**From Orchard to Opportunity: Exploring the Entrepreneurial Behaviour of Mango Growers in Eastern Dry Zone of Karnataka, India**

**ABSTRACT**

Mango cultivation is driving the development of a robust value chain across India, leveraging the potential of horticulture for higher unit productivity and significant value addition. The study assessed the entrepreneurial behaviour of mango growers in the Eastern Dry Zone of Karnataka. The study was conducted in Srinivasapura taluk of Kolar district and Chintamani taluk of Chikkabalapur district of Karnataka during 2023-2024. *Ex-post* facto research design was used. A structured questionnaire was used to collect data. The study sample consisted of 120 mango growers, with six villages selected from each taluk. Approximately 37.50 % of the farmers belonged to the medium entrepreneurial behaviour category, followed by low (35.00 %) and high (27.50 %) categories of entrepreneurial behaviour. It was found that 38.33 % of the farmers belonged to medium level of innovativeness, achievement motivation (39.16 %), leadership ability (40.00 %), information seeking behaviour (40.83 %), scientific orientation (38.33 %), while nearly one third of the mango growers belonged to medium level of risk-taking ability (29.16 %), coordinating ability (35.83 %) and nearly half of the farmers had medium level of innovativeness (48.33 %). Results revealed that there exists an opportunity for enhancing the entrepreneurial behaviour of mango growers by organizing entrepreneurship development programmes through the collaboration of various departments and they need to be educated about income-generating processes like value addition, processing, and measures to reduce crop losses.

***Key words:*** Entrepreneurial behaviour, Mango growers, Innovativeness, *Karnataka*

**INTRODUCTION**

With the potential of horticulture for increased unit productivity and substantial value addition, mango production is propelling the growth of a strong value chain throughout India. The agricultural environment is changing as a result of this sector's quick penetration throughout the industry. In India, about 1500 varieties of mangoes are grown, including 1000 commercial varieties. Of these, the Deccan Plateau and Western regions favor Alphanso and Pairi, whereas the northern parts of the country favor Dashehari, Langra, and Chausa. The three most significant variants in South India are Totapuri, Neelam, and Benishan.

Mango, India's national fruit, boasts an impressive production profile. According to 2023 data, the country's mango output stands at 2,08,72,000 MT, cultivated across a vast area of 23.46 lakh hectares. Globally, India leads the production, ranking first among the top ten mango- producing nations, accounting for a substantial 44.01 percent of mango production. The leading mango-producing states are Andhra Pradesh (49,85,280 MT), Uttar Pradesh (46,62,450 MT), Bihar (15,76,060 MT), followed by Karnataka (14,62,250 MT) (Source: National Horticulture Board)

Mango production for commercial purposes relies on cultivars specifically adapted and recommended for local conditions. The remarkable diversity of mango fruit enables versatile utilization, catering to various markets and products, including juice, pulp, candy, chutney, amchur, pickles, jam, jelly, fresh fruit, canned goods, and dried fruit. Due to its numerous applications, mango production presents a valuable opportunity for foreign exchange earnings in developing countries and generates employment for a substantial seasonal workforce.

A nation's advancement is heavily dependent on the pivotal contributions of entrepreneurs, making them indispensable in developing economies like India. Consequently, entrepreneurship development is a key priority in all initiatives aimed at boosting economic growth. To elevate agricultural productivity, concurrent advancements in innovation and technology accessibility are crucial. Novel solutions are essential, but their impact relies on farmers' ability to access and utilize new methods and tools. The present study aims to fill this gap by investigating the entrepreneurial behavior of mango growers and the ways in which it could be enhanced to improve the socio-economic conditions of farmers and contribute to the economy.

**METHODOLOGY**

The study was conducted in Srinivasapura taluk of Kolar district and Chintamani taluk of Chikkaballapur district of Karnataka during 2023-2024. Considering the highest area under mango cultivation, the list of villages was selected. From this, six villages, namely, Hogalgere, Chowkanhalli, Bandapalli, Maniganahalli, Kallur, and Avalakuppa from Srinivasapura taluk, and Madikere, Nandiganahalli, Hebbri, Chemanahalli, Mudhalli, and Immreddyhalli were selected based on the maximum available area under the mango crop. Ten mango growers from each village were selected, five small farmers and five large farmers, to constitute a sample of 120 mango growers. *Ex-post* *facto* research design was used. The scale developed by Chaudhary *et al.* was used to study the entrepreneurial behaviour. The dependent variable, Entrepreneurial behaviour, is operationally defined as a function of ten dimensions *viz.,* innovativeness, decision-making ability, achievement motivation, risk-taking ability, leadership ability, management orientation, information-seeking behaviour, scientific orientation, economic motivation, coordinating ability, and of mango growers. The aggregate scores across ten dimensions were used to determine the overall entrepreneurial behaviour of mango growers. Information regarding personal, socio-economic, and psychological characteristics was gathered using an already prepared interview schedule, which was then scored, tabulated, and analyzed using percentage, frequency, mean, and standard deviation. Later, respondents were classified into three categories- low (Mean- ½ SD), medium (Mean + ½ SD), and high (Mean + ½ SD) based on mean, frequency and standard deviation.

**RESULTS AND DISCUSSION**

**Overall entrepreneurial behaviour of mango growers**

It was apparent from Table 1 that 37.50 % belonged to medium category, followed by low (35.00 %) and high (27.50 %). Among small farmers, more than two-fifths (41.67 %) of the mango growers belonged to a low entrepreneurial category, followed by medium (36.66 %) and high (21.67 %). Among big farmers, nearly two-fifths (38.34 %) of the farmers belonged to a medium entrepreneurial category, followed by high (33.33 %) and low (28.33 %).

The possible reason might be due to medium innovativeness, decision-making ability, achievement motivation, information-seeking ability, risk-taking ability, economic motivation, scientific orientation, management orientation, leadership ability and coordinating ability of farm activities, of the mango growers. The results are in accordance with Kolgane *et al*. (2018) and Chikkalaki *et al.* (2024).

# **Table 1: Overall entrepreneurial behaviour of mango growers**

|  |  |  |  |
| --- | --- | --- | --- |
| **Entrepreneurial Categories** | **Small farmers (n1=60)** | **Big farmers (n2=60)** | **Overall (n=120)** |
| **f** | **%** | **F** | **%** | **f** | **%** |
| Low (<135.41) | 25 | 41.67 | 17 | 28.33 | 42 | 35.00 |
| Medium (135.4-154.48) | 22 | 36.66 | 23 | 38.34 | 45 | 37.50 |
| High (>154.48) | 13 | 21.67 | 20 | 33.33 | 33 | 27.50 |

 Mean: 144.70 SD: 18.91

**Innovativeness:** The results from the Table 2 indicated that the majority (38.33 %) of the mango growers had medium innovativeness, followed by high (36.66 %) and low (25.00 %). Among small farmers, more than two-fifths (41.66 %) of the farmers had medium innovativeness, followed by high (33.33 %) and low (25.00 %). Among big farmers, exactly two-fifths (40.00 %) of the farmers had high innovativeness, followed by medium (35.00 %) and low (25.00 %). This might be because small farmers often face resource constraints, which limit their ability to invest in new technologies or practices, making them more inclined to adopt innovations that are affordable and practical, resulting in medium innovativeness. Additionally, small farmers may have limited access to information or extension services, leading to a more cautious approach to innovation. In contrast, big farmers have more financial resources, better access to advanced technologies, and stronger market pressures to stay competitive, allowing them to take greater risks and adopt high-innovative practices. The results are in accordance with the findings of Kolgane *et al.* (2018) and Chikkalaki (2024).

**Decision-making ability**: It is evident from Table 2 that nearly half (48.33 %) of the mango growers belonged to the medium decision-making ability category, followed by high (26.66 %) and low (25.00 %). Among small farmers, exactly half (50.00 %) of mango growers belonged to the medium category, followed by low (30.00 %) and high (20.00 %). More than two-fifths (46.67 %) of the big farmers belonged to a medium category, with high (33.33 %) and low (20.00 %) following closely behind. This indicated that small farmers may face more challenges in decision-making, possibly due to limited resources, knowledge, or external support. In contrast, big farmers show a higher proportion in the high decision-making ability, likely reflecting their greater access to resources, experience, and information, which enables them to make more informed and confident decisions. The low decision-making ability across both small and big farmers may indicate a segment of farmers who are either less confident in their decision-making process or dependent on external factors, such as traditional practices or guidance from others, rather than making independent, strategic decisions. Similar tendency has been reported by Sumana *et al.* (2018) and Chikkalaki (2024).

**Achievement motivation:** The results from Table 2 indicated that nearly two-fifth (39.16 %) of the mango growers belonged to the medium achievement motivation category, followed by low (32.50 %) and high (28.33 %). Among small farmers, exactly two-fifth (40 %) of the mango growers belonged to a medium category, followed by low (36.66 %) and high (23.33 %). Among big farmers, nearly two-fifth (38.33 %) belonged to a medium category, followed by high (33.33 %) and low (28.33 %). This revealed that most mango growers have a moderate level of motivation to achieve their goals, which may be due to factors such as limited access to resources, lack of exposure to new technologies, and traditional farming practices. The slight variation in motivation levels between small and big farmers may be attributed to differences in their socio-economic status, educational background, and access to extension services. Overall, the findings indicate that there is scope for improving achievement motivation among mango growers, particularly through targeted interventions and support services. The findings are in accordance with the studies conducted by Chikkalaki (2024).

**Risk-taking ability:** From the Table 2, it is observed that nearly one-third (29.16 %) of the mango growers belonged to medium and high categories of risk-taking ability, followed by low (24.16 %). Among small farmers, more than two-fifth (45 %) of the mango growers belonged to a medium category, followed by low (31.67 %) and high (23.33 %). Among big farmers, nearly half (48.33 %) of the farmers belonged to the medium category, followed by high (35.00 %) and low (16.66 %). This indicated that big farmers may have more confidence in their decision-making, better access to information, and more resources to absorb potential losses, enabling them to take calculated risks. However, small farmers typically have more modest risk-taking abilities, which may be due to limited resources, lack of access to information, and greater vulnerability to market and climate fluctuations. The results are in confirmity with the findings of Kolgane *et al.* (2018) and Chikkalaki (2024).

**Leadership ability:** From the Table 2, it is clear that exactly two-fifths (40.00 %) of the mango growers belonged to medium leadership ability, followed by high (30.00 %) and low (30.00 %). Among small farmers, more than two-fifths (46.66 %) of the farmers belonged to the medium category, followed by low (36.66 %) and high (30.00 %). Among big farmers, more than two-fifths (43.33 %) of the farmers belonged to the high category, followed by medium (33.33 %) and low (23.33 %). This disparity may be attributed to the fact that big farmers often have more formal education, training, and exposure to modern management practices, enabling them to develop stronger leadership skills. Leadership ability could be increased by enhancing their technical knowledge and developing leadership qualities by involving sericulturists in training programmes, study tours, and agricultural exhibitions**.** The results are in accordance with the findings of Sumana *et al.* (2018) and Chikkalaki (2024).

**Information-seeking behaviour:** It is observed from the Table 2 that more than two-fifths (40.83 %) of the farmers belonged to the medium information-seeking behaviour category, followed by low (35.00 %) and high (24.17 %). Among small farmers, more than two-fifths (43.33 %) of the farmers belonged to the medium information-seeking category, followed by low (41.66 %) and high (15.00 %). Among big farmers, nearly two-fifths (38.33 %) of the farmers belonged to the medium information-seeking category, followed by high (33.33 %) and low (28.33 %). The relatively lower proportion of farmers with high information-seeking behavior, particularly among small farmers, may be attributed to limited access to information sources, lack of exposure to modern communication technologies, and inadequate extension services. In contrast, big farmers show a slightly higher inclination towards high information-seeking behavior, possibly due to their better access to resources, education, extension services, and industrial networks. The similar findings were reported by Kushwah *et al.* (2020).

**Scientific orientation:** From the Table 2, it is evident that nearly two-fifths (38.33 %) of the farmers belonged to medium scientific orientation, followed by high (31.66 %) and low (30.00 %). The majority of small farmers (36.66%) fell into the medium group, followed by low (33.33%) and high (30 %). Among big farmers, exactly two-fifths (40 %) of the farmers belonged to medium scientific orientation category, followed by high (33.33 %) and low (26.66 %). This indicated that most farmers have a moderate understanding and adoption of scientific practices in their farming operations. The relatively lower proportion of farmers with high scientific orientation may be attributed to factors such as limited access to formal education and training, inadequate exposure to modern agricultural technologies, and insufficient extension services. In contrast, big farmers show a slightly higher inclination towards high scientific orientation, possibly due to their better access to resources, education, and extension services. Overall, the findings highlight the need for targeted interventions to enhance the scientific orientation of mango farmers, particularly small farmers, to improve their productivity and competitiveness. The similar findings were reported by Sumana *et al.* (2018) and Chikkalaki (2024).

**Economic motivation:** From Table 2, it is observed that more than two-fifths (46.66 %) of the farmers belonged to the medium economic motivation category, followed by followed by high (29.16 %) and low (24.16 %). Among small farmers, more than two-fifth (43.33 %) of the mango growers belonged to the medium category, followed by low (30.00 %) and high (26.67 %). Among big farmers, exactly half (50.00 %) of the mango growers belonged to the medium category, followed by high (31.67 %) and low (18.33 %). This resulted in most farmers being moderately motivated by economic factors, such as profit and income, to engage in mango cultivation. The relatively lower proportion of farmers with high economic motivation may be attributed to factors such as limited market access, price fluctuations, and uncertainty about returns on investment. In contrast, big farmers show a slightly higher inclination towards high economic motivation, possibly due to their better access to markets, credit, and other resources, which enables them to be more economically motivated. Similar findings were reported by Kolgane *et al.* (2014) and Chikkalaki (2024).

**Management orientation:** The data furnished in the Table 2 revealed that more than one third (35.83 %) of the farmers belonged to the low management orientation category, followed by medium (33.33 %) and high (30.83 %). More than two-fifths (43.33%) of small farmers fell into the low management orientation category, with medium (33.33%) and high (23.33%) following closely behind. Among big farmers, nearly two-fifth (38.33 %) of the mango growers belonged to the high management orientation category, followed by medium (33.33 %) and low (28.33 %). The analysis of management orientation among mango farmers indicates that small farmers tend to lag in adopting formal management practices, with a significant proportion exhibiting low management orientation. This disparity may be attributed to the relatively limited access to education, training, and extension services among small farmers. In contrast, big farmers demonstrate a higher propensity for structured management practices, likely due to their greater exposure to modern management techniques and resources.

**Coordinating ability:** It is apparent from the Table 2 that the more than one third (35.83 %) of the farmers belonged to the low coordinating ability category, followed by high (32.50 %) and medium (31.66 %). Among small farmers, more than two-fifth (45.00 %) of the mango growers belonged to a low category, followed by medium (30.00 %) and high (25.00 %). Among big farmers, exactly two fifth (40.00 %) of the farmers belonged to the high coordinating ability category, followed by medium (33.33 %) and low (26.67 %). This revealed that small farmers may face difficulties in coordinating activities due to limited resources or experience This can be enhanced by supplying farm inputs through co-operatives at reasonable prices so that, they can procure the inputs at the right time. On the other hand, big farmers show better coordination skills, likely because they have more resources, better management practices, and a larger scale of operation.

**Table 2: Distribution of mango growers according to different dimensions of entrepreneurial behaviour**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SL NO.** | **Entrepreneurial components** | **Categories** | **Small farmers (n1=60)** | **Big farmers (n2=60)** | **Mango growers (n=120)** |
| **f** | **%** | **f** | **%** | **f** | **%** |
| **1.** | **Innovativeness** **(Mean = 11.45****SD = 2.43)** | Low (<10.23) | 15 | 25.00 | 15 | 25.00 | 30 | 25.00 |
| Medium (10.23-12.66) | 25 | 41.66 | 21 | 35.00 | 46 | 38.33 |
| High (>12.66) | 20 | 33.33 | 24 | 40.00 | 44 | 36.67 |
| **2.** | **Decision making ability** **(Mean = 17.42****SD =3.67)** | Low (<15.58) | 18 | 30.00 | 12 | 20.00 | 30 | 25.00 |
| Medium (15.58-19.26) | 30 | 50.00 | 28 | 46.66 | 58 | 48.33 |
| High (>19.26) | 12 | 20.00 | 20 | 33.33 | 32 | 26.66 |
| **3.** | **Achievement motivation****( Mean = 12.92****SD = 2.42)** | Low (<12.92) | 22 | 36.66 | 17 | 28.33 | 39 | 32.50 |
| Medium(12.92-15.34) | 24 | 40.00 | 23 | 38.33 | 47 | 39.16 |
| High (>15.34) |  | 23.33 | 20 | 33.33 | 34 | 28.33 |
| **4.** | **Risk taking ability****( Mean = 16.25****SD = 3.81)** | Low (<14.34) | 19 | 31.66 | 10 | 16.66 | 29 | 24.16 |
| Medium(14.34-18.15) | 27 | 45.00 | 29 | 48.33 | 56 | 46.66 |
| High (>18.15) | 14 | 23.33 | 21 | 35.00 | 35 | 29.16 |
| **5.** | **Leadership ability****(Mean = 5.81****SD = 1.83)** | Low (<4.89) | 22 | 36.66 | 14 | 23.33 | 36 | 30.00 |
| Medium (4.89-6.73) | 28 | 46.66 | 20 | 33.33 | 48 | 40.00 |
| High (>6.73) | 10 | 16.66 | 26 | 43.33 | 36 | 30.00 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **6.** | **Information seeking behaviour** **(Mean = 13.11****SD = 5.77)** | Low (<10.23) | 25 | 41.66 | 17 | 28.33 | 42 | 35.00 |
| Medium (10.23-16.00) | 26 | 43.33 | 23 | 38.33 | 49 | 40.83 |
| High (>16.00) | 9 | 15.00 | 20 | 33.33 | 29 | 24.16 |
| **7.** | **Scientific orientation** **(Mean = 7.99****SD = 1.68)** | Low (<7.15) | 20 | 33.33 | 16 | 26.66 | 36 | 30.00 |
| Medium (7.15-8.84) | 22 | 36.66 | 24 | 40.00 | 46 | 38.33 |
| High (>8.84) | 18 | 30.00 | 20 | 33.33 | 38 | 31.66 |
| **8.** | **Economic motivation** **(Mean = 13.05****SD = 2.05)** | Low (<12.02) | 18 | 30.00 | 11 | 18.33 | 29 | 24.16 |
| Medium (12.02-14.08) | 26 | 43.33 | 30 | 50.00 | 56 | 46.66 |
| High (>14.08) | 16 | 26.66 | 19 | 31.66 | 35 | 29.16 |
| **9.** | **Management orientation** **(Mean = 40.51****SD = 6.17)** | Low (<37.42) | 26 | 43.33 | 17 | 28.33 | 43 | 35.83 |
| Medium (37.42-43.60) | 20 | 33.33 | 20 | 33.33 | 40 | 33.33 |
| High (>43.60) | 14 | 23.33 | 23 | 38.33 | 37 | 30.83 |
| **10.** | **Coordinating ability** **(Mean = 5.18****SD = 1.19)** | Low (<4.58) | 27 | 45.00 | 16 | 26.66 | 43 | 35.83 |
| Medium (4.58-5.70) | 18 | 30.00 | 20 | 33.33 | 38 | 31.66 |
| High (>5.70) | 15 | 25.00 | 24 | 40.00 | 39 | 32.50 |

**CONCLUSION**

From the results, it is revealed that the majority of the mango growers belonged to the medium entrepreneurial category. However, small farmers largely belonged to the low to medium category, and big farmers belonged to the medium-high category. Among various components of entrepreneurship behaviour, Mango growers generally belonged to the medium category of innovativeness, decision-making ability, achievement motivation, risk-taking ability, leadership ability, information-seeking behaviour, scientific orientation, economic motivation, management orientation, and coordinating ability. However, Farmers have to be educated about value addition through processing as it can increase income, reduce post-harvest losses, and create entrepreneurial opportunities. For this, KVKs (Krishi Vigyana Kendra), policymakers, and stakeholders should provide training and support, establish processing infrastructure, promote value addition and develop market linkages. By doing so, farmers can diversify their products and markets and increase income generation opportunities.

**Consent**

As per international standards or university standards, respondents’ written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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