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Competitive Aggressiveness and Innovation Ecosystem Development in Kampala's Industrial Sector

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Abstract: This study evaluated the effect of competitive aggressiveness on innovation ecosystems in the industrial sector of Kampala, Uganda. It addressed limited evidence on whether bold competitive moves, aggressive opportunity pursuit, early product introduction, and disruptive pricing and marketing independently strengthen collaborative and institutional innovation arrangements. Guided by Entrepreneurial Orientation Theory, Innovation Ecosystem Theory, and Institutional Theory, the study adopted a pragmatic philosophy and an explanatory sequential mixed-methods design. The quantitative population comprised 1,450 industrial enterprises. A sample of 306 enterprises was selected, 261 questionnaires were returned, and five multivariate outliers were removed, leaving 256 valid cases. Twenty innovation ecosystem stakeholders participated in follow-up interviews. Quantitative data were analysed using SPSS and SmartPLS 4, while qualitative data were analysed thematically. Competitive aggressiveness positively and significantly predicted innovation ecosystems ($\beta = 0.112$, SE = 0.057, $t = 1.971$, $p = 0.049$), but its unique effect was negligible ($f^2 = 0.007$). The full model explained 59.1% of the variance in innovation ecosystems ($R^2 = 0.591$; adjusted $R^2 = 0.578$). Qualitative findings showed that firms viewed aggressive market positioning as necessary for survival, but tempered it to protect smaller suppliers, preserve value chains, and remain eligible for industry collaboration. The study concludes that competitive aggressiveness can support ecosystem development only when vigorous market action is balanced with ethical conduct, co-operation, and ecosystem sustainability.

Keywords: *competitive aggressiveness, entrepreneurial orientation, innovation ecosystems, industrial firms, Kampala, Uganda*

1. Introduction

1.1 Background and Problem

Innovation ecosystems depend on both rivalry and interdependence. Industrial firms compete for customers, technologies, talent, finance, and market position, yet they also rely on suppliers, universities, regulators, financiers, associations, and competitors whose complementary capabilities support innovation. Innovation Ecosystem Theory therefore treats alignment among interdependent actors as central to collective value creation (Adner, 2017; Granstrand & Holgersson, 2020).

Competitive aggressiveness is a core dimension of entrepreneurial orientation. It reflects the intensity with which a firm challenges competitors, defends or improves its market position, pursues opportunities, and deploys pricing, marketing, product, or service actions intended to outperform rivals (Lumpkin & Dess, 1996). Unlike proactiveness, which emphasises anticipation and early action, competitive aggressiveness emphasises the forcefulness of a firm's response to rivalry.

Competitive aggressiveness can affect an innovation ecosystem in opposing ways. Vigorous market action may accelerate product introduction, stimulate technology adoption, raise quality expectations, and pressure partners to improve. Excessive or unfair aggression may instead weaken smaller suppliers, discourage knowledge sharing, provoke retaliation, and exclude the firm from collaboration. Its ecosystem effect therefore depends on whether rivalry remains compatible with interdependence.

Kampala's industrial sector includes manufacturing, agro-processing, technology-oriented, renewable-energy, and green-technology enterprises across Central, Kawempe, Makindye, Nakawa, and Rubaga divisions. Firms operate amid resource

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scarcity, intense market pressure, infrastructure constraints, and fragmented relationships among industry, government, research, and finance. These conditions make assertive competition important for survival but increase the risk that aggressive conduct damages the same relationships on which innovation depends.

Existing studies generally link competitive aggressiveness to market share, innovation performance, and firm-level outcomes. Less evidence isolates its unique contribution to collaborative networks and institutional support after the other entrepreneurial-orientation dimensions are controlled. This study asks: What is the effect of competitive aggressiveness on innovation ecosystems in the industrial sector of Kampala, Uganda? It tests the null hypothesis of no significant effect and uses interviews to explain how firms balance forceful competition with ecosystem sustainability.

2. Theoretical Foundation

2.1 Entrepreneurial Orientation Theory

Entrepreneurial Orientation Theory explains how firms pursue opportunities through strategic practices and decision styles. Miller (1983) identified innovativeness, risk-taking, and proactiveness as foundational dimensions, while Lumpkin and Dess (1996) added autonomy and competitive aggressiveness. In the multidimensional view, competitive aggressiveness is distinct because it concerns the intensity of a firm's efforts to outperform rivals and defend or improve its position.

Competitively aggressive firms may use bold market entry, rapid product launches, forceful promotion, price actions, differentiation, and persistent opportunity pursuit. The theory does not imply that unlimited aggression is beneficial. The effectiveness of such behaviour depends on environmental conditions and on whether the firm preserves the relationships and legitimacy required to create and commercialise innovation.

2.2 Innovation Ecosystem Theory

Innovation ecosystems comprise interdependent actors whose complementary activities must align for innovation to be developed and commercialised (Adner, 2017). Competitive pressure may energise this system by accelerating experimentation, adoption, quality improvement, and response to customer needs. However, rivalry can undermine alignment when it damages suppliers, reduces trust, or discourages knowledge exchange.

This study conceptualised innovation ecosystems through collaborative networks, innovation infrastructure, and regulatory and institutional support. Competitive aggressiveness may strengthen these components when market rivalry motivates firms and partners to improve, but the effect should remain limited where scarce resources and dependence on small suppliers require restraint and co-operation.

2.3 Institutional Theory and Competitive Aggressiveness

Institutional Theory explains how rules, norms, ethical expectations, and industry relationships define legitimate competitive conduct (Scott, 2014). Formal regulation constrains anti-competitive behaviour, while informal norms influence whether a firm remains trusted and included in collaborative initiatives. Competitive actions that violate these expectations may produce short-term advantage but weaken access to ecosystem resources.

Together, the theories suggest a conditional positive relationship. Entrepreneurial Orientation Theory explains forceful market action; Innovation Ecosystem Theory reveals firms' dependence on complementary actors; and Institutional Theory clarifies why competitive aggression must remain legitimate and relationally sustainable.

3. Empirical Literature and Research Gap

Gupta and Das (2021), studying 200 Indian small and medium-sized enterprises, found that competitive aggressiveness significantly supported innovation performance. Firms that actively challenged rivals, pursued market share, and adopted technology faster were more likely to innovate. The study focused largely on internal strategic behaviour and firm performance, however, rather than collaborative and institutional ecosystem outcomes.

Broader entrepreneurial-orientation research associates competitive aggressiveness with forceful responses to rivals, market defence, differentiation, and efforts to improve competitive position (Lumpkin & Dess, 1996; Wales, 2016). These behaviours can stimulate innovation, but firm-level advantage does not necessarily translate into healthier supplier and collaboration networks.

Innovation ecosystem research stresses alignment and mutual dependence among actors (Adner, 2017; Granstrand & Holgersson, 2020). This creates an unresolved tension: the same aggressive behaviour that improves a focal firm's market position may mobilise ecosystem upgrading or may destabilise partners whose survival is necessary for collective innovation.

Three gaps remain. First, an outcome gap arises because firm performance and innovation performance dominate existing measures. Second, a dimensional gap arises because competitive aggressiveness is frequently combined with other entrepreneurial-orientation dimensions. Third, a contextual gap concerns limited evidence from Kampala's resource-constrained industrial ecosystem. This study addresses the gaps through a distinct PLS-SEM path and qualitative explanations from ecosystem stakeholders.

4. Conceptual Framework and Hypothesis

The conceptual framework positions competitive aggressiveness as the explanatory construct and innovation ecosystems as the outcome. Competitive aggressiveness is represented by bold steps to outperform competitors, aggressive pursuit of opportunities, early product or service introduction, and disruptive pricing and marketing. Innovation ecosystems are represented by collaborative networks, innovation infrastructure, and regulatory and institutional support.

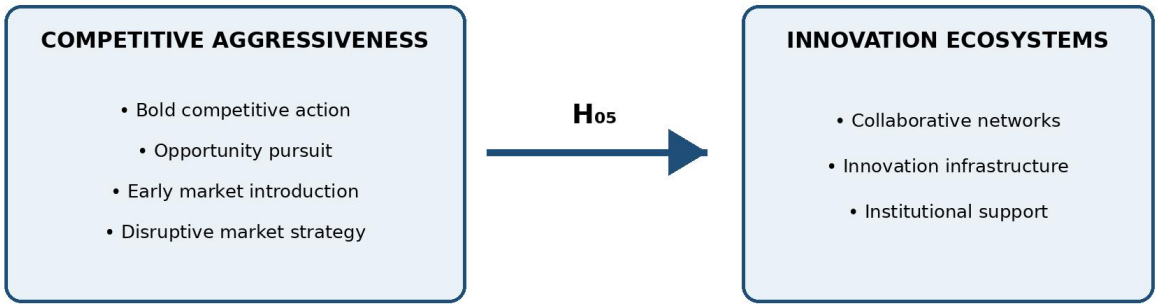


Figure 1 Conceptual Framework for Objective Five

H_{05}: Competitive aggressiveness has no statistically significant effect on innovation ecosystems in the industrial sector of Kampala, Uganda.

5. Methodology

5.1 Research Philosophy and Design

The study was grounded in pragmatism and adopted an explanatory sequential mixed-methods design. Positivist principles guided measurement and hypothesis testing in the quantitative phase, while critical realist reasoning supported interpretation of mechanisms identified in the qualitative phase. A survey and PLS-SEM analysis were followed by semi-structured interviews intended to explain the statistical relationship (Creswell & Plano Clark, 2018; Morgan, 2014).

5.2 Population and Sampling

The quantitative population comprised approximately 1,450 formally registered industrial enterprises in Kampala, covering manufacturing, agro-processing, technology-oriented industries, and renewable-energy and green-technology firms. The enterprise was the unit of analysis and was represented by an owner or senior decision-maker knowledgeable about strategy and innovation activities.

Using the Krejcie and Morgan (1970) approach, 306 enterprises were selected after preparatory stratification and simple random sampling within industrial subsectors. Of 306 questionnaires distributed, 261 were returned, giving an 85.3% response rate. Five multivariate outliers were removed using Mahalanobis distance at $p < 0.001$, leaving 256 valid cases. Twenty ecosystem stakeholders were purposively selected for follow-up interviews.

Table 1 Population Sample and Usable Responses

Study component	Population	Selected sample	Usable cases	Sampling procedure
Industrial enterprises	1,450	306	256	Stratification followed by simple random sampling
Innovation ecosystem stakeholders	20	20	20	Purposive sampling

5.3 Data Collection and Measurement

Quantitative data were collected with a five-point Likert questionnaire. Competitive aggressiveness was measured through four statements covering bold action to outperform competitors, aggressive pursuit of business opportunities, early introduction of products or services, and disruptive pricing and marketing. Innovation ecosystems were measured through collaborative networks, innovation infrastructure, and regulatory and institutional support. The instrument was reviewed by experts and pilot tested.

Semi-structured interviews examined how firms used aggressive sales and marketing, speed to market, client acquisition, and market-positioning strategies while managing supplier dependence, ethical limits, and industry collaboration. Interview data were analysed through familiarisation, coding, theme development, review, and interpretation (Braun & Clarke, 2006).

5.4 Data Analysis

SPSS was used for data screening and descriptive statistics, while SmartPLS 4 was used for measurement and structural model assessment. Reliability and convergent validity were evaluated using loadings, Cronbach's alpha, composite reliability, and average variance extracted. Discriminant validity was assessed through the Fornell-Larcker criterion and HTMT ratio. Structural paths were tested using 5,000 bootstrap resamples at the 5% significance level, and f^2 was interpreted using Cohen's (1988) benchmarks.

The competitive-aggressiveness path was estimated within the complete thesis model alongside autonomy, innovativeness, risk-taking, proactiveness, and government policy, finance, and infrastructure. Its coefficient therefore represents a unique

direct association after accounting for the other predictors. The R^2 value belongs to the complete predictor set rather than competitive aggressiveness alone.

5.5 Ethical Considerations

Participation was voluntary and based on informed consent. Respondents were informed about the study, withdrawal rights, confidentiality, and data treatment. Interview quotations were reported using anonymous participant codes, and the study followed institutional and national research-ethics procedures.

6. Results

6.1 Data Screening and Diagnostic Assessment

Five multivariate outliers were removed before model estimation, leaving 256 valid observations. Competitive aggressiveness had a tolerance of 0.654 and VIF of 1.529. Because the VIF was below conventional thresholds, multicollinearity did not threaten interpretation of its structural coefficient. PLS-SEM was retained for the model's predictive and explanatory purposes and its tolerance of non-normal data.

Table 2 Diagnostic Statistics for Competitive Aggressiveness

Construct	N	Tolerance	VIF	Assessment
Competitive aggressiveness	256	0.654	1.529	No problematic multicollinearity
Innovation ecosystems	256	-	-	Endogenous construct

6.2 Descriptive Results for Competitive Aggressiveness

Respondents reported a high overall level of competitive aggressiveness (M = 3.96, SD = 0.843). Taking bold steps to outperform competitors recorded the highest mean (M = 4.07, SD = 1.006), while disruptive pricing and marketing recorded the lowest mean (M = 3.83, SD = 0.792).

Table 3 Descriptive Statistics for Competitive Aggressiveness

Measurement item	Mean	SD
The company takes bold steps to outperform competitors	4.07	1.006
The company aggressively pursues new business opportunities	3.95	0.800
The company introduces products or services ahead of competitors	3.99	0.772
The company uses pricing and marketing strategies that disrupt the market	3.83	0.792
Overall competitive aggressiveness	3.96	0.843

6.3 Measurement Model

All four competitive-aggressiveness indicators were retained, with loadings from 0.655 to 0.814. Competitive aggressiveness demonstrated satisfactory reliability and convergent validity (Cronbach's alpha = 0.742, composite reliability = 0.828, AVE = 0.549). Innovation ecosystems also met the required thresholds (Cronbach's alpha = 0.789, composite reliability = 0.856, AVE = 0.543)

Table 4 Reliability and Convergent Validity of the Focal Constructs

Construct	Retained indicators	Loading range	Cronbach's alpha	CR	AVE
Competitive aggressiveness	COMPAGG 1 to 4	0.655-0.814	0.742	0.828	0.549
Innovation ecosystems	COLLNET 1 to 3 and INSRS 2 to 3	0.683-0.780	0.789	0.856	0.543

Discriminant validity was supported. The square roots of AVE were 0.741 for competitive aggressiveness and 0.737 for innovation ecosystems, both exceeding their correlation of 0.433. The HTMT ratio was 0.521, below the conservative 0.85 threshold (Henseler et al., 2015).

Table 5 Discriminant Validity of the Focal Constructs

Criterion	Competitive aggressiveness	Innovation ecosystems	Assessment
Square root of AVE	0.741	0.737	Acceptable
Interconstruct correlation	0.433	0.433	Below both AVE square roots
HTMT ratio	0.521	0.521	Below 0.85

6.4 Structural Model and Hypothesis Test

Bootstrapping showed that competitive aggressiveness positively and significantly predicted innovation ecosystems ($\beta = 0.112$, SE = 0.057, t = 1.971, p = 0.049). The null hypothesis was therefore rejected at the 5% level. However, $f^2 = 0.007$ indicates no meaningful unique effect under conventional benchmarks. The result is statistically borderline and practically negligible, so it should not be interpreted as evidence that aggressive competition is a major ecosystem driver.

Table 6 Test of the Competitive Aggressiveness Hypothesis

Structural path	β	SE	t	p	f^2	Decision
Competitive aggressiveness to innovation ecosystems	0.112	0.057	1.971	0.049	0.007	Reject H_{05}

The complete structural model explained 59.1% of the variance in innovation ecosystems ($R^2 = 0.591$; adjusted $R^2 = 0.578$). This explanatory power belongs to the full model rather than competitive aggressiveness alone. Q^2_predict was 0.258, indicating predictive relevance; RMSE was 0.868, MAE was 0.697, and SRMR was 0.067, below the 0.080 guideline.Qualitative Findings

The central qualitative theme was market positioning amid environmental and resource limitations. Participants regarded aggressive sales, marketing, client pursuit, and speed to market as necessary for survival, but repeatedly described boundaries intended to protect suppliers, value chains, and eligibility for industry collaboration.

> "We are very aggressive in our sales and marketing. But we cannot push so hard that we kill our smaller local suppliers, because the whole ecosystem depends on them." (R16)

> "Aggressiveness is about speed to market. We constantly push our teams, but we must balance this with the long-term health of the industrial sector." (R5)

> "Aggressive pursuit of clients is survival. But we ensure our aggressive moves don't break the supply chain we rely on." (R15)

> "If you do it unfairly, competitors will block you from industry collaborations. Aggression has to be framed within industrial ethical limits." (R10)

The qualitative evidence qualified the statistically significant path. Competitive aggressiveness may push firms and partners toward faster market response, but its ecosystem contribution is bounded by resource scarcity, ethical expectations, and interdependence. Sustainable competitive action resembles co-opetition: firms compete vigorously while preserving the relationships required for joint innovation.

Table 8 Integration of Quantitative and Qualitative Findings

Quantitative result	Qualitative explanation	Integrated interpretation
Positive borderline-significant path ($\beta = 0.112$, $p = 0.049$); negligible effect ($f^2 = 0.007$)	Firms competed through aggressive sales, speed to market, and client pursuit, but protected suppliers and observed ethical limits.	Competitive aggressiveness contributes only marginally and is constructive when disciplined by interdependence, fairness, and ecosystem sustainability.

7. Discussion

Competitive aggressiveness had a positive and statistically significant effect on innovation ecosystems in Kampala's industrial sector, but the p value was borderline and the unique effect was negligible. The result supports the contextual view of Entrepreneurial Orientation Theory: forceful competition can contribute to ecosystem development, yet its value depends on how it is enacted (Lumpkin & Dess, 1996).

The ecosystem contribution of competitive aggressiveness is not unrestricted rivalry. Interviews showed that firms use speed to market, assertive sales, and persistent client pursuit while recognising dependence on smaller suppliers and collaborators. Innovation Ecosystem Theory explains this restraint: a focal firm cannot capture value if its complementors and supply relationships are destabilised (Adner, 2017).

The f^2 value of 0.007 requires a cautious interpretation. Although the path crossed the conventional significance threshold, competitive aggressiveness added virtually no explanatory power after the other predictors were considered. Statistical significance at $p = 0.049$ does not imply managerial importance, and the full model's R^2 of 0.591 must not be attributed to this dimension alone.

The high descriptive mean of 3.96 shows that assertive competition was common. Bold action to outperform rivals scored highest, whereas disruptive pricing and marketing scored lowest. This pattern suggests that firms favour vigorous positioning but are somewhat more restrained about tactics that may unsettle markets or relationships.

Institutional Theory further explains why aggression was bounded. Participants described ethical limits and the risk of exclusion from industry collaboration when firms competed unfairly. Legitimate competitive behaviour is therefore socially regulated as well as economically motivated; reputation and relational acceptance remain ecosystem resources.

7.1 Theoretical Implications

The study links a firm-level entrepreneurial-orientation dimension to an interorganisational outcome and shows that competitive aggressiveness is neither inherently constructive nor destructive. Its effect depends on whether rivalry stimulates upgrading without eroding complementary relationships.

The findings add a co-opetitive boundary to Innovation Ecosystem Theory. Firms can challenge rivals and pursue market opportunities while remaining dependent on suppliers, associations, institutions, and sometimes competitors. Ecosystem development therefore requires a workable balance between value capture and collective value creation.

7.2 Practical and Policy Implications

Industrial firms should define responsible competitive-aggressiveness guidelines. Sales, pricing, marketing, and product-launch teams should pursue market opportunities vigorously while assessing likely effects on smaller suppliers, channel partners, collaboration opportunities, and value-chain resilience.

Firms should use supplier-development programmes, fair contracting, transparent quality standards, and joint capability building to prevent competitive pressure from weakening essential partners. Managers should evaluate aggressive moves against both short-term market outcomes and ecosystem indicators such as partner retention, trust, supply continuity, and knowledge exchange.

Government agencies and industry associations should promote fair-competition rules, supplier-development mechanisms, shared standards, and neutral collaboration platforms. These arrangements can preserve productive rivalry while limiting tactics that exclude smaller actors or damage the industrial innovation base.

8. Conclusion

Competitive aggressiveness positively and significantly predicted innovation ecosystems among industrial firms in Kampala, but its unique practical effect was negligible. Qualitative evidence explains the boundary: aggressive market positioning supports survival and speed, yet firms deliberately temper it to protect suppliers, value chains, and industry relationships. Competitive aggressiveness should therefore be managed as disciplined, ethical, and ecosystem-aware rivalry rather than unrestricted confrontation.

8.1 Limitations and Future Research

The cross-sectional design cannot establish whether competitive aggressiveness preceded ecosystem development or whether stronger ecosystems enabled firms to compete more forcefully. Self-reported measures may introduce common-method bias, and the borderline p value warrants replication. The final innovation ecosystem construct relied on retained collaborative-network and institutional-support indicators after weak innovation-infrastructure indicators were removed. Future research should use longitudinal data, distinguish constructive from destructive aggression, test non-linear effects, and examine whether trust, co-opetition, supplier resilience, or institutional quality moderates the relationship.

References

Adner, R. (2006). Match your innovation strategy to your innovation ecosystem. Harvard Business Review, 84(4), 98-107.

Adner, R. (2017). Ecosystem as structure: An actionable construct for strategy. Journal of Management, 43(1), 39-58. https://doi.org/10.1177/0149206316678451

Gupta, A., & Das, K. (2021). Entrepreneurial orientation and innovation performance in Indian SMEs. International Journal of Entrepreneurship and Small Business, 44(3), 335-353.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.

Creswell, J. W., & Plano Clark, V. L. (2018). Designing and conducting mixed methods research (3rd ed.). SAGE Publications.

Granstrand, O., & Holgersson, M. (2020). Innovation ecosystems: A conceptual review and a new definition. Technovation, 90-91, 102098. https://doi.org/10.1016/j.technovation.2019.102098

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). SAGE Publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30(3), 607-610.

Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21(1), 135-172. https://doi.org/10.5465/amr.1996.9602161568

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. Management Science, 29(7), 770-791. https://doi.org/10.1287/mnsc.29.7.770

Morgan, D. L. (2014). Pragmatism as a paradigm for social research. Qualitative Inquiry, 20(8), 1045-1053.

Scott, W. R. (2014). Institutions and organizations: Ideas, interests, and identities (4th ed.). SAGE Publications.

Wales, W. J. (2016). Entrepreneurial orientation: A review and synthesis of promising research directions. International Small Business Journal, 34(1), 3-15. https://doi.org/10.1177/0266242615613840