

Influence of Small and Medium-Sized Enterprises on the Economic Performance of the Manufacturing Sector in Kaduna State: A case study of Seven-Up Bottling Company Plc

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Abstract

This paper set out to evaluate how Small and Medium-sized Enterprises (SMEs) function as an instrument of economic advancement in the manufacturing segment of Kaduna State, covering the years 2011 through 2025. One hundred respondents drawn from Seven-Up Bottling Company Plc within the Kaduna metropolis supplied the data through a survey-based methodology. A systematic appraisal of relevant academic literature provided the conceptual and theoretical grounding for the study. Structured questionnaires served as the principal instrument for primary data collection, and three research questions were designed to steer the investigation. Chi-square statistics were applied in testing and verifying the formulated hypotheses. Key outcomes of the analysis reveal that SMEs contribute substantially to the Nigerian economy through productive output and job creation, among several other measurable benefits. The study further uncovers that stunted credit access, managerial inefficiency, corruption, insufficient workforce training, crumbling infrastructure, and weak product demand rank among the foremost obstacles constraining SME expansion in Nigeria. The study arrives at the conclusion that, despite the operational difficulties they encounter, small and medium enterprises have made a net positive contribution to the Nigerian economy. On this basis, the study urges government to direct commercial banks to allocate a greater share of their lending portfolios to SMEs, thereby relieving the financial pressures that threaten the sustainability of many such businesses.

Keywords: SMEs; economic performance; manufacturing sector; seven-up bottling company.

1. Introduction

Few sectors of any national economy carry the weight that Small and Medium-sized Enterprises (SMEs) carry in terms of day-to-day economic vitality. Policymakers worldwide have turned their attention increasingly to SMEs because of the tangible benefits they deliver: harnessing indigenous raw materials, opening up employment channels, channeling domestic savings into productive activity, breathing life into rural economies, building supply-chain bridges to large corporations, spreading investment more evenly across regions, and training the next generation of managers and artisans (Ekeziel, 2018).

Whether in high-income industrialised nations or in countries still climbing the development ladder, SMEs share a common quality: the willingness of their founders to innovate, persevere, and shoulder risk. This entrepreneurial spirit makes them reliable engines of sustained growth, and governments are increasingly called upon to create the conditions under which this engine can run at full capacity.

Scholarly attention to the intersection of SME activity and national economic output has intensified noticeably in recent years, generating a rich stream of enquiry (Kadiri, 2021; Taiwo, Ayodeji and Yusuf, 2022; Thurik & Wennekers, 2023; Vijayakumar, 2024). Researchers are drawn to this subject because SMEs interact with the economy through several simultaneous pathways: producing goods and services, redistributing income, creating jobs, lifting people out of poverty, and sustaining a productive commercial environment (Beck, Dunt & Levine, 2024).

Nigeria's economic landscape gives the SME question particular urgency. The country's overdependence on oil, weak agricultural output, chronic joblessness, under-utilised industrial facilities, persistent inflation, and poor industrial infrastructure create a context in which SMEs can either serve as a vital counterweight or remain trapped by the same structural weaknesses they are expected to overcome. Against this background, the present study focuses on SMEs as a potential lever for economic advancement, using the beverage manufacturing sub-sector specifically, Seven-Up Bottling Company Plc in Kaduna as its lens.

What makes the SME challenge in Nigeria especially troubling is that government efforts to improve conditions for these businesses have not translated into the hoped-for results (Onugu, 2018). Banks remain hesitant to lend because borrowers often lack reliable financial records, maintain inadequate books, operate with minimal transparency, misuse credit once granted, and cannot offer collateral. Lenders also regard the sector as structurally risky and find it difficult to enforce loan agreements even when defaults occur (Ogechukwu, 2019).

Compounding the credit problem is a crumbling infrastructure base, with unreliable electricity supply at the forefront of concerns that have weighed on SME productivity for decades. Governments at both the state and federal levels have made incremental attempts to shore up power provision for industry, yet the

problem remains far from resolved. These intractable difficulties have prompted waves of academic investigation into whether, and by how much, SME activity moves the needle on economic outcomes. Aremu and Adeyemi (2020), Cravo, Gourly and Becker (2020), Kaigama, Talib and Ashari (2021), Nagaya (2019), and Taiwo, Ayodeji and Yusuf (2022) are among those who have grappled with this question, but their conclusions diverge sharply, underscoring the need for continued enquiry. Most of these studies drew on time-series datasets; primary survey data from Nigeria remain scarce. This study fills that gap by deploying questionnaire-based evidence, incorporating more recent observations, and applying a wider specification and more exacting statistical tools, thereby refreshing the analytical conversation on SMEs and growth.

Three specific objectives guide the enquiry:

- i) To examine the trend of SME performance and economic indicators in Kaduna State.
- ii) To determine the relationship between SMEs and economic performance in Kaduna State.
- iii) To assess the extent of SMEs' contribution to the economic changes of Kaduna State.

The following null hypothesis is proposed for empirical testing:

Ho: There is no significant contribution of SMEs to the prediction of economic indicators.

2. Literature Review

2.1 Conceptual Framework

Concept of Small and Medium-size Enterprises

How exactly should an SME be defined? USAID answers this question by drawing three boundaries: micro enterprises sit at the informal end, engaging five or fewer workers, often including unpaid family helpers; small enterprises move into the formal economy, employing between five and twenty staff; and medium enterprises occupy the upper tier, with workforces ranging from 21 to 50 persons (Kayanula & Quartey, 2019). Nigerian regulatory bodies have offered their own parameters: Ali (2023) anchors the definition in turnover, setting the ceiling at five hundred thousand naira annually, while the Federal Ministry of Industries

(2023) combines capital assets, covering land, structures, plant, and working funds, up to a ceiling of N60,000, with a maximum payroll of 50 workers.

What sets SMEs apart from their larger counterparts are certain enduring organisational features. Ahmed (2021) draws attention to two that are particularly telling. The first is ownership concentration: these businesses are almost always steered by one person or a tight-knit group, with no separation between ownership and control. The second is the near-fusion of the owner's identity with that of the enterprise itself. Having the proprietor directly involved in every operational sphere sharpens the firm's capacity to adapt quickly, but it also concentrates authority in one pair of hands, sometimes at the cost of delegation and structured management. Taken together, SMEs tend to rely on local inputs, confine their activities geographically, carry relatively low startup and setup costs, and draw on a workforce whose formal educational credentials and specialised skills may be limited (Ifechukwu, 2022).

Economic and Non-Economic Importance of SMEs

SMEs punch well above their weight when it comes to poverty reduction. By generating wage employment, producing income streams, encouraging saving habits, and channelling funds back into productive investment, these enterprises have repeatedly been shown to raise living standards and expand economic opportunity at the grassroots level (Sirajo & Zayyanu, 2019).

Writing from the Sri Lankan experience but drawing wider conclusions, Lingesiya (2020) catalogues the development contributions of SMEs: they pull workers off the sidelines and into productive employment; they capture and recycle household savings that might otherwise lie dormant; they push against poverty and lopsided income distribution; they anchor regional economies that might otherwise stagnate; they train entrepreneurs and skilled workers; they build the demand base that allows larger firms to thrive; and they earn foreign exchange through export activity.

Economists and sociologists have long observed that the benefits of SME participation extend well beyond the purely financial. For populations routinely excluded from formal employment, including women, ethnic minorities, youth, and older workers, SMEs represent one of the few accessible pathways to economic agency. Beyond income, working within or owning an SME has been found to nurture values of self-sufficiency and personal responsibility that carry

their own social worth, regardless of any direct economic outcome (Ahmed, 2021).

Challenges of SMEs in Nigeria

Running an SME in Nigeria is an exercise in navigating a formidable obstacle course. The talent deficit is perhaps the most fundamental problem: a large share of those who set up small businesses arrived without adequate vocational training or the technical expertise their enterprise demands. Misperceptions about the impossibility of securing capital compound the difficulty, even as government-administered support schemes consistently fall victim to political capture and corrupt administration. Where well-intentioned policies do exist, they rarely survive intact through to implementation. The consequences are predictable: enterprise failure rates remain elevated, output stays low, firms are chronically under-resourced, financial records are kept poorly or not at all, skilled workers are scarce, and financial discipline is inconsistently applied (Sirajo & Zayyanu, 2019).

For most Nigerian small business owners, the startup funding story begins and often ends with personal savings, typically built up during years in employment elsewhere or received through inheritance. When those savings run short, informal credit from relatives and trusted acquaintances fills some of the gap. Organised government support, delivered via bodies such as the Industrial Development Centres and the Federal Ministry of Industry, does offer a measure of technical guidance and skills upgrading, though the reach of these programmes remains limited (Sirajo & Zayyanu, 2019).

2.2 Theoretical Framework

This study draws its theoretical sustenance from Keynesian Economic Theory (Keynes, 2006). In its application to small enterprise development, Keynesian thinking holds that businesses at the smaller end of the scale are not peripheral actors in an economy but central ones, capable of delivering stability and growth when properly resourced. The theory's core contention is that state intervention matters: governments that channel financial resources purposefully toward small enterprises, working through microfinance institutions and other intermediaries, can impart a stabilising and stimulating impulse to the broader economy. The operating environment is not self-correcting; it requires active management through resource allocation decisions, market regulation, and the deliberate maintenance of policy conditions that favour small enterprise activity.

Keynes placed particular weight on macroeconomic stability as a prerequisite for small business confidence. Where interest rates, exchange rates, and prices fluctuate unpredictably, small enterprises, which typically lack the reserves to absorb shocks, are disproportionately harmed. A stable macroeconomic setting, by contrast, allows small businesses to plan, invest, and grow. Enterprises whose managers remain alert to the economic signals around them are best positioned to convert stability into performance. The theory rests on two foundational assumptions:

- The theory assumes that small-scale enterprises operate within an environment shaped by the interplay of various forces. Consequently, small business operators should remain informed about the external economic factors affecting them, since an awareness of these conditions enables more proactive and effective business management.
- The theory further assumes that small enterprises flourish within a stable economic setting defined by fixed exchange rates, interest rates, and inflation rates.

2.3 Empirical Review

A considerable body of empirical work has probed how SMEs shape economic outcomes. Nagaya (2019) tackled this question using Indian data and concluded that SMEs drive measurable growth by absorbing workers who would otherwise remain unemployed and by raising household incomes among previously poor populations. Aremu and Adeyemi (2020) reached broadly similar conclusions in their own investigation, affirming that small enterprises function as one of the most direct and accessible pathways to job creation and poverty reduction available to developing economies.

The consensus, however, is not universal. Cravo, Gourly and Becker (2020) reached a strikingly different verdict: their analysis reveals a negative statistical relationship between SME activity and growth levels. Their interpretation shifts attention from what SMEs do to who works in them, arguing that the educational and skill levels of the people running these firms may shape economic outcomes more decisively than the volume of enterprise activity itself.

Kadiri (2021) zeroed in on employment as a barometer of SME impact in Nigeria, applying binomial logistic regression to test whether small enterprises were delivering on their job-creation promise. The results were sobering: the positive

employment effect was largely absent, and the researchers traced this failure to two structural weaknesses, insufficient access to finance and a lack of sustained political will from government.

The financing constraint recurs as a central finding across multiple studies. Jibir (2021) and Bekele and Zekele (2022) both investigated the link between credit availability and enterprise vitality, and both arrived at the same conclusion: SMEs that enjoy reliable access to funds tend to grow and survive, while those that cannot secure credit are vulnerable to stagnation or collapse. Capital access, in other words, is not merely one factor among many but a foundational enabler of everything else.

Taiwo, Ayodeji and Yusuf (2022) provide one of the most comprehensive Nigerian perspectives on the SME-growth relationship, establishing a strong positive link between enterprise activity and economic outcomes while simultaneously cataloguing the pressures that hold SMEs back, with financial scarcity, endemic corruption, and skills deficits occupying the top of their list of constraints.

Taking a longer-term view, Afolabi (2023) analysed Nigerian data from 1990 to 2020 using OLS regression and found that two measures of SME activity, the sector's contribution to domestic trade output and the volume of bank credit flowing to small enterprises, both carry statistically significant and positive effects on economic development. This finding points directly to the importance of credit policy as a lever for expanding SME impact.

Chinweuba and Sunday (2023) add to this picture by showing that SMEs drive growth not only through their direct output but through adaptive strategies that allow them to survive and expand even in difficult conditions. Motilewa (2024) describes the same enterprises as engines in a vehicle perpetually running low on fuel, capable of propelling growth but consistently held back by financial and organisational bottlenecks.

Zooming out to the global level, Andre, Carree and Thurik (2024) pooled data from 36 countries to investigate how total entrepreneurial activity shapes GDP growth, and they uncovered a nuanced picture: the influence of new and early-stage business founders on growth is real, but its magnitude varies with the

income level of the country in question. Richer countries extract more growth per unit of entrepreneurial activity than poorer ones.

Ming-Wen (2025) extended this cross-national inquiry to 37 countries over the three decades from 1990 to 2020, and found robust evidence that small businesses add to national prosperity across diverse economic contexts. What differs between contexts is the mechanism: in wealthier nations, SMEs primarily fuel the entrepreneurial ecosystem, while in developing economies their most visible contribution remains the creation of livelihoods for working people.

Mueller (2025) returned the lens to Nigeria and focused specifically on the banking sector's role in SME development. The analysis showed that bank lending volumes are statistically linked to SME growth, and that the regulatory environment, particularly tax policy, shapes this relationship in ways that can be either supportive or obstructive. The study called for banks to be incentivised to lend more to small enterprises, and for policymakers to rationalise the tax burden and strengthen the institutional framework governing SME finance.

Lawal (2026) examined the downstream effects of financial sector reform on small enterprise growth in Nigeria and reported that reform-related improvements across all the variables studied translated into measurable gains for small businesses. The clear implication is that getting the financial environment right is among the most powerful things government can do to unleash SME potential.

Critiques of the Review and Literature Gaps

What the accumulated research makes clear is that there are no settled answers on how strongly SMEs influence economic outcome. The findings diverge, and in the Nigerian context, this divergence is deepened by a shared methodological weakness: most studies have relied on descriptive statistics and have not tested the properties of their data rigorously (see Taiwo, Ayodeji & Yusuf, 2022; Motilewa, 2024). Inferential tools that would allow stronger causal claims have been infrequently deployed, and sample sizes have often been too modest to support generalisable conclusions. The present study is designed to correct these shortcomings by pushing the observation window further forward in time and applying more demanding analytical techniques.

A further gap worth noting is geographic: no prior study within this field appears to have used the Kaduna metropolis as its research site with the specific variable

configuration adopted here. Earlier investigations have gravitating toward service industries, leaving manufacturing, and beverage production in particular, largely unexplored. By anchoring the study at Seven-Up Bottling Company Plc in Kaduna, and by grounding the analysis in Keynesian theory, this research closes gaps that are simultaneously empirical, theoretical, sectoral, and geographic.

3. Methodology

The study adopts a survey research design. At the time of the investigation, Seven-Up Bottling Company Plc in Kaduna employed a total of 162 staff (Relationship Manager, 2026). Using the validated sample size determination table developed by Krejcie and Morgan (1967), a sample of 113 employees was drawn through simple random sampling to ensure that every member of staff had an equal chance of selection.

A well-constructed structured questionnaire, designed to align precisely with the research questions and capture responses relevant to the study objectives, served as the primary data collection instrument. The questionnaire's content validity was confirmed through face validation, and its reliability was verified by means of a pilot study before full deployment. The researcher administered all questionnaires personally, working alongside the Relationship Manager of Seven-Up Bottling Company Plc, who contributed both as a respondent and as a field facilitator. Once collected, the data were arranged in tabular format and subjected to analysis using arithmetic mean, simple percentages, and chi-square statistical testing for hypothesis verification.

The arithmetic mean is computed using the formula:

$$\text{Mean (x)} = \text{Efx} / \text{Ef}$$

Where:

E	=	Summation
f	=	Frequency
x	=	Variables

The chi-square statistic is calculated as follows:

$$X^2 = \text{E}(\text{O} - \text{E})^2 / \text{E}$$

Where:

X^2	=	chi-square
E	=	Summation
O	=	Observed frequency

$$E = \text{Expected frequency}$$

4. Results and Discussion Findings

The data presented below draw on 100 usable responses returned by the full pool of study participants.

Table 4.1: SME and Economic Performance Trends in Kaduna State.

S/N	Variables		SA	A	UD	D	SD	Total	Mean	Remarks
1.	Generation of employment opportunities.	f	32	56	0	8	4	100	4	Agreed
		x	5	4	0	2	1	404		
		fx	160	224	0	16	4	100		
2.	Labour-intensive approach to production.	f	36	52	0	12	0	100	4.1	Agreed
		x	5	4	3	2	1	412		
		fx	180	208	0	24	0	100		
3.	Dedication to business success and growth.	f	24	60	4	8	4	100	3.9	Agreed
		x	5	4	3	2	1	392		
		fx	120	240	12	16	4	100		
4.	Positive and conducive working environment.	f	32	56	0	8	4	100	4	Agreed
		x	5	4	0	2	1	404		
		fx	160	224	0	16	4	100		
5.	Ability to make prompt and adaptable decisions.	f	36	52	0	12	0	100	4.1	Agreed
		x	5	4	3	2	1	412		
		fx	180	208	0	24	0	100		

Source: Field Survey, 2026.

Grand Mean = $20.1 / 5 = 4.0$ (Agreed)

Table 4.1 reports the mean scores generated from respondents' ratings of statements bearing on SME performance and its relationship to economic outcome in Kaduna State. With a grand mean of 4.0, the data show unanimous agreement across all items, confirming that the respondents collectively regard SMEs as performance-oriented institutions whose activities align closely with the patterns of economic outcome observed in the state.

Table 4.2: Relationship between SMEs and Economic Performance in Kaduna State

S/N	Variables		SA	A	UD	D	SD	Total	Mean	Remarks
6.	Inseparable bond between the business owner and the enterprise.	f	28	48	8	8	8	100	3.8	Agreed
		x	5	4	3	2	1	380		
		fx	140	192	24	16	8	100		
7.	Growth in SME operations and output.	f	34	48	6	8	4	100	4	Agreed
		x	5	4	3	2	1	400		
		fx	170	192	18	16	4	100		
8.	Creating economic openings for vulnerable and marginalised groups.	f	32	44	8	8	8	100	3.8	Agreed
		x	5	4	3	2	1	384		
		fx	160	176	24	16	8	100		
9.	Fostering of self-reliance and independent thinking.	f	28	40	4	8	20	100	3.5	Agreed
		x	5	4	3	2	1	348		
		fx	140	160	12	16	20	100		
10.	SMEs cultivate personal values extending beyond economic considerations.	f	36	42	10	8	4	100	4	Agreed
		x	5	4	3	2	1	398		
		fx	180	168	30	16	4	100		

Source: Field Survey, 2026.

Grand Mean = $19.1 / 5 = 3.8$ (Agreed)

Table 4.2 captures respondents' perspectives on how SMEs relate to economic performance in Kaduna State. Every statement in this section attracted majority agreement, producing a grand mean of 3.8. This score conveys that, in the view of

participants, the relationship between SME activity and economic performance in the study area is real, tangible, and broadly positive.

Table 4.3: Extent of SMEs' Contribution to Economic outcome in Kaduna State

S/N	Variables		SA	A	UD	D	SD	Total	Mean	Remarks
11.	Reduction of poverty through job creation.	f	20	40	8	20	12	100	3.4	Agreed
		x	5	4	3	2	1	336		
		fx	100	160	24	40	12	100		
12.	Improvement in household income and equitable distribution.	f	32	52	0	8	8	100	3.9	Agreed
		x	5	4	3	2	1	392		
		fx	160	208	0	16	8	100		
13.	Accumulation and mobilisation of domestic savings.	f	24	44	14	12	6	100	3.7	Agreed
		x	5	4	3	2	1	184		
		fx	120	176	42	24	6	100		
14.	Expansion of investment and promotion of regional development.	f	28	36	18	12	6	100	3.7	Agreed
		x	5	4	3	2	1	368		
		fx	140	144	54	24	6	100		
15.	Increase in economic activities and per capita income.	f	20	40	8	20	12	100	3.4	Agreed
		x	5	4	3	2	1	336		
		fx	100	160	24	40	12	100		

Source: Field Survey, 2026.

Grand Mean = $14.7 / 4 = 3.7$ (Agreed)

Table 4.3 records how respondents rate the actual depth of SME contributions to Kaduna State's economic performance. Agreement was recorded across all fifteen survey items, underlining that participants recognise SMEs as genuine contributors to economic progress in the state, not merely in principle but in measurable practice.

Testing of Hypotheses

Verification of the study hypotheses proceeds as set out below:

H₀: There is no significant contribution of SMEs to the prediction of economic performance

Items 13 and 15 were chosen from the questionnaire for this purpose because their content maps directly onto what the hypothesis seeks to test.

Table 4.4.1: Critical Value (Observed Frequency)

S/N	Statement	SA	A	UD	D	SD	Total
13.	Accumulation and mobilisation of domestic savings.	24	44	14	12	6	100
15.	Increase in economic activities and per capita income.	20	40	8	20	12	100
	Total	44	84	22	32	18	200

Source: Field Survey, 2026.

Degree of freedom:

$$= (c - 1)(r - 1)$$

$$= (4 - 1)(2 - 1)$$

$$= 3 \times 1$$

$$= 3$$

The study applies a 5% significance threshold ($\alpha = 0.05$). At this level, the chi-square value in the table stands at 7.82 (Wooldrige, 2023).

Table 4.4.2: Expected Frequency

S/N	Statement	SA	A	UD	D	SD	Total
13.	Accumulation and mobilisation of domestic savings.	22	42	11	16	9	40
15.	Increase in economic activities and per capita income.	22	42	11	16	9	40
	Total	44	84	22	32	18	80

Source: Researcher's Computation, 2026.

Inferential Analysis

Table 4.4.3: Chi-Square Computation $X^2 = E(O - E)^2 / E$

O	E	O - E	(O - E) ²	(O - E) ² / E
24	22	5	25	1.67
20	22	-5	25	1.67
44	42	-1	1	0.09
40	42	1	1	0.09
14	11	-4	16	2.67
8	11	4	16	2.67
12	16	2	4	1.0
20	16	-2	4	1.0
6	9	-2	4	1.0
12	9	2	4	1.0
				Total = 12.86

Source: Researcher's Computation, 2026.

Decision Rule

A computed chi-square value (X^2_c) that surpasses the tabulated critical value (X^2_t) calls for rejection of the null hypothesis in favour of the alternative. Where the reverse holds, the null hypothesis is retained.

Decision

With X^2_c standing at 12.86 against a critical value of 7.82, the computed statistic comfortably exceeds the threshold. The null hypothesis is therefore rejected. This

outcome validates the alternative hypothesis: SMEs carry a statistically significant weight in predicting economic outcome.

Findings

Taken together, the study's findings make a compelling case for the centrality of SMEs to real-time economic advancement in Kaduna State. Respondents consistently affirmed that these enterprises deliver measurable value across several fronts: they absorb workers who would otherwise be unemployed, spread income more equitably, build the savings pool from which future investment is drawn, expand investment expenditure, raise overall economic activity, and push per capita income upward.

5. Conclusion and Recommendations

The evidence assembled in this study leaves little room for doubt: small and medium enterprises are a cornerstone of sustained economic growth and development in Nigeria. They absorb labour, build skills, stimulate industrial activity, and act as a buffer against poverty. The analysis confirms that their net effect on growth is positive. What holds them back is not a lack of productive potential but a set of addressable environmental constraints, of which inadequate financing stands out as the most consistently damaging.

The following policy directions are proposed on the basis of these findings:

1. Federal and state governments should prioritise the rehabilitation and expansion of physical infrastructure, giving particular attention to power supply, to remove one of the most persistent drags on SME productivity and output.
2. Trade policy should be recalibrated to protect domestic manufacturing capacity. Targeted restrictions on the importation of goods that local SMEs are capable of producing at competitive quality will reduce the unequal contest between Nigerian small enterprises and foreign multinationals.
3. Government should work actively with the banking sector to redirect credit flows toward small and medium enterprises. This may take the form of directed lending targets, concessionary rate schemes, or partial guarantee arrangements that lower the perceived risk of lending to smaller borrowers.

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Appendix I

Sample Size Determination Table Adapted by Krejcie and Morgan

N - n	N - n	N - n	N - n	N - n
10-10	100-80	280-162	800-260	2800-338
15-14	110-86	290-165	850-265	3000-341
20-19	120-92	300-169	900-269	3500-346
25-24	130-97	320-175	950-274	4000-351
30-28	140-103	340-181	1000-278	4500-354
35-32	150-108	380-186	1100-285	5000-357
40-36	160-113	380-191	1200-291	6000-361
45-40	170-118	400-196	1300-297	700-364
50-44	180-123	420-201	1400-302	8000-367
55-48	190-127	440-205	1500-306	9000-368
60-52	200-132	460-210	1600-310	10000-370
65-56	210-136	480-241	1700-313	15000-375
70-59	220-140	500-217	1800-317	20000-377
75-63	230-144	550-226	1900-320	30000-379
80-66	240-148	600-234	2000-322	40000-380
85-70	250-152	650-242	2200-327	50000-381
90-73	260-155	700-248	2400-331	7500-382
95-76	270-159	750-254	2600-335	100000-384

Source: Krejcie & Morgan (1967), p. 608.

Where:

N = Population
n = Sample size