Prioritising crowdfunding benefits: a fuzzy-AHP approach

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Abstract
The current research aims to explore and prioritize the key benefits that influence the acceptance of crowdfunding as a fund-raising tool, either directly or indirectly. The study utilized a multidisciplinary approach to find out the varied benefits of crowdfunding. The study also prioritized the benefits by applying the Buckley fuzzy-AHP technique. The results indicate the various benefits of crowdfunding. The study’s results suggest fund-raising (FR), venture viability (VV), cost structure (CS), customer relationships (CR), demand building (DB), general strategy (GS), market intelligence (MI), personal sphere (PS), business ecosystem (BE), team development (TD) and product lifecycle (PL) are the benefits associated with the crowdfunding process. The findings also suggest that the topmost benefit of crowdfunding is FR. But our study has not categorized the benefits according to different types of crowdfunding, and the study’s findings cannot be generalized as the study was conducted in India. The study highlighted the critical financial and non-financial benefits of crowdfunding which can help the entrepreneurs to have more insightful knowledge of the potential benefits of crowdfunding. Studying the financial and non-financial benefits of crowdfunding can further help the entrepreneurs utilize crowdfunding platforms, depending on the need, to provide the right solution to their requirements. This research is the first study to apply the Buckley fuzzy-AHP technique to prioritize the multidisciplinary benefits of crowdfunding, thereby widening the knowledge base of academicians and entrepreneurs.

Keywords
Crowdfunding · Fund-raising · Fuzzy-AHP · Venture viability · Cost structure · Benefits

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JEL Classification G2 · G3

1 Introduction

The internet has resulted in various applications by building a network of people across the globe. Crowdfunding is one such innovative internet-based application (Shneor 2020). Michael Sallivan coined the crowdfunding term in 2006 (Gobble 2012). Though still at a nascent stage, crowdfunding holds a lot of potentials as it is seen as a financial seeding entrepreneurship model (Bagheri et al. 2019). Crowdfunding, a new digital business model, is a process of seeding entrepreneurship by raising small money from a large number of individuals through the internet as an intermediary (Mollick and Kuppuswamy 2014). In the present time of global connectivity through the internet, dedicated websites provide a platform for investors and entrepreneurs to raise capital (Bachmann et al. 2011). Crowdfunding is a multifaceted phenomenon as the business model of crowdfunding can be based on Peer to Peer (P2P), Equity, Reward, or Donation-based (Paschen 2017). The P2P is based on the model where an entrepreneur raises money from private lenders, thus eliminating the need for conventional money lending institutes. The model became popular as unbanked people could not get a loan from banks, hence getting entrapped in exorbitant interest rates of money lenders (Hollas 2013; Bachmann et al. 2011). Equity-based crowdfunding is based on the business model of issuing equity in lieu of the capital received (Lukkarinen 2020). In early 2010, equity-based crowdfunding recorded strong growth. Still, from 2016 onwards, there has been a steady decline due to stringent regulatory checks and uncertainty of clear rules governing the issuance of shares (Garvey et al. 2017; Ziegler et al. 2018). The reward-based crowdfunding model is based on acknowledging the investor by non-financial benefits like giving a T-Shirt with a company logo or dinner with the company’s CEO (Shneor and Munim 2019). Reward-based crowdfunding is also considered the most appropriate tool for marketing (Brown et al. 2017). Donation-based crowdfunding is primarily meant to raise money for a charitable cause (Gleasure and Feller 2016).

The benefits of crowdfunding are beyond mere money-raising platforms (Nucciarelli et al. 2017)). Although previous studies have been conducted on crowdfunding, the focus of the studies was not on the multi-dimensional impact of crowdfunding (De Luca et al. 2019). The main focus of earlier studies was on the purely financial benefits of crowdfunding (Belleflamme et al. 2015). However, the benefits of crowdfunding percolate to the strategic support that it can provide to the new venture and a medium that can support innovative business ventures (Rossi 2014). Previous studies have opinionated that crowdfunding provides a platform for scouting potential employees, in the present era of intense competition crowdfunding offers the opportunity to get the public attention (Ramos 2014; Mollick 2014). Crowdfunding also acts as a source to test a business idea. Individuals only invest in that idea they think is viable (Lehner et al. 2015). Hence the investment from individuals also acts as a testament to the proposed business idea. Studies have also pointed out the ability of crowdfunding to acquire a customer base (Hu et al. 2015), higher visibility of new venture (Burtch et al. 2013), interaction with customers (Gruner and Homburg 2000). Although the past studies have suggested the far-reaching implications of crowdfunding, however as a business model, few studies have tested the empirical framework based on the multidisciplinary merits of crowdfunding to the entrepreneurs in addition to funding platforms (Macht and Weatherston 2014). Moreover, considering the vast potential
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of non-financial benefits in addition to the financial benefits, there is also a need for prioritizing various benefits so that entrepreneurs can focus on the critical factors.

Crowdfunding holds a lot of potential for a developing economy like India. The technological awareness and the internet penetration rate provide an ideal setup for the success of the crowdfunding model in India (Baber 2019). India has also witnessed a sharp increase in technology-based start-ups (KPMG 2018). According to the Government of India (2017), there are more than 63 million Micro, Small, and Medium Enterprises (MSMEs) operational in India. Crowdfunding provides an alternative source of funding to the conventional financial channel (Suresh et al. 2020).

It is always a challenge for entrepreneurs of MSMEs to fulfil the conditions for a loan from established financial channels. According to PWC (2018), 50 million MSMEs have a debt demand of USD 198 million that has yet to be met. A sizeable population in rural areas in India, especially women, does not have a bank account. For them, the only source of money is a local money lender that charges exorbitant interest rates. Crowdfunding is a boon for the unbanked population to raise funds through crowdfunding. Although people make a lot of religious donations in India, contributing to a business idea is still at a nascent stage in India.

Moreover, the complex regulatory framework impedes equity-based crowdfunding in India (Suresh et al. 2020). Even entrepreneurs are reluctant to use crowdfunding for raising capital due to specific challenges that crowdfunding pose. The sharing of the business idea in the public platform for crowdfunding is like a double-edged sword as, on the one hand, it is a must to share the idea. Still, on the other hand, there is always a risk that might be stolen by a rival company or by a big business house (Galwin 2012). Crowdfunding is purely based on virtual connect through the internet; hence, the company’s virtual presence makes it even more challenging for the entrepreneurs to win the trust of potential investors (Sigar 2012). Despite the vast potential of crowdfunding for Indian entrepreneurs, the limited research on non-financial benefits apart from the financial benefits of crowdfunding impedes the acceptability of crowdfunding in India. The lack of research is also resulting in outweighing challenges as compared to the benefits. This gap in the research has also been noted in the past, wherein prior studies have underscored the need to further explicate the benefits of crowdfunding to entrepreneurs, particularly in the Indian context.

By addressing all the aspects mentioned above, we propose two key research questions (RQs).

**RQ1** What are the benefits of crowdfunding for entrepreneurs?

**RQ2** To prioritize these benefits to find out the most important benefits of crowdfunding to the entrepreneurs.

The study makes three novel contributions. First, limited prior literature has empirically tested the framework based on the merits of crowdfunding to the entrepreneurs that go beyond the mere funding platform. The study provides a comprehensive framework of the various factors that represent the benefits of crowdfunding in addition to the fund-raising phenomenon. The study answers the call given by (De Luca et al. 2019) for empirically testing the framework from entrepreneurs. Second, unlike most prior studies, the current research is based on the Buckley Fuzzy-AHP technique to prioritize the benefits of crowdfunding. Fuzzy-AHP is one of the most widely used multiple criteria decision-making (MCDM) methods in ambiguous situations (Wang and Chin 2011). While AHP is a powerful technique that prioritizes different criteria, evaluates decision alternatives for each criterion, and determines an overall ranking of the decision alternatives, it is not without flaws.
However, much of the data collected from experts in the real world contained ambiguity and vagueness due to the complexity of the decision environment. Fuzzy-AHP is used to get past AHP’s limitations (Iftikhar and Siddiqui 2017). The study is based on a survey of experts (entrepreneurs) to prioritize crowdfunding benefits. Third, the study has the benefits of crowdfunding in developing economies like India, a geographical context that has seen tremendous growth of start-ups including MSMEs in the past few years; however, received limited scholarly attention in the past. Given the nascent nature of crowdfunding in the Indian context, policymakers can derive vital advantages through insights derived from this study’s findings.

The current research is divided into seven sections. The literature review and criteria identified are discussed in Sect. 2. The research technique and procedures are covered in Sect. 3. The extraction of highly prioritized elements is the subject of Sect. 4. Sections 5 and 6 deal with the key findings and discussion, while Sect. 7 deals with the conclusions, Limitations, and future study directions.

2 Review of literature

2.1 Emerging phenomenon of crowdfunding

Fisk et al. (2011) has defined crowdfunding as “a collective effort by individuals who network and pool their money together, usually via the Internet, to invest in or support the efforts of others.”. Crowdfunding evolved from crowdsourcing, a wider term related to obtaining suggestions, input, and solutions from the general public to improve corporate activities (Bayus 2013). Further, this platform has grown from a simple online feedback box to a source of crowd-sourced knowledge and ideas on how to develop the company’s goods and services (Giones and Oo 2017). Many countries have made this source legal, while some other countries are still in the dilemma of approving it under law. Crowdfunding in India, which is still in its infancy, has a slew of issues to deal with. Second, no proper legislative law exists that establishes and specifies the same laws. However, lawmakers recognized the need for regulation of this business model. As a result, India’s Securities and Exchange Board issued a consultation paper on crowdfunding in 2014 (Kaur and Nanda 2020). Valanciene and Jegeleviciute (2013) also opined that necessary changes in the law are required for the fast development of a relatively new and innovative concept of fund-raising called crowdfunding. Especially at the time of crisis at the global level, when even the banks are facing the issue of under capital, crowdfunding acts as a blessing in disguise. According to Kuti and Madarász (2014), various crowdfunding platforms have recently been established, allowing managers, entrepreneurs, and project initiators to solicit funding through an open call and post details about their projects.

After the global financial crisis in the year 2008, crowdfunding has rapidly grown into a popular platform for helping innovating companies produce goods, and it is one of the ways that creative, small businesses have been able to access capital (Moysidou and Hausberg 2020). The concept of crowdfunding is gaining popularity in developing countries because people are left with no other option of fund-raising than from near and dear ones in the scarcity of capital. In recent years, the crowdfunding movement has exploded (Allison et al. 2017), becoming a viable option for entrepreneurs, artists, and other individuals seeking funding for their innovative ventures (Petruzzelli et al. 2019). Crowdfunding, in particular, allows entrepreneurs who are just getting started with their new businesses
to raise the funds they need to transform their concepts into reality (Bagheri et al. 2019; Babich et al. 2021).

Mollick (2014) mentioned four types of crowdfunding: reward-based, donation-based, equity-based, and lending/loan-based crowdfunding. Paschen (2017) advocated that different stages of start-ups need a different type of crowdfunding. The founder raises money from a crowd without receiving anything in return in the donation crowdfunding model (Meer 2014). Additionally, the beneficiary has no legally binding contractual responsibility to the donor, and the donor does not expect any financial or material returns (Cason and Zubrickas 2019). Also known as investment-based crowdfunding, Equity-based funding accommodates consumers to invest directly or indirectly in new or existing companies by purchasing investments such as shares or debentures (Wasiuzzaman et al. 2021). Consumers lend money in exchange for interest payments and a repayment of capital over time in lending-based or loan-based crowdfunding, also known as "P2P lending." Zheng et al. (2016) have considered reward-based funding as an important and most popular form of crowdfunding where funders or investors have access to a wealth of knowledge about a project or product when making investment decisions (Bi et al. 2017). The final type of crowdfunding is reward-based, which gives back to donors in the form of a product or service, or a letter of appreciation from entrepreneurs (Belleflamme et al. 2014). Different parameters of reward-based crowdfunding have been studied the influence on the performance of investors (Roma et al. 2017); reward-based crowdfunding campaigns (Roma et al. 2018); motivations behind reward-based crowdfunding (Li and Wang 2019).

According to Short et al. (2017), the time and opportunity cost of soliciting small amounts of capital from a large number of investors, on the other hand, has been a major obstacle to crowdfunding for the average entrepreneur. But then again Internet, online payment systems, and crowdfunding sites lowered this barrier by democratizing access to crowds of people who may be involved in financing the next big idea. Shneor and Vik (2020) advocated that internet-enabled crowdfunding is a new method of raising funds for businesses and projects that have significantly increased volume and importance in recent years. Creators may collect funds from a large number of dispersed supporters using online crowdfunding platforms (Tafesse 2021).

### 2.2 Benefits associated with crowdfunding

Due to the novelty of the approach and lack of governing body (especially in India), fears emerge in the minds of investors as well as entrepreneurs regarding the credibility of the source. In line with this, many researchers have attempted to analyze the benefits and drawbacks related to the concept of crowdfunding. Sigar (2012) sees crowdfunding as a way to bridge the capital gap by bringing together small businesses. Valanciene and Jegeleviciute (2013) advocated that crowdfunding suffers from various drawbacks, namely chances of fraud, leakage of ideas, and lesser protection to the safety of investors. But, the benefits like easy accessibility to capital, ability to test marketability, benefits for communities, rights to make a company’s decisions stay in the hands of entrepreneurs. Previous research has witnessed that the crowdfunding phenomenon can overcome funding difficulties by providing benefits like no or limited loss of ownership, exposure to more funding sources, and gaining publicity and wider reach (Macht and Weatherston 2014). Benefits have been identified by Mollick and
Kuppuswamy (2014) in terms of obtaining additional finance, finding staff, obtaining publicity and press coverage, and establishing a customer base. According to Ramos (2014), Crowdfunding is about more than just raising money; it’s also about market research, engaging potential consumers and target audiences, and leveraging the benefits of culture to gain public interest and input for products and services. Wald et al. (2019) have categorized the advantages of crowdfunding into two parts: internal and external advantages. Luca et al. (2019) attempted to synthesize the literature on the benefits of crowdfunding. Babich et al. (2021) revealed that crowdfunding is beneficial to entrepreneurs as well as investors because it gives them access to funds for projects that would otherwise go unfunded.

### 2.3 Criteria and sub-criteria

Crowdfunding has generated various benefits as it is a new fund-raising technique for small businesses. This technique can help fund-seeking businesses resolve funding challenges, provide value-added involvement, provide publicity and connections, and enable fund-raising with little or no loss of control or ownership (Macht and Weatherston 2014; Mollick and Robb 2016; De Crescenzo et al. 2020). Another benefit can be associated with Venture Viability as before making donations, prospective funders evaluate projects’ feasibility (i.e., their chances of success), putting their money into the most feasible project since it encourages the achievement of positive outcomes. (Mollick 2014; Herrero et al. 2020). Next, Cost Structure is very economical. Due to the availability of a large-scale audience, a campaign may be used for low-cost or no-cost market research and promotion (Dalla Chiesa and Handke 2020). Also, strong customer relationships in the form of a principal-agent partnership between customer investors and project creators are formulated, demonstrating how customer investors can support project creators (Mollick and Kuppuswamy 2014; Farhoud et al. 2021). Another set of possible crowdfunding advantages is consumer demand, which can be influenced in a variety of ways. A successful campaign will help a start-up project’s credibility. Pre-sales, opinion leaders, project ambassadors, and the overall peer effect can all be used to signal consistency. Since engagement with the public can create empathy and confidence through an impression of authenticity and openness, the project becomes more popular (Brown et al. 2017; Simpson et al. 2021). Crowdfunding is a strategy for being financially self-sufficient without relying on banks or business angels, and it can be thought of as a type of bootstrap financing for start-ups. (Mollick and Robb 2016; Hervé and Schwienbacher 2018). Furthermore, crowdfunding aids in collecting consumer data, exploring new markets, and creating a pricing plan that is tailored to the needs of potential customers. The campaign also helps the developer to profile consumers, make predictions about target audiences, identify target groups, recognize consumer requirements, and choose premium users, which is the final advantage (Luca et al. 2019; Cornelius and Gokpinar 2020). Another possible advantage of crowdfunding is the ability to improve the recognition of potential stakeholders such as manufacturers, distributors, supporters, payment service providers, and other forms of expertise (Luca et al. 2019; Fehr and Nenonen 2020). Furthermore, there are personal reasons for developers to run a crowdfunding campaign. In reality, through repeated experiences, they can create large networks, duplicate the effective experience, gain moral support and gain support for continuing the project, test business skills, and use the campaign as a learning experience (Presenza et al. 2019). Apart from these, team development (Foà (2019); Luca et al. (2019)), Product lifecycle (Rossi (2014), García and Estellés-Arolas (2015)), access to financial resources (Kubheka
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2020), debt avoidance (Snyder 2016) has been identified in the previous researches as greatest motivations behind raising funds through crowdfunding.

It is, however, an emerging concept, and it is unclear whether or how crowdfunding participants are motivated. In light of this, this study aims to prioritize the most significant benefits derived from the phenomenon of crowdfunding (Fig. 1).
3 Research methodology

3.1 Pilot testing

The measurement scale for 11 factors and 85 sub-factors was adopted from the study conducted by (De Luca et al. 2019), which was based on the systematic literature review of 102 research studies related to the benefits of crowdfunding phenomenon. Ten experts validated the measurement scale. Academicians and industrial experts with at least 15 years of experience in finance were among the specialists. The research objectives were first explained to all selected experts, who were then requested to reply to all factors and sub-factors based on linguistic terms (see Table 1). Saaty (1980) advocated checking the consistency ratio to confirm the reliability in order to avoid inconsistency in the pairwise comparison matrix. Only if the Consistency Ratio (CR) (Fig. 3) is less than 0.10, the results are regarded as credible (Saaty 1980; Wong and Li, 2008). The consistency ratio of the factors in pilot testing was below the cut-off values, demonstrating good reliability (Table 2).

3.2 Data collection

Entrepreneurs of start-ups in the Small and Medium Enterprises (SMEs) domain were the respondents of the study. These start-ups are situated in SEZ, Technology parks, and industrial corridors across multiple cities of India like Noida, Delhi, Mumbai, Chennai, Bangalore, Kolkata, Madras, Cochin, Vishakhapatnam, and Hyderabad. Considering the travel restrictions due to the current COVID-19 pandemic, link to online questionnaires was posted on multiple social media sites such as Facebook, Telegram, and WeChat. Also, we have applied the snowball sampling technique where we have sent questionnaires to those who entrepreneurs of SMEs referred. The questionnaire starts with a qualifying question: Are you aware of the Crowdfunding phenomenon? Those who responded yes to this were having further access to the complete questionnaire. It took around six months to gather the

| Table 1 | Fuzzy-AHP versus Saaty’s scale (Gupta et al. 2020) |
|---|---|---|
| Linguistic terms | AHP scale | Triangular fuzzy numbers (TFN’s) | Reciprocal of TFN’s |
| Equally significant | 1 | $\tilde{A} = (1, 1, 1)$ | $\tilde{A}^{-1} = (1, 1, 1)$ |
| Equally significant to moderately significant | 2 | $\tilde{A} = (1, 2, 3)$ | $\tilde{A}^{-1} = \left(\frac{1}{3}, \frac{1}{2}, \frac{1}{3}\right)$ |
| Moderately significant | 3 | $\tilde{A} = (2, 3, 4)$ | $\tilde{A}^{-1} = \left(\frac{1}{4}, \frac{1}{3}, \frac{1}{2}\right)$ |
| Strongly significant to moderately significant | 4 | $\tilde{A} = (3, 4, 5)$ | $\tilde{A}^{-1} = \left(\frac{1}{5}, \frac{1}{4}, \frac{1}{3}\right)$ |
| Strongly significant | 5 | $\tilde{A} = (4, 5, 6)$ | $\tilde{A}^{-1} = \left(\frac{1}{6}, \frac{1}{5}, \frac{1}{4}\right)$ |
| Very strongly significant to strongly significant | 6 | $\tilde{A} = (5, 6, 7)$ | $\tilde{A}^{-1} = \left(\frac{1}{7}, \frac{1}{6}, \frac{1}{5}\right)$ |
| Very strongly significant | 7 | $\tilde{A} = (6, 7, 8)$ | $\tilde{A}^{-1} = \left(\frac{1}{8}, \frac{1}{7}, \frac{1}{6}\right)$ |
| Extremely significant to very strongly significant | 8 | $\tilde{A} = (7, 8, 9)$ | $\tilde{A}^{-1} = \left(\frac{1}{9}, \frac{1}{8}, \frac{1}{7}\right)$ |
| Extremely significant | 9 | $\tilde{A} = (9, 9, 9)$ | $\tilde{A}^{-1} = \left(\frac{1}{9}, \frac{1}{9}, \frac{1}{9}\right)$ |
|   | VV  | N.W | CS  | N.W | CR  | N.W | DB  | N.W | FR  | N.W | GS  | N.W | MI  | N.W | PS  | N.W | BE  | N.W | TD  | N.W | PL  | N.W |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| VV | 0.2613 | 0.1857 | 0.1262 | 0.2110 | 0.0940 | 0.2588 | 0.0807 | 0.1025 | 0.1897 | 0.1987 | 0.0378 |
| VV2 | 0.2486 | 0.1662 | 0.0771 | 0.0813 | 0.0978 | 0.1569 | 0.2723 | 0.2651 | 0.1212 | 0.1247 | 0.0571 |
| VV3 | 0.2479 | 0.1677 | 0.0812 | 0.0819 | 0.0856 | 0.0593 | 0.1161 | 0.0960 | 0.0632 | 0.0633 | 0.1347 |
| VV4 | 0.1280 | 0.1548 | 0.1773 | 0.0861 | 0.0611 | 0.0620 | 0.1914 | 0.1035 | 0.1124 | 0.3086 | 0.1931 |
| VV5 | 0.1142 | 0.1534 | 0.0553 | 0.0632 | 0.2534 | 0.1363 | 0.1170 | 0.1386 | 0.1990 | 0.0623 | 0.0997 |
| CS6 | 0.1722 | 0.1162 | 0.0791 | 0.1022 | 0.0658 | 0.1296 | 0.0710 | 0.1130 | 0.1227 | 0.0812 | 0.1065 |
| CR7 | 0.1256 | 0.0604 | 0.1331 | 0.0958 | 0.0958 | 0.0477 | 0.1662 | 0.2016 | 0.1196 | 0.1345 | 0.1059 |
| CR8 | 0.1172 | 0.0865 | 0.1728 | 0.1652 | 0.0452 | 0.0571 | 0.0445 | 0.0571 | 0.0445 | 0.0571 | 0.1299 |
| CR9 | 0.1238 | 0.0604 | 0.1899 | 0.091 | 0.079 | 0.095 | 0.081 | 0.089 | 0.078 | 0.084 | 0.094 | 0.088 | 0.091 |

**Table 2** Consistency ratio (C.R.) and normalised weight (N.W.) of sub-criteria

_C.R._ consistency ratio
Start

1. Reject Criteria and Sub-Criteria
   - No
   - Yes

2. Determine Criteria and sub-criteria for Crowd Funding

3. Meet Objective?
   - Yes
   - No

4. Develop the Hierarchy Structure

5. Adjust the Pairwise Judgment Matrix

6. Constitute Fuzzy Pairwise judgment matrix of Criteria and Sub-Criteria

7. Check the Consistency Ratio i.e., CR of each Criteria and Sub-Criteria
   - No
   - Yes

8. Is CR < 0.10?
   - No
   - Yes

9. Aggregate the Local weights of all the judgment makers and rank the criteria and sub-criteria

End

Fig. 2 Membership function of triangular fuzzy numbers (TFN's)

Fig. 3 Flowchart of proposed fuzzy-AHP
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final data. In total, 1350 responses were received. Following the exclusion of incomplete responses, 1065 complete responses were retained for further data analysis (Fig. 2).

3.3 Sample profile

The demographic profile of respondents was assessed using questions about gender, age (in years), and amount raised through crowdfunding platforms. Eighty percent of the 1065 respondents were men, and twenty percent were women. The bulk of the respondents (73%) were between the ages of 30 and 45. The area of investigation was Special Economic Zones, Technology parks, Industrial Corridors of India located at Noida, Delhi, Mumbai, Chennai, Bangalore, Kolkata, Madras, Cochin, Vishakhapatnam, and Hyderabad.

3.4 Fuzzy analytical hierarchy process (fuzzy-AHP)

Saaty (1980) has developed the multi-criteria decision-making (MCDM) technique which is popularly known as Analytical Hierarchy Process (AHP). AHP easily prioritizes and ranks the criteria, sub-criteria, and alternatives. According to Kilincci and Onal, (2011), AHP is not able to handle the vagueness of individual responses; with the help of the fuzzy logic method, we can easily handle the vagueness. According to Kabir and Hasan (2011), when the judgment makers’ preferences are not reflected through the crisp values, then we will apply fuzzy-AHP. Zadeh (1965) has given the concept of fuzzy-AHP. In fuzzy-AHP, the linguistic scale has been used to express the judgment makers’ thoughts through a pairwise comparison matrix (Jain et al. 2020; Buckley 1985). The flow chart of the Fuzzy-AHP process (Fig. 3) is presented to make it easy to understand.

\[
\mu_{A(x)} = \begin{cases} 
0, & x < l \\
\frac{(x-l)}{(m-l)} & \text{if } l \leq x \leq m \\
\frac{(u-x)}{(u-m)} & \text{if } m \leq x \leq u \\
0, & x > u
\end{cases}
\]  

(1)

In Fig. 2, the triangular fuzzy numbers (TFN’s) i.e., ‘A’ which are symbolized as Al, Am, Au. The membership function i.e., \(\mu_{A(x)}\) lies between 0 and 1. In Eq. 1, ‘l’ represents lower value, ‘m’ represents middle value, and ‘u’ represents upper value.

The following steps of Fuzzy-AHP proposed by Buckley (1985) have been applied in this study for the calculation of global weights (Gül et al. 2012; Tzeng and Huang 2011; Arora et al. 2020).

**Step 1**: The pairwise judgment matrix has been created for all the criteria and sub-criteria for making a hierarchy structure (Eqs. 2 and 3). Linguistic scale (Table 1) has been used by questioning which is strongly significant out of two criteria and sub-criteria.
Step 2: Geometric mean operations (Davies 1994) have been used for aggregating the group decision (Eqs. 4 and 5).

$$\tilde{P} = \begin{bmatrix}
1 & \tilde{a}_{12} & \cdots & \tilde{a}_{1n} \\
\vdots & 1 & \ddots & \vdots \\
\tilde{a}_{n1} & \tilde{a}_{n2} & \cdots & 1
\end{bmatrix} = \begin{bmatrix}
1 & \tilde{a}_{12} & \cdots & \tilde{a}_{1n} \\
\vdots & 1 & \ddots & \vdots \\
\frac{1}{\tilde{a}_{n1}} & \frac{1}{\tilde{a}_{n2}} & \cdots & 1
\end{bmatrix} \tag{2}
$$

$$\tilde{a}_{ij} = \begin{cases}
1, 3, 5, 7, 9 & \text{Criteria 'i' is of relative importance to criteria 'j'} \\
1 & \text{i} = j \\
\tilde{a}_{i1}^{-1}, \tilde{a}_{i2}^{-1}, \tilde{a}_{i3}^{-1}, \tilde{a}_{i4}^{-1} & \text{Criteria 'j' is of relative importance to criteria 'i'}
\end{cases} \tag{3}
$$

Step 3: The criterion and sub-criteria fuzzy weights have been calculated by applying Eq. 6.

$$\tilde{w}_i = \tilde{r}_i * \tilde{r}_1 + \tilde{r}_2 + \tilde{r}_3 + \cdots + \tilde{r}_n)^{-1} \tag{5}
$$

In Eq. 6, $\tilde{w}_i$ represents the fuzzy weight of criteria/sub-criteria, i.e., ($lw_i$, $mw_i$, $uw_i$). Here, $lw_i$ represents the lower fuzzy weight, $mw_i$ represents the middle fuzzy weight, and $uw_i$ represents the upper value of fuzzy weight.

Step 4: To find the BNP i.e., best non-fuzzy performance, the center of area (COA) method has been applied (Eq. 7).

$$w_i = \frac{(u_{wi} - l_{wi})}{3} + \frac{(m_{wi} - l_{wi})}{3} + l_{wi} \tag{7}
$$

Step 5: To normalizing $w_j$, matrix $w_i$ has been converted into matrix $Nw_i$ by applying Eq. (8).

$$NW_i = \frac{w_i}{\sum_{i=1}^{n} w_i} \tag{8}
$$

4 Results and discussion

In this section, we have discussed the dimensions and sub-dimensions affecting the benefits associated with a fund-raising platform called crowdfunding. The global weight and global ranks are presented in Table 3. This paper has taken into account 11 criteria depicting the benefits derived from crowdfunding, namely: Venture Viability (VV), Cost Structure (CS), Customer Relationships (CR), Demand Building (DB), Fundraising (FR), General Strategy
| Criteria                          | Criteria weight (ranking) | Sub-criteria                          | Local weight of sub-criteria (ranking) | Global weight of sub-criteria | Global rank |
|----------------------------------|---------------------------|---------------------------------------|----------------------------------------|------------------------------|-------------|
| Venture viability (VV)           | 0.0961 (5)                | VV1: Early market validation          | 0.2613 (1)                             | 0.0251                       | 6           |
|                                  |                           | VV2: Venture pitching and reporting    | 0.2486 (2)                             | 0.0239                       | 7           |
|                                  |                           | VV3: Respect of deadlines             | 0.2479 (3)                             | 0.0238                       | 8           |
|                                  |                           | VV4: Concretizing efforts             | 0.1280 (4)                             | 0.0123                       | 31          |
|                                  |                           | VV5: Overall risk mitigation          | 0.1142 (5)                             | 0.0110                       | 35          |
| Cost structure (CS)              | 0.0407 (11)               | CS1: Lower cost of capital            | 0.1857 (1)                             | 0.0076                       | 55          |
|                                  |                           | CS2: Free promotion                   | 0.1662 (4)                             | 0.0068                       | 60          |
|                                  |                           | CS3: Cheap market research            | 0.1677 (3)                             | 0.0068                       | 59          |
|                                  |                           | CS4: Bargaining power                 | 0.1548 (5)                             | 0.0063                       | 63          |
|                                  |                           | CS5: Economy of scale                 | 0.1534 (6)                             | 0.0062                       | 64          |
|                                  |                           | CS6: Free labor contributions         | 0.1722 (2)                             | 0.0070                       | 58          |
| Customer relationships (CR)      | 0.1316 (3)                | CR1: Real-time response               | 0.1262 (2)                             | 0.0166                       | 15          |
|                                  |                           | CR2: Customer base building           | 0.0771 (8)                             | 0.0101                       | 39          |
|                                  |                           | CR3: Target self-selection and bundling| 0.0812 (7)                             | 0.0107                       | 36          |
|                                  |                           | CR4: Customer service evaluation      | 0.1773 (1)                             | 0.0233                       | 9           |
|                                  |                           | CR5: Interactive customer experience  | 0.0553 (9)                             | 0.0073                       | 56          |
|                                  |                           | CR6: Timely product rating            | 0.1162 (6)                             | 0.0153                       | 23          |
|                                  |                           | CR7: Community development            | 0.1256 (3)                             | 0.0165                       | 16          |
|                                  |                           | CR8: Early adopters’ identification   | 0.1172 (5)                             | 0.0154                       | 21          |
|                                  |                           | CR9: Better customer knowledge        | 0.1238 (4)                             | 0.0163                       | 18          |
| Criteria               | Criteria weight (ranking) | Sub-criteria                                      | Local weight of sub-criteria (ranking) | Global weight of sub-criteria | Global rank |
|------------------------|---------------------------|---------------------------------------------------|----------------------------------------|------------------------------|-------------|
| Demand building (DB)   | 0.0526 (10)               | DB1: Better perceived quality                      | 0.2110 (1)                             | 0.0111                       | 34          |
|                        |                           | DB2: Popularity, credibility and trust             | 0.0813 (6)                             | 0.0043                       | 75          |
|                        |                           | DB3: Awareness expansion                           | 0.0819 (5)                             | 0.0043                       | 74          |
|                        |                           | DB4: Purchase intention                            | 0.0861 (4)                             | 0.0045                       | 71          |
|                        |                           | DB5: Opinion leaders’ involvement                  | 0.0632 (8)                             | 0.0033                       | 82          |
|                        |                           | DB6: Better customer acceptance                    | 0.0791 (7)                             | 0.0042                       | 76          |
|                        |                           | DB7: Legitimacy and reputation                     | 0.0604 (9)                             | 0.0032                       | 83          |
|                        |                           | DB8: Brand image                                   | 0.0865 (3)                             | 0.0046                       | 70          |
|                        |                           | DB9: Direct and indirect sales                     | 0.0604 (10)                            | 0.0032                       | 84          |
|                        |                           | DB10: CF as distribution channel                   | 0.1899 (2)                             | 0.0100                       | 40          |
| Fund raising (FR)      | 0.1577 (1)                | FR1: Facilitated extra-funding                     | 0.0940 (6)                             | 0.0148                       | 24          |
|                        |                           | FR2: Overcoming funding difficulties               | 0.0978 (5)                             | 0.0154                       | 22          |
|                        |                           | FR3: Self-sufficiency                              | 0.0856 (7)                             | 0.0135                       | 28          |
|                        |                           | FR4: Easy access                                   | 0.0611 (8)                             | 0.0096                       | 43          |
|                        |                           | FR5: Few formal obligations                        | 0.2534 (1)                             | 0.0400                       | 2           |
|                        |                           | FR6: Industry-irrelevance                          | 0.1022 (4)                             | 0.0161                       | 20          |
|                        |                           | FR7: Signals to venture capitalists                | 0.1331 (3)                             | 0.0210                       | 10          |
|                        |                           | FR8: Upfront cash and speed of acquisition         | 0.1728 (2)                             | 0.0273                       | 5           |
### Table 3 (continued)

| Criteria                              | Criteria weight (ranking) | Sub-criteria                                      | Local weight of sub-criteria (ranking) | Global weight of sub-criteria | Global rank |
|---------------------------------------|---------------------------|---------------------------------------------------|----------------------------------------|-------------------------------|-------------|
| General strategy (GS)                 | 0.0623 (9)                | GS1: Strategy orientation                         | 0.2588 (1)                            | 0.0161                        | 19          |
|                                       |                           | GS2: Business model improvement                   | 0.1569 (3)                            | 0.0098                        | 41          |
|                                       |                           | GS3: Actions/features prioritization               | 0.0593 (8)                            | 0.0037                        | 80          |
|                                       |                           | GS4: Shorter time-to-market                        | 0.0620 (7)                            | 0.0039                        | 79          |
|                                       |                           | GS5: Variance of the offering increase            | 0.1363 (4)                            | 0.0085                        | 50          |
|                                       |                           | GS6: Improved decision making                     | 0.0658 (6)                            | 0.0041                        | 77          |
|                                       |                           | GS7: Chance of scalability                        | 0.0958 (5)                            | 0.0060                        | 66          |
|                                       |                           | GS8: Innovation/efficiency trade-off              | 0.1652 (2)                            | 0.0103                        | 38          |
| Market intelligence (MI)              | 0.1025 (4)                | MI1: Segmentation and customer selection          | 0.0807 (6)                            | 0.0083                        | 52          |
|                                       |                           | MI2: New market discovery                         | 0.2723 (1)                            | 0.0279                        | 4           |
|                                       |                           | MI3: Acquiring customer data                      | 0.1161 (5)                            | 0.0119                        | 33          |
|                                       |                           | MI4: Customer reaction testing                    | 0.1914 (2)                            | 0.0196                        | 11          |
|                                       |                           | MI5: Understanding user requirements              | 0.1170 (4)                            | 0.0120                        | 32          |
|                                       |                           | MI6: Price discrimination/optimization            | 0.1296 (3)                            | 0.0133                        | 29          |
|                                       |                           | MI7: Better customer knowledge                    | 0.0477 (7)                            | 0.0049                        | 68          |
|                                       |                           | MI8: Community screening                          | 0.0452 (8)                            | 0.0046                        | 69          |
| Criteria                        | Criteria weight (ranking) | Sub-criteria                          | Local weight of sub-criteria (ranking) | Global weight of sub-criteria | Global rank |
|--------------------------------|---------------------------|---------------------------------------|----------------------------------------|------------------------------|-------------|
| Personal sphere (PS)           | 0.0624 (8)                | PS1: Building networks                | 0.1025 (5)                             | 0.0064                       | 62          |
|                                |                           | PS2: Learning experience              | 0.2651 (1)                             | 0.0165                       | 17          |
|                                |                           | PS3: Replication of successful experiences | 0.0960 (6)                       | 0.0060                       | 65          |
|                                |                           | PS4: Communication skills testing     | 0.1035 (4)                             | 0.0065                       | 61          |
|                                |                           | PS5: Personal power and self-affirmation | 0.1386 (3)                       | 0.0086                       | 49          |
|                                |                           | PS6: Confidence boosting              | 0.0710 (7)                             | 0.0044                       | 72          |
|                                |                           | PS7: Motivation growth                | 0.1662 (2)                             | 0.0104                       | 37          |
|                                |                           | PS8: Moral support                    | 0.0571 (8)                             | 0.0036                       | 81          |
| Business ecosystem (BE)        | 0.0689 (7)                | BE1: Manufacturing support            | 0.1897 (3)                             | 0.0131                       | 30          |
|                                |                           | BE2: Outsourcing activities           | 0.1212 (4)                             | 0.0083                       | 51          |
|                                |                           | BE3: Suppliers scouting               | 0.0632 (7)                             | 0.0044                       | 73          |
|                                |                           | BE4: Retailers and distributors       | 0.1124 (6)                             | 0.0077                       | 54          |
|                                |                           | BE5: Commercial partnerships          | 0.1990 (2)                             | 0.0137                       | 26          |
|                                |                           | BE6: Acquiring new sponsors           | 0.1130 (5)                             | 0.0078                       | 53          |
|                                |                           | BE7: Early ecosystem development      | 0.2016 (1)                             | 0.0139                       | 25          |
| Team development (TD)          | 0.1543 (2)                | TD1: Development team joining         | 0.1987 (2)                             | 0.0307                       | 3           |
|                                |                           | TD2: Acquiring testers                | 0.1247 (3)                             | 0.0192                       | 12          |
|                                |                           | TD3: Specialized skill expertise      | 0.0633 (6)                             | 0.0098                       | 42          |
|                                |                           | TD4: Employee attractiveness          | 0.3086 (1)                             | 0.0476                       | 1           |
|                                |                           | TD5: New talents scouting and aggregation | 0.0623 (7)                     | 0.0096                       | 44          |
|                                |                           | TD6: Team members scouting            | 0.1227 (4)                             | 0.0189                       | 13          |
|                                |                           | TD7: Emotional attachment             | 0.1196 (5)                             | 0.0184                       | 14          |
Table 3 (continued)

| Criteria                  | Criteria weight (ranking) | Sub-criteria                                      | Local weight of sub-criteria (ranking) | Global weight of sub-criteria | Global rank |
|---------------------------|---------------------------|---------------------------------------------------|----------------------------------------|------------------------------|-------------|
| Product lifecycle (PL)    | 0.0709 (6)                | PL1: Approval achievement                         | 0.0378 (9)                             | 0.0027                       | 85          |
|                           |                           | PL2: Product versioning and testing               | 0.0571 (8)                             | 0.0040                       | 78          |
|                           |                           | PL3: Creativity inputs                           | 0.1347 (2)                             | 0.0095                       | 45          |
|                           |                           | PL4: Brainstorming and ideas generation          | 0.1931 (1)                             | 0.0137                       | 27          |
|                           |                           | PL5: User-based innovation                       | 0.0997 (6)                             | 0.0071                       | 57          |
|                           |                           | PL6: Feedback/advice on product/project           | 0.0812 (7)                             | 0.0058                       | 67          |
|                           |                           | PL7: Partnerships and collaborations              | 0.1345 (3)                             | 0.0095                       | 46          |
|                           |                           | PL8: Supplement development                      | 0.1299 (5)                             | 0.0092                       | 48          |
|                           |                           | PL9: Time-to-market reduction                    | 0.1320 (4)                             | 0.0094                       | 47          |
(GS), Market Intelligence (MI), Personal Sphere (PS), Business Ecosystem (BE), Team Development (TD) and Product lifecycle (PL). The Radar chart depicts the local weight of 11 main crowdfunding benefits (Fig. 4). It is clearly evident from Table 3 that the main criteria Fundraising, having a criteria weight of 15.77% (Rank 1), is the most important benefit associated with crowdfunding. Next, Team Development (TD), Customer Relationships (CR) have a second and third ranking with the criteria weights of 15.43% and 13.16%, respectively. Criteria like Market Intelligence (MI), Venture Viability (VV), Product lifecycle (PL), and Business Ecosystem (BE) have medium importance having weights of 10.25%, 9.61%, 7.09%, and 6.89%, respectively as far as benefits of crowdfunding are concerned. Criteria like Personal sphere (PS), General strategy (GS), Demand building (DB), Cost Structure (CS) are the least important benefit associated with crowdfunding having weights of 6.24%, 6.23%, 5.26%, and 4.07%, respectively. Table 3 predicts the relative importance (Global significance of sub-criteria level). An attempt has been made to elaborate on it in the following paragraphs.

The most important criteria, Fund-raising (FR) has eight sub-criteria, the most important of which is FR5 (Few formal obligations), which has a global weight of 4% and a global rank of 2. The next important sub-criteria are FR8 (Upfront cash and acquisition speed) which has a global weight of 2.73 percent and a global rank of 5. FR4 (Easy access) is the least important benefit under fund-raising is having a global weight of 0.96 percent and a global rank of 43.

The second most important criterion is Team Development (TD) which has seven sub-criteria. Here, TD4 (employee attractiveness) is the most important benefit having a global significance of 4.76% and 1st rank globally. On the same lines, TD1 (Development team joining) is an important benefit having a global significance of 3.07% and 3rd rank at the global level. TD 5, i.e., new talents scouting and aggregation, is not that important benefit under team development as it has the significance of 0.96% and rank is 44 at the global level.

Another main criterion, Customer Relationships (CR) has 9 sub-dimensions. Out of which, CR4 (Customer service evaluation) and CR1 (Real-time response) are most
important, having the global rank of 9 and 15, respectively. On the other hand, CR2 (Customer base building) and CR5 (Interactive customer experience) are the least important having a global rank of 39 and 56, respectively.

Under Market Intelligence (MI), MI2 (Newmarket discovery), and MI4 (Customer reaction testing) are the top two benefits with global weights of 2.79% and 1.96%, respectively. In contrast, MI7 (Better customer knowledge) and MI8 (Community screening) are the lowest two having the significance of 0.49% and 0.46%, respectively.

There are five sub-criteria under Venture Viability (VV), the most important of which are VV1: Early market validation and VV2: Venture pitching and reporting, which have global rankings of 6 and 7, respectively. VV5: Overall, risk mitigation is the least important, with a global rank of 35.

Product lifecycle (PL) has 9 subdimensions. PL4: Brainstorming and ideas generation has a global rank of 27 and a global significance of 19.321%, which is the highest amongst all other subdimensions of the product lifecycle. Whereas PL1: Approval achievement is least important, having a global weight of 0.27% and a global rank of 85.

Under Business Ecosystem, a total of seven criteria exists. BE7: Early ecosystem development is most important, having a global significance of 1.39% and a global rank is 25. The next important sub-criteria are BE5: Commercial partnerships have a global significance of 1.37% and a global rank of 26. The least important one is BE3: Suppliers scouting having a global significance of 0.44% and a global rank of 73.

Next Criteria Personal sphere (PS) has eight dimensions. Out of which, PS2: Learning experience and PS7: Motivation growth are important benefits having the global rank of 17 and 37 respectively. Whereas PS8: Moral support is least important, having a global significance of 0.36% and a global rank of 81.

General Strategy (GS) has eight criteria in which GS1: Strategy orientation is most important, having a global significance of 1.61% and a global rank of 19. GS8: Innovation/efficiency trade-off is the next important sub-criteria having a global significance of 1.03% and rank of 38 at the global level. Here, GS3: Actions/features prioritization is least important, having a global significance of 0.37% and a rank of 80 at the global level.

One of the least important criteria, i.e., Demand Building (DB) has 10 dimensions. DB1: Better perceived quality and DB10: CF, as distribution channels are, is among the important benefits under demand building, having the global significance of 1.11% and 1%, respectively, along with the global rank of 34 and 40, respectively. DB9: Direct and indirect sales are the least important subdimension having a global significance of 0.32% and a rank of 84 at the global level.

The least important Criteria Cost structure (CS) has six sub-dimensions. Here, CS1 (Lower cost of capital) is most important, having a global significance of 0.76% and a global rank of 55. Another important sub-criterion under cost structure is CS6 (Free labor contributions), having a global significance of 0.7% and a global rank of 58. Under this criteria, CS5 (Economy of scale) is the least important having a global significance of 0.62% and a rank of 64 at the global level.

5 Conclusion

The study analyzed the benefits of the crowdfunding phenomenon to entrepreneurs by applying a multidisciplinary approach. The study also prioritized the benefits of crowdfunding by applying the Buckley Fuzzy-AHP technique. This research is the first study
to utilize the Buckley Fuzzy-AHP technique to prioritize the multidisciplinary benefits of crowdfunding. About RQ1 (benefits of crowdfunding for entrepreneurs), the results of our study suggest that Venture Viability (VV), Cost Structure (CS), Customer Relationships (CR), Demand Building (DB), Fund-raising (FR), General Strategy (GS), Market Intelligence (MI), Personal Sphere (PS), Business Ecosystem (BE), Team Development (TD) and Product lifecycle (PL) are the benefits associated with the crowdfunding process. Coming to RQ2 (To prioritize these benefits of crowdfunding for the entrepreneurs), the findings suggest the topmost benefit of crowdfunding is fundraising (FR). At the same time, the study also highlighted other benefits in the order of priority after the Fund-raising (FR) benefit. These are Team development (TD), Customer Relationships (CR), Market Intelligence, while “Cost Structure” (CS) is the least important benefit associated with crowdfunding.

The main findings of our study acknowledge that crowdfunding is gaining popularity not only because it is the fund-raising platform but due to the fact that there are so many other benefits that come along. Keeping all the benefits in mind, entrepreneurs can excel in their entrepreneurial journey by gaining popularity among the masses, having good relationships with suppliers and customers, etc. using crowdfunding platforms. The current study enhances the development of social sciences by contributing to the field of entrepreneurship. Budding entrepreneurs who lack awareness about crowdfunding platforms can get benefit from our study by acquiring knowledge about the benefits associated with crowdfunding apart from fund-raising. The study offers exciting implications for researchers, entrepreneurs, and policymakers, as discussed below.

5.1 Implications

The study provides interesting theoretical and practical implications. Theoretically, the study is based on a multidisciplinary approach to analyze the benefits of crowdfunding. In this approach, various dimensions related to finance, team development, marketing were considered and thoroughly analyzed. The study enriches the emerging literature on crowdfunding by exploring different multidisciplinary dimensions. The study has explored the benefits of crowdfunding in one of the emerging economies, i.e., India. The resurgent and robust growth of the Indian economy has given a big push to the various start-ups. The crowdfunding platforms provide various opportunities to budding entrepreneurs. The knowledge provided by the study is beneficial to develop a theoretically driven framework in other emerging economies. Furthermore, the study also enriches the existing literature by applying the fuzzy AHP in crowdfunding, which has not been explored in the recent past. Although past studies have investigated the benefits of crowdfunding (Wasiuzzaman et al. 2021), our study makes pioneering work by grounding the research on the tenets of Fuzzy-AHP. In this regard, it is pertinent to mention that although the Fuzzy-AHP technique is considered a better approach than AHP, surprisingly, past studies have not applied the Fuzzy-AHP technique in the context of crowdfunding (De Luca et al. 2019; Wald et al. 2019). The application of Fuzzy-AHP in crowdfunding is the novel contribution of the study. The in-depth examination of the main criteria and the sub-criteria factors is another unique contribution of the study. Future studies can apply the approach followed by our study to decipher fine nuances of a phenomenon. The study also lays a foundation for further extending the scope of research in the areas related to crowdfunding, like crowdsourcing. As the basic principle of working of crowdfunding and crowdsourcing is similar,
Prioritising crowdfunding benefits: a fuzzy-AHP approach

hence the methodology followed by our study can help to extend further the research in the field of crowdsourcing (Behl et al. 2021). Future studies can also apply the study’s theoretical framework to further extend the research in the specific types of crowdfunding, like equity-based crowdfunding. There are a lot of apprehensions regarding equity-based crowdfunding, hence applying the detailed methodology followed by our study can help provide deeper insights into the various aspects of equity-based crowdfunding.

The study also provides important practical implications. The study provides a framework based on the multidisciplinary approach, highlighting the various benefits of crowdfunding. Although fund-raising is the most crucial benefit of crowdfunding. However, the study also highlighted various other benefits of crowdfunding. The entrepreneurs can analyze whether crowdfunding can provide the right solution to their requirements depending on the need. The varied types of benefits of crowdfunding highlighted by the study also call for an urgent need to boost crowdfunding, especially in emerging economies like India. Equity-based crowdfunding can provide a much-needed fillip to crowdfunding. The Securities and Exchange Board (SEBI) has classified equity-based crowdfunding as illegal. Although the apprehension and intention of SEBI are appropriate, there is a need to formulate more balanced and start-up-friendly crowdfunding guidelines to increase liquidity while ensuring the security of investors’ money.

Although there are several crowdfunding platforms in India like Kickstarter, Fueladream. The crowdfunding platforms also need to enhance their visibility to attract more investors. For example, crowdfunding platforms can have tie-up with famous social media celebrities in the age of social media. The social media influencer can help the crowdfunding platforms to connect with young investors. Also, crowdfunding platforms can run marketing campaigns on social media channels to reach out to a large audience. Based on the earlier deliberations, our study advocates that entrepreneurs and premature start-ups can use crowdfunding to evaluate their idea, locate finance and early adopters, and gain the visibility they need to succeed. A crowdfunding campaign can assist a firm get greater traction than traditional financing options.

### 5.2 Limitations

The study has four limitations. First, the study has analyzed various multidisciplinary benefits of crowdfunding. There are different types of crowdfunding like Peer to Peer (P2P), Equity, Reward, or Donation-based crowdfunding. Our study has not categorized the benefits according to these types of crowdfunding. However, the utmost care has been taken to validate the benefits of crowdfunding from various experts. Second, the framework presented by the study only highlights the advantages of crowdfunding, thus ignoring the drawbacks of crowdfunding. Although crowdfunding provides multiple benefits, there are certain limitations of crowdfunding at the same time. These drawbacks, when considered, can negate some of the benefits of crowdfunding. Third, the study’s findings cannot be generalized as the study was conducted in India. The benefits of crowdfunding may vary if the geographical region of the study changes. For example, in some developed countries, equity-based crowdfunding is legalized, while in India, it is not. Forth, we have not classified participants according to gender, age, or funding amount and compared between groups. The results may vary based on the demographic profile of respondents. Future researchers should address these limitations.
5.3 Future research directions

Future researchers can consider the limitations of crowdfunding while analyzing the benefits of crowdfunding. Future studies can also be conducted by considering various types of crowdfunding, i.e., Peer to Peer (P2P), Equity, Reward, or Donation-based crowdfunding. This can help to analyze the benefits of each type of crowdfunding. Future studies can be conducted in a developed country so that a comparison of benefits can be made with the findings of this study. Further, it is recommended to apply fsQCA (Fuzzy-set qualitative comparative analysis) which is a social science method that helps to combine case-oriented and variable-oriented quantitative analysis (Ribeiro-Navarrete et al. 2021a b). This technique of fsQCA has been successfully applied in the field of crowdfunding by past scholars (De Crescenzo et al. 2021; Lassala et al. 2021; Ribeiro-Navarrete et al. 2021a b).

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