

**POLITECNICO DI MILANO**

School of Industrial and Information Engineering Master of Science in  
Management Engineering



**POLITECNICO**  
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**OVERVIEW OF FACTORS AFFECTING THE FUNDING OF  
INTERNATIONAL MOBILE B2C STARTUPS**

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## LIST OF ABBREVIATIONS

VC	Venture Capital
IPO	Initial Public Offering
CVC	Corporate Venture Capital
WRT	With Respect To
USD	United States Dollar
US	United States
UK	United Kingdom
R&D	Research and Development
App	Application
B2B	Business to Business
B2C	Business to Customer
Std. Dev.	Standard Deviation

## **Executive Summary**

The aim of this Masters' report is to study the different factors that affect the overall funding of international startups in the B2C space, thereby contributing to their success in the market. Literature review has been focused on mobile startup ecosystem, entrepreneurial success factors and trends in the B2C space, particularly focusing on mobile startups on an international scale leveraging mobile technologies since this area has incredible growth potential. Crunchbase was used to form the foundation of database of mobile startups as it is a credible source for startup analysis, all startups catering to end consumers were filtered and startups in the mobile ecosystem were then shortlisted.

Firstly, the final database sourced primarily from Crunchbase was categorized into different categories and sub-categories covering different sectors. A deep-dive was then done into the various categories of startups and different elements such as geographical location, equity funding, type and source of funding, etc were studied in order to develop a better understanding of factors that affect the best-performing startups in different categories. The data analysis has been represented in different graphs and conclusions have been made.

The analysis shows that the Mobile ecosystem trends around the globe are focused on sectors like banking, health, finance and m-commerce primarily. As consumers start to become more digitally conscious, mobile startups in these sectors are attracting the largest number of consumers. Startups, however, need to be very flexible in adapting to changing B2C digital trends in order to survive in a competitive environment, and different business models are being explored in order to attract high investment. Region-wise, North America and Asia are leading locations to get investments in the B2C space, but there are different entrepreneurial cultural factors that have to be considered in terms of startup environment and use of technology by the customers.

## **1. Introduction**

Digital innovation has always been a big driver for business growth, and mobile startups have accelerated the speed of innovation, and have embraced new technology. Continuing mainstream adoption of e-commerce, peer-to-peer marketplaces, cloud services, mobile apps and innovations based on emerging digital technology-driven business models are expected to disrupt the consumer market for the coming years. Startups investing in mobile and digital technologies are encouraged by 3 motives: mobile offerings simplify the purchase process for customers or clients, helps to boost the company's image in the market and allows the firm to stay connected with the customer on a real-time basis, leading to efficient customer service and an overall improved brand experience. Particularly for B2C, the new generation of audiences are hands-on with technology and mobile offerings are a part of their daily lives: they use it for e-commerce, make appointments and choose what's best for themselves. Particularly, many mobile apps are embedded with mobile payments, that allow users to transact for goods or services using a mobile device such as a smartphone or tablet. In the current competitive environment, there are many elements that affect the funding that these mobile startups receive from different sources such as venture capitalists, angel investors, banks or seeding. The aim of this study is to collect and present the various factors affecting the total funding of a mobile startup, which were identified through the research and to conclude which variables play the most important role in getting funding for an international startup. Part of the study is also aimed in understanding which geographical locations are more start-up friendly and to analyze the number of investments in these countries and their magnitude.

For ease of analysis, 5 major categories have been explored in this study: Advertising, Promo & Wallet, Service, Commerce and Vertical Technological Solutions. Various sectors such as

Banking/Finance, Transportation, Education, Health, etc falling under these categories have been analyzed to understand which sectors are most attractive for investors and whether they are correlated with other factors affecting total equity funding.

## **2. Literature Review**

The literature review for this thesis focuses on relevant business literature and papers and aims to explore previously published theories or findings and give an overview of concepts and success components of B2C Mobile Startups in the ecosystem of the 5 chosen categories. In order to understand and comprehend the mobile startup ecosystem, certain concepts must be explored. These include an overall understanding of the digital startup ecosystem and the various factors to influence entrepreneurial success and how it can be measured, as well as how startups are funded by major sources of investment and the current B2C Mobile trends and developments globally. These premises form the core foundation of the study's main focus: what are the factors affecting the funding of international B2C startups?

### **2.1 Digital Startup Ecosystem**

The subject of digital start-ups has a predominance of valuable literature focusing on startup growth and development written by subject matter experts and experienced entrepreneurs such as Eric Ries (Ries 2011), Ash Maurya (Maurya 2012) and Steve Blank (Cooper and Vlaskovits 2010), additionally, extensive research on the startup industry has been carried out by Marmer (2012). Stinchcombe & March (1965) in their findings emphasize on the true definition of startups and the fact that the future of any startup, especially in the early stages, are subjected to a high level of volatility and equivocation. This statement stands true in the case of most of the startups as it is not confirmed whether the product or offering that the startup is based on, particularly digital, will be adopted by consumers and will be scalable in the B2C space, especially in this era of digital-advanced technology and fierce competition for consumers' attention. It is because

of this that most startups have a fluid business model, which can be scaled in any direction depending on the customers' feedback in the testing phases. It is quite important for startups to be susceptible to such volatility as it is difficult to predict if the startup would survive or not. The above is also a good reason why new startups have to be flexible in terms of internal resource management, which can also contribute to innovation and high growth of ideas. Barnir's (2012) description of an innovative new venture "in terms of introducing new products, targeting new markets, defining new business models, establishing new distribution channels, introducing new organizational forms or launching innovative technologies" seems relevant to digital start-ups. Therefore, mobile startups leveraging the Internet for their offerings, goals of high growth, extreme innovations and a highly volatile environment are a few of the elements of an emerging definition.

What is a startup ecosystem? According to Grow Advisors,<sup>1</sup> a startup ecosystem is formed by people, startups in their various stages and different types of organizations in the physical or virtual world, interacting as a system to create new startups or push startups further along specific development stages. Some of the essential components of a startup ecosystem includes time, money and skills that are contributed by the different stakeholders involved in the creation and development of a startup. There are several factors that affect how startups operate in an industry: Market disruptions, financial situation, and transition and state of big companies in the industry all externally affect startup ecosystems. Isenberg (2010) in "Ecosystem Strategy for Entrepreneurship" argues that accessible local and international markets,

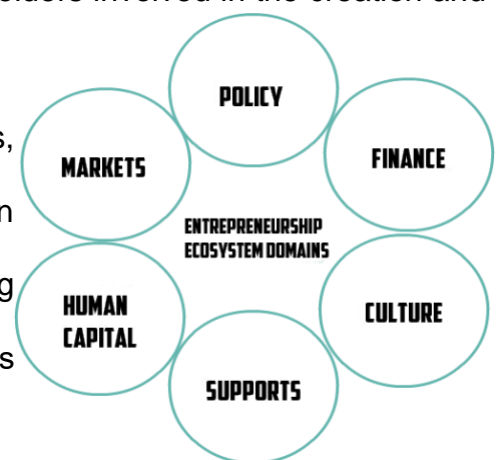


Figure 1: Entrepreneurship Ecosystem

<sup>1</sup> <https://www.startupcommons.org/what-is-startup-ecosystem.html>

available human capital and financing, mentorships, sponsorships and other support, supportive regulatory frameworks, and a university environment motivating extensive research are the most important factors for creating an entrepreneurial ecosystem. Therefore, his approach underlines that an ecosystem can be seen as network of interlinked institutions that allow entrepreneurs to grow and pass through different stages of venture development. Isenberg also asserts that his strategy is fresh and cost-effective in stimulating prosperity in order to install communal cluster strategies and enhance policies to promote national competitiveness.

## **2.2 Entrepreneurial Success Factors**

Digital start-up practitioners and their ecosystem, including venture capital gurus and consultants, have developed definitions, performance measurements, and indicators that signal traction and success of new digital undertakings. A few specific varieties of user growth, customer churn and retention rates, revenue, conversion rates such as leads-to-customers, gross profit, cost of acquiring customers and lifetime value have emerged as metrics. In the peer-reviewed literature, stage-based indicators of progress bear a resemblance to the Business Platform Model (Davidsson & Klofsten 2003). The model is presented as a “quantifiable, holistic and action-oriented instrument to assess the development of startups”. It is based on eight cornerstones: business idea, product, market, organization, employee expertise, motivation, customer and stakeholder relations.

Nascent entrepreneurs of digital ventures often refer to ‘traction’ as an indicator of success. A novel method to measure whether a start-up has achieved success in the early stage is the ‘investability test’. The test was proposed by PricewaterhouseCoopers (Startup AUS 2014) and is claimed to be an indicator of high growth, it measures the ability of the venture to raise funding from professional investors.

The innovative success of Silicon Valley in the US has motivated academicians and entrepreneurs to develop start-up development models that mimic this success. The 2<sup>nd</sup> Internet boom of the web, mobile apps, and social media has coincided with these attempts, which can help in spreading them to the rest of the world. There is also a need to expand the scope of digital entrepreneurship from processes and metrics to also cover human capital, clusters and networks, ethical values, organizational decision-making and sustainable growth.

When it comes to external factors that affect startups, Gilbert and McDougall published their research that claimed that startups located with specific successful geographical clusters absorb knowledge from the local environment which contributes to their higher growth and performance innovation. However, contrary to conventional sayings, technological spillovers are not the contributing cause of higher performance observed for these firms”.

### **2.3 Startup Funding**

Startups thrive where entrepreneurs can get human capital, and funding that allows them to scale to wider markets and expand their disruptive technological product. An international startup can receive funding to launch and accelerate a startup from various sources, it is important to understand the various options in order to attract the best type of investors to a startup:

a. **Personal savings/Friends and family:** When a startup is in the initial stages, there is hardly any concrete evidence of the potential success of a startup’s core idea. At this stage, the main investment source for entrepreneurs is personal savings accumulated over time, or close friends and family members who believe in them or the future potential of the startup’s core offering. This type of investor may not result in a lot of money, but it is a good start for most entrepreneurs and depends a lot on the relationship between the two parties.

b. **Crowdfunding:** Crowdfunding is essentially using the power of Internet and social media platforms to raise capital from a large number of people, the concept is the same as a fundraising campaign: to convince enough investors that the startup's product or service is good enough to make donations or prepay to receive the product after development. Crowdfunding essentially provides a platform to facilitate the financing process between startups and individuals passionate about a cause or product concept. According to the World Bank, crowdfunding will surpass \$300 billion in funding transactions by 2025<sup>2</sup>.

c. **Angel Investors:** Angel investors are quickly becoming the main source of funding for many new startups and are a safe funding option that ultimately boost a country's economy and creates jobs. They usually invest in the early Seed or Series financing stages of a startup and are somewhat of the middle ground between family/friends and venture capitalists. Forbes estimate that Angel investors invest their own money, where the amount typically ranges from \$150,000 to \$2,000,000<sup>3</sup>. There are several advantages of startups getting funding from angels: besides the financial investment, angel investors are often corporate moguls or high-profile executives, they provide advice and guidance to entrepreneurs and can also raise additional money from within their network. A Stanford report shows that 90% of all seed and startup capital comes from angels<sup>4</sup>.

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<sup>2</sup> [https://www.researchgate.net/publication/277637559\\_Crowdfunding\\_and\\_Value\\_Creation](https://www.researchgate.net/publication/277637559_Crowdfunding_and_Value_Creation)

<sup>3</sup> <https://www.forbes.com/sites/tanyaprive/2013/03/12/angels-investors-how-the-rich-invest/#59f601dd3297>

<sup>4</sup> <https://www.forbes.com/sites/alejandrocremades/2018/09/25/how-angel-investors-and-angel-groups-work/#21b69ab076dc>



d. **Venture Capitalists:** Venture capitalists are typically large financial institutions, universities, and investment firms. The investment is made in return for equity or shares in the startup and capitalists expect good return when the startup scales up or is bought by another large company. VC's are seen a powerful source of income to startups, they play an important role in a startup's



Figure 2: Investment made by CVC's in Billions vs Number of Deals

growth offering credibility, visibility and high capital. They usually get involved after the early stages of a startup and expect to see some financial proof a startup's success before making any financial investment and are also placed in decision-making positions within the company.

e. **Government Institutions and Banks:** Bank loans can be a quick funding options for startups that have already gained some traction, however they also have the need to show proper proof of business idea and will demand back a return whether the business fails or succeeds. There are different financing options and startups must explore them including interest rates before deciding on a bank. There are also certain government programs that provide funds and grants, but this may come with many limitations and restrictions and hence aren't the most viable option for many startups. However, there are many regions in Europe where startups heavily rely on government funding, Poland being a prime example in the startup ecosystem.

The type of funding that a startup chooses depends on several factors: the size of the startup in terms of number of employees, the type and scale of expansion that the startup has envisioned in the short-term, the current financial situation of the startup and the revenue being generated by the startup's current position in the market. It is important for an entrepreneur to have the right kind of vision and planning to attract the right kind of investors.

Many startups hire investment bankers or financial consultants to help navigate various funding rounds, especially when due diligence is required. To understand the impact that funding plays in a startup's growth and reach, let us look at a star example of one of Europe's most successful



Figure 3: An N26 card and the Mobile App.

startups: the German Fintech provider, N26. Valuated at \$3.5 billion, the startup was founded in 2013 by Valentin Stalf and Maximilian Tayenthal and specializes in offering its banking services completely via a smartphone app without any brick-and-mortar banking locations. A broad spectrum of financial services is offered by N26, all accessible via their mobile app which now has almost 226,653 monthly downloads<sup>5</sup>.

Headquartered in Berlin, since their initial product launch in 2015, N26 now serves 3.5 million customers worldwide. In 2018, N26 received a total of \$215 Million funding from top investors across the world including Allianz, Tencent Holdings Limited, and Valar Ventures and raised an additional \$170 million in their recent (July 2019) series D round and plans to expand globally<sup>6</sup>.

<sup>5</sup> <https://www.crunchbase.com/organization/n26>

<sup>6</sup> <https://n26.com/en-eu/blog/series-d-funding-announcement>

N26's successful business model is largely driven by their mobile first approach, one of their key selling points, and according to James Fitzgerald, General Partner at Valar Ventures, N26 is a prime example of digital innovation and the fact that "it pushes against the standard notion that all successful startups are born in Silicon Valley, N26 is moving in the opposite direction, from Europe to the US and beyond"<sup>7</sup>. Currently, N26 is one of the top ten FinTech startups in the world.

The success of every startup largely depends on the level of innovation within the firm and the financing it receives from lucrative investors. The cost of building a new innovative digital start-up has

decreased, which has led to 'bootstrapping' as a viable option. In other cases, raising finances in the seed round is easier and less expensive (generally in terms of giving up equity ownership). Tanrisever (2012), underlines the fact that maximization of profit is the key to funding attraction which in turn plays a significant role in the essential survival of startups. For example, Facebook's success was pressurized to a large scale by the need to continuously innovate and compete aggressively against other tech companies which led to a large turnover, thereby attracting more investors (Diamond, 2012). Additionally, government policies play a major role in the financing of digital startups by fostering or discouraging financing and investment opportunities. A geographic location's startup ecosystem depends largely on the institutions or systems that form the economy, which is why it is critical for digital entrepreneurs to have

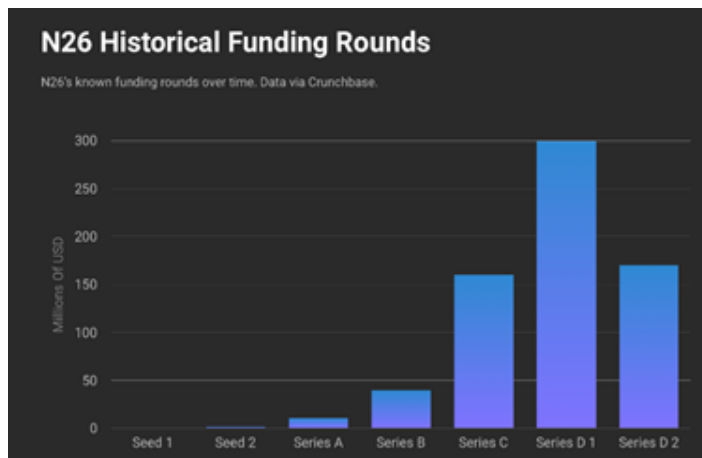


Figure 4: N26's known funding rounds and amount of money raised in each round.

<sup>7</sup> <https://www.pymnts.com/news/digital-banking/2019/peter-thiel-backed-german-online-bank-n26-worth-3-5b/>

foresight and plan well for agility and flexibility so that their startups can survive in times of financial crises and downward market conditions. Overall, the market dynamics of any geographic region highly influence the funding and growth of startups, hence it will be explored in-depth in latter sections of this report.

## 2.4 B2C Mobile Trends

As the use of mobile devices is increasing across the globe, jumping to 5.1 billion users<sup>8</sup> in 2018 (more than two-thirds of the global population), the global internet use has accelerated. People are now using their devices for all kinds of daily activities like e-commerce, dating, sending and receiving money etc. Experts are of the opinion that by

2020, the global revenue from mobile apps will be \$581 billion<sup>9</sup>. This is validated by the graph which highlights the growth of average time that users are spending on mobile apps – this has grown at a steady rate from 2013 to 2018. Having a mobile app allows startups to increase their brand presence and propel user engagement: the app’s functionality, design and

user-friendly interface plays a major role in this. In order to allow a frictionless experience, businesses are integrating digital payment options within their mobile apps, thereby keeping up with the continuously progressing infrastructure and technology. A study by Kuoppamäki (2017) shows that consumers between 55 to 74 of age use a smartphone or tablet to purchase products or services as much and as often as younger consumers.

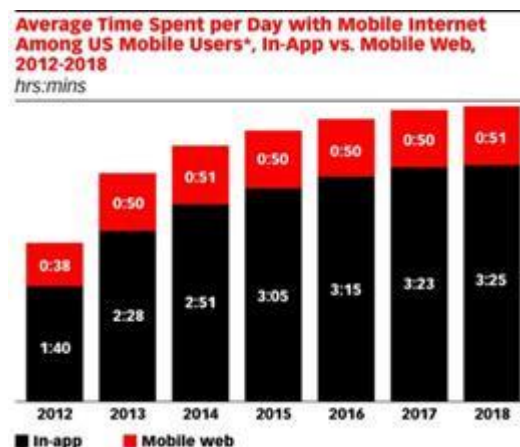


Figure 5: Graph showing average time spent/day in-app vs Mobile Web

<sup>8</sup> <https://wearesocial.com/blog/2019/01/digital-2019-global-internet-use-accelerates>

<sup>9</sup> <https://www.statista.com/statistics/269025/worldwide-mobile-app-revenue-forecast/>

Mitok (2015), in her study highlighted the fact that mobile offerings are becoming more powerful with technological advancements and increasingly being used by marketers to target consumers, which is why the way brands are interacting with consumers is changing. For example, in today's world, the ability to check prices online, read reviews by other customers and compare products and services of different brands and companies had led to a sharp increase in the contribution to end customers' decision-making. Hence, startups have the advantage of being agile, the absence of existing culture or systems allows them to take advantage of next-generation technology.

Results from the study also revealed that activities through mobile devices was largely influenced by age, education level, and type of household (presence or absence of children) and use of entertainment media by age and gender. Another advantage that mobile startups have is that their digital platforms, which act as digital assistants, can be leveraged to create and deliver personalized content that appeals to the end-customers, while using data for analytics as well.

### **3. Objectives & Methodology**

The following section details into the data used for this research, the hypothesis and methodology that was followed to analyze the success of a startup. The sections below include how the database was collected and condensed into different dependent and independent variables and the methodology that was used to analyze the dataset.

#### **3.1 Data Collection**

To draw conclusions and understand the factors that affect the total funding of a startup, many variables must be considered that affect the overall environment of a startup and which may directly or indirectly may have contributed to the growth and success of a startup. This report is based on the data set extracted from CrunchBase.com and the main dataset contains 2500 startups with details of the founding date, headquarters region, last funding date, total funding amount, total equity funding, last equity funding amount and other variables such number of employees and funding status. All the startups extracted have been founded in the reference period of 2013-2018.

Based on this data, a working dataset of 932 startups was formed by following these steps:

1. First, all startups that cater to B2B audience were omitted as the main purpose of the study is to explore the B2C Digital startups and any startup that was not involved in the process of selling products or services to customers who are its end-users was removed from the database.
2. All startups were filtered to ensure that none of them were founded before 2013 and received funding in the past 2 years.
3. All startups that did not operate on a mobile platform were removed from the dataset; this is because one of the key criteria of the research is to look at startups that have a mobile app and connects to its audience through it. Once the dataset was finalized, all the 932 startups

were classified into different categories and sub-categories according to the classification criteria below:

<b>CATEGORY</b>	<b>SUBCATEGORY</b>
<b>Service</b>	Banking/Finance Health Education Messaging & Chatbot Transportation Real Estate Culture, Sports & Events Hospitality Industry specific Culture, Sports & Events People service Retail
<b>Commerce</b>	Marketplace People service Hospitality Retail Industry specific Culture, Sports & Events Social Commerce Parking, TAXI/NCC Logistics & Shipping services
<b>Vertical Technological Solution</b>	App & Web development App Testing & Security API/SDK functionalities Proximity localization Analytics & App Engagement Authentication services Augmented reality Messaging & Chatbot Indoor Positioning System Artificial intelligence
<b>Advertising</b>	Adv Analytics Formats App Marketing Mobile Agency Programmatic Advertising Target Audience and Data Management Platform Ad network

<b>Promo &amp; Wallet</b>	Promotion & Loyalty Loyalty & Payment Promotion, Loyalty & Payment Payment Promotion Gamification
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Table 1: Category & Subcategory of Start-ups used in Database

The startup's website was referred to in order to deduce the categorization of the startups and once each startup was classified into the appropriate category and sub-category, the headquarters city of all the startups were clustered into 6 geographical locations (continents). The main purpose of creating the database is to analyze the data of all the startups on a global level that are mobile startups, B2C and have been founded in the past 5 years, in order to validate the hypothesis that category, sub-category, location and funding received are all major factors that affect the total funding collected by a start-up.

### 3.2 Selection of Variables

The data set formed allows the observation of a set of firm-related variables, among them are startups founding date, geographical location, funding amount and type, etc. In the following sections, the main variables considered for analysis and its relevance to the research is explained. The research focuses on measuring whether the startups are successful or not, the key hypothesis that has been explored in this study are the factors or variables that contribute to the financial success of a startup.

To understand what determines success, several explanatory variables are considered. The hypothesis is that these variables have a significant effect on the main focus of the study, i.e. success of the venture.



3.2.1 **Category:** This variable has been included in order to understand which industries are booming worldwide and which sectors attract the highest funding from investors. Categorizing the startups (as shown in table 1) allows to cluster the startups based on the industry they cater to and explore the scope and worldwide startup trends in each industry.

3.2.2 **Sub-category:** In each category, the startups have been further classified into sub-category to allow deeper analysis of the particular type of product or service offered by the startups. Through this, an understanding has been obtained on the different markets that are growing in each category and the verticals in which startups are being founded.

3.2.3 **Geographical location (Headquarters):** Each startup has been clustered according to the continent its headquarters is located in, which allows the dataset to be classified into 6 continents. The aim of analyzing this variable is to understand if certain regions in the world attract more investment and the analysis of startup culture dominance in certain countries.

This variable is certainly linked to the high availability of investment capital for innovative startups, but at the same time it is also influenced by the nature and language of the considered sources (Crunchbase).

3.2.4 **Last funding type:** The last funding type of the startup (Angel, Convertible Note, Corporate Round, Debt Financing, Equity Crowdfunding, Grant, Initial Coin Offering, Non-Equity Assistance, Pre-Seed, Private Equity, Seed, Series A, Series B, Series C, Series D, Series D, Venture) helps to understand at what stage the startup is concerning its financial situation.

The data set was prepared in the Microsoft Excel format and Microsoft Excel was also used to code the variables and plot some descriptive statistics graphs.

## 4. Analysis & Results

The variables have been analyzed in order to understand their relation to the success of the startup and the extent to which it affects it.

### 4.1 Category and Sub-category

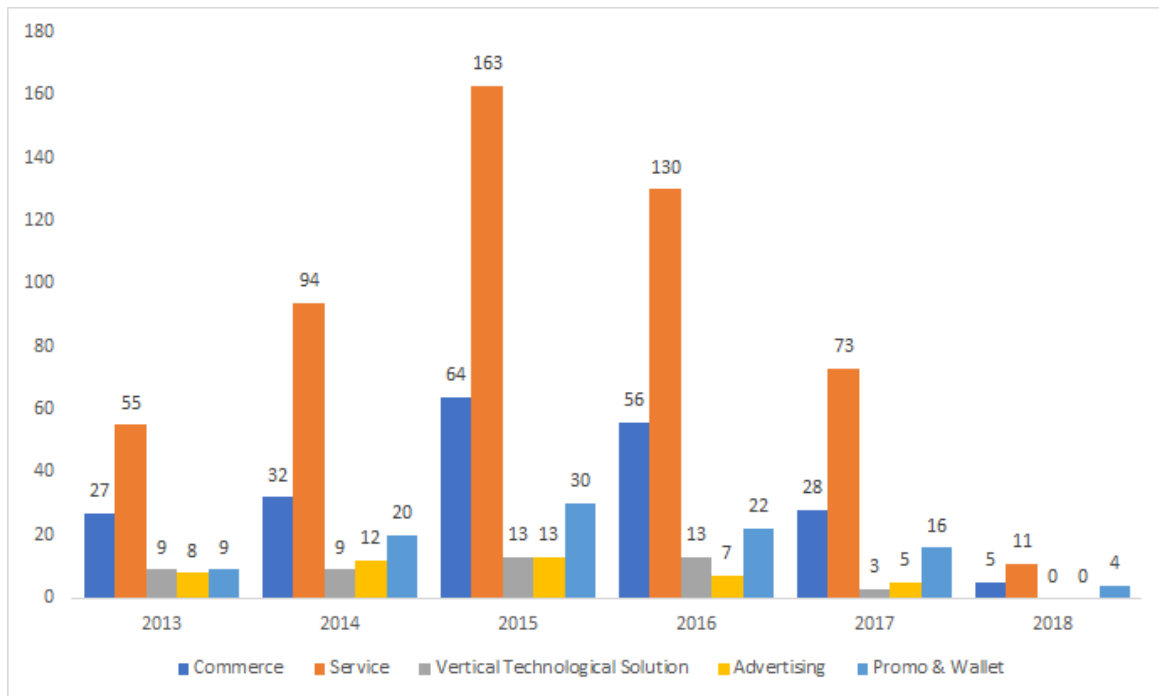


Figure 6: Graph showing Number of Start-ups according to Category between 2013 and 2018.

From 2015 - 2018, it can be seen that the highest number of startups were founded in the year 2015 in the service category. In fact, 2015 can be considered as a peak year since it had the highest number of startups being founded across all categories. After 2015, there seems to be a downward decrease in the founding of mobile startups across different sectors, the most noticeable seems to be low number of new startups in the year 2017 in the Advertising and Vertical Technological Solution categories. Category-wise, a large percentage (57%) of mobile startups are concentrated in the service industry.

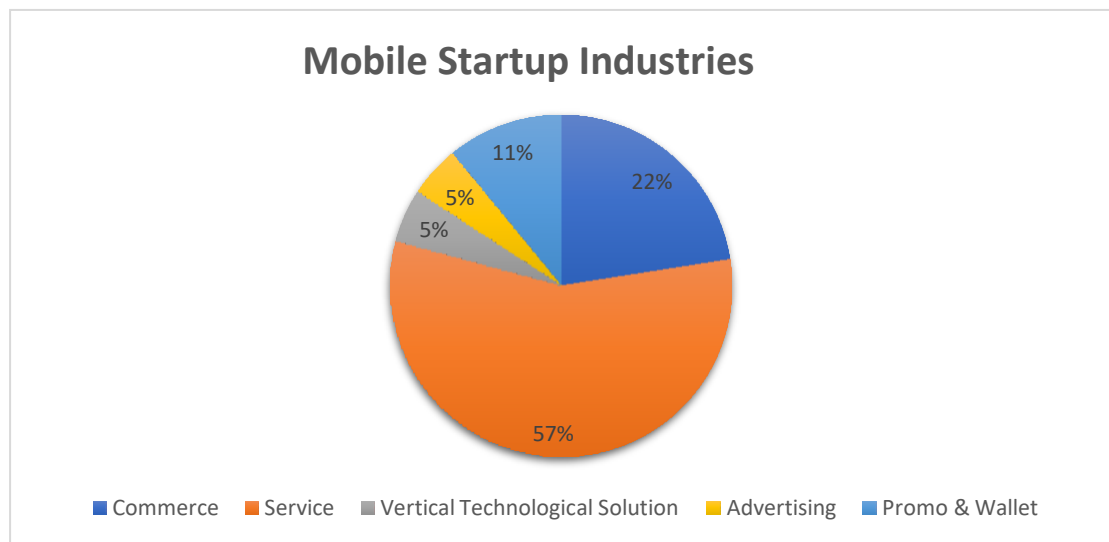


Figure 7: Pie Chart showing percentage of start-ups in different categories.

#### 4.1.1 Service

Startups in the service category serve customers by providing intangible products or services and are rarely involved in manufacturing. To understand better, let us deep dive into the various sectors of the service industry and the number of startups catering to each sector. It can be observed that Health and Banking/Finance sectors have the highest number of startups, which is in line with the current trends around these sub-categories. Nowadays, everybody is becoming more conscious about healthy living. Every day, millions of social platform users post pictures or updates about their healthy food habits or physical activities.

This has led to a massive increase in mobile apps in the health sector, offering fitness advice, trainings, on-call doctors, video conferencing with medical experts, home delivery of medicines, etc. Since the launch of the smartphone a decade ago, the number of mobile health apps in the market has jumped to 325,000 in 2017<sup>10</sup>. The financial services industry has also undergone a

<sup>10</sup> <https://research2guidance.com/325000-mobile-health-apps-available-in-2017/>

considerable shift since the financial crisis, it has had a profound and lasting effect on the way in which worldwide customers interact with banking services. Startups offering their services in the banking and financing sector get a significant return on investment, are able to offer improved customer experience, better security, gather customer analytics and retain users with push and in- app notifications. Fintech Startups are now disrupting the banking industry around the world leading to a massive digital transformation.<sup>11</sup>

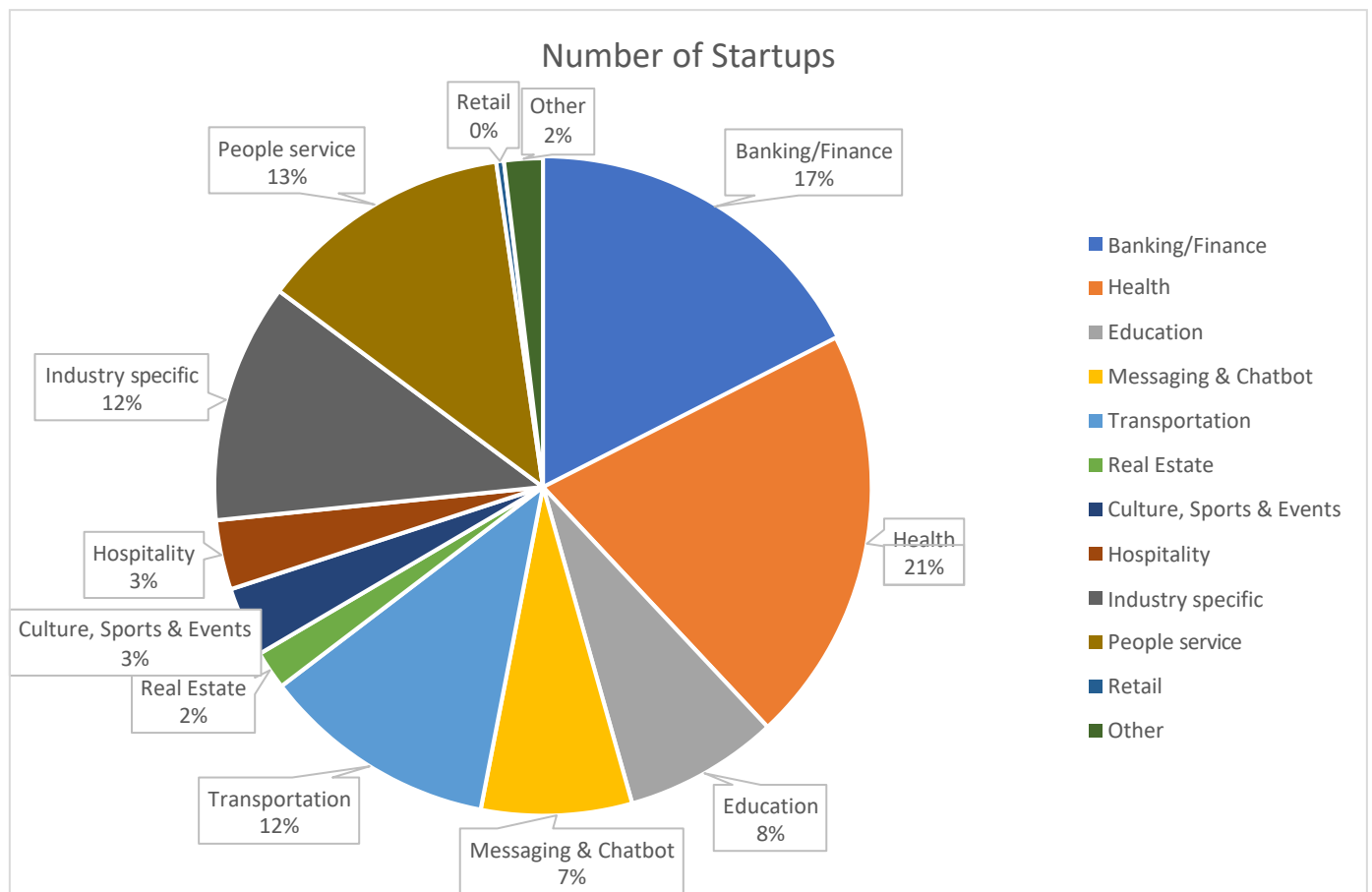


Figure 8: Pie Chart depicting percentage of start-ups in different Subcategories in Service Category.

<sup>11</sup> <https://medium.com/technicity/fintech-startups-are-disrupting-the-banking-industry-around-the-world-7d5ca5bb3cb8>

### 4.1.2 Commerce

Mobile commerce, also called m-commerce, includes any monetary transaction completed using a mobile device. It is an advancement of ecommerce, enabling people to buy and sell goods or services from almost anywhere, simply using a mobile phone or tablet device. Analyzing the commerce category, it can be observed that Marketplace sector is the most popular (33%) followed by People Service (13%) and Parking/Taxi (13%). The number of people using shopping apps to purchase products or goods is only going to increase in the future, which is why startups will continue to invest in marketplaces. People service category involves startups that are specialized in offering services like pet care, babysitting, laundry, and other services that are mostly intangible and are human based. The Parking/Taxi sector boom is due to the fact that using smartphones to facilitate mobility is becoming a new norm. Startups in this sector are offering services that include peer-to-peer sharing and car-sharing such as BlaBla car and taxi services like Uber and Lyft besides offering parking assistance through e-valet and smart parking apps.

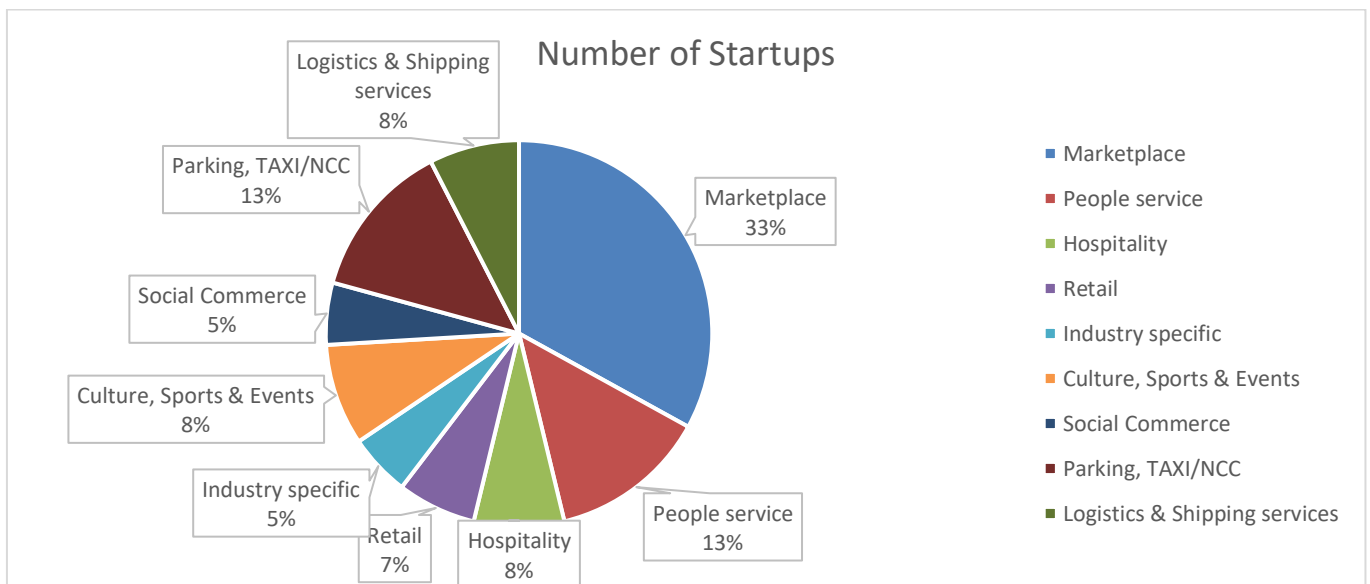


Figure 9: Pie Chart depicting percentage of start-ups in different Subcategories in Commerce Category

### 4.1.3 Vertical Technological Solutions

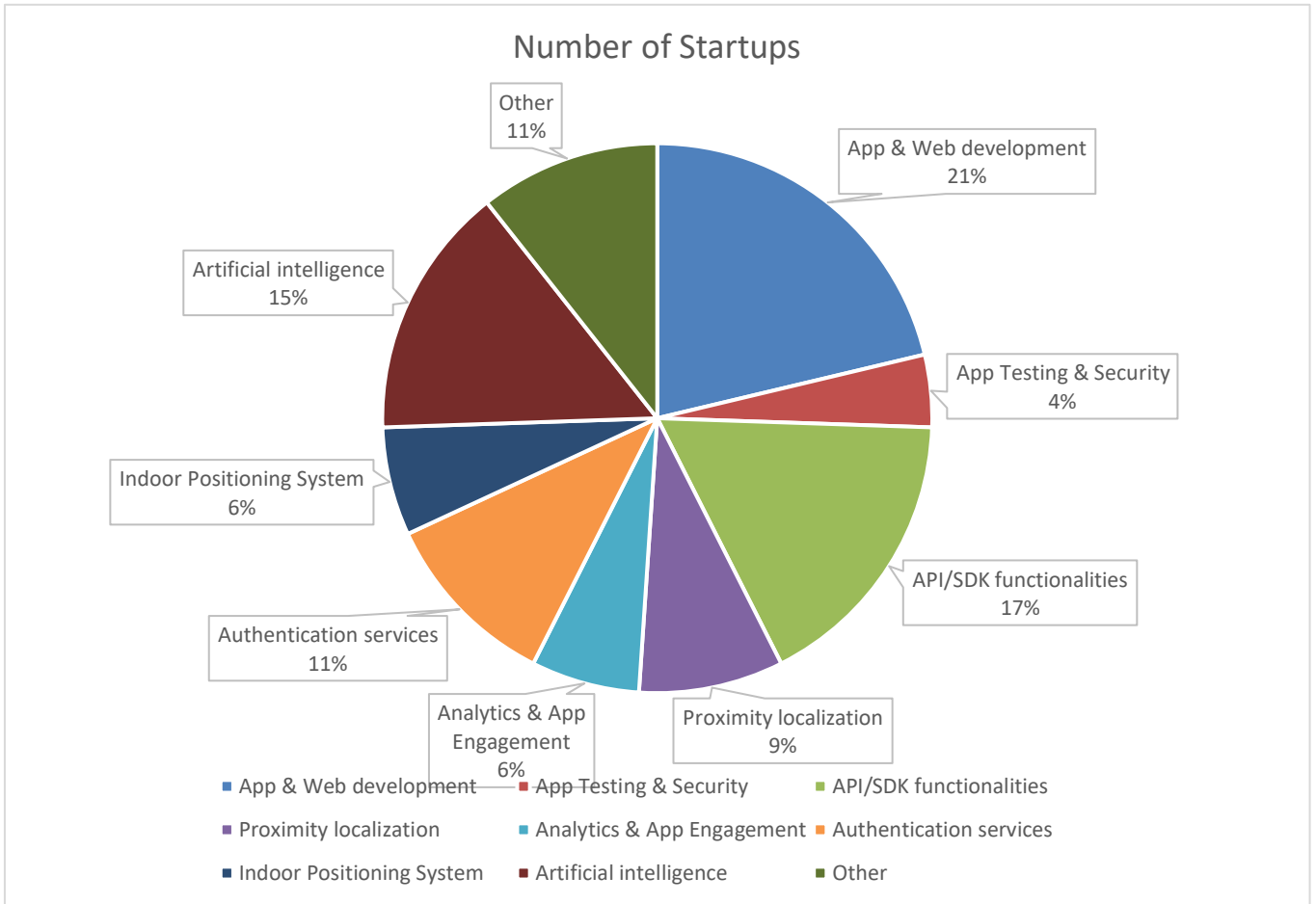


Figure 10: Pie Chart depicting percentage of start-ups in different Subcategories in Vertical Technological Solutions Category.

The Vertical Technological Solution category weighs about 5% of all startup categories, and includes varied services such as support in app and website development, tools that allow you to monitor customer interaction and engagement through advanced analytics, authentication and security testing of mobile apps that deal with the protection of data and optimize the technical performance of apps, and API/SDK functionalities that allow for the creation of mobile services. App and Web Development and API/SDK functionalities are the two most popular sectors which can be contributed to the fact that the rise of use of mobile apps leads to a rise in services that involve developing the backend and software running these apps, besides increasing the customer experience on mobile apps and mobile-optimizing websites.

#### 4.1.4 Advertising

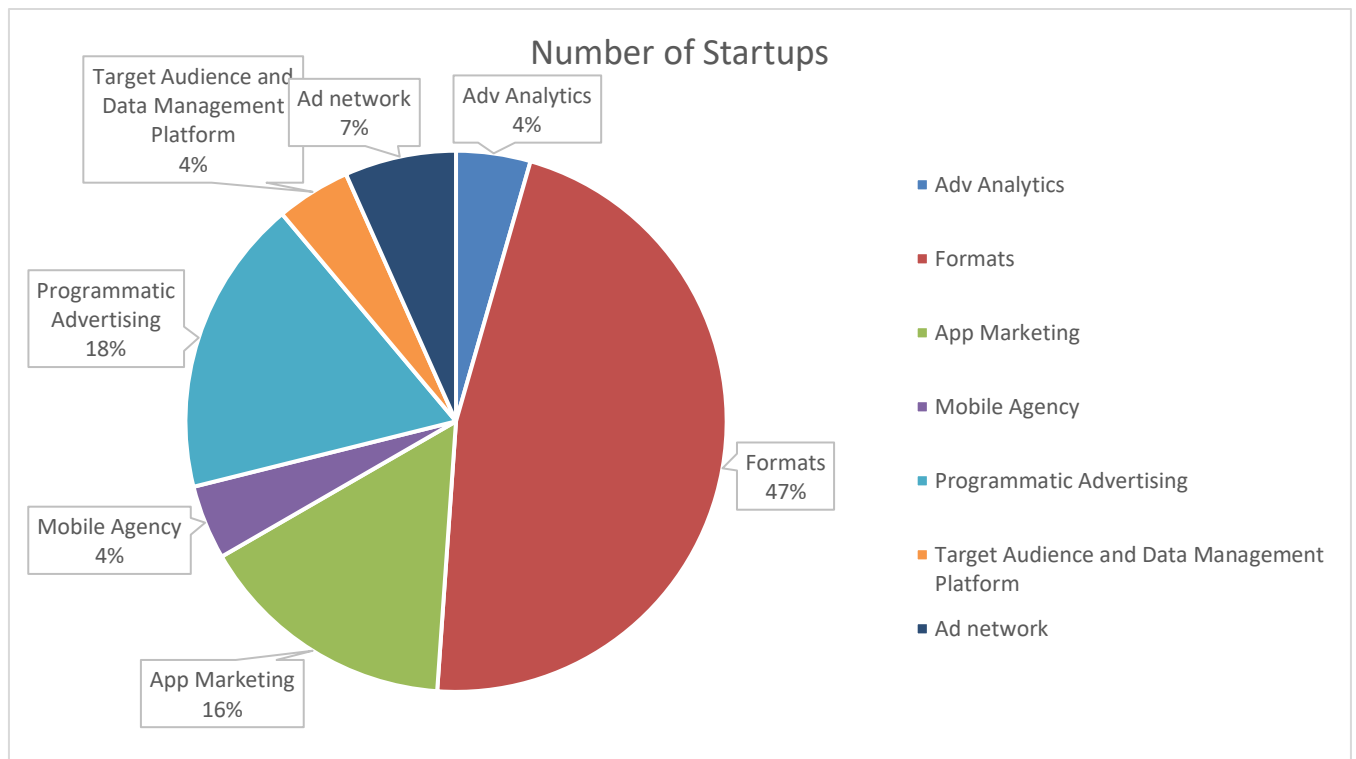


Figure 11: Pie Chart depicting percentage of start-ups in different Subcategories in Advertising Category.

The Advertising sector forms 5% of all startup categories and deals with startups that offer services in the advertising space including providing information and profiles of customers through data management, innovative formats of mobile advertising to reach target audience through different channels, reach and create user engagement using interactive formats and rich media, advanced analytics to analyze and measure the performance of advertising campaigns, and programmatic advertising that helps to optimize media buying by targeting specific audiences and demographics. Formats (47%) and Programmatic advertising (18%) are the most popular sub-categories as advertising is becoming more digitally advanced, media is being delivered to customers through innovative formats such as parallax or infographics and being target-specific through programmatic advertising allows content to be delivered to the right end-users.

#### 4.1.5 Promo & Wallet

The Promo & Wallet sector forms 11% of all startup categories and include startups that offer customers discount coupons and loyalty programs, mobile wallets that dematerialize debit, credit and loyalty cards, gamification solutions that aim to maximize customer engagement, payment and fintech startups that offer different digitized payment solutions.

The payment sub-category is the most popular (53%) and has witnessed extraordinary growth in the past decade. This is followed by Promotion sub-category (18%) and Promotion & Loyalty sub- category (13%) respectively. The lowest number of start-ups were found to be in the Gamification sub-category.

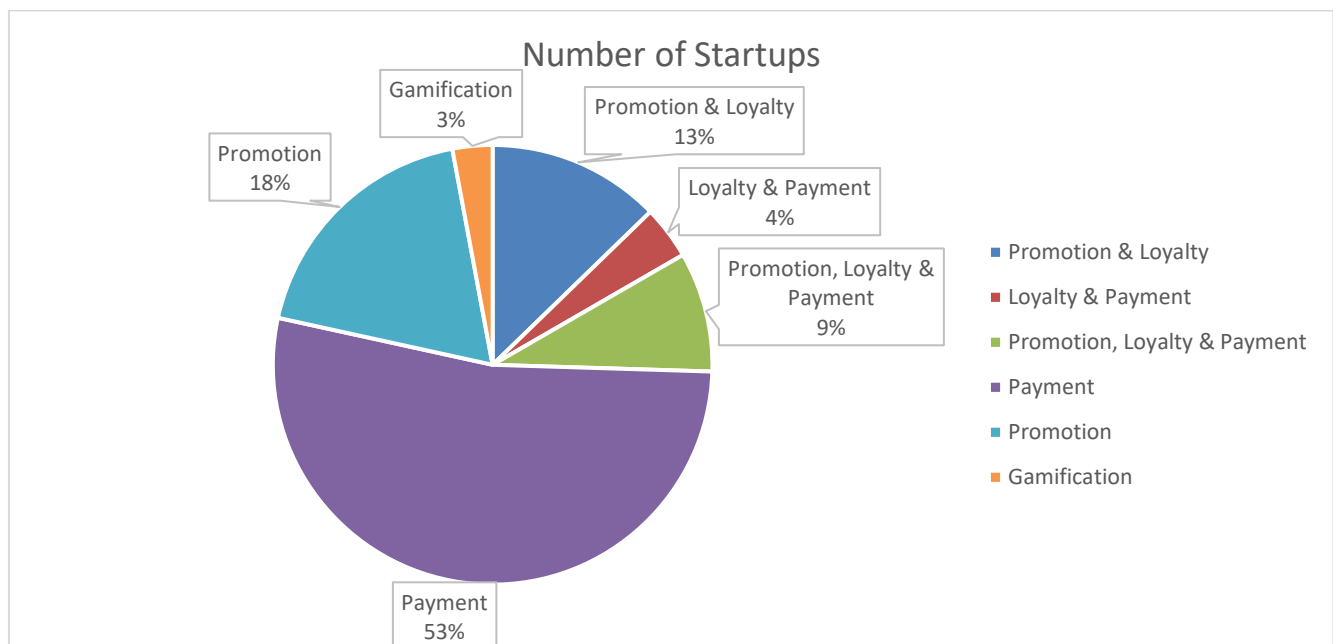


Figure 12: Pie Chart depicting percentage of start-ups in different Subcategories in Promo & Wallet Category.

End-users are now paying their bills, paying for different goods and services, buying tickets for shows and travel, and engaging in prepaid top-ups. M-payments facilitate the cashless payment delivery between consumers and businesses, and mobile wallets allow access to the secure element of the credit or debit card information which is secured in an application hosted by the



device. According to market research conducted by Zion, Global Mobile Payment Technology Market Will Reach USD 3,371 Billion By 2024<sup>13</sup>, which is why startups continue to invest and grow in this sector.

#### **4.1.6 Summary**

Overall, we can see that the leading international startup trends include sectors such as health, banking and finance, mobile wallet and payments, m-commerce, app and web development and format advertising. These are the industries with the highest digital growth and attract the largest number of startups across the world. As these emerging categories increase in size and quality of services being offered by firms, competition will continue to increase, and new startups will have to continuously innovate digitally to survive and be flexible to adapt themselves to changing customer trends. Hence, it can be observed that the upward trend of growth in these categories gives startups a higher chance of success as investors look to invest in these sectors.

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<sup>13</sup> <https://www.globenewswire.com/news-release/2018/11/30/1659943/0/en/Global-Mobile-Payment-Technology-Market-Will-Reach-USD-3-371-Billion-By-2024-Zion-Market-Research.html>

## 4.2 Geographic Distribution

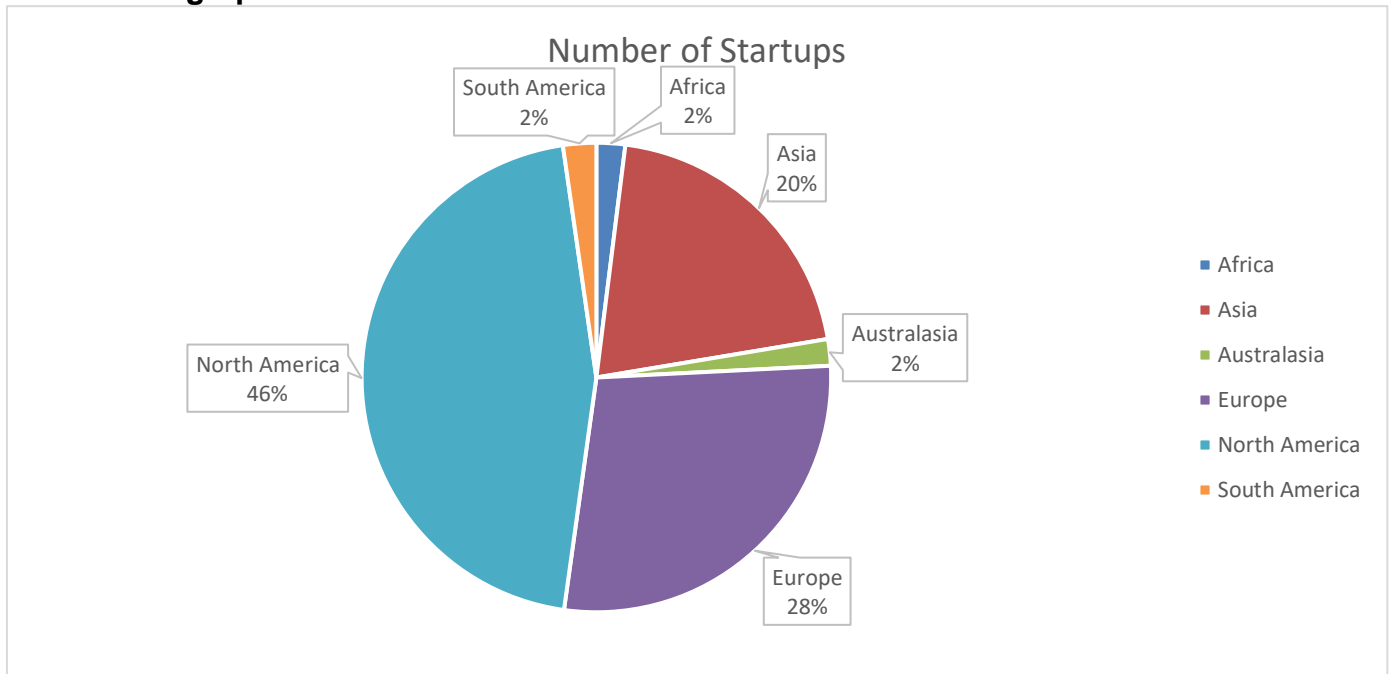


Figure 13: Pie Chart depicting percentage of start-ups according to its Geographic Location.

The location where a startup is founded and based plays a significant role in its success and funding received. As observed from the figure above, North America has the biggest share of startups (45%) followed by Europe (28%), together forming almost 3/4<sup>th</sup> of all startups across the different categories. This may be due to the fact that North America is the continent with the biggest tech company headquarters and startups are boosted by the incredible innovation capacity and entrepreneurial potential of the continent. Apple, Uber, Netflix and Airbnb are just few examples of North American venture-backed startups introducing new technologies and which had formed new industries. Even though venture capital investment has reached \$90 billion in 2017 in the US, it is also growing massively in other parts of the world. The location of a startup does not really indicate the trends of customer adoption willingness to a product of service offered by a startup but may play a very important role in the total funding that it can receive based on the industry and other startup cultural factors.

The location of a startup is also closely linked to the total and average funding that startups have received, as shown in the figure 14. It can be observed that North America followed by Asia have received the highest accumulated funding in the reference period. Since larger number of startups would lead to a higher total amount of funding, it is preferable to look at the average funding received in \$Millions.

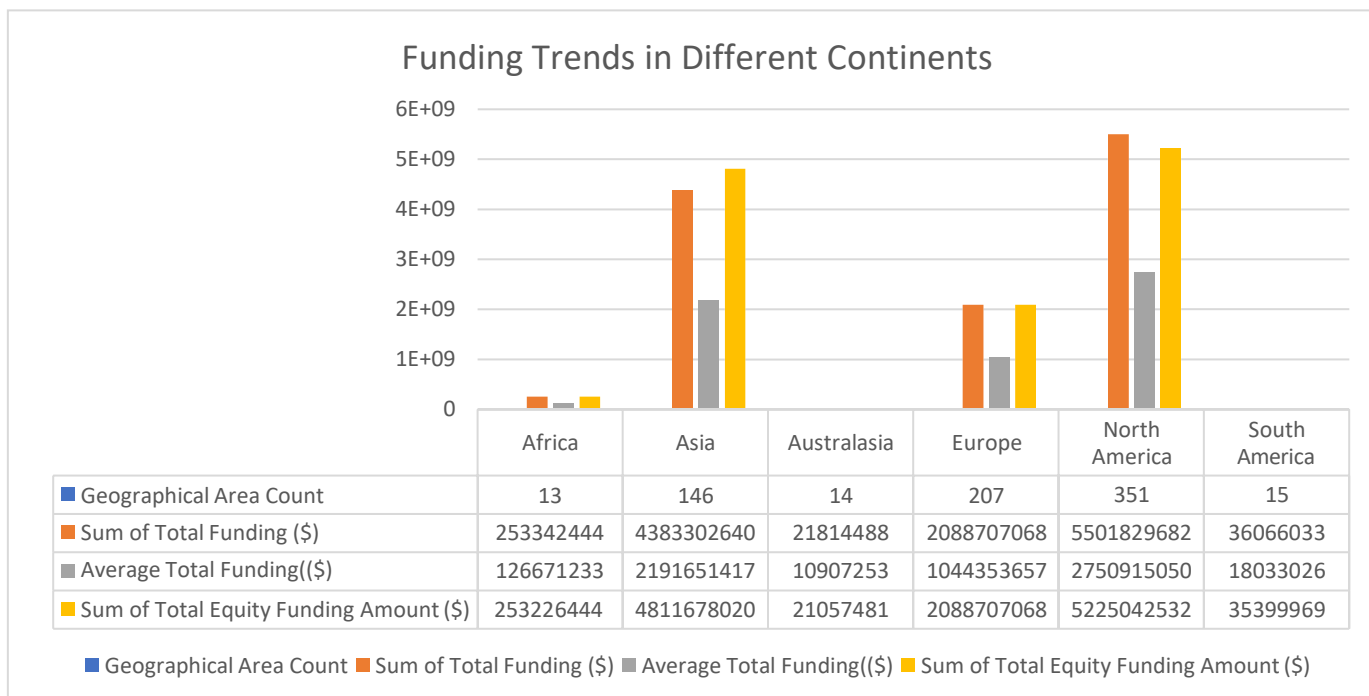


Figure 14: Graph depicting Funding Trends according to different geographical locations.

In order to identify the biggest markets for mobile B2C startups in each continent, an in-depth analysis has been done to conclude the countries with the highest investment opportunities and the different characteristics and startup environment in each continent. The total funding and the average of total funding per category across continents is shown in the figure below.

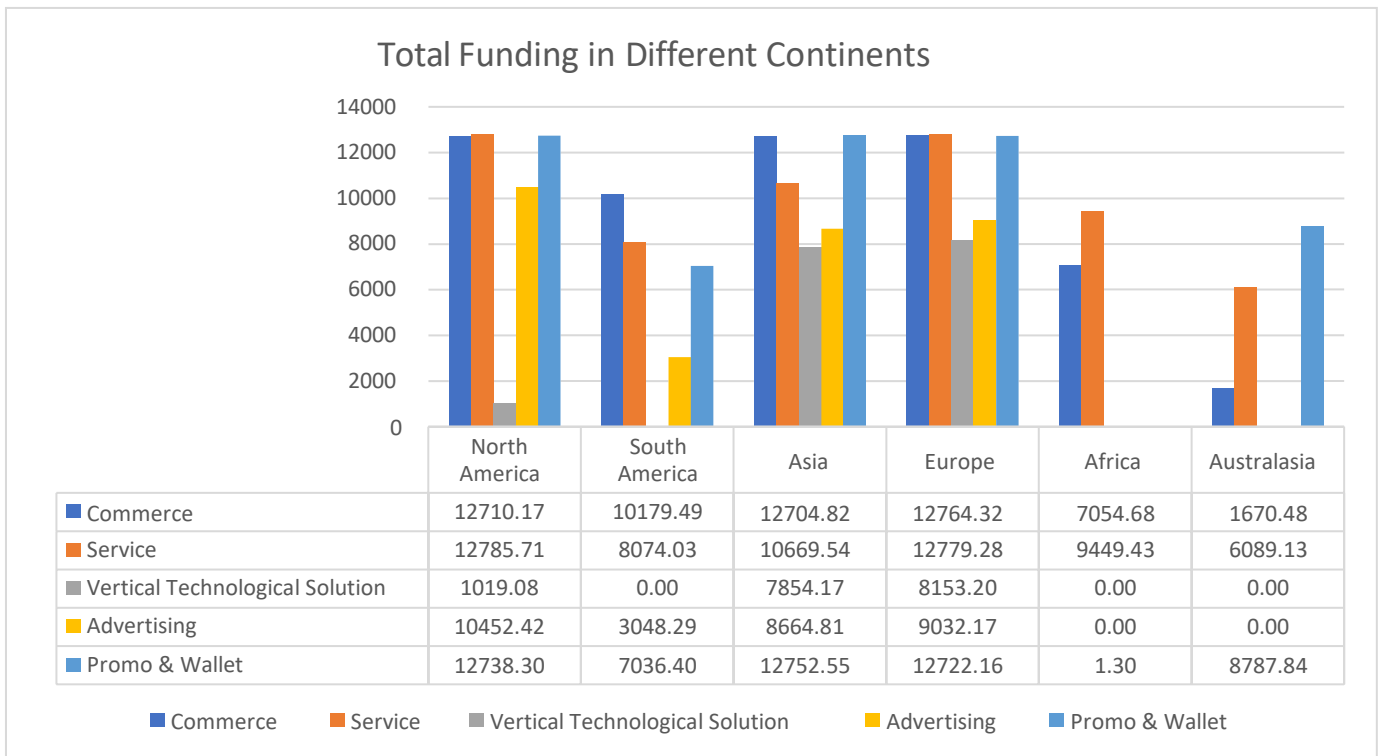


Figure 15: Graph depicting Total Funding in each category across continents.

The funding in Figure 15 gives a good overview of the total funding received in each categories across the different geographic location. This leads to a thorough understanding of the financial benchmarks in each category and the consumer behavior in each market. It is observed that North America has received the highest funding in 3 out of 5 categories, Europe leads the funding numbers in the other 2 categories. Asia has considerable funding in Service, Commerce and Promo & Wallet, whereas Africa’s marginal funding is split between Service and Commerce. Australasia’s primary categories of focus for funding are Promo & Wallet and Service. The absence of funding in continents in some categories reflect markets whose potential remains untapped by entrepreneurs and investors, there may be many reasons behind this; primary are the underdevelopment of the continents’ overall economy and startup growth or the financial market characteristics, these will be investigated later in the report.

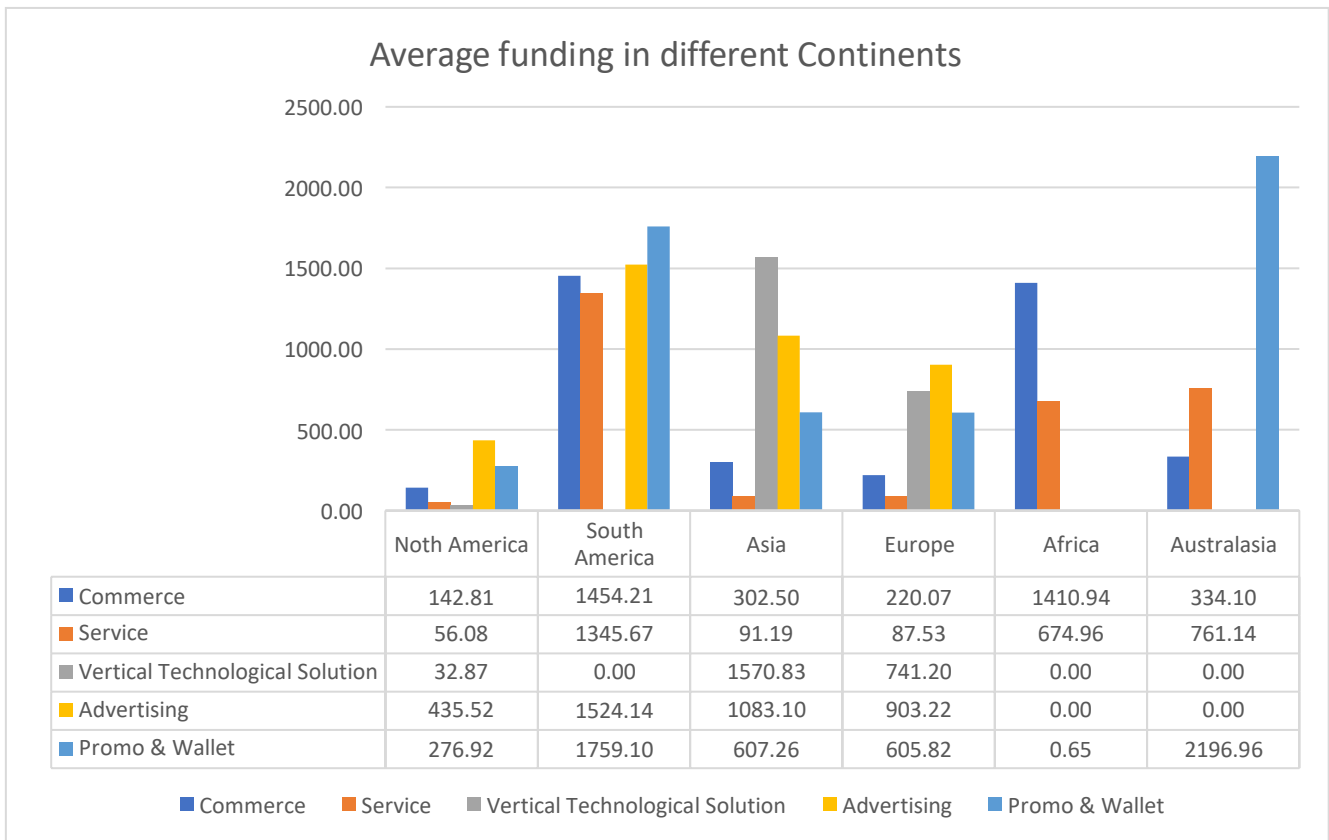


Figure 16: Graph depicting Average of total funding per category across continents.

Figure 16 shows the average funding received per category across the 6 geographic locations, these numbers roughly indicate the market demand for each category/industry of startups and are a reflection of the success of the startups and positive consumer behavior towards their offerings. Since the database consists of a small number of startups in South America, the analysis reveals the highest average funding per startup in any continent and in any category, this data can be considered as an anomaly and is disregarded in the conclusions.

Asia, on the other hand, has more funding per startup dedicated to Vertical Technological Solution, which indicates intensive growth and consumer adoption of advanced analytics, authentication, app and web development, security testing, and API/SDK functionalities usage in the region.

#### 4.2.1 North America

The US has the highest number of mobile startups in North America, almost 10 times as many as Canada and Mexico put together. Due to the startup culture, entrepreneurs have access to funding, business infrastructure, monetization capabilities and practiced management. For a long time, US has been the hub of high-tech innovation and startups in fertile startup ecosystems such as Silicon Valley, Seattle and New York.

The country held a near monopoly on venture capital, capturing more than 95% of all venture capital investments globally<sup>14</sup>, however, this number has drastically decreased in the last five years to a little more than half. The high number of startups and funding that these startups receive have various factors that contribute to their growth: places like the Silicon Valley and New York are some of the most populated and affluent areas of the country with some of the best universities, this means a combination of wealthy investors and some of the sharpest, youngest minds in the country.

The government policies in these regions also offer business incentives to startups, organizations like Small Business Services aim to work hand-in-hand with entrepreneurs and cultivate businesses providing them with support from state and local governments. As the funding opportunities increase, so do the number of startups.

Wildly successful startups like Airbnb, Uber or Hubspot have originated from the US and a major factor is more accessible funding options, in the US, startups rely on heavy marketing coverage and VCs. Canada is slowly growing in the mobile startup scene, the government's efforts such as the StartUp HERE Toronto and Venture Capital Action Plan (VCAP) is looking to boost the startup culture and growth in the country.

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<sup>14</sup> <https://www.webfx.com/blog/marketing/made-in-america-startup-culture-in-the-usa-infographic/>

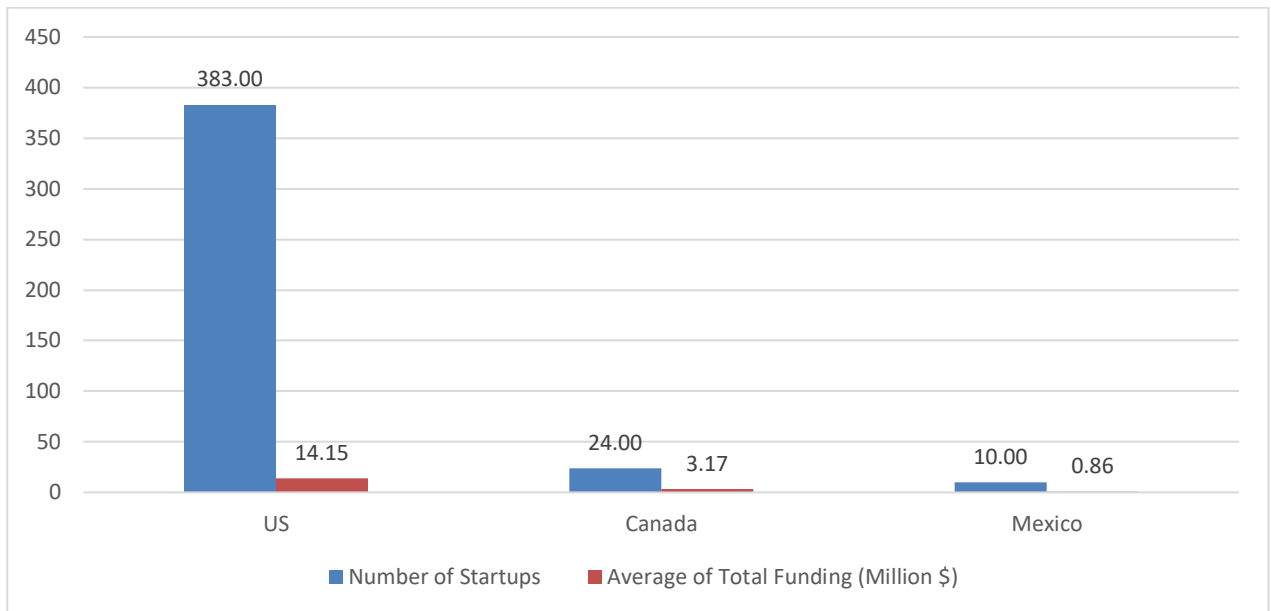


Figure 17: Graph depicting Number of Start-ups per Average Total Funding in Millions in North America.

However, this data is just an indicator of an entrepreneurial friendly environment rather than the willingness of customers to adopt and use new digital technologies that are mobile-focused and catering to end-users. From a funding perspective, it can be seen that in the North American continent, the Advertising category has received the highest average funding per startup.

Taking the example of one of United States' biggest and most promising start-ups LIME, which provides a sustainable solution to the first and last mile transportation problem by providing electric scooters which can be accessed by a smart phone. Lime is headquartered in San Mateo California and this has played a vital role in it getting a total of 8 rounds of Series A-D funding which has led to investments of over 765 Million USD. This a typical example of geographical location playing a vital role in receiving funding.

## 4.2.2 South America

The South American continent has grown massively in the past 5 years when it comes to new startups in the digital innovation space. Ironically, US accelerator programs are often the steppingstone that Latin American startups need to scale regionally and globally, these programs provide funding as well as networks and partnerships. In the reference period, Brazil has higher number of startups in the mobile B2C space as the startup scene in the country is rising, yes, but slowly. The country's booming economy is feeding into the pool of entrepreneurs and attracting foreign investors alongside the government's accelerator: Start-Up Brazil.

However, as observed in figure 18, Argentina has received higher average funding per startup. This is due to the funding received by two startups in the database: Moni (banking and finance app) and Umewin (Advertising), 12 and 13 million USD respectively. While Argentina was behind its Latin America's counterparts, it has brandished a healthy startup scene in the past decade, especially in the digital world. The country's Entrepreneur Law reduces bureaucratic barriers to entry and investments and supports accelerators and crowdfunding platforms, leading to a more open and attractive investment environment.

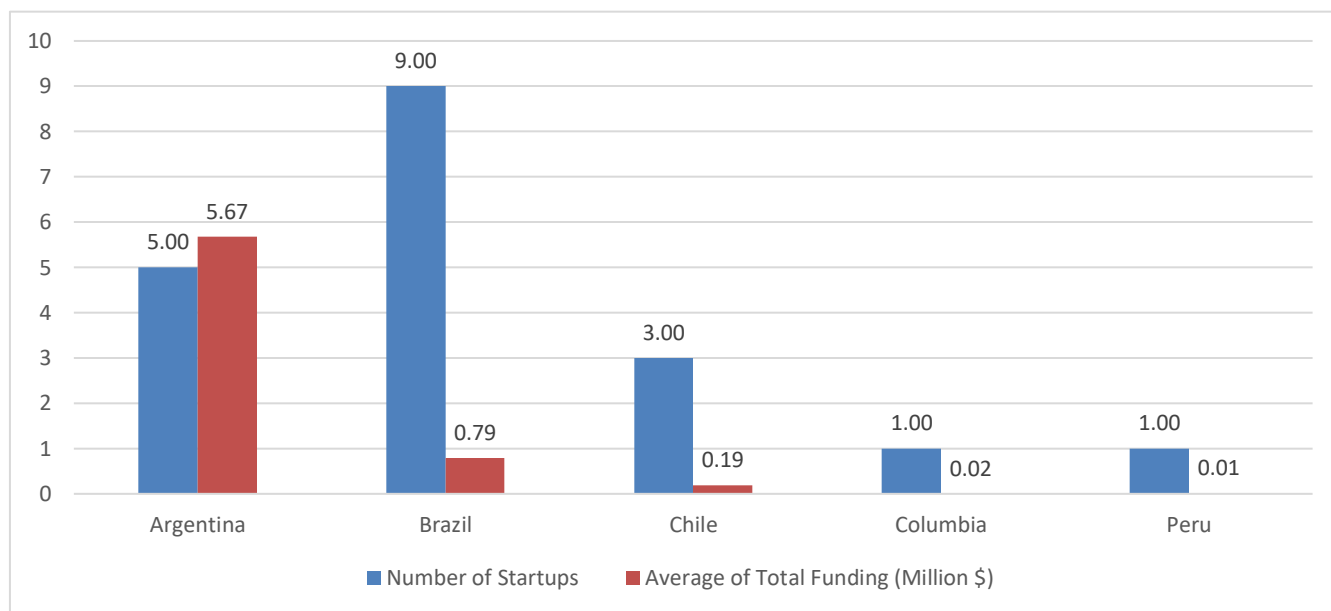


Figure 18: Graph depicting Number of Start-ups per Average Total Funding in Millions in South America.



### 4.2.3 Europe

Europe’s mobile startup scene has long existed in the shadow of Silicon Valley, and it is now finally emerging massively with the biggest European startup hubs being established in London, Berlin, Paris, Copenhagen and Lisbon. As observed in the figure, UK has by far the highest number of mobile B2C startups followed by Spain, Germany and France, all around the same range of startups being founded between 2013-2018. This is not surprising as London is the financial capital of the world and more than 30% of the European Venture Capitalists are based in the UK. The analysis of the database reveals that Spain ranks second in the number of mobile startups catering to the 5 categories in the B2C space; Barcelona and Madrid are important stops on the startup map. Barcelona is considered one of the “smartest cities” in the world, and has many successful startups in the commerce, mobile and tech sectors. Germany and France are also important startup locations and in 2017 alone, Germany raised almost over 500 million Euros for funding digital tech startups. In Germany, Berlin is the leading city with the most dominant startup culture attracting the best minds and foreign investment with its infrastructure, cultural diversity and startup scene.

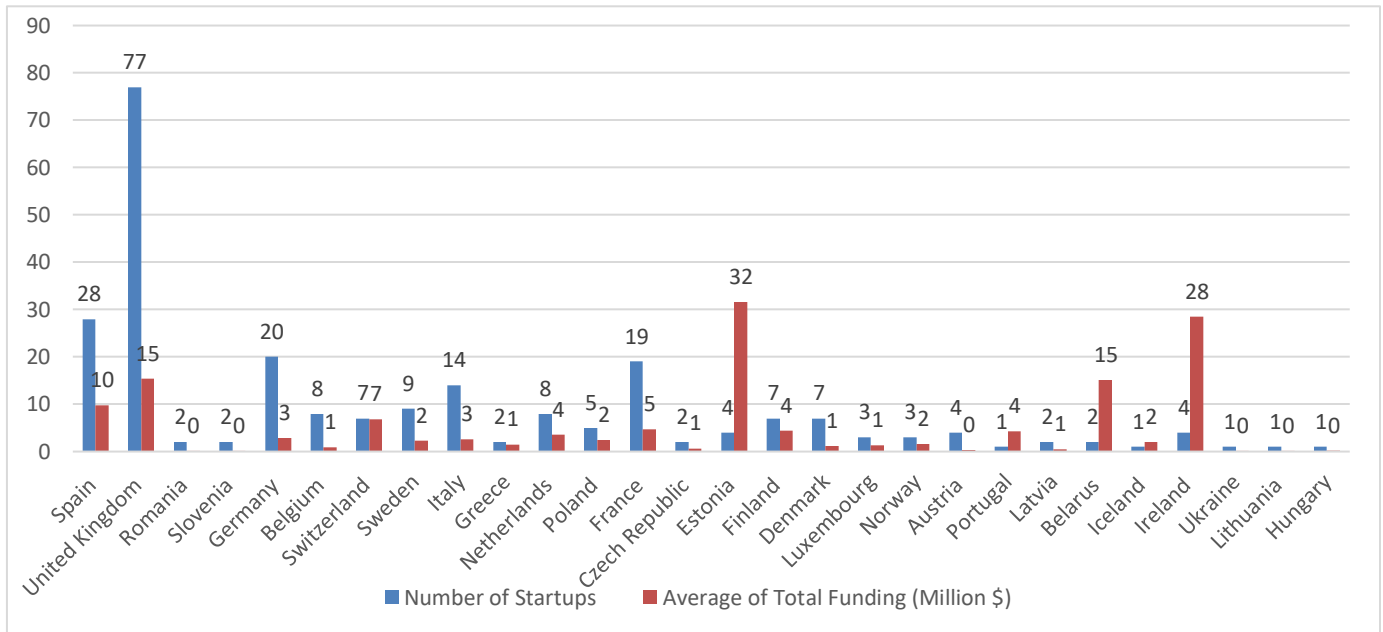


Figure 19: Graph depicting Number of Start-ups per Average Total Funding in Millions in Europe.

This study has also revealed an important observation: Estonia and Ireland are leading startup countries when it comes to funding received in the past 5 years. Estonia's startup scene kicked off with the launch of Skype in 2003 and today, Estonia has the highest rate of number of startups per capita in Europe and has turned into a startup paradise. The country is highly digitally advanced, and among the key figures illustrating Estonia's thriving startup ecosystem, is startup funding, as is shown by figure 19. Startups in Estonia raised a record of nearly EUR 328 million in investments in 2018, a considerable increase compared to the previous year at EUR 272 million.<sup>15</sup> Ireland is sometimes called the Silicon Valley of Europe and has one of the most effective technology development and innovation programs in the continent, the transparent regulation for startups and companies has made it easier for startups to be founded. Startup funding is on a positive trend in the country, Enterprise Ireland is Europe's largest seed investor by number of investments and the country also has an active network of business angel investors and venture capitalists, besides other micro-financing options.

Overall, Europe is home to more than twice as many initial public offerings (IPOs) as the U.S., while newly-listed European digital companies are outperforming their American counterparts, according to a report last year by venture capital firm Atomico.<sup>16</sup> European startups also have a distinct difference to their US counterparts: the founders are predominantly male of average 38 years old and 85% of them hold a university degree.

This goes against the usual stereotype with founders acquiring competencies through university degrees, practical knowledge and working experience. Most of the startups are also born global, with operations in more than one country, founders are looking to internationalize and grow across borders, motivated by the potential to expand digitally and reach audiences through various channels.

<sup>15</sup> <https://fintechbaltic.com/2019/03/14/how-estonia-is-secretly-rising-to-be-europes-startup-nation/>

<sup>16</sup> <https://www.cnbc.com/2018/12/04/state-of-european-tech-2018-record-year-for-start-ups.html>

The mobile startup culture in Europe is also greatly boosted by the many initiatives of the European Commission, that offers financial assistance and grant programs in order to boost and scale up innovations that are created and brought to markets by startups. One key source of financial investment in the European continent are Chinese investors, who participated in funding rounds worth more than \$1 Billion in European tech startups in 2018.

In Europe, one of the few unicorns (valued over 1 Billion USD) Bolt, formerly called Taxify, was founded by Markus Villig in 2013, with a view to aggregate all Tallian and Riga taxis into one mobile platform. Since its founding, Bolt has raised a total of 244 Million USD in funding over 6 rounds which includes a seed round and a series D round of funding. As of today, Bolt has branched out and operates in 34 countries and more than 150 cities and has 25 million customers and over 500,000 who use the platform to offer rides. Prior to announcing a strategic partnership with Didi Chuxing, Taxify had raised over €2 million in investment capital from Estonian and Finnish angel investors. In August 2017, Didi Chuxing invested an undisclosed amount believed to be an "eight-figure U.S. dollar sum". A May 2018 funding round with a \$175 million investment from Daimler helped it reach Unicorn status.

With the US adopting more restrictive policies on trade and security, China has been increasingly expanding its footprint in Europe.<sup>17</sup> Upcoming hubs including Copenhagen, Lisbon, Barcelona, Dublin, Oslo and Tallinn are all growing rapidly and starting to attract more investment from across the world. However, a large proportion of startup funding still comes from the EU government, and more capital investment is needed from pension funds, VCs and financial institutions.

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<sup>17</sup> <https://www.cnbc.com/2018/12/04/state-of-european-tech-2018-record-year-for-start-ups.html>

<sup>18</sup> <https://www.forbes.com/sites/kjartanrist/2019/07/25/the-future-of-startups-is-in-europe/#747612988de9>

There is still a huge funding and valuation gap between the U.S. and Europe, with research by GP Bullhound finding that unicorns in Europe are typically valued 18 times their revenue, compared to 46 times in the U.S.<sup>18</sup>

**4.2.4 Asia**

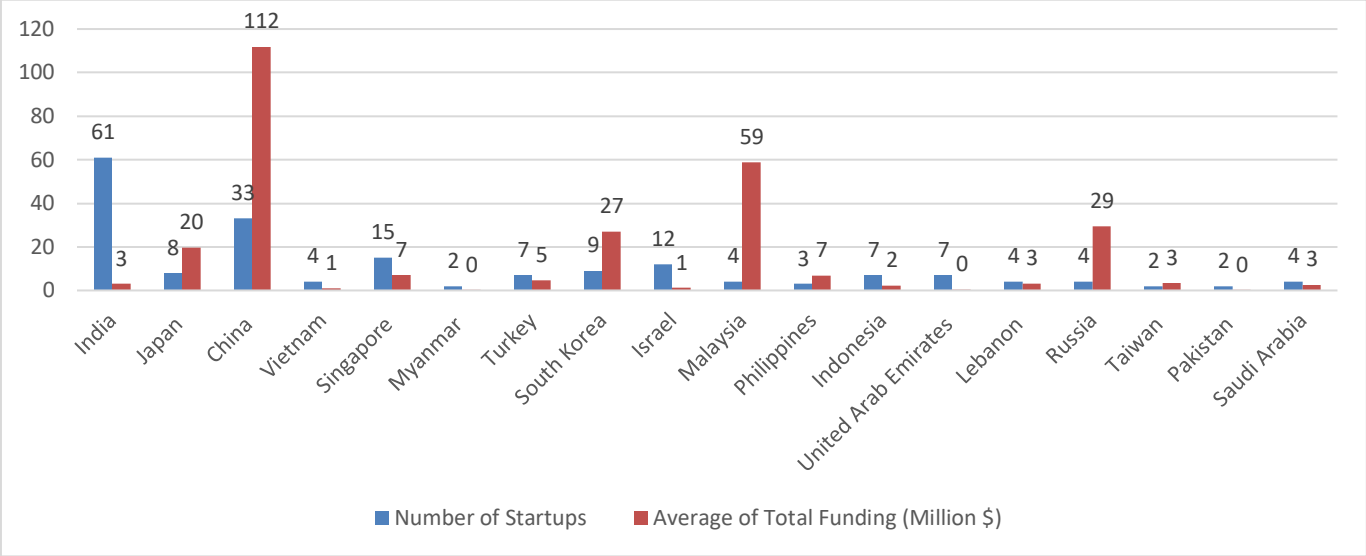


Figure 20: Graph depicting Number of Start-ups per Average Total Funding in Millions in Asia.

Asia is a very large and diverse continent, with a high youth population and some of the wealthiest countries. The startup ecosystem in Asia has been making leaps and strides, and the Asian market is growing fast due to population and innovation.

It can be observed from the figure above that India has the highest number of mobile B2C startups (61) followed by China (33) in the reference period. According to a KPMG report,<sup>19</sup> the Indian startup ecosystem has received 28 Billion Euros between 2014 and 2018. Bengaluru continues to remain the main hub for startups in India with the highest number of startups and maximum funding received, with its pool of technology talent and presence of global investors. Success stories like BookMyShow (e-ticketing mobile-based startup for events, cinemas,

<sup>19</sup> <https://assets.kpmg/content/dam/kpmg/in/pdf/2019/01/startup-landscape-ecosystem-growing-mature.pdf>

theatre, etc.) and Flipkart (e-commerce platform with mobile app catering to end-users offering a wide range of products) have boosted the entrepreneurial culture in the country.

B2C Startups in India have been driving solutions to meet customer needs, solve problems and revolutionize sectors like healthcare, education, financial services and transportation. Mobile startups in India at later stages of funding like Ola (app-based car sharing platform) have attracted a lot of attention from foreign investors, and the year 2017 witnessed record investments worth USD 13.5 Billion in Indian startups.

It can be observed from figure 20, China is second to India in terms of number of startups catering to the B2C audience, however, the funding scenario in China is way ahead compared to any other Asian country. China is a global leader in e-commerce and digital payments: According to a McKinsey report<sup>20</sup>, the value of China's e-commerce transactions is estimated to be larger than the value of those of France, Germany, Japan, the United Kingdom, and the United States combined together. The sheer scale of China's internet user base encourages continuous experimentation and enables digital startups to achieve economies of scale quickly.

However, the strength of China's digital consumers goes beyond the advantages of scale—it also reflects the fact that the country's consumers are embracing digital technologies with hunger. Geographically speaking, Beijing, Shanghai, and Shenzhen are the global start-up ecosystems in China. Banking and Finance, and Transportation and Logistics services are sectors that are attracting the most investment in these countries.

A recent report published by KPMG showed that the Chinese venture capitalists, both private and public, invested more than US\$31 billion in Chinese startups in 2016, up from US\$27.4 billion in 2015. The leading private VC institutions in China include Zhen Fund, K2VC and

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<sup>20</sup><https://www.mckinsey.com/~media/mckinsey/featured%20insights/China/Chinas%20digital%20economy%20A%20leading%20global%20force/MGI-Chinas-digital-economy-A-leading-global-force.ashx>

Sinovation Ventures in the initial funding stage, and IDG Capital, MatrixPartners, and Sequoia Capital China in the subsequent funding stages.

In 2017, over 100 Chinese start-ups were listed in stock markets around the world, and China added 34 new companies to its stock of unicorns (companies valued at USD 1 billion or more and less than 10 years old), now standing at more than 270. China is now only second to the US, when it comes to the amount of venture capital funds raised and invested in mobile startups.<sup>21</sup>

The Chinese government has introduced a slew of policies to encourage the start and growth of startups, through government guidance funds on national, provincial, city, and district levels, the government is a major force in Chinese venture capital funding of mobile B2C startups. Technology giants like Tencent and Alibaba are nurturing and supporting entire startup ecosystems, treating them as innovation powerhouses.

Besides these two countries, Singapore, Japan and Vietnam are also growing as mobile startup hubs and several investors have started pouring into startups, the rationale behind these trends may lie in the fact that Asian cities have a low cost of conducting business, strong economics and healthy business environments, feeding into the potential of strong digital innovation.

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<sup>21</sup> [https://press.covestro.com/news.nsf/id/2018-177-EN/\\$file/KAIROS\\_ENG.pdf](https://press.covestro.com/news.nsf/id/2018-177-EN/$file/KAIROS_ENG.pdf)

## 4.2.5 Africa

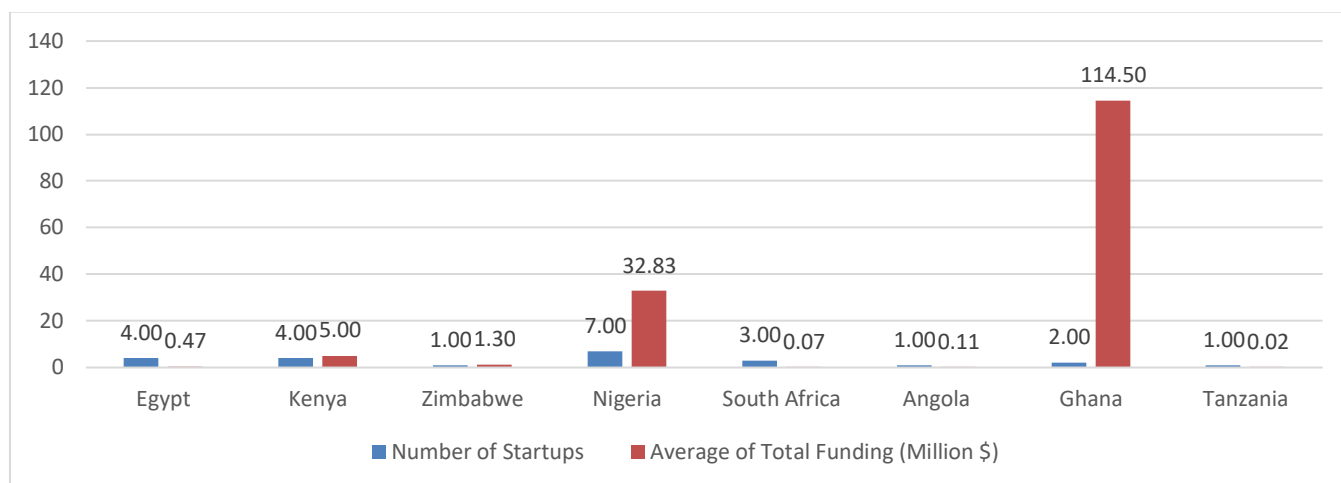


Figure 21: Graph depicting Number of Start-ups per Average Total Funding in Millions in Africa.

Africa is the world's second largest and second most-populous continent, however, mobile penetration in the continent is only at 44 percent<sup>22</sup>, much lower when compared to other regions of the world and lower than the global average of 66 percent. As technology is slowly advancing, the birth and growth of mobile startups is slowly getting traction.

With the growth of mobile communications across the continent, digital technological adoption is being facilitated with the stimulation of the emergence of a new wave of African entrepreneurs. Entrepreneurship in Africa is gaining increased importance and is gradually being pushed as the solution to Africa's developmental challenges. Vibrant startup ecosystems are developing in cities like Lagos, Nairobi, Johannesburg, Cape Town and Cairo.

Africa is still behind compared to other continents, and there is a lack of high growth startups or unicorns, the present startups are of small dimension and without critical mass. African startup ecosystems have insufficient availability of capital in the local market, especially in the pre-seed, seed and Series A stages which is limiting the growth of the local African countries' ecosystem.

<sup>22</sup> <https://www.zdnet.com/article/mobile-in-sub-saharan-africa-can-worlds-fastest-growing-mobile-region-keep-it-up/>

As seen in figure 21, Nigeria is leading in number of mobile startups, most of them based in the Nairobi region, however Ghana has a higher average total funding. It is to be noted that this dataset had a small sample size of African startups based in the mobile B2C space and the limitations may be reflected in countries like Ghana and South Africa, with high investment rate in Ghana and lower in South Africa, in fact, it is the opposite.

**4.2.6 Australasia**

In the Australasia region, Australia and New Zealand are slowing growing in number, as startups are beginning to get access to funding and infrastructure. Until 2015, Australian VC funding was very limited but today, class investors are raising large funds here. The government of Australia

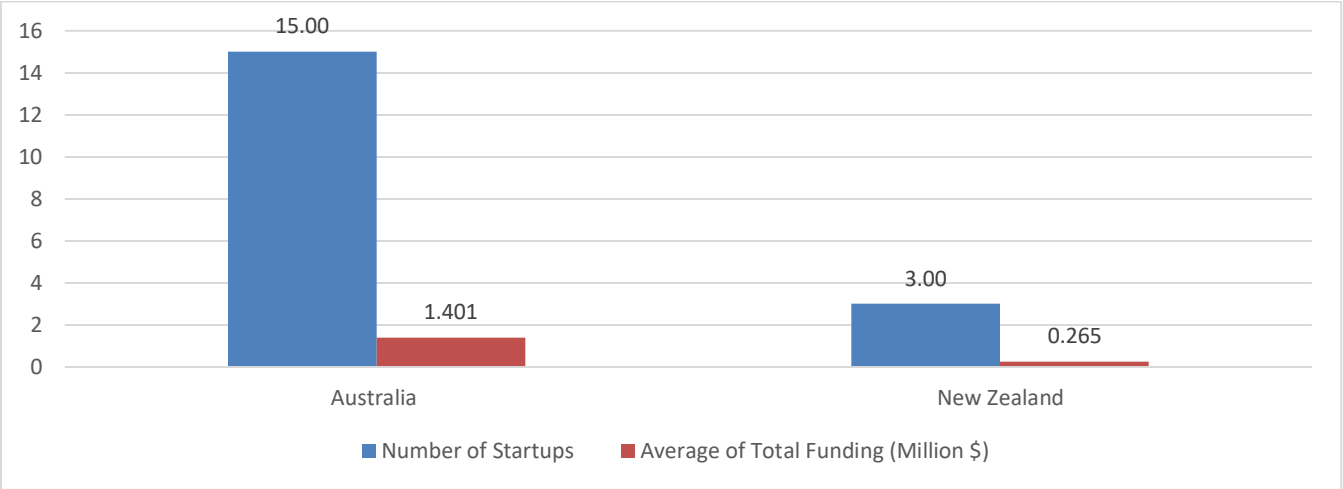


Figure 22: Graph depicting Number of Start-ups per Average Total Funding in Millions in Australasia.

are also boosting the founding and growth of startups due to R&D tax credit, and incentives also support the angel scene in the country. However, despite a healthy economy, investment in local mobile startups remain low, at least when compared to other regions across the world.

A recent report by Startup Muster revealed that in 2018, the number of mobile-based startups fell by 12 percent. The same annual report from Startup Muster found that, out of the 49.2 percent of startups who are seeking funding, 45.1 percent are planning to raise between \$100,000 and \$1,000,000 of investment in the next year – a staggering statistic showing how



crowded the investment space is. Mobile startups in New Zealand are slowing growing in number and size, the sample size of this database is too small to draw conclusions from.

### **4.3 Funding Types and Amounts**

The Crunchbase glossary<sup>23</sup> explains the different funding types of the mobile startups taken in this database for analysis. It can be observed from the figure below that a large majority of mobile startups (441) are in the seeding phase of financing. Pre-seed funding is usually when investments are made into the startups from personal savings of founders or close friends and family in order to get operations off the ground.

According to Crunchbase, seed rounds are among the first rounds of funding a company receives, generally while the company is young and working to gain traction. Round sizes range between \$10k–\$2M, though larger seed rounds have become more common in recent years. The typical valuation for a company raising a seed round is between \$3 million and \$6 million.

A seed round typically comes before a company's Series A round that involves investments from Venture Capitalists and Private Equity. Capital from a seed round plays an important role in the total funding that a startup receives, it often fuels the startup's move beyond its founding team, funds the development of the product or service that the startup offers its customers, and in some cases, especially with digital startups, even facilitates early revenue generation.

According to the firm CB Insights<sup>24</sup>, only 46 percent of seed funded companies will raise another round. That means that this is the end point for the majority of early stage startups, some examples of such startups include Chariot, Sinemia, and Homeshare, all of which started out promising but did not manage to make it any further. According to a report in the Journal of Empirical

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<sup>23</sup> <https://support.crunchbase.com/hc/en-us/articles/115010458467-Glossary-of-Funding-Types>

<sup>24</sup> <https://www.cbinsights.com/research/venture-capital-funnel-2/>

Entrepreneurship<sup>25</sup>, the rate of failure for startups in the seed stage to raise another round of funding is 79.4%. The figure 23 below shows the general different stages of financing and it can be seen that the seeding stage is in the early stages of the growth of a startup, there are several subsequent stages before a startup reaches the IPO stage.

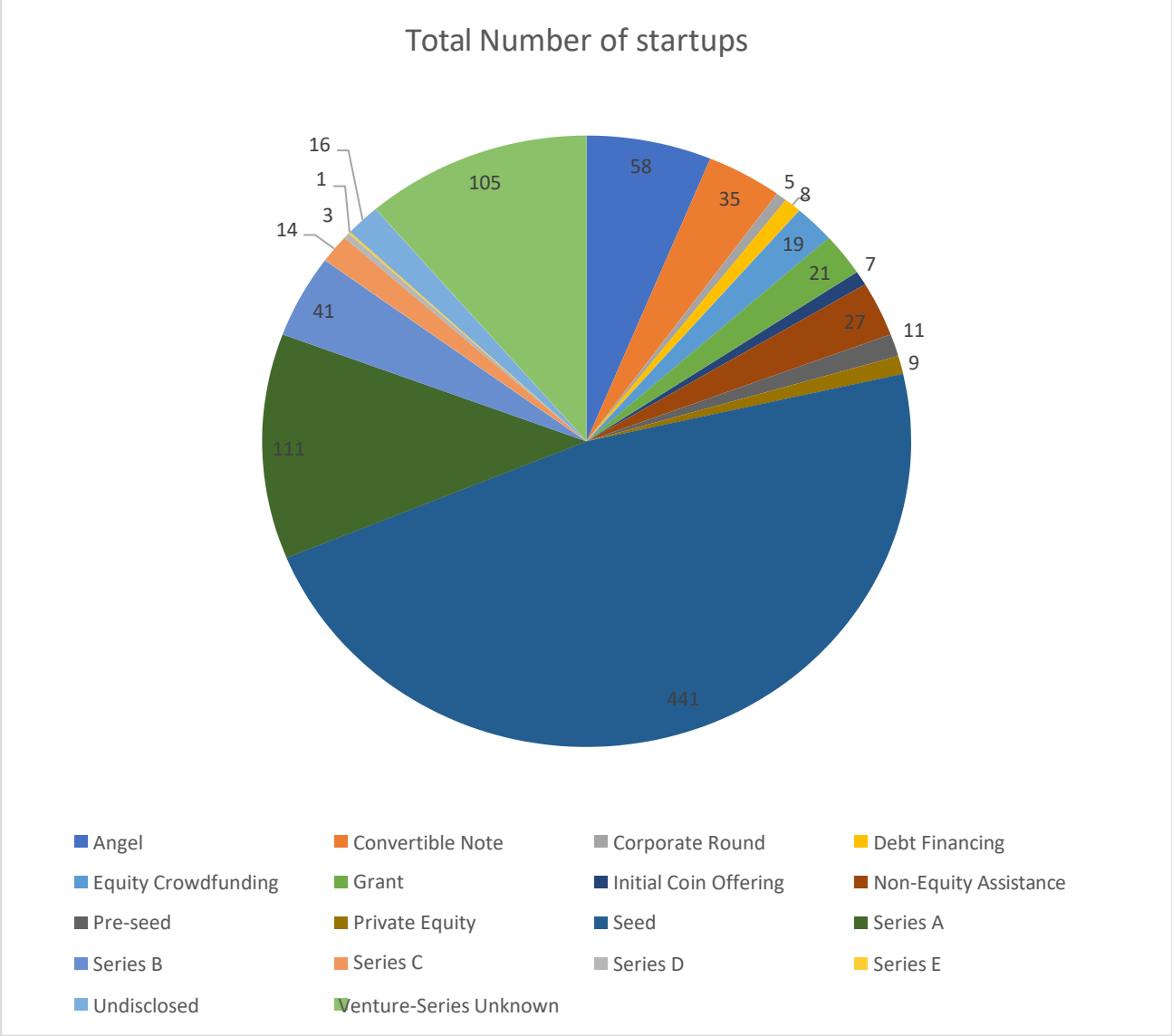


Figure 23: Pie Chart depicting Total Number of Start-ups in Database according to their type of funding.

<sup>25</sup> <https://medium.com/journal-of-empirical-entrepreneurship/dissecting-startup-failure-by-stage-34bb70354a36>

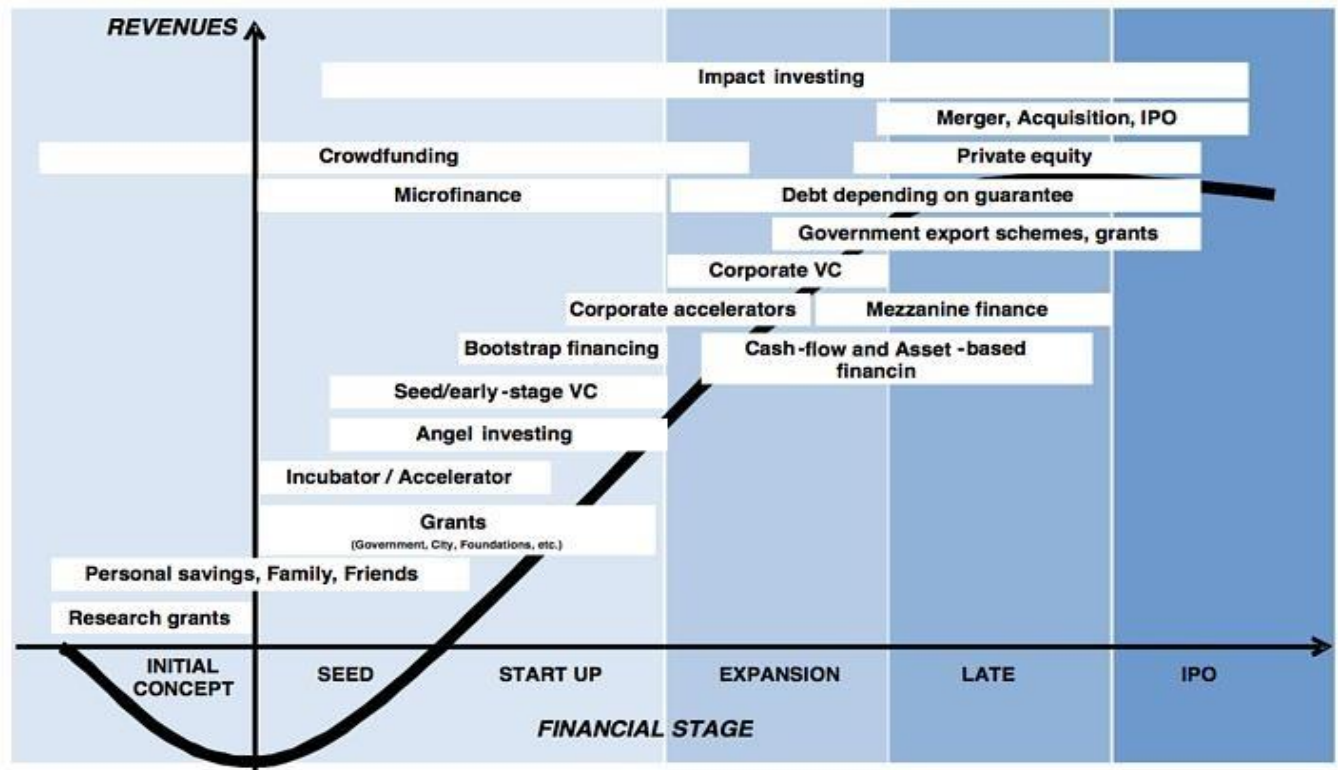


Figure 24: Figure showing different financial stages of Start-up Investment wrt to Revenue.

Seed investors largely take the risk of backing startup formation. The skills and networks inherent in making the early bet are consistent with the funds that play in this category. Seed investing is really about backing “the start”, which is why the highest number of startups fall under this category and remains an attractive funding stage for domestic and foreign investors including business angels.

## **5. Limitations and Further Research**

This study was conducted with accuracy in data collection, descriptive statistics and analysis. However, as in the case for most research, this research has its own limitations.

The first limitation is the sample size of 932 startups. Given the resources at hand and the research methodology, the sample size is limited to the startups that are available on CrunchBase, some of them have missing values for different variables such as the total funding amount received, and the last funding amount received in USD.

The fact that there are several startups founded each year and we look at startups taken from a database, it is evident that there may be some startups that are missed out, it is nearly impossible to have the exact population, narrowed down under the mobile B2C space.

As discussed earlier, the location, funding that a startup has received, or the category that a startup serves may not necessarily affect or imply its success, as the background information on the details of any successful start-up is rarely available.

As per worldwide mobile trends and research, certain factors and assumptions are made in this research. Another limitation with regards to the categorization of the start-ups was that the data was collected from its website, the categorization may have been affected by the subjective bias of the researchers. However, all data collected was done with cross-checking between multiple sources to maintain the highest possible accuracy of the data.

Further and in-depth study of this paper would include a more dynamic database including funding details for all the start-ups considered, besides background of founders and human and social capital. Additionally, some geographic locations do not have a sufficient sample size to draw conclusions to, various sources should be considered to establish a sufficiently large enough sample of mobile startups catering to the B2C audience, particularly in Australasia and South America.

Correlation and Regression analysis can be performed in order to conclude the results in correlation coefficients to measure the extent of correlation between the variables and the dataset can be analyzed using regressions in order to understand the effect of the variables on the success of a start-up.

## 6. Conclusion

This paper provided a broad overview on the current mobile B2C startup ecosystem, and insights into correlated factors that influence the success of startups around the world. Right from the business literature to the industry trends and growth of different sectors, it is evident that international B2C startups have a higher chance of receiving equity funding in certain geographical locations like North America (extensive startup ecosystem and culture) and Asia (massive growth due to large population), even though Europe is closely 3<sup>rd</sup>, encouraged by government programs and steady increase in VC funding. Funding levels in other continents like Australia and Africa are steadily on the increase, however, the growth of startups in these regions are slower compared to other geographical regions, which can be contributed to lack of consistent, long-term funding from investors and regulated government grant schemes. These findings support claims and conclusions from previous research that mobile startups located within specific successful geographical clusters absorb knowledge from the local environment and culture which contributes, at least partially, to their higher growth and performance innovation.

As the culture of digitization and mobile usage evolves, it is evident that modern technological advancements have led to a consumer audience that is more focused on shifting to a digital world. The analysis in this report has led to the conclusion that major categories of mobile startups are Service, Commerce and Promo & Wallet. The Service category offers B2C customers intangible products or services and are rarely involved in manufacturing. The Commerce category, or in this case, mobile commerce is an advancement of ecommerce, and enables people to buy and sell goods or services from almost anywhere using a mobile device. The Promo & Wallet category includes startups that offer customers discount coupons and loyalty programs, mobile wallets that dematerialize debit, credit and loyalty cards, gamification

solutions that aim to maximize customer engagement, and payment and fintech startups that offer different digitized payment solutions. Overall, the service category has the highest number of startups across the globe, and according to current trends, this will continue to grow in the coming years.

There are certain sub-categories in our analysis which have received higher funding and investment opportunities from a global perspective and have attracted the interest of a large number of investors, irrespective of their location. Research in this paper has revealed that some of these high growth areas are **Banking and Finance, Marketplaces, Payment and Promotion and the Health sector**. These fields are largely being fueled by the digital transformation and the evolution of mobile relevance between businesses and consumers, hence the need for innovative business models.

The sub-category Payment and Promotion is leading this digital transformation with startups developing business models to drive innovation in this field – **Satispay**, an e-payment startup is contributing to this revolution with a mobile payment system that is independent and alternative to traditional networks. The startup, founded in 2013, developed a payment system that allows users to connect Satispay's mobile app with their bank account, making payments methods digital, safer and easier than ever.

Another example would be **FindmeCure**, founded in 2017, which has a novel business model (in the health sector) that bridges the gap between consumers who have diseases without a cure and those developing clinical trials and research. The mobile platform, developed by the startup, replaces traditional manual processes with a more tailored, efficient way for consumers to find opportunities and treatment options.

**Goin**, an award-winning startup, founded in 2017 is also an excellent example of a unique business model in the banking sub-category, that targets millennials and allows them to manage

their financial savings and offers different forms of investments that traditional financial institutions lack, all through their mobile app with a fully automated interface.

From a funding perspective, it can be seen that the most popular stage of funding for all types of investors is the seed stage. This can be contributed due to the fact that startups in their early stages are on a high-growth path and offer immense potential for return of investments (relative to larger, mature incumbents). This potential motivates the acquisition of early stage startup equity, despite the risk it involves.

Overall, it can be concluded that there are several factors that play a role in the total funding a mobile startup may receive at different stages, depending on the industry and sector it operates in. Some of the factors like geographical location or category of the startup play a larger role in determining the funding level. B2C startups, however, need to understand that as the success and number of startups grow in these industries, it will attract increased investment from venture capitalists and other investors. This will lead to increased competition, hereby forcing entrepreneurs in the startup ecosystem to boost themselves in terms of innovation and flexibility to changing consumer trends.



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