Table 4. This table's R-value, R-square, and Adjusted R-squared columns are the most important for making sense of the findings. Independent factors (competitors, mentors,

and investors) are correlated with the company based on the R-value. With an R-value of 0.791, we can say that accelerator program factors correlate positively with companies by 79.1%. In regression analysis, a higher R-squared value indicates that the model well describes the data. An R-squared score of 0.625 indicates that factors related to accelerator programs can account for 62.5% of the variation in startup performance. This shows that the model explains the connection between new businesses and the factors. The number of independent variables is considered while calculating the Adjusted R-squared. It gives us a metric for evaluating the precision of the model. The model successfully accounts for around 52.3% of the variance in startups when controlling for the factors that make up accelerator programs, as measured by the Adjusted R-squared value. Startups and the factors influencing accelerator programs are strongly correlated, as shown by the model summary in Table 4. The considerable amount of startup variability explained by the regression model demonstrates the model's utility for elucidating the connection between startups and the determinants of accelerator programs. There is an opportunity for improvement in the model's capacity to explain the variability in startups based on the drivers evaluated, as shown by the modified R-squared value.

Table 4: Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
1	.791 ^a	.625	.523	1.885
a. Predictors: (Constant), peers, investors, mentors				

Table 5 of the ANOVA results show that the regression model significantly impacts the overall effect in explaining the dependent variable (startup) variability. Peers, investors, and mentors all have a role in explaining the variance in startups, as shown by the substantial F-statistic.

Table 5: ANOVA^a Estimates

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	65.273	3	21.758	6.118	.011 ^b
	Residual	39.119	11	3.556		
	Total	104.392	14			
a. Dependent Variable: startup						
b. Predictors: (Constant), peers, investors, mentors						

The regression results are shown in Table 6. The findings indicate that the intercept (constant term) equals 11.283. This is the value of the dependent variable (startup) that may be anticipated if all other factors are held constant at 0. The standard error for the constant term is 3.292, which provides information about the estimate's precision. Mentors (MENT) have a standardized coefficient of 0.603, indicating a significant positive impact on startups. Having mentors in an accelerator program substantially influences the success and growth of startups. The standardized coefficient of investors' (INV) influence on new ventures is 0.548. This suggests that investors' participation in the accelerator program increases the company's success probability. Investors may aid companies in their development by providing money, advice, and connections. There is a modest but positive impact of peer influence on startup enterprises, as evaluated by a standardized coefficient of 0.477. The p-value of 0.072 indicates that the positive coefficient may not indicate a statistically meaningful association between peers and startups. This suggests that fellow accelerator program participants may have less of an impact on a startup's success than program mentors and investors. The p-values of mentors and investors in this study are lower than the threshold for statistical significance (0.05). However, the p-value for peers is more than .05. This indicates that the association between the two is not statistically significant. From a managerial perspective, mentoring and attracting investors is crucial for enhancing startup success. Allocating resources to establish mentorship programs and attracting investors can significantly contribute to startups' growth, development, and overall performance. On the other hand, the role of peers may be less influential, indicating that efforts should be directed more toward mentorship and investor engagement. These findings highlight the importance of fostering strong mentorship networks and securing investor support within accelerator programs to maximize the potential for startup success. Managers and policymakers should prioritize building effective mentorship programs, attracting investors, and fostering supportive environments facilitating knowledge-sharing and networking among startups, mentors, and investors.

Table 6: Regression Estimates

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.283	3.292		3.427	.006
	Mentors (MENT)	.630	.231	.603	2.724	.017
	Investors (INV)	1.173	.496	.548	2.363	.034
	Peers (PEERS)	.792	.404	.477	1.958	.072

a. Dependent Variable: startup

5. DISCUSSION

5.1. How can startups participating in accelerator programs benefit from the knowledge transfer offered by the accelerators' informal networks, and how does this help them improve their innovation performance? (Del Sarto et al., 2022)

Figure 2 presents a graphical representation of the impact of accelerator programs on products and services. According to the data displayed, approximately 93.3% of the respondents indicated that their products and services were likely to be modified due to their participation in accelerator programs. This finding suggests that accelerator programs play a significant role in shaping and transforming the offerings of start-ups. The high percentage of respondents expressing the likelihood of modifying their products and services highlights the influence and effectiveness of accelerator programs in driving innovation and adaptation within start-ups. By participating in accelerator programs, start-ups access valuable resources, mentorship, and networking opportunities, which can stimulate creativity, inspire new ideas, and encourage product/service enhancements. The findings depicted in Figure 1 emphasize the positive impact of accelerator programs in facilitating product/service modifications, ultimately contributing to the growth and success of start-ups in dynamic and competitive markets.

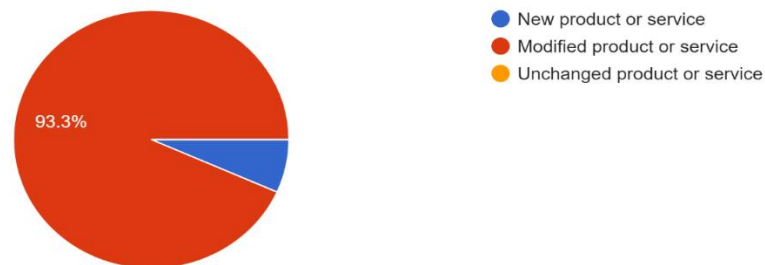


Figure 2: Impact on product/service due to accelerator programs

Source: Author's survey.

Figure 3 illustrates the distribution of responsibility for bringing innovation among different stakeholders in the context of accelerator programs. The data indicates that peers are perceived as the most significant contributors to innovation, accounting for 60% of the responsibility. Mentors, who come in second to peers, are credited with 26.7% of the initiative to foster creativity. However, investors contribute the least to innovation, at just 13.3%. These results demonstrate how peers may play a significant role in encouraging innovation in early-stage companies. In accelerator programs, interactions between peers provide helpful information, new points of view, and chances to work together, all of which can inspire the development of novel ideas and methods. Given that peers bear a disproportionate share of the burden for driving innovation, the ecology around accelerator programs must facilitate opportunities for mutual learning, information sharing, and issue resolution. To a lesser degree than peers, mentors may be essential in fostering creative thinking and new ideas. Startups may benefit significantly from their advice, direction, and industry experience, which can help them create and execute cutting-edge plans and procedures. Interestingly, investors are seen to make the least contribution to innovation, which may indicate that their primary function is providing capital and strategic assistance rather than actively fostering creativity. Investors contribute to innovation in various ways, including offering access to networks, market insights, and possible alliances in addition to the crucial resources and growth prospects they provide.

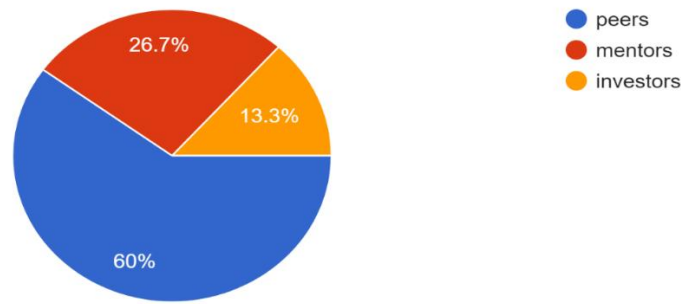


Figure 3: Accelerator program responsible for the impact

Source: Author's survey.

Forés and Camisón (2016) have pointed out how mentors and peers may help startups' innovation performance. Startups may improve their products, processes, and management techniques via these partnerships. Mentors' knowledge and experience allow them to guide and encourage startups, helping them create novel solutions to problems. Peers, on the other hand, serve as a valuable source of feedback, collaboration, and knowledge exchange, promoting continuous learning and improvement. Furthermore, the interaction with investors has also been found to positively impact innovation performance. Investors bring industry insights, market knowledge, and connections that can fuel innovation within start-ups (Surana et al., 2023). By leveraging this external knowledge and integrating it with their internal capabilities, start-ups can foster innovation and drive competitive advantage.

5.2. To what extent do startups value business accelerators? (Lange & Johnston, 2020)

Figure 4 depicts startups' dependency level on accelerator programs based on the data collected from 15 startups in Pakistan. The findings reveal that all 15 startups included in the study incorporate accelerator programs into their business processes, indicating a high level of dependency on such programs for their operations and growth. Furthermore, the results indicate that startups in Pakistan display varying degrees of dependency on different stakeholders within the accelerator programs. Among the three critical stakeholders considered, investors are identified as the most significant source of dependency, with 46.7% of startups relying on them. This suggests that securing funding and financial resources from investors plays a crucial role in supporting and sustaining the operations of startups in Pakistan. Mentors are recognized as the second most significant source of dependency, with 40% of startups relying on their guidance, expertise, and support. Mentors are critical in providing startups with valuable insights, industry knowledge, and mentoring relationships, contributing to their overall growth and success. On the other hand, peers are the least relied-upon source of dependency among startups in Pakistan, with only 13.3% of startups depending on them. This implies that while interactions and collaboration with peers are valuable, startups in Pakistan may emphasize peer-to-peer relationships less than investors and mentors. These findings highlight the significance of investors and mentors in driving the growth and development of startups in Pakistan through accelerator programs. The high dependency on investors underscores the importance of securing financial support and resources while relying on mentors emphasizes the value of their guidance and knowledge-sharing.

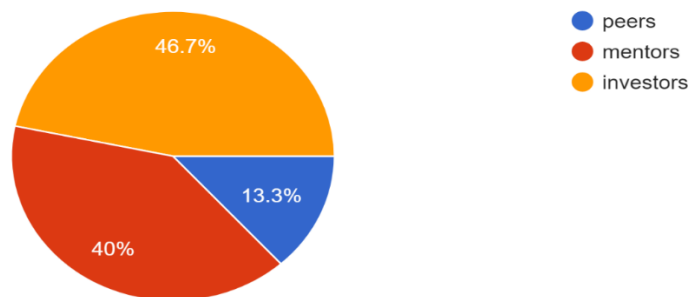


Figure 4: Accelerator program contributing in startups

Source: Author's survey.

The study by Lange & Johnston (2020) revealed that users of accelerator programs highly valued the program's impact on refining their business outcomes. The users enormously appreciated the program and enthusiastically recommended it to other entrepreneurs. What is particularly intriguing is that the level of appreciation for the accelerator program remained significant, regardless of whether the users' businesses ultimately succeeded or failed. This suggests that the users found the experience and benefits derived from the program valuable, irrespective of the long-term survival of their businesses. These findings highlight the positive impact of accelerator programs on entrepreneurs' overall business development and the perceived value they bring to the users. It indicates that even if a business does not succeed long-term, the knowledge, skills, and networks gained through the accelerator program can still provide substantial benefits and contribute to the entrepreneurs' growth and learning (Vaz et al., 2023).

5.3. What factors contribute to the success or failure of businesses, leading to either prosperity or bankruptcy? (Hyder & Lussier, 2016)

Based on secondary research conducted through case studies and articles, several key findings have emerged regarding the role of capital and investors in the success or failure of startups, particularly in Pakistan. Firstly, it has been identified that a lack of capital or investment is often cited as the primary determinant of business failure (Hyder & Lussier, 2016). In a capital-starved country like Pakistan, adequate funding is crucial for the sustainability and growth of businesses. Furthermore, Pakistan's unstable macroeconomic environment, including factors such as the rapid devaluation of the rupee, geopolitical pressures, and a changeable political system, creates an environment that makes foreign investors cautious about investing in the country (Zaman, 2023a). The importance of investors in the success or failure of startups is further shown through case studies of particular failures of companies in Pakistan, such as SWVL and Airlift. The influence of global investment patterns on startup operations is shown by SWVL's decision to halt its retail business in Pakistan, which the company blamed on a shift in investor mood in the public markets. Similarly, Airlift ran into trouble when investors abandoned a significant investment round. The crucial significance of money in maintaining a startup was highlighted by the impact of the VCs' withdrawal of financial assistance on the company's operations and viability. According to research conducted in Pakistan (Jamil et al., 2023), investors and access to sufficient capital play a crucial impact in the success or failure of startups. Al-Housani et al. (2023) and Zaman (2023b) both find that insufficient funding and the cautious attitude of investors, driven by both global and local variables, may substantially affect the operations and sustainability of startups. The study's significant links with its research hypotheses are summarized in detail in Table 7. It presents an overview of the findings regarding the significance of the relationships between variables examined in the study.

Table 7: Hypotheses Summary

S.No.	Study's Hypotheses	Prob. value at 5% significance level	Decision
1	Peers have a significant impact on startups.	0.072>0.05	Rejected
2	Mentors have a significant impact on startups.	0.017<0.05	Accepted
3	Investors have a significant impact on startups.	0.034<0.05	Accepted

Source: Author's estimate

Cohen et al. (2019) discovered that variations in program design, such as the frequency of mentor consultations, interactions with potential customers, and peer networking, accounted for differences in venture performance outcomes. Similarly, Chowdhury & Audretsch (2019) identified significant variations in the level of support and resources of different accelerators. Nevertheless, in the specific context of Pakistan, the findings reveal an insignificant relationship between startups and peers. This finding may be attributed to the current conditions of the country, where a significant number of startups fail, leading to a decrease in the number of peers (i.e., competitors) within the market. Therefore, the collected data reflects this insignificance in the relationship between startups and peers in the Pakistani context. Cohen and Hochberg (2014) elucidated the role of mentors as vital resources offered by accelerator programs. These resources encompass a variety of valuable assets, such as seed funding, shared workspace, extensive networking opportunities, educational support, and mentorship provided by program directors, fellow founders, and external participants. By leveraging these resources, startups can enhance their entrepreneurial endeavors and aspirations, ultimately positively impacting their overall performance. Following Cohen et al. (2019), investors play a crucial role in engaging with numerous startups during their early stages, offering essential support and resources. This ability to interact efficiently with many startups is critical in fostering efficiency within the startup ecosystem. Consequently, this relationship between investors and startups holds significant importance, and its significance is also recognized within the context of Pakistani startups.

6. CONCLUSIONS

Based on this study, accelerator programs are vital tools for the success of startups. These programs play a significant role in fostering innovation in products and services. Therefore, startups in Pakistan must incorporate accelerator programs into their business plans. Startups that participate in accelerator programs tend to flourish, whereas those that do not often run into trouble. Since many Pakistani entrepreneurs actively participate in mentoring programs, mentors have emerged as the most critical variable in our research. The strong association between mentors and accelerator programs further emphasizes the significance of mentoring in the startup ecosystem. The role of investors in a company's eventual success or failure is highlighted. Insufficient capital is a significant contributor to the failure of many Pakistani startups. Startups often improve during economic downturns and macroeconomic uncertainty when delayed payments or investments are withdrawn. There was no discernible link between peers in this study. This is because the participants in this research were seen as rivals. Because so many companies failed, the community of similar businesses shrank dramatically. When there are few rivals, the competitive dynamics are muted, and there is little interaction between startups and their contemporaries. Increased levels of competition might motivate companies to improve their efficacy, output, and overall success. This research sheds light on the unique difficulties entrepreneurs encounter in the Pakistani setting while emphasizing the necessity of accelerator programs, mentors, and investors.

Ethical approval

All international standards have been adopted and compliance.

Informed consent

The study was conducted with equal participation by all authors.

Conflicts of interests

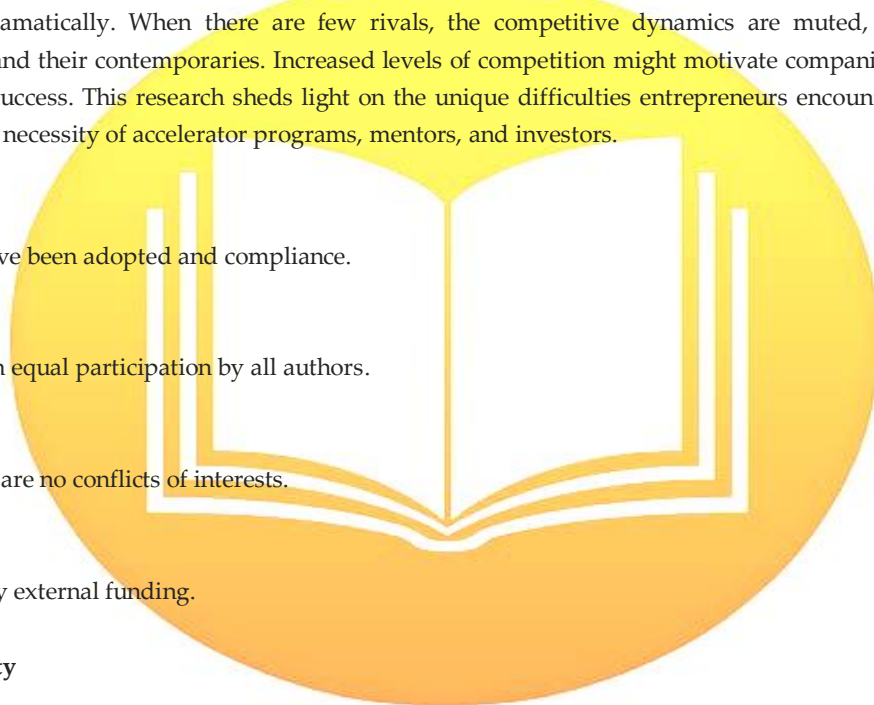
The authors declare that there are no conflicts of interests.

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Data and materials availability

Not Applicable.



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