

# GLOBAL JOURNAL

OF MANAGEMENT AND BUSINESS RESEARCH: B

## Economics and Commerce



The Latest Census Data

Demographic Aspects of Illiteracy

Highlights

Illiteracy in Italian Regions

Effect of Entrepreneurial Orientation

Discovering Thoughts, Inventing Future

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## Demographic Aspects of Illiteracy in Italian Regions through the Latest Census Data

By Giuseppe De Bartolo

*University of Calabria, Italy*

**Abstract-** The level of education is becoming more and more important in order to explain the variations in the demographic phenomena. In fact, many studies have shown that women with a high level of education have fewer children; higher education is associated with lower mortality and better health. These evidences are already consolidated in the recent international literature and, according to many scholars, the variable education will be at the center of the social demography of the 21 st century. In this context the analysis of illiteracy would allow to grasp some critical issues related to the transformations taking place in society. We recall that in Italy the community of statisticians and demographers, apart a brief interlude in the fifties and sixties of the last century, gave little importance to the study of illiteracy, considering it a residual element of the social development of the country. Instead, pedagogues and linguists, because of their direct involvement, have shown that in Italy illiteracy and functional illiteracy are in various ways widely spread and cause social marginalization.

**Keywords:** *demography, illiteracy, Italian censuses.*

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# Demographic Aspects of Illiteracy in Italian Regions through the Latest Census Data

Giuseppe De Bartolo

**Abstract** - The level of education is becoming more and more important in order to explain the variations in the demographic phenomena. In fact, many studies have shown that women with a high level of education have fewer children; higher education is associated with lower mortality and better health. These evidences are already consolidated in the recent international literature and, according to many scholars, the variable education will be at the center of the social demography of the 21st century. In this context the analysis of illiteracy would allow to grasp some critical issues related to the transformations taking place in society. We recall that in Italy the community of statisticians and demographers, apart a brief interlude in the fifties and sixties of the last century, gave little importance to the study of illiteracy, considering it a residual element of the social development of the country. Instead, pedagogues and linguists, because of their direct involvement, have shown that in Italy illiteracy and functional illiteracy are in various ways widely spread and cause social marginalization.

At national level these phenomena are widely investigated thanks also to international surveys involving Italian country, such as the International Adult Literacy Survey coordinated by Statistics Canada and those conducted by the OECD. Going down to the Italian regional level, the immediately available data are those provided by the censuses which, however, have the limit of not explicitly bringing out these new forms of lack of adequate education, because only "illiterate being able to read or write. In the census, illiterate and unskilled literates are labeled as those with no educational" and "alphabets but without a qualification" are detected. In the analysis developed here these two categories have been grouped because in this way we believe we could estimate some important features of functional illiteracy at regional level, a phenomenon that is largely underestimated today.

**Keywords:** *demography, illiteracy, Italian censuses.*

## I. INTRODUCTION

Education is becoming increasingly important as a crucial variable in explaining changes in demographic phenomena. Indeed, numerous research studies have shown, for example, that women with high educational attainment have fewer children, and higher education is often associated with lower mortality and better health (Samir and Lentzner 2010, pp. 201-236; James et al. 2012). This evidence is already well-established in the most recent international literature, and according to some authors, the education variable will be at the center of demography in the 21st century (Lutz 2010, pp. 9-16). This is due to the significant changes in today's world, but especially to

new ways of interpreting these changes. In this context, the analysis of illiteracy would allow us to capture some critical issues related precisely to the transformations taking place in our society. Limiting ourselves to the terminology in use in the Italian literature on illiteracy, we list its most important definitions below, recalling the difficulty of comparing the phenomenon from country to country and even over time due to the lack of uniform criteria by which the various surveys are carried out.

Literate is one who has no educational qualification but is at least able to read; literates without educational qualifications, defined as such by the population census, are those who reported being able to read and write, even though they did not have an elementary school leaving certificate; illiterate is one who has no educational qualification and can neither read nor write; instead illiterates surveyed by the population census, on the other hand, are those who reported not being able to read or write. In the census, illiterate and unskilled literates are labeled those with no educational qualification. Returning literates are the literate who, without the exercise of alphanumeric skills, regress by losing the ability to use written language to formulate and understand messages; a functional illiterate is defined as one who, although having developed the ability to read and write, is unable to fully comprehend the meaning of the passage read and unable to use writing in order to be understood by other possible readers (Schettini 2005; Vågvolgyi et al. 2016, pp. 1-13).

## II. DEMOGRAPHICS AND ILLITERACY

In Italy, the community of statisticians and demographers, apart from a brief interlude in the 1950s-1960s, gave little importance to the study of illiteracy, considering it a residual element in the country's social development. It was not until the 1990s that interest in this topic returned through original research by Pezzulli and Lombardo on youth illiteracy in light of 1991 census data (Pezzulli and Lombardo 1995, pp. 15-28). Pedagogists and linguists, on the contrary, through their direct involvement, have pointed out that in Italy illiteracy, but especially return illiteracy and functional illiteracy, are in various ways widespread and of concern because they are a cause of social marginalization (De Mauro 1995).

At the national level, these phenomena are widely studied thanks also to international surveys that have seen and see our country involved. We recall in this regard the International Adult Literacy Survey (IALS),

*Author:* University of Calabria, Italy.  
*e-mail:* giuseppe.debartolo@unical.it

a sample survey coordinated by Statistics Canada, conducted between 1994 and 1998, which was the first large-scale comparative survey supported by the OECD and designed to identify and measure a set of adult skills in order to assess the impact of education on the economy in the 20th century. The results of this survey represent an important asset for studying and evaluating adult skills in twenty two countries including Italy, which joined in 1998. It was followed in 2003 by the Adult Literacy and Life Skill Study and in 2012 by the Program for the International Assessment of Adult Competencies (PIAAC), which in our country is edited by the National Institute for Public Policy Analysis-INAPP. Recall again that the PIAAC survey measures the skills of adults aged 16-65 on *Literacy, Numeracy and Problem solving*.

The results of the first round of the PIAAC survey, which took place between 2011 and 2012 and in which 38 countries took part, show a gap between Italian participants and the OECD average in both *Literacy* and *Numeracy*; moreover, at the geographical level, the average scores recorded in the South and Islands are lower than the rest of the country (Invalsi Open 4/12/2020).

For a more detailed analysis regarding the so-called *low skilled*, who emerge from the data of the 2014 OECD-PIAAC survey country report with respect to socio-demographic characteristics and other variables for the 16-24 and 25-34 age groups, please refer to the study by Di Francesco et al. (2016, pp. 53-67). Here we highlight only a few features of this study, such as that the problem of the *low skilled* is a feature shared by all the countries that participated in the first round of the PIAAC survey; that in Italy citizens in the 16-65 age group with very low levels of *literacy* are just under 11million, the highest percentage among the participating countries. The *low skilled* tend to be concentrated in the older ages, although important percentages are found in the 16-24 age group (9.6 percent) and the 25-34 age group (15 percent). In addition, there is not an even distribution throughout the country of people with low skill levels as the South and Northwest have the highest percentages (60 percent). People with low levels of competence are in the vast majority low-schooled (75 percent), which confirms that educational qualification is one of the main "predictors" of the level of competence expressed by individuals. In any case, it is not insignificant that 20.9 percent of these people hold a diploma and 4.1 percent even hold a bachelor's degree.

The results of the association of age with educational qualification highlight an important feature: the *low-skilled* with an educational qualification equal to a high school diploma are predominantly in the 25-34 age group (28 percent) and in the 35-44 age group (26 percent). This finding confirms a trend of the existence in our country of a significant number of young adults

who are functionally illiterate despite possessing a college degree, which was already highlighted in the previously cited research by Pezzulli and Lombardo (1995, pp. 15-28) on census data from 1991.

### III. LIFE EXPECTANCY BY GENDER AND LEVEL OF EDUCATION IN ITALY

The mortality table is the tool that allows a very accurate statistical analysis of human survival. Its invention played a fundamental role in the history of demography (J.et M. Dupâquier, 1985, Ch. 6). Until recently, mortality tables have been constructed exclusively by age, sex, and territory, whereas many studies conducted on inequality in morbidity and mortality indicate that there is strong heterogeneity in survival associated with socioeconomic factors such as education, income, employment status, and social class (Kuhn, Prskawetz and Sunde 2014).

From these evidences, observed in many European countries, arose by Istat the need to study also for Italy, with a special project, the inequalities on mortality linked to socio-economic factors, choosing the educational qualification as a symptomatic variable of this condition; variable that is also related to the social condition of the family of origin, lifestyles and opportunities for access to care. Subsequently, the survival analysis was extended by Istat to the regional level, thus making available for the first time in Italy regional mortality tables by level of education (high, medium, low) of the resident population at the 2011 Census classified by gender and also by birth cohort (Istat, 2018).

These new tables highlight the existence of significant territorial inequalities in survival at birth, estimated at 3.0 years for the male sex (between Bolzano and Campania) and 2.6 years for the female sex (again between Bolzano and Campania) with Calabria, Sicilia and Campania always occupying the last places in these rankings. The gap widens even more when education level is also taken into consideration. Considering the difference between high and low levels of education, there is even a 6.1 year difference for men and a 4 year difference for women, differences again recorded between the province of Bolzano and Campania. The latter region is also the most disadvantaged in life expectancy at birth for both less educated women and less educated men (82.9 and 77.5 years of life expectancy at birth, respectively) (Table 1).

Variation in inequality in life expectancy by educational attainment is a constant feature at the territorial level but with some differences that we point out here: Marche and Umbria have smaller differentials than other Italian regions for both sexes, while Emilia-Romagna and Calabria have lower differentials only among men (Table 1).

**Table 1:** Life Expectancy at Birth by Region, Gender and Educational Level of the Census Population in Italy in 2011  
Period 2012-2014

Regions/Provinces	Males				Regions/Provinces	Females			
	Education level					Education level			
	Low	Medium	High	All		Low	Medium	High	All
Bolzano	80.4	82.3	83.6	81.7	Bolzano	85.5	86.6	86.9	86.0
Trento	80.0	81.5	83.0	81.1	Trento	85.4	86.8	86.4	85.9
Marche	80.5	81.2	82.3	81.1	Umbria	85,5	85,5	86,0	85,6
Toscana	79.9	81,6	82,8	81,0	Marche	85.5	85.5	86.2	85.6
Umbria	80.0	81.6	82.1	81.0	Lombardia	84.9	85.8	86.5	85.4
Emilia-Romagna	80.0	81.4	82.5	80.9	Veneto	85.1	85.8	86.4	85.4
Lombardia	79.5	81.3	82.9	80.8	Toscana	85.0	85.6	86.3	85.4
Veneto	79.4	81.3	82.7	80.6	Molise	84.8	85.6	86.7	85.3
Puglia	79.8	81.3	82.5	80.6	Sardegna	85.0	85.8	86.3	85.3
Molise	79.3	81.0	83.2	80.5	Emilia-Romagna	84.8	85.2	86.0	85.2
Abruzzo	79.4	80.7	82.2	80.4	Basilicata	84.7	85.7	86.7	85.0
Piemonte	79.1	80.8	82.3	80.3	Liguria	84.2	85.1	86.3	84.9
Liguria	78.8	80.7	82.2	80.3	Friuli-Venezia G.	84.5	84.9	86.0	84.9
Italia	79.2	80.9	82.3	80.3	Lazio	84.2	85.1	86.0	84.9
Valle d'Aosta	79.1	80.4	82.8	80.1	Puglia	84.5	85.5	86.2	84.9
Friuli-Venezia G.	78.7	80.3	82.2	80.1	Italia	84.5	85.3	86.0	84.9
Basilicata	79.3	80.4	82.2	80.1	Piemonte	84.4	85.1	85.8	84.8
Sardegna	78.8	80.9	82.3	80.0	Valle d' Aosta	84.3	85.4	85.7	84.8
Calabria	78.8	80.5	81.4	79.8	Calabria	84.2	85.3	85.5	84.6
Sicilia	78.6	80.2	81.5	79.5	Sicilia	83.3	84.5	85.3	83.8
Campania	77.5	79.4	81.0	78.7	Campania	82.9	84.0	85.1	83.4

Source: Istat, *Tavole regionali di mortalità per genere e livello d'istruzione, 2018*

#### IV. ILLITERACY AND CENSUSES

In early population censuses, partly because of the low rate of schooling, little space was devoted to educational system. From 1861 to 1931 the only information that was collected referred to the ability to read and/or write. At the 1936 census, data on education was not collected. In 1951, for the first time, it is asked to specify in a free-text field the highest educational qualification attained. Beginning in 1971, the question is restructured, providing for some precoded modes (literacy, elementary and middle school graduation) but leaving open the question on the description of upper secondary and college degrees. In the 1981 and 1991 censuses this survey mode remains roughly unchanged. In the 2001 census, the "Education and Training" section of the questionnaire was entirely redesigned in terms of content to adapt it to changes in the education system and the no longer insignificant presence of foreign nationals. In subsequent censuses, the survey strategy has remained very similar to that of 2001.

The definition of illiterates has also varied over time. In the censuses from 1861 to 1881 and 1901 to 1931, those who could not read are considered illiterate, and from 1951 to 2001, both those who can neither read nor write and those who can either only read or only write are considered illiterate. In 2011 and subsequent censuses, those who stated that they had no educational qualification and could not read or write are detected as illiterate. With the start of the permanent censuses, the minimum age of detection is also increased from 6 to 9 years. The changes in the methods of surveying educational attainment, which we described earlier, lead us to look with some caution, however, at the long-term statistics of illiteracy captured through this survey instrument, even though there has been a picture of actual contraction of the phenomenon since Unity (Table 2).

Table 2: Illiterates detected at censuses from 1861 to 2022. Absolute values and percentages

Censuses	Illiterates	%	Censuses	Illiterates	%
1861	16,999,701	78.0	1971	2,547,217	5.2
1871	19,553,792	73.0	1981	1,608,212	3.1
1881	19,141,157	67.3	1991	1,145,612	2.1
1901	18,186,353	56.0	2001	782,342	1.5
1911	16,107,173	46.7	2011	593,523	1.1
1921	13,888,556	35.8	2018	346,616	0.6
1931	7,458,909	21.0	2020	306,923	0.6
1951	5,456,005	12.9	2022	260,247	0.5
1961	3,796,834	8.3			

Sources: G. Genovesi, *Storia della scuola in Italia dal Settecento ad oggi*, Laterza, 2010; Istat, *L'Italia in 150 anni. Sommario di statistiche storiche 1861-2010, year 2011; censuses 2018, 2020 and 2022*

#### V. FUNCTIONAL ILLITERACY AT THE REGIONAL LEVEL. EVIDENCE FROM THE 2011, 2018 AND 2020 CENSUS DATA

As illustrated above, at the national level illiteracy, but especially return illiteracy and functional illiteracy, are widely studied thanks also to international surveys involving our country. Going down instead to the regional level, the results immediately available are census results, which, however, have the limitation of not explicitly bringing out these new forms of lack of adequate education since only illiterate people and those who are literate but lack a qualification are surveyed. In the analysis that follows, these two categories have been grouped by us because we believe that we are thus approaching the concept of functional illiteracy, a phenomenon that is largely underestimated today<sup>1</sup>.

Since Unification, the great advances in schooling and in Italian society as a whole have resulted in a significant reduction in overall and gender illiteracy. The educational institution participated on two levels in the building of the state structure, both by combating illiteracy and by making people acquire a series of values essential for the construction of a national identity such as fatherland, flag, family, authority, etc. This work of the school continued in the Fascist period, obviously with a strong ideological conditioning, and after World War II in the climate of new found democratic coexistence, changing, under the pressure of the social and technological changes that were gradually taking place, its original function from a school of education and instruction to a school of training (Trebisacce 2012, pp. 219-231). This evolution has caused the level of illiteracy in our country from the value of 78 percent in 1861 to gradually decrease to the value of 0.5 percent in 2022 (Table 2).

Despite this exceptional progress, the persistence of the education deficit that is also captured through the tool of recent censuses represents an element of backwardness for Italy that is not easily removed: 2,138,024 functional illiterates in 2022 (3.9 percent) (Table 3).

<sup>1</sup> We remind that functional illiteracy are those who can read and write, but have difficulty understanding simple texts and lack many skills useful in daily life.

**Table 3:** Illiterates, Unskilled Literates, and Functional Literates at the 2011, 2018, 2020 and 2022 Censuses. Percentages of Resident Population Aged 9 Years and Older<sup>2</sup>

Censuses	Absolute values				%			
	2011	2018	2020	2022	2011	2018	2020	2022
Illiterates	591,22	346,616	306,923	260,247	1.10	0.60	0.60	0.50
Alphabets without educational qualifications	2,812,433	2,265,127	2,074,583	1,877,777	5.20	4.10	3.80	3.40
Functional illiterates	3,403,653	2,611,743	2,381,506	2.138.024	6.30	4,7	4.30	3.90

Source: Istat Censuses 2018, 2020 and 2022 and estimated values from 2011 census

These data being aggregated, however, hide in first place the Calabria region (illiteracy rate 1.5 the considerable territorial variability that sees the percent and functional illiteracy 5.7 percent) (Table 4). southern regions the most penalized and among them

**Table 4:** Functional Illiterates and Illiterates in Italian Regions Year 2022. Percentage Values of the Resident Population Aged 9 years and Older.

Regions	Illiterates	%	Functional Illiterates	%
Piemonte	14,830	0.37	136,100	3.42
Valle d'Aosta	609	0.53	3,851	3.34
Liguria	3,855	0.27	41,164	2.90
Lombardia	34,226	0.37	315,342	3.40
Trentino Alto Adige	2,415	0.24	30,478	3.08
Veneto	12,870	0.28	148,909	3.29
Friuli- Venezia G.	2,304	0,21	30,083	2.68
Emilia-Romagna	14,793	0.36	154,024	3.72
Toscana	14,514	0.42	124,889	3.64
Umbria	2,991	0.37	30,821	3.84
Marche	3,998	0.29	56,163	4.04
Lazio	17,366	0.33	187,960	3.53
Abruzzo	4,612	0.39	47,859	4.02
Molise	1,391	0.51	11,459	4.19
Campania	33,335	0.64	225,096	4.35
Puglia	27,454	0.75	188,059	5.16
Basilicata	5,022	1.00	27,204	5.40
Calabria	21,324	1.25	97,063	5.67
Sicilia	35.164	0,79	217.637	4.89
Sardegna	7,174	0.48	63,863	4.28
Italia	260,247	0.47	2,138,024	3.89

Source: elaborations on 2022 census data

<sup>2</sup> In calculating the indices the age groups resulting from the 2011 census were corrected to make them uniform with those from subsequent censuses.

## VI. FUNCTIONAL ILLITERACY BY REGIONS AND AGE GROUPS AT THE 2020 CENSUS

Istat's dissemination of census data by level of education and age makes it possible to make more in-depth comparisons through the calculation of specific ratios that, compared with generic ratios of level of education, are not affected by the interference of the demographic structure<sup>3</sup>. Because of these characteristics, the specific quotients can be compared both with the corresponding values of another

population and with those of the same population over time, especially if they are summarized in some way, for example, by calculating an average value.<sup>4</sup> index that could thus be accepted as a value of *educational inefficiency* of the area under consideration. Following this methodology, Table 5 shows the absolute values of functional illiterates by age groups resulting from the 2022 census, and Table 6 the specific quotients derived from them.

Table 5: Functional Illiterates by Age Group in Italian Regions. Year 2022. Absolute Values

Regions	9-24 years old	25-49 years old	50- 64 years old	65 years old and +	9 years old and +
Piemonte	73,730	12,413	9,401	40,556	136,100
Valle d'Aosta	2,257	335	372	887	3,851
Liguria	23,380	4,204	2,998	10,582	41,164
Lombardia	188,416	37,133	25,889	63,904	315,342
Trentino Alto Adige	22,632	2,506	2,070	3,270	30,478
Veneto	87,552	14,651	11,573	35,133	148,909
Friuli - Venezia G.	20,013	2,484	1,54	6,046	30,083
Emilia-Romagna	80,368	14,684	13,462	45,51	154,024
Toscana	63,132	14,349	10,38	37,028	124,889
Umbria	14,757	1,828	1,612	12,624	30,821
Marche	25,936	4,744	3,163	22,32	56,163
Lazio	106,314	18,156	11,016	52,474	187,96
Abruzzo	21,789	3,094	2,386	20,590	47,859
Molise	4,292	646	519	6,002	11,459
Campania	99,783	21,31	19,061	84,942	225,096
Puglia	66,832	11,684	12,435	97,108	188,059
Basilicata	8,238	1,546	1,198	16,222	27,204
Calabria	31,666	8,023	7,529	49,845	97,063
Sicilia	84,500	13,649	20,549	98,939	217,637
Sardegna	23,987	2,701	3,620	33,555	63,863
Italia	1,049,574	190,14	160,773	737,537	2,138,024

Source: elaborations on 2022 census data

More specifically, an examination of Table 5 shows that functional illiteracy is most concentrated both in the older classes 34.5 percent (737,537 functional illiterates aged 65 and older, out of total functional illiterates of 2,138,024) and in the younger classes ((9-24 years of age) whose weight is even higher (1,049,574 out of 2,138,024). The latter values represent a further confirmation of the persistent inefficiency of our education system.

<sup>3</sup> Such as, for example, the illiteracy index, which is obtained by dividing the number of illiterates to the population aged 9 and older.

<sup>4</sup> It is actually the application of the concept of direct standardization (Wunsch and Termote, (1978), p. 53-60; an exemplification of the various standardization methods can be found in De Bartolo (1997, Ch. IV) .

**Table 6:** Specific Rates of Functional Illiteracy by Age Group in Italian Regions. Year 2022 Values %

Regions	9-24 years old	25-49 years old	50-64 years old	65 years old and +	9 years old and +
Piemonte	11.9	1.0	0.9	3.6	3.4
Valle d'Aosta	11.8	1.0	1.2	2.9	3.3
Liguria	11.4	1.0	0.8	2.4	2.9
Lombardia	12.1	1.2	1.1	2.7	3.4
Trentino Alto Adige	12.4	0.8	0.8	1.44	3.1
Veneto	11.7	1.0	1.0	3.0	3.3
Friuli-Venezia G.	11.7	0.7	0.5	1.9	2.7
Emilia-Romagna	12.1	1.1	1.3	4.2	3.7
Toscana	11.9	1.3	1.2	3.9	3.6
Umbria	11.8	0.7	0.8	5.5	3.8
Marche	11.7	1.1	0.9	5.8	4.0
Lazio	12.2	1.0	0.8	4.0	3.5
Abruzzo	11.7	0.8	0.8	6.4	4.0
Molise	10.4	0.7	0.8	7.8	4.2
Campania	10.2	1.2	1.5	7.4	4.3
Puglia	10.7	1.0	1.4	10.4	5.2
Basilicata	10.2	1.0	0.9	12.1	5.4
Calabria	10.8	1.4	1.8	11.5	5.7
Sicilia	10.7	0.9	1.9	9.0	4.9
Sardegna	11.2	0.6	0.9	8.1	4.3
Italia	11.5	1.1	1.2	5.2	3.9

Source: elaborations on census data 2022

In order to complete the picture of the analysis, we have reported in Table 7 the regional summary indices of *school inefficiency* as of 2022 compared with similar indices calculated at the 2001 census. The comparison shows the remarkable recovery of the southern regions (Calabria, Basilicata, Puglia, Sicilia, Campania and Sardegna) even though values of school inefficiency still persist in these territories far above the Italian average.

We recall that the synthetic indices of educational inefficiency for each Italian region were estimated by us by making the arithmetic mean of the specific quotients calculated in each age class (9-24 years; 25-49 years; 50-64 years; 65 years and over), that is, by relating the number of functional illiterates in each age class to the resident population belonging to the same class. Some corrections had to be made to the population structure by educational attainment of the 2001 census, which had as its initial age 6 years, to make it congruent with that of the 2022 census, which instead has as its initial age 9 years.



Table 7: Regional Rankings of School Inefficiency. Years 2001, 2022. Values %

Regions	2001 Census	2022 Census	Differences
Piemonte	6.0	4.4	-1.6
Valle d'Aosta	5.0	4.2	-0.8
Liguria	5.3	3.9	-1.4
Lombardia	5.3	4.3	-1.0
Trentino- Alto Adige	3.7	3.8	0.1
Veneto	6.7	4.2	-2.5
Friuli - Venezia G.	5.1	3.7	-1.4
Emilia-Romagna	7.6	4.7	-2.9
Toscana	7.3	4.6	-2.7
Umbria	9.3	4.7	-4.6
Marche	9.3	4.9	-4.4
Lazio	7.5	4.5	-3.0
Abruzzo	11.2	4.9	-6.3
Molise	13.3	4.9	-8.4
Campania	13.1	5.1	-8.0
Puglia	18.1	5.9	-12.2
Basilicata	16.4	6.0	-10.4
Calabria	16.4	6.4	-10.0
Sicilia	22.0	5.6	-16.4
Sardegna	15.3	5.2	-10.1

Source: elaborations on 2001 and 2022 census data.

## VII. CONCLUDING REMARKS

Relevant and robust international studies have highlighted the importance of education in explaining changes in many socio-demographic variables, so much so that many now believe that education will be at the center of social demography in the 21st century. In this framework, the analysis of illiteracy would allow us to capture some critical issues related precisely to the transformations taking place in society. In Italy, the community of statisticians and demographers, apart a brief interlude in the 1960s, have always given little importance to the study of illiteracy, considering it a residual element in the development of our country. Pedagogues and linguists, on the other hand, through their direct involvement, have made it clear that in Italy illiteracy *tout court* and functional illiteracy are in various ways widespread and of concern because they are a cause of social marginalization.

Starting on the previous considerations-after a brief *excursus* of the main international surveys in which our country has participated, surveys aimed at identifying and measuring a set of adult skills - our analysis focused on illiteracy and functional illiteracy, the latter estimated through data from the latest population censuses and in particular that of 2022. While we are

aware that the estimation of illiteracy through census data has critical issues related to the way in which the phenomenon is surveyed, a way that has changed over time not marginally, the study focused more specifically on the regional level analysis of the relationship between life expectancy, gender and level of education, using the 2018 Istat regional tables by gender and level of education. This analysis highlighted how spatial differences in survival are amplified when spatial data and education level are taken into account. In addition, it showed that functional illiteracy is more concentrated in southern regions, in the youth (9-24) and older (65+) classes. Furthermore, it was found that the youth classes weigh as much as 46.2 percent of the total functional illiterates and the older classes (50-64) 38.4 percent. These latter features of the phenomenon, which were partially grasped as early as the 1991 census statistics, are indicative of a persistent deficit in our education system that can now be monitored in a timely manner through the annual data provided by the permanent censuses, also using a symptomatic indicator of school inefficiency proposed in this research.



## BIBLIOGRAPHY

1. De Bartolo G., Elementi di analisi demografica e demografia applicata, Centro Editoriale e Librario, Università della Calabria, 1997.
2. De Mauro T., *Idee per il Governo. La scuola*, Bari, Laterza, 1995.
3. Di Francesco G., Amendola M., Mineo S., *The low skilled in Italy. Evidenza dall'indagine sulle competenze degli adulti*, Osservatorio Istat, n. 1-2, 2016, pp. 53-67.
4. Dupâquier J. et M., *Histoire de la Démographie*, Perrin, Paris, 1985.
5. Genovesi G., *Storia della scuola in Italia dal Settecento ad oggi*, Laterza, 2010.
6. Invalsi Open 4/12/2020: <https://www.invalsiopen.it/competenze-adulti-indagine-ocse-piaac/>.
7. Istat, *L'Italia in 150 anni. Sommario di statistiche storiche 1861-2010*, anno 2011.
8. Istat, *Diseguaglianze nella speranza di vita per livello d'istruzione*, aprile 2016.
9. Istat, *Diseguaglianze nella speranza di vita per livello d'istruzione*, giugno 2017.
10. Istat, *Diseguaglianze regionali nella speranza di vita per livello d'istruzione*, aprile 2018.
11. Istat, *Tavole regionali di mortalità per genere e livello d'istruzione*, 2018.
12. James K.S., Skirbekk V., Van Bavel J., *Education and the Global Fertility Transition*, Vienna Yearbook of Population Research 2012, (Vol. 10).
13. Kuhn M., Prskawetz A. and Sunde U. (Guest Editors), Health, education and retirement over the prolonged life cycle, Vienna Yearbook of Population Research 2014, (Vol. 12).
14. Lutz W., *Education will be at the heart of 21st century demography*, Vienna Yearbook of Population Research 2010, (Vol. 8), pp. 9-16.
15. Pezzulli S., Lombardo, E., L'analfabetismo giovanile alla luce dell'ultimo censimento della popolazione. Un indicatore globale dell'efficienza scolastica?, CADMO, n. 9, Dicembre 1995, pp. 15-28.
16. Samir K.C, Lentzner H., *The effect of education on adult mortality and disability: a global perspective*, Vienna Yearbook of Population Research 2010, (Vol. 8), pp. 201-236.
17. Schettini B., Tanti analfabetismi anche oggi, INDIRE, 19 luglio 2005.
18. Trebisacce G., *Scuola e Mezzogiorno in 150 anni di storia unitaria*, in F. Cambi and G. Trebisacce (a cura di), I 150 anni dell'Italia unita. Per un bilancio pedagogico, ETS, Pisa, 2012, pp. 219-231.
19. Vågölgyi R., Coldea, A., Dresler Th., Schrader J., Nuerk, H. C., *A Review about Functional Illiteracy: Definition, Cognitive, Linguistic, and Numerical Aspects*, Frontiers in Psychology, Vol. 7, Nov. 2016, pp. 113.
20. Wunsch G. J and Termote M. G., Introduction to Demographic Analysis, Plenum Press, 1978, pp. 53-60.



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# The Effect of Entrepreneurial Orientation on Entrepreneurial Intention

By Mohamed Abo Zaid, Dr. Shymaa Farid, Mohamed A. Ragheb  
& Prof. Dr. Alaa El-Gharbawy

*Alexandria University*

**Abstract- Objective:** This study aims to investigate the influence of entrepreneurial orientation (innovativeness, pro-activeness, and risk-taking) on entrepreneurial intention through the mediating variables of family business involvement, personal attitudes, social norms, and perceived behavioral control.

**Design/methodology/approach:** Primary data were collected using questionnaires. This study analyzed 445 valid responses from Egyptian enterprises. The hypotheses were analyzed through correlation and structural equation modeling.

**Findings:** The results of the analysis fully support the relationship between entrepreneurial orientation and personal attitude, family business involvement and entrepreneurial intention, personal attitude and entrepreneurial intention, and social norms and entrepreneurial intention. In addition, the results partially support the relationship between entrepreneurial orientation, family business involvement, social norms, perceived behavioral control, and between entrepreneurial orientation and intention.

**Keywords:** *entrepreneurial orientation, entrepreneurial intention, family business involvement, personal attitude, social norm, perceived behavioral control.*

**GJMBR-B Classification:** LCC Code: HB615



*Strictly as per the compliance and regulations of:*



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Mohamed Abo Zaid <sup>α</sup>, Dr. Shymaa Farid <sup>σ</sup>, Mohamed A. Ragheb <sup>ρ</sup> & Prof. Dr. Alaa El-Gharbawy <sup>ω</sup>

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**Implications:** The findings suggest that fostering these traits can significantly boost entrepreneurial intentions. Policymakers and educators should focus on promoting these qualities to strengthen the entrepreneurial ecosystem.

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**Ethical Compliance:** All procedures performed in studies involving human participants followed the ethical standards of the institutional and national research committee and with the Arab Academy for Science, Technology, and Maritime Transport (AASTMT) and its later amendments or comparable ethical standards.

**Plain Language Summary:** This paper used proofreading techniques to ensure clarity of the text, which in turn provided clarity regarding the topic of the paper. Grammarly was also

used to refine grammar, spelling, and style, enhancing the overall quality of writing.

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## 1. INTRODUCTION

Entrepreneurship is expected to play a significant role in propelling economic growth in an unsteady industrial world. Entrepreneurship fosters knowledge sharing, the creation of new jobs, the provision of a wide range of innovative goods and services, and a rise in market competition (Selim, 2021). Therefore, investing in the education, coaching, and training of aspiring entrepreneurs is essential for fostering sustainable community development, job creation, and economic progress (Galvão et al., 2020). Similarly, young people are always interested in entrepreneurship as a professional path, but they still want education and practical skills to assist them in preparing for any obstacle (Efrata et al., 2021).

Advancements in technology, operations, and regulations impact corporate growth and competitiveness (Kubitsky et al., 2024). Entrepreneurial Orientation, in particular, continues to find family-owned enterprises desirable, despite these shifts both domestically and internationally (Upadhyay et al., 2023). The impact of family company engagement on entrepreneurial inclinations has been the subject of several studies, as it is referred to as the nursery for future entrepreneurs (Wang et al., 2018). Arzubiyaga et al. (2018) confirmed that the link between entrepreneurial orientation (EO) and performance is stronger in firms with lower levels of family involvement and higher levels of gender diversity by collecting data from 230 family firms in Spain using a questionnaire. Glowka et al. (2021) proved that CEO tenure and family involvement in Austrian Small and Medium Family Enterprises significantly mediate the relationship between risk management and performance. Similarly, Kalali (2022) found that long-term orientation positively influenced innovativeness and proactiveness, but negatively affected risk-taking, suggesting that a long-term perspective benefits EO in family businesses from a stewardship standpoint in Iran's science and technology parks. However, Dos Santos et al. (2022) proved EO's impact on family involvement through a literature review.

Author <sup>σ</sup>: e-mail: S.farid@dau.edu.sa

Author <sup>ρ</sup>: Dean of Cardiff Programs, AAST.

e-mail: raghebmm@aast.edu

Author <sup>ω</sup>: Professor of Marketing, Alexandria University.

Moreno-Menéndez et al. (2022) examined whether family enterprises' EO remains unaltered, strengthens, or diminishes following a crisis. Based on an evaluation of a database of 151 family businesses gathered between 2004 and 2017, the findings show that compared to enterprises with higher pre-crisis EO levels, those with lower levels had greater growth post-crisis. In contrast to the latter group, the former could sustain pre-crisis levels, even after the crisis. Similarly, Jovic et al. (2023) discovered support for the mediated model, with the underlying characteristics of families varying in their effect on EO, which in turn influences a range of innovative outcomes, using a worldwide sample of family enterprises. Moreover, Keen et al. (2024) proved that family businesses with greater levels of entrepreneurship are more likely to recognize and seize international business prospects. The moderating influence of family social suggests that this relational family-specific asset promotes organizational performance and stability. In a similar context, Sultan et al. (2024) show that the performance of Palestinian family owned enterprises in 2022 is significantly improved by risk-taking, inventiveness, and pro activeness.

Other important factors that could affect entrepreneurial intention are personal attitude, social norms, and perceived behavioral control (Dinc and Budic, 2016). Several previous literature discussed the relationship between these variables in different contexts. Ekpe and Mat (2012) collected the primary data by surveying female students in the final year of three University Business Schools in Nigeria. The results indicate a significant positive relationship between EO and social norms, besides, the significance of social norms as moderators in this relationship. Conversely, Awang et al. (2016) proved that proactive personality and risk-taking have a significant impact on PBC and social norms among students at a public university in Malaysia. The results also showed that PBC and social norms can be used as moderators in the relationship between EO and EI. The survey conducted by Munir et al. (2019), to collect data from seven universities in China and nine universities in Pakistan, showed that the effect of TPB was positive in both countries. The results also showed a stronger influence of personality traits (risk-taking propensity, proactive personality, and internal locus of control) among Chinese students when personality traits were used as antecedents of TPB. Finally, the results proved that personality traits significantly impact entrepreneurial behavior.

Zollo et al. (2021) indicated that Entrepreneurial passion is a substantial predictor of EO, which has a considerable effect on strategic entrepreneurship behavior. Furthermore, entrepreneurs' linear thinking style moderates the association between EO and strategic entrepreneurship behavior, but not the link between passion and EO. However, a nonlinear thinking style positively moderates the association between

passion and EO, but not between EO and strategic entrepreneurship activity. Similarly, Hwang et al. (2021) highlighted the significant positive effect of innovativeness on personal attitudes within the context of 321 food delivery service companies in Korea. By conducting a quantitative method, with questionnaires distributed to five universities in Indonesia, Bagis (2022) proved that a spiritual workplace might counter-productively regulate students' intentions to develop EO. Subjective standards appear to have the most significant impact on students' intentions. Furthermore, Perez et al. (2024) demonstrated that innovativeness, proactivity, and risk-taking were fostered by entrepreneurship education programs among 1,423 undergraduate students from Ecuador and Colombia.

Regarding the relationship between Family Involvement and Entrepreneurial Intentions, Wang et al. (2018) gathered secondary data from business family offspring businesses in China in 2010. The findings supported that perceived parental entrepreneurial rewards are positively related to EI, and this relationship is partially mediated by entrepreneurial self-efficacy and family business involvement weakens the positive impact of perceived parental entrepreneurial rewards on entrepreneurial intentions but strengthens the effect of entrepreneurial self-efficacy. On the contrary, Zaman et al. (2020) claim that family business involvement did not have a direct effect on EI by surveying 367 university students in Pakistan. Still, it had an indirect effect through the full mediating role of institutional forces between them.

Using the idea of planned behavior, Onjewu et al. (2022) analyzed several variables of family exposure on entrepreneurial implementation intention in Nigeria. Data were collected from five public Nigerian universities. The findings indicate that entrepreneurial exposure in the form of parents, family members, and job engagement has different and significant effects on implementation intention, to the degree that entrepreneurial self-efficacy, attitudes, and subjective norms are differentially influenced. Similarly, Xu et al. (2023) collected data from 202 business oriented students at a prominent institution in eastern China. Affective family-work enrichment is favorably associated with EI through the mediating influence of ESE. Individuals with lower degrees of work-home segmentation preferences have a substantially stronger link. Similarly, Chaudhuri et al. (2023) found that gender moderated the association between government assistance, technology use, and EI in family businesses by incorporating both the resource-based perspective and the dynamic capability view theory, as well as the literature on family business entrepreneurship.

Over the last decade, female entrepreneurship played an important role in economic growth. In this regard, Dinc and Budic (2016) showed a positive impact of perceived behavioral control and personal attitude on

EI of women in the Federation of Bosnia and Herzegovina by distributing a questionnaire to two large cities in Bosnia. By collecting the primary data using a questionnaire of participants from the region of Catalonia in northeastern Spain, Miralles et al. (2017) showed a positive relationship between entrepreneurial behavior and EI, but only when the individual's age was considered. Saeed et al. (2019) showed that both PBC and social norms had a statistically significant relationship with EI among undergraduate students in Yemen, however, Personal attitude had no significant relationship with entrepreneurial intention. Additionally, EI has a strong positive correlation with PA, PBC, and social norms. Similarly, Al-Jubari et al. (2019) investigated the relationship between entrepreneurial behavior (PA, social norms, and PBC) and EI by gathering primary data from 600 students from four public Malaysian universities. The findings show a significant relationship between entrepreneurial behavior and entrepreneurial intention. The findings also show that both TPB and SDT provide complementary explanations for entrepreneurial motivational processes.

Moreover, Gieure et al. (2020) gathered primary data by distributing questionnaires among 74 universities in 34 countries for fourth-year students with a master's degree in business and management. The results proved that there is a significant relationship between entrepreneurial behavior (PA and social norms) and EI. These results were consistent with the results of Jena (2020) which confirmed that PA has a positive effect on EI in 509 business management students in the higher education sector in India. Similarly, Zovko et al. (2020) surveyed 160 students at the Faculty of Economics, Business, and Tourism, University of Split, Croatia. The results showed that attitudes had a positive effect on EI. However, behavioral control and social norms failed to produce a significant effect on EI. Regarding university students in Indonesia, Kusumawardhany and Dwiarta (2020) proved that PA had a positive effect on EI examined the impact of PA on EI. Additionally, Cynthia et al. (2020) revealed that PBC has a substantial influence on the intention to become an entrepreneur at selected postsecondary institutions in Kogi. Vamvaka et al. (2020), on the contrary, proved the link between attitude, perceived behavioral control, and EI using a cross-sectional investigation included 441 Greek tertiary education undergraduate computer technology students. The same results were concluded by Tausif et al. (2021) by conducting a comparative study between two countries: Saudi Arabia and India. The findings showed that attitude and PBC had a significant effect on EI in both countries. However, social norms were significant in explaining EI only in India.

Previous literature focused also on the relationship between entrepreneurial orientation and entrepreneurial intention. Mandongwe and Jaravaza

(2020) show that innovativeness and risk taking have a significant relationship with EI by distributing questionnaires to prospective women entrepreneurs in the rural markets of Manicaland Province, Zimbabwe. However, there was no significant relationship between pro-activeness and EI. Additionally, Wathanakom et al. (2020) confirmed that innovativeness can effectively predict EI among undergraduate students, by conducting a survey targeting 330 undergraduate students from public universities. In the same context, Chafloque-Cespedes et al. (2021) revealed that variables such as the entrepreneur's position, employment status, country, and gender significantly moderated the relationship between entrepreneurial attitude and EI among university students from Latin American business schools using an inductive quantitative method via questionnaires.

In the Egyptian context, Hassan et al. (2021) confirm that entrepreneurship education promotes both individual EO and entrepreneurial motives, as well as has a favorable relationship with EI. Additionally, Efrata et al. (2021) surveyed 255 management and university business students who completed an entrepreneurship education program. The results found that only innovativeness significantly predicted EI, whereas personal pro-activeness and risk-taking showed no significant impact. However, Twum et al. (2021) conducted a study investigated how Entrepreneurial Orientation (EO) dimensions (innovativeness, pro-activeness, and risk-taking) affect Entrepreneurial Intention (EI) among students from private and public universities in Ghana. Using data collected through an online survey of 720 participants, they found significant influences of all three EO dimensions on EI. Singh and Mehdi (2022) surveyed students studying entrepreneurship in northern Indian academic institutions. The research focused on the interaction between openness to experience and EO, demonstrating significant impacts on EI.

Despite extensive research on the impact of entrepreneurial orientation on business outcomes, there is a notable gap in evaluating the relationship between Entrepreneurial Orientation elements on Entrepreneurial Intention through Family Business Involvement, Personal Attitude, Social Norms, and Perceived Behavioral Control in Egypt, as there is no model found to study these variables together in the previous studies. Therefore, the current study addresses these gaps by examining these relationships and mediations, focusing on how innovativeness, pro-activeness, and risk-taking influence these variables. The objectives include providing insights and recommendations for policy-makers and educators to foster a robust entrepreneurial ecosystem in Egypt. Additionally, this study presents a comprehensive study of a group of the most important variables that affect the field of family business in Egypt, which has a great impact on the development of this

sector in the Egyptian economy, as no previous study has examined these variables in the Arab Republic of Egypt.

## II. METHODS

The methodology of this study depends on positivism philosophy because positivism is based on evaluating assumed causal relationships in phenomena and utilizes a deductive method of research design. The main processes are precisely depicted in the observation and experimentation stages, followed by the formulation of hypotheses regarding various relationships. Accordingly, quantitative approaches are widely used in research. This technique uses numerical data collection and analysis to quantify relationships, patterns, and trends. Statistical techniques are often

The current research conceptual framework is illustrated in Figure 1,

used to analyze data and draw conclusions. Collecting original data directly from the source is known as primary data collection. Surveys are often used to gather information from a large group of respondents (Smith, 2018). Therefore, quantitative data were collected through questionnaires to test the impact of innovativeness, pro-activeness, risk-taking and family business involvement, personal attitude, social norms, and perceived behavioral control on entrepreneurial intention as follows:

*Dependent variable:* Entrepreneurial Intention.

*Independent variable:* Entrepreneurial Orientation Dimensions.

*Mediator:* Family Business Involvement, Personal Attitude, Social Norm and Perceived Behavioral Control.

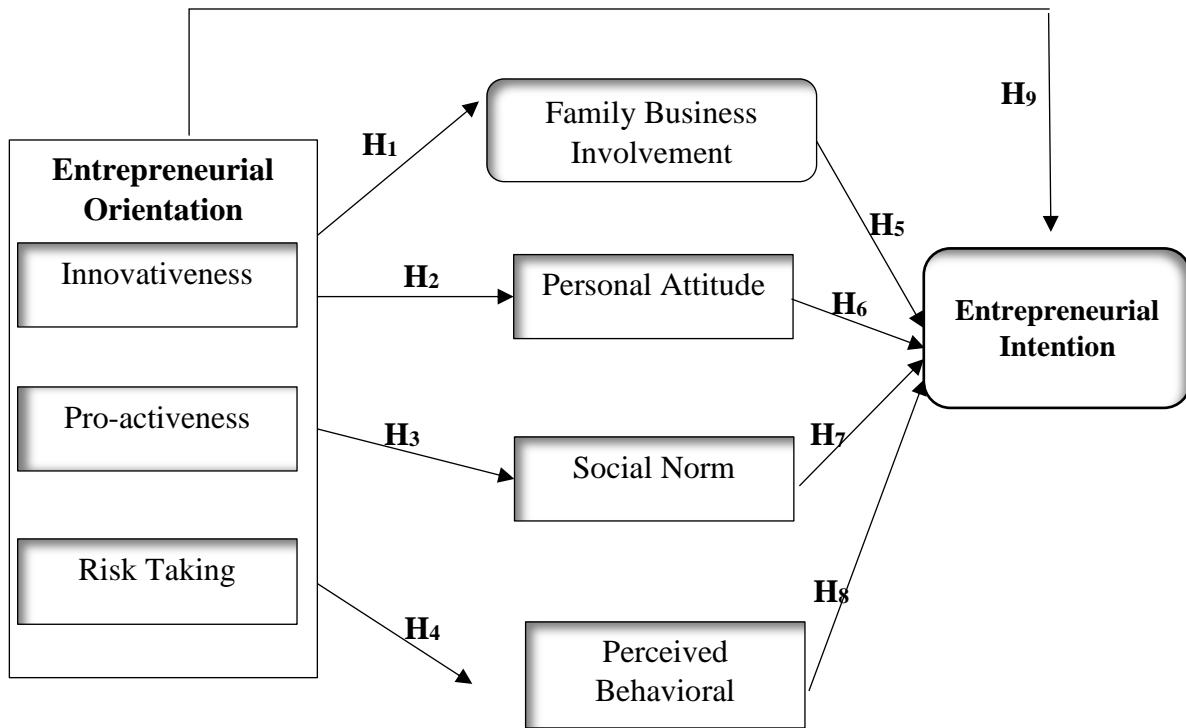


Figure 1: Research Framework

According to Figure 1, the research hypotheses are stated as follows:

*H1:* There is a significant relationship between Entrepreneurial Orientation and Family Business Involvement.

*H2:* There is a significant relationship between Entrepreneurial Orientation and Personal Attitude.

*H3:* There is a significant relationship between Entrepreneurial Orientation and Social Norm.

*H4:* There is a significant relationship between Entrepreneurial Orientation and Perceived Behavioral Control.

*H5:* There is a significant relationship between Family Business Involvement and Entrepreneurial Intention.

*H6:* There is a significant relationship between Personal Attitude and Entrepreneurial Intention.

*H7:* There is a significant relationship between Social Norm and Entrepreneurial Intention.

*H8:* There is a significant relationship between Perceived Behavioral Control and Entrepreneurial Intention.

*H9:* There is a significant relationship between Entrepreneurial Orientation and Entrepreneurial Intention.

H10: Family Business Involvement significantly mediates the relationship between Entrepreneurial Orientation and Entrepreneurial Intention.

H11: Personal Attitude significantly mediates the relationship between Entrepreneurial Orientation and Entrepreneurial Intention.

H12: Social Norm significantly mediates the relationship between Entrepreneurial Orientation and Entrepreneurial Intention.

H13: Perceived Behavior Control significantly mediates the relationship between Entrepreneurial Orientation and Entrepreneurial Intention.

According to the above research framework and hypotheses, the research variables were measured according to a questionnaire adopted from the studies of Miralles et al. (2016), Hooi et al. (2016), and Wang et al. (2018), using a 5-point Likert scale, where participants were asked to rate their agreement or disagreement with each statement using a five-point scale, as shown in Table 1.

Table 1: Research Variables Operationalization

Conceptual Definition	Operational Definition	Statements
<b>Innovativeness (Hooi et al., 2016)</b>		
The capacity of a company to promote novel concepts, try new things, launch novel goods, and engage in creative processes is referred to as innovative-ness (Hernández-Perlines et al., 2020).	It is measured by the levels of development in the company's products and services, as well as the levels of R&D and technology leadership within it.	My company has many new lines of products or services.
		My company changes in product or service lines have usually been quite dramatic.
		My company strong emphasis on R&D, technological leadership, and innovations.
<b>Pro-activeness (Hooi et al., 2016)</b>		
It is the capacity of businesses to devote resources to the introduction of new goods and services before rivals (Hernández-Perlines et al., 2020).	It is measured by the company's priority in introducing new products /services, management methods, and operating technologies, to ensure the company's competitive-ness.	My company is often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
		My company typically adopts a very competitive, "undo-the competitors" posture.
<b>Risk taking (Hooi et al., 2016)</b>		
Risk-taking entails the development of audacious acts employing significant resources that are most suitable (Hernández Perlines et al., 2020).	It is measured by how a company engages in new projects and bold, large-scale decisions in order to achieve its goals	My company has a strong proclivity for high-risk projects (with chances of very high returns).
		My company believes that, owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.
<b>Conceptual Definition</b>	<b>Operational Definition</b>	<b>Statements</b>
		My company typically adopts a bold, aggressive posture to maximize the probability of exploiting potential opportunities.
<b>Family Business Involvement (Wang et al., 2018)</b>		
In these studies, family involvement in the company is	It is measured by the levels of involvement of family	My family used to take me to work with them.





<p>defined in terms of ownership (e.g., the proportion of family stock), governance (e.g., family members on the board of directors), management (e.g., a family member serving as CEO), and succession (e.g., the number of generations of family members working for the company) (Garcia-Castro and Aguilera, 2014).</p>	<p>members of company owners in managing the company and making decisions.</p>	<p>My family used to take me to business meetings.</p>
		<p>My family used to teach me about managing a business.</p>
		<p>My family used to discuss work/business with me.</p>
		<p>My family used to encourage me to get to know their employees and partners.</p>
<p><b>Personal Attitude (Miralles et al., 2016)</b></p>		
<p>Before making choices that have an impact on one's behavior, people have attitudes regarding the world around them and the situation they find themselves in. People's attitudes are essentially shaped by their underlying values and beliefs (Yildiz et al., 2022).</p>	<p>It is measured by the attitude of the businessman towards their work.</p>	<p>Being an entrepreneur implies more advantages than disadvantages to me</p>
		<p>A career as entrepreneur is attractive for me</p>
		<p>Among various options, I would rather be an entrepreneur</p>
<p><b>Social Norm (Miralles et al., 2016)</b></p>		
<p>Social norms are accepted standards of conduct among various social groupings. Both explicit</p>	<p>It is measured by the levels of support for entrepreneurship initiatives in your close</p>	<p>I perceive support for entrepreneurial initiatives in your close environment from your close family</p>
<p><b>Conceptual Definition</b></p>	<p><b>Operational Definition</b></p>	<p><b>Statements</b></p>
<p>rules and laws as well as informal understandings that direct social conduct are examples of social norms (Sinclair and Agerström, 2023).</p>	<p>environment of close family, friends, and colleagues.</p>	<p>I perceive support for entrepreneurial initiatives in your close environment from your friends</p>
		<p>I perceive support for entrepreneurial initiatives in your close environment from your colleagues</p>
		<p>I perceive a positive perception towards entrepreneurial initiatives in your close environment from your close family</p>
		<p>I perceive a positive perception towards entrepreneurial initiatives in your close environment from your friends</p>
		<p>I perceive a positive perception towards entrepreneurial initiatives in your close environment from your colleagues</p>
<p><b>Perceived Behavioral Control (Miralles et al., 2016)</b></p>		
<p>A person's expectation that he or she has control over how an</p>	<p>It is measured by the level of awareness of the processes</p>	<p>I can control the creation process of a new firm</p>

action is performed is known as perceived behavioral control. Three factors affect intentions in different ways (Hagger et al., 2022).	necessary to start and develop a company, and its success rates.	I know the necessary practical details to start a firm
		I know how to develop an entrepreneurial project
		If I tried to start a firm, I would have a high probability of succeeding.
		I can control the creation process of a new firm
<b>Entrepreneurial Intention (Miralles et al., 2016)</b>		
Entrepreneurial intents may be characterized as a	It is measured by entrepreneurs' intentions to	I intend to start a business in the future.
<b>Conceptual Definition</b>	<b>Operational Definition</b>	<b>Statements</b>
desire to start a firm or work for oneself. As personal inclinations that might result in the formation of businesses, entrepreneurial intents are also taken into consideration (Halizah and Mardikaningsih, 2022).	start a new business, their levels of development in the field of entrepreneurship.	I am obtaining the knowledge and skills needed to start a business.
		I am considering a business plan.

Regarding the study population, the researcher targeted Egyptian enterprises, where the sample size was chosen according to the Saunders equation. The Saunders equation depends on a 95% confidence level, in which the sample size should not be less than 385 respondents (Saunders et al., 2016). After developing the questionnaire, 800 questionnaires were distributed, and 520 respondents received a response rate of 65%. From the collected responses, only 445 completed questionnaires were valid for the analysis.

### III. RESULTS AND FINDINGS

The current section presents the empirical analysis and its main findings, which are presented in the following six sub-sections:

#### a) Validity and Reliability Analysis

In the examination of the validity of this research, two pivotal metrics were considered. The first metric, Average Variance Extracted (AVE), serves as an indicator of the average shared variance among the latent factors. Meeting or exceeding the 0.5 threshold in AVE is considered acceptable validity (Hair et al., 2016). The second metric involves examining the factor loadings, with a minimum requirement of 0.4 or higher for adequate validity (Yong and Pearce, 2013). Conversely, the assessment of reliability relies on the

evaluation of the stability and consistency of each factor by the application of Cronbach's alpha. Falling within a scale of 0 to 1, higher Cronbach's alpha coefficients signify a greater degree of reliability, with coefficients equal to or exceeding 0.7 indicating satisfactory reliability (Taber, 2018).

Table 2 illustrates the validity and reliability tests conducted for the research variables. According to the results, the research variables (innovativeness, proactiveness, risk-taking, family business involvement, personal attitude, social norm, perceived behavioral control, and entrepreneurial intention) were demonstrated to be valid, as the AVE values were above 50% (85.161, 87.097, 84.428, 84.989, 86.293, 82.402, 85.198, and 84.798 respectively). Regarding the KMO values are higher than 0.4 (0.759, 0.500, 0.757, 0.920, 0.761, 0.941, 0.870, and 0.756 respectively). Furthermore, the research variables were reliable as Cronbach's Alpha value exceeded 0.7 indicating satisfactory reliability (0.913, 0.852, 0.908, 0.956, 0.920, 0.957, 0.942, 0.910 respectively).



Table 2: Reliability and Validity Table

Variables	KMO	AVE %	Cronbach's $\alpha$	Items	Factor Loading
Innovativeness	.759	85.161	.913	INN1	.849
				INN2	.852
				INN3	.854
Pro-activeness	.500	87.097	.852	PAC1	.871
				PAC2	.871
Risk-taking	.757	84.428	.908	RT1	.841
				RT2	.851
				RT3	.841
Family Business Involvement	.920	84.989	.956	FBIN1	.858
				FBIN2	.836
				FBIN3	.850
				FBIN4	.846
				FBIN5	.860
Personal Attitude	.761	86.293	.920	PAT1	.876
				PAT2	.859
				PAT3	.854
Social Norm	.941	82.402	.957	SN1	.825
				SN2	.809
				SN3	.837
				SN4	.833
				SN5	.815
				SN6	.825
Perceived Behavioral Control	.870	85.198	.942	PBC1	.851
				PBC2	.854
				PBC3	.847
				PBC4	.856
Entrepreneurial Intention	.756	84.798	.910	EIN1	.845
				EIN2	.864
				EIN3	.835

Figure 2 shows the Average Variance Extracted (AVE) percentage of all research variables. As mentioned before, all the AVEs are more than 50% and are considered to have acceptable validity.

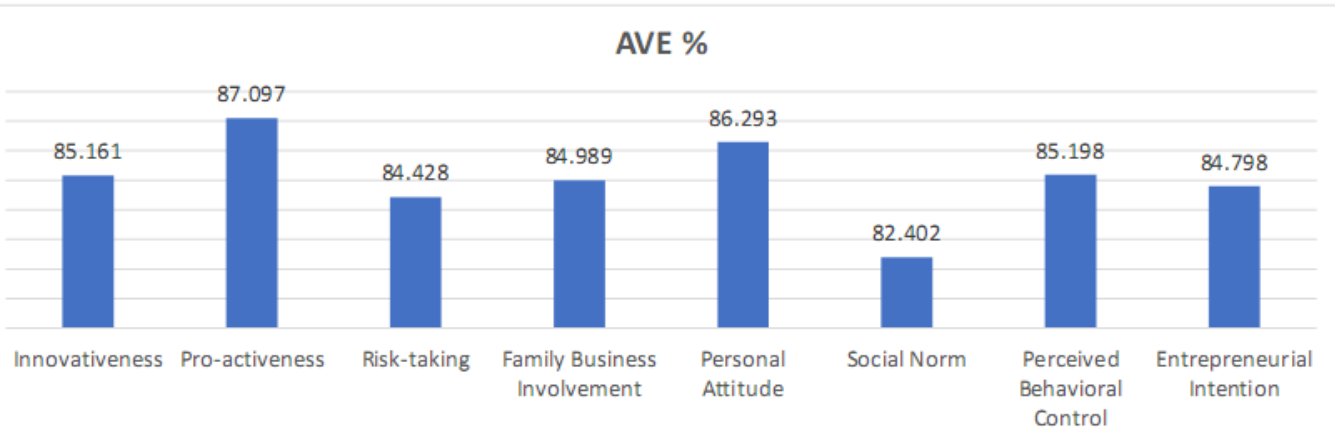


Figure 2: Average Variance Extracted Percentage of the Research Variables

b) *Confirmatory Factor Analysis*

Confirmatory Factor Analysis (CFA) precedes the application of structural equation modeling (SEM), it is executed using AMOS 24 software, utilizing the Maximum Likelihood (ML) estimation method to determine factor loadings and assess the overall model fit. The fit indices provide a comprehensive assessment of how well the measurement model aligns with the observed data. The Chi-square/df ratio of 1.106 indicates that the model fits the data reasonably well, especially considering that values close to 1 are desirable. The associated p-value of 0.000 suggests that the model's fit is statistically significant. The Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) both exceeded 0.90, demonstrating that the model fits the data well, with a GFI of 0.944 and an AGFI of 0.930. These indices measure the proportion of variance in the observed data accounted for by a model.

The Normed Fit Index (NFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) values, all above 0.90, signify excellent fit. These indices assessed how well the model reproduced the observed covariance structure, with NFI = 0.975, TLI = 0.997, and CFI = 0.998. The Root Mean Square Residual (RMR) of 0.020 indicates a small discrepancy between the observed and predicted covariance matrices, supporting the overall accuracy of the model. The Root Mean Square Error of Approximation (RMSEA) of 0.015, falling below the commonly accepted threshold of 0.05, indicates a close fit of the model to the population covariance matrix. In summary, these fit indices collectively suggest that the measurement model is well-suited to the observed data, demonstrating good overall fit, statistical significance, and accurate reproduction of the covariance structure, Table 3 in this study provides detailed insights.

Table 3: Thresholds and Fit Indices for the Measurement Model

Measure	Results	Threshold
Chi-square/df	1.106	< 2 excellent; < 3 good; < 5 sometimes permissible
P-value	0.000	> 0.05
GFI	0.944	> 0.90
AGFI	0.930	> 0.90
NFI	0.975	> 0.90
TLI	0.997	> 0.95
CFI	0.998	> 0.90
RMR	0.020	< 0.08
RMSEA	0.015	< 0.05

Figure 3 shows the results of the Fit Indices for the Measurement Model, indicating that the measure-

ment model is well-suited to the observed data, demonstrating good overall.

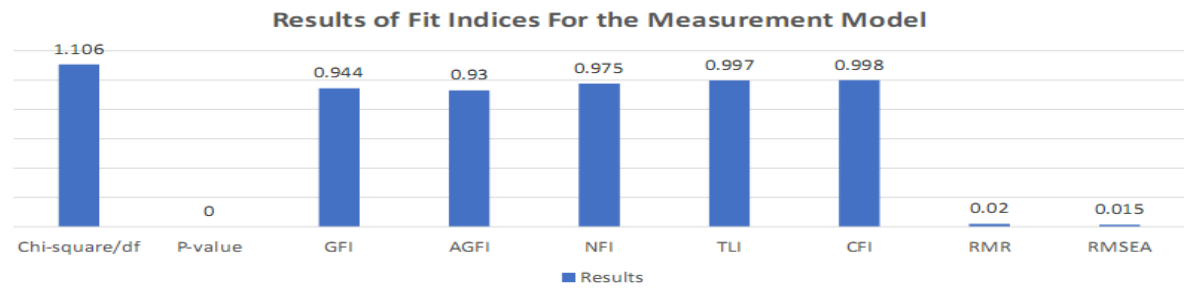


Figure 3: The Results of Fit Indices for the Measurement Model

Figure 4 illustrates the execution of the confirmatory factor analysis, portraying the factor loadings through prominent arrows. The arrows signify

strong factor loadings, with values exceeding the 0.4 threshold.

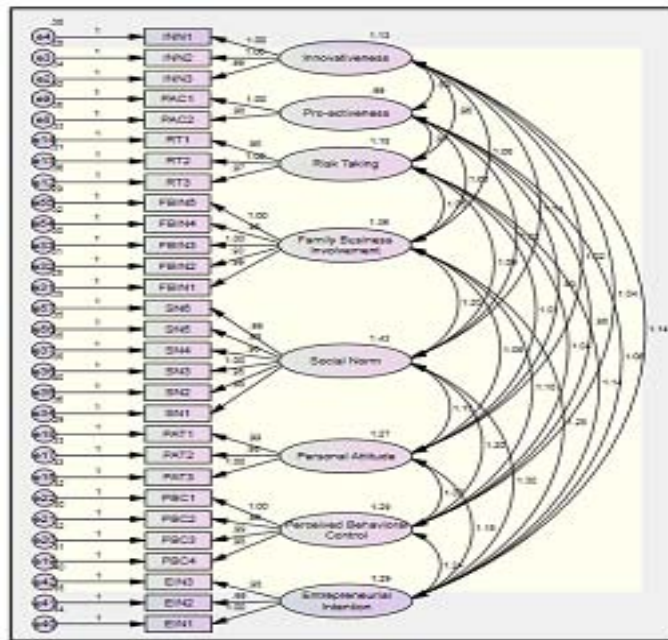


Figure 4: CFA for the Measurement Model

c) Descriptive Analysis

Descriptive statistics is a tool that clarifies and provides a clear overview of the characteristics of a particular data collection by providing concise summaries of the samples and information on how to quantify the data (Vetter, 2017). This section presents a descriptive analysis of the respondents' profiles and research variables.

i. Descriptive Analysis of Respondent Profile

The respondent profile provided valuable insights into the demographics and characteristics of the study participants (Table 5). The respondent profile provides insights into key demographic characteristics, with the results sorted from high to low percentages. In terms of company age, the majority of respondents had a business tenure of five to less than 10 years (42.7%), followed by 15 years or more (18.9%). The largest

proportion of business volume operates in large companies (44.9%), followed by medium (37.3%), and small companies (17.8%). Employee count revealed a distribution with 1000 - Less than 3000 employees being the most dominant (41.3%), followed by Less than 1000 employees (18.7%).

In terms of age distribution, the largest group falls within the 40-less than 50 age range (32.4%), followed by 22-less than 30 (19.6%), and 50-less than 60 (19.6%). The gender distribution indicates a higher percentage of male respondents (58.0%) than female respondents (42.0%). In terms of education, a significant percentage held a bachelor's degree (49.7%), followed by a master's degree (32.1%), while individuals with a doctoral degree constituted a smaller proportion (7.0%). Those with "other" educational backgrounds comprised 11.2% of the respondents.

Table 4: Respondent Profile

	Frequency (n=445)	Percent %
<b>Company Age</b>		
Less than one year	38	8.5
One – less than Five years	91	20.4
Five – less than 10 years	190	42.7
10 – less than 15 years	42	9.4
15 years or more	84	18.9
<b>Business Volume</b>		
Small	79	17.8
Medium	166	37.3
Large	200	44.9
<b>Employee Count</b>		
Less than 1000	83	18.7
1000 – Less than 3000	184	41.3
3000 – Less than 5000	92	20.7
5000 – Less than 10000	56	12.6
10000 or more	30	6.7
<b>Age</b>		
22 - Less than 30	87	19.6
30- Less than 40	83	18.7
40- Less than 50	144	32.4
50- Less than 60	87	19.6
60 or older	44	9.9
<b>Gender</b>		
Male	258	58.0
	<b>Frequency (n=445)</b>	<b>Percent %</b>
Female	187	42.0
<b>Education</b>		
Bachelor's degree	221	49.7
Master's degree	143	32.1
Doctorate degree	31	7.0
Other	50	11.2

ii. *Descriptive Analysis of Research Variables*

The descriptive results for the research variable offer valuable insights into the central tendencies and variations within the dataset, as shown in Table 6. For "innovativeness" the mean was 3.0854, with a standard deviation of 1.20318. "Pro-activeness" has a mean of 3.1551 and a standard deviation of 1.13731. Similarly, "Risk-taking" had a mean of 3.1236, with a standard deviation of 1.14903. "Family Business Involvement" has

a mean of 3.3079 and a standard deviation of 1.30213. "Personal Attitude" shows a mean of 2.9933 with a standard deviation of 1.21827, while "Social Norm" had a mean of 3.0854 and a standard deviation of 1.31069. "Perceived Behavioral Control" has a mean of 2.9910 and a standard deviation of 1.27869. Lastly, "Entrepreneurial Intention" has a mean of 3.4584 with a standard deviation of 1.21411.

Table 5: Descriptive Analysis for the Research Variables

Research Variable	N	Mean	Std. Deviation	Frequency				
				1	2	3	4	5
Innovativeness	445	3.0854	1.20318	60	79	114	147	45
Pro-activeness	445	3.1551	1.13731	48	73	127	156	41
Risk-taking	445	3.1236	1.14903	47	84	125	145	44
Family Business Involvement	445	3.3079	1.30213	51	88	67	151	88
Personal Attitude	445	2.9933	1.21827	67	84	125	123	46
Social Norm	445	3.0854	1.31069	58	115	78	119	75
Perceived Behavioral Control	445	2.9910	1.27869	74	96	82	146	47
Entrepreneurial Intention	445	3.4584	1.21411	13	121	72	127	112

Figure 5 shows the descriptive statistics for the research variables, represented as mean and standard deviation.

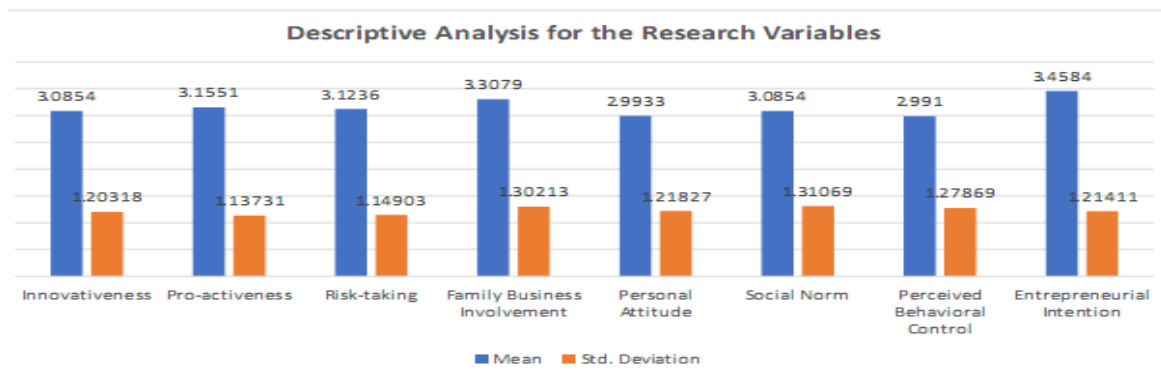


Figure 5: Descriptive Statistics for the Research Variables

d) *Normality Testing for the Research Variables*

Confirming the normality of the data is a prerequisite before conducting inferential analyses, influencing the choice between parametric and non-parametric tests for hypothesis testing (Demir, 2022). A

widely employed method for assessing normality is the Kolmogorov-Smirnov test, which is especially suited for sample sizes exceeding 50 observations in Table 6. A P-value surpassing the 0.05 threshold indicates the dataset conforms to a normal distribution. This

meticulous evaluation of normalcy is a key aspect of the research process, steering the selection of appropriate

statistical tests for hypothesis testing, thereby fortifying the reliability and validity of the research outcomes.

Table 6: Formal Testing of Normality

Research Variables	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	Df	Sig.
Innovativeness	.208	445	.000
Pro-activeness	.214	445	.000
Risk-taking	.202	445	.000
Family Business Involvement	.240	445	.000
Personal Attitude	.175	445	.000
Social Norm	.193	445	.000
Perceived Behavioral Control	.219	445	.000
Entrepreneurial Intention	.209	445	.000

Given the outcomes of the formal tests signaling a departure from a normal distribution in the dataset in Table 7, a supplementary informal assessment was employed to gauge the data's approximate normality. As illustrated in Table 7, this informal

evaluation revealed that both the skewness and kurtosis values exceeded the acceptable range of ±1. Consequently, non-parametric tests are considered appropriate for elucidating the relationships among the research variables.

Table 1: Informal Testing of Normality

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Innovativeness	445	-.282	.116	-.894	.231
Pro-activeness	445	-.372	.116	-.674	.231
Risk-taking	445	-.270	.116	-.767	.231
Family Business Involvement	445	-.358	.116	-1.066	.231
Personal Attitude	445	-.145	.116	-.936	.231
Social Norm	445	-.056	.116	-1.204	.231
Perceived Behavioral Control	445	-.158	.116	-1.165	.231
Entrepreneurial Intention	445	-.183	.116	-1.267	.231

e) Testing Multicollinearity Assumption

The examination of Variance Inflation Factors (VIFs), detailed in Table 8, for the independent variables in the research model, yields crucial insights into the state of multicollinearity. The results revealed that all VIFs corresponding to the research variables remained

below the predetermined threshold of 5. This observation indicates the absence of noticeable multicollinearity among the independent variables in this analysis, thereby reinforcing the robustness and reliability of the research model.



Table 2: VIF values for Research Variables

Independent Variables	VIF
Innovativeness	3.007
Pro-activeness	2.659
Risk-taking	2.985

f) Testing Research Hypotheses

Within this segment, meticulous scrutiny of the research hypotheses transpires through the utilization of correlation analysis and path analysis within the structural equation modeling (SEM) framework. Given the non-normal distribution inherent in the dataset, the preferred analytical method was Spearman's correlation. Table 9 presents the correlation matrix for the variables examined in this study.

Innovativeness is strongly and positively correlated with Family Business Involvement ( $r = 0.850, p < 0.001$ ), Personal Attitude ( $r = 0.806, p < 0.001$ ), social norms ( $r = 0.862, p < 0.001$ ), Perceived Behavioral Control ( $r = 0.826, p < 0.001$ ), and Entrepreneurial Intention ( $r = 0.898, p < 0.001$ ). Similarly, pro-activeness showed a strong positive correlation with Family Business Involvement ( $r = 0.843, p < 0.001$ ), Personal Attitude ( $r = 0.781, p < 0.001$ ), social norms ( $r = 0.823, p < 0.001$ ), Perceived

Behavioral Control ( $r = 0.822, p < 0.001$ ), and Entrepreneurial Intention ( $r = 0.880, p < 0.001$ ). Moreover, risk taking was significantly positively correlated with Family Business Involvement ( $r = 0.829, p < 0.001$ ), Personal Attitude ( $r = 0.804, p < 0.001$ ), social norms ( $r = 0.827, p < 0.001$ ), Perceived Behavioral Control ( $r = 0.827, p < 0.001$ ), and Entrepreneurial Intention ( $r = 0.884, p < 0.001$ ).

Family Business Involvement shows a strong positive correlation with Entrepreneurial Intention ( $r = 0.943, p < 0.001$ ). Moreover, Personal Attitude revealed a robust positive correlation with Entrepreneurial Intention ( $r = 0.885, p < 0.001$ ). Furthermore, social norms revealed robust positive correlations with Entrepreneurial Intention ( $r = 0.927, p < 0.001$ ). Additionally, Perceived Behavioral Control revealed a robust positive correlation with Entrepreneurial Intention ( $r = 0.919, p < 0.001$ ).

Table 3: Correlation Matrix for the Research Variables

			1.	2.	3.	4.	5.	6.	7.	8.
Spearman's rho	1. Innovativeness	R	1.000							
		Sig.	.							
		N	445							
	2. Pro-activeness	R	.776**	1.000						
		Sig.	.000	.						
		N	445	445						
	3. Risk-taking	R	.806**	.777**	1.000					
		Sig.	.000	.000	.					
		N	445	445	445					
	4. Family Business Involvement	R	.850**	.843**	.829**	1.000				
		Sig.	.000	.000	.000	.				
		N	445	445	445	445				
		R	.806**	.781**	.804**	.834**	1.000			

		1.	2.	3.	4.	5.	6.	7.	8.
1. Personal Attitude	Sig.	.000	.000	.000	.000	.			
	N	445	445	445	445	445			
2. Social Norm	R	.862**	.823**	.827**	.879**	.837**	1.000		
	Sig.	.000	.000	.000	.000	.000	.		
	N	445	445	445	445	445	445		
	R	.826**	.822**	.827**	.883**	.821**	.867**	1.000	
3. Perceived Behavioral Control	Sig.	.000	.000	.000	.000	.000	.000	.	
	N	445	445	445	445	445	445	445	
4. Entrepreneurial Intention	R	.898**	.880**	.884**	.943**	.885**	.927**	.919**	1.000
	Sig.	.000	.000	.000	.000	.000	.000	.000	.
	N	445	445	445	445	445	445	445	445

Structural equation Modeling (SEM) analysis was used to evaluate the influence of the research variables in Table 10. The SEM results, outlined below, provide valuable insights into the relationships between the variables.

Hypothesis 1, which posits a relationship between Entrepreneurial Orientation and Family Business Involvement, Innovativeness (estimate = 0.337,  $p < 0.000$ ), and pro-activeness (estimate = 0.739,  $p < 0.000$ ), demonstrated a significant positive effect on Family Business Involvement as the P-values were less than 0.05, while, Risk Taking (estimate = 0.053,  $p = 0.513$ ) showed an insignificant effect on Family Business Involvement as the P-value was more than 0.05. The coefficient of determination (R-square) for the dependent variable "Family Business Involvement" was 0.867. This value indicates that approximately 86.7% of the variability in Family Business Involvement can be explained by independent variables in the model.

For Hypothesis 2, which posits a relationship between Entrepreneurial Orientation and Personal Attitude, Innovativeness (estimate = 0.369,  $p < 0.000$ ), pro-activeness (estimate = 0.497,  $p < 0.000$ ), and risk-taking (estimate = 0.177,  $p < 0.036$ ) demonstrated a significant positive effect on Personal Attitude as the P-values were less than 0.05. The coefficient of determination (R square) for the dependent variable "Personal Attitude" was 0.807. This value indicates that

approximately 80.7% of the variability in personal attitudes can be explained by the independent variables in the model.

Hypothesis 3, which posits a relationship between entrepreneurial orientation and social norms, innovativeness (estimate = 0.503,  $p < 0.000$ ), and pro-activeness (estimate = 0.562,  $p < 0.000$ ), demonstrates a significant positive effect on social norms as the P-values are less than 0.05, while, Risk Taking (estimate = 0.083,  $p = 0.513$ ) shows an insignificant effect on social norms as the P-value is more than 0.05. The coefficient of determination (R-square) for the dependent variable "Social Norm" was 0.868. This value indicates that approximately 86.8% of the variability in the Social Norm can be explained by the independent variables in the model.

Hypothesis 4, which posits a relationship between Entrepreneurial Orientation and Perceived Behavioral Control, Innovativeness (estimate = 0.276,  $p < 0.000$ ), and pro-activeness (estimate = 0.745,  $p < 0.000$ ), demonstrates a significant positive effect on Perceived Behavioral Control as the P-values are less than 0.05, while, Risk Taking (estimate = 0.092,  $p = 0.247$ ) showed an insignificant effect on Perceived Behavioral Control as the P-value was more than 0.05. The coefficient of determination (R-square) for the dependent variable "Perceived Behavioral Control" was 0.878. This value indicates that approximately 87.8% of

the variability in Perceived Behavioral Control can be explained by the independent variables in the model.

For Hypothesis 5, which posits a relationship between Family Business Involvement and Entrepreneurial Intention, it could be noted that Family Business Involvement (estimate = 0.277,  $p < 0.000$ ), demonstrates a significant positive effect on Entrepreneurial Intention as the P-value is less than 0.05.

For Hypothesis 6, which posits a relationship between Personal Attitude and Entrepreneurial Intention, it can be noted that Personal Attitude (estimate = 0.108,  $p < 0.011$ ), demonstrates a significant positive effect on Entrepreneurial Intention as the P-value is less than 0.05.

For Hypothesis 7, which posits a relationship between social norms and entrepreneurial intention, it could be noted that social norms (estimate = 0.130,  $p < 0.009$ ), demonstrate a significant positive effect on Entrepreneurial Intention as the P-value is less than 0.05. For Hypothesis 8, which posits a relationship between Perceived Behavioral Control and Entrepreneurial Intention, it could be noted that Perceived Behavioral Control (estimate = 0.107,  $p = 0.080$ ) shows an insignificant effect on Entrepreneurial Intention as the P-value is more than 0.05.

Hypothesis 9, which posits a relationship between Entrepreneurial Orientation and Entrepreneurial Intention, Innovativeness (estimate = 0.503,  $p < 0.000$ ), and risk-taking (estimate = 0.142,  $p < 0.022$ ), demonstrates a significant positive effect on Entrepreneurial Intention as the P-values are less than 0.05, while pro-activeness (estimate = 0.181,  $p = 0.176$ ) shows an insignificant effect on Entrepreneurial Intention as the P-value is more than 0.05. The coefficient of determination (R-square) for the dependent variable "Entrepreneurial Intention" is 0.990. This value indicates that approximately 99% of the variability in Entrepreneurial Intention can be explained by the independent variables in the model.

According to previous findings, family business involvement, social norms, and personal attitudes exert a substantial influence on Entrepreneurial Intention. This implies that family business involvement, social norms, and personal attitudes have a direct impact on entrepreneurial intention. On the other hand, there is a lack of a significant effect of Perceived Behavioral Control on Entrepreneurial Intention, indicating the absence of a direct relationship between behavioral control and Entrepreneurial Intention.

Hypothesis 10, Family Business Involvement mediates the relationship between entrepreneurial orientation and intention. Based on the previous results, it can be noted that there is a significant effect of Innovativeness, and Pro-activeness on Family Business Involvement, which means that Family Business Involvement could mediate the relationship between

Innovativeness, Pro-activeness, and Entrepreneurial Intention.

It could be observed that Family Business Involvement partially mediate the relationship between Innovativeness and Entrepreneurial Intention as the effect still significant at the presence of Family Business Involvement. Moreover, it could be observed that Family Business Involvement fully mediate the relationship between Pro-activeness and Entrepreneurial Intention as the effect turned to be insignificant at the presence of Family Business Involvement.

Hypothesis 11, Personal Attitude mediated the relationship between Entrepreneurial Orientation and Entrepreneurial Intention. Based on the previous results, it could be noted that there is a significant effect of Innovativeness, and Pro-activeness on Personal Attitude, which means that Personal Attitude could mediate the relationship between Innovativeness, Pro activeness, and Entrepreneurial Intention.

It could be observed that Personal Attitude partially mediate the relationship between Innovativeness, Risk Taking, and Entrepreneurial Intention as the effect still significant at the presence of Personal Attitude. Moreover, it could be observed that Personal Attitude fully mediate the relationship between Pro-activeness and Entrepreneurial Intention as the effect turned to be insignificant at the presence of Personal Attitude.

Hypothesis 12, social norms mediate the relationship between Entrepreneurial Orientation and Entrepreneurial Intention. Based on the previous results, it can be noted that there is a significant effect of innovativeness, and pro-activeness on social norms, which means that social norms could mediate the relationship between Innovativeness, Pro-activeness, and Entrepreneurial Intention.

It could be observed that Social Norm partially mediate the relationship between Innovativeness and Entrepreneurial Intention as the effect still significant at the presence of Social Norm. Moreover, it could be observed that Social Norm fully mediate the relationship between Pro-activeness and Entrepreneurial Intention as the effect turned to be insignificant at the presence of Social Norm.

For Hypothesis 12, Perceived Behavioral Control mediates the relationship between Entrepreneurial Orientation and Entrepreneurial Intention. Based on the previous results, it could be noted that there is no direct effect of Perceived Behavioral Control on entrepreneurial intention; therefore, Perceived Behavioral Control could not mediate the relationship between Entrepreneurial Orientation and Entrepreneurial Intention.

Table 4: SEM Analysis for the Research Variables

			Estimate	P	R <sup>2</sup>
Family Business Involvement	<---	Innovativeness	.337	***	.867
Family Business Involvement	<---	Pro-activeness	.739	***	
Family Business Involvement	<---	Risk Taking	.053	.513	
Social Norm	<---	Innovativeness	.503	***	.868
Social Norm	<---	Pro-activeness	.562	***	
Social Norm	<---	Risk Taking	.083	.282	
Personal Attitude	<---	Innovativeness	.369	***	.807
Personal Attitude	<---	Pro-activeness	.497	***	
Personal Attitude	<---	Risk Taking	.177	.036	
Perceived Behavioral Control	<---	Innovativeness	.276	***	.878
Perceived Behavioral Control	<---	Pro-activeness	.745	***	
Perceived Behavioral Control	<---	Risk Taking	.092	.247	
Entrepreneurial Intention	<---	Innovativeness	.142	.022	.990
Entrepreneurial Intention	<---	Pro-activeness	.181	.176	
Entrepreneurial Intention	<---	Risk Taking	.162	***	
Entrepreneurial Intention	<---	Family Business Involvement	.277	***	
Entrepreneurial Intention	<---	Social Norm	.130	.009	
Entrepreneurial Intention	<---	Personal Attitude	.108	.011	
Entrepreneurial Intention	<---	Perceived Behavioral Control	.107	.080	

The model fit indices, including CMIN/DF (1.189), GFI (0.938), CFI (0.996), AGFI (0.924), and RMSEA (0.021), all fell within the acceptable ranges. Figure 6 shows the SEM employed to analyze the impact of the research model.



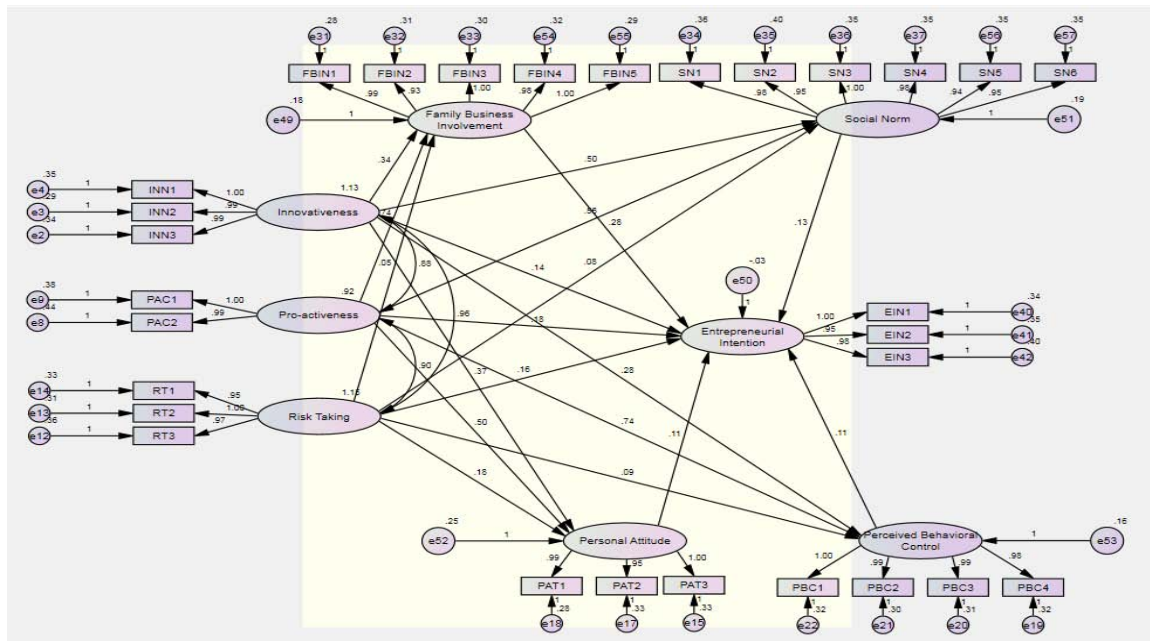


Figure 6: SEM for the Research Variables

#### IV. RESEARCH DISCUSSION AND CONCLUSION

In this section, the results of the hypotheses tested using a correlation matrix and Structural Equation Modeling (SEM) are discussed.

##### a) Research Discussion

The results of the first hypothesis reveal that innovativeness and pro-activeness have significant positive effects on family business involvement, therefore, the first hypothesis is partially supported. These results are consistent with those of Arzubiaga et al. (2018), Glowka et al. (2021), Dos Santos et al. (2022), Kalali (2022), Moreno-Menéndez et al. (2022), and Jocić et al. (2023). Otherwise, the results of the second hypothesis proved that all three dimensions had significant positive effects on personal attitudes, therefore, the second hypothesis is fully supported. These results align with those of Zollo et al. (2021) and Hwang et al. (2021). The findings of the third hypothesis clarify that innovativeness and pro-activeness have significant positive effects on social norms, accordingly, the third hypothesis is partially supported. The results are consistent with those of Ekpe and Mat (2012) and Bagis (2022), but inconsistent with those of Awang et al. (2016).

Moreover, the results of the fourth hypothesis proved that innovativeness and pro activeness had significant positive effects on perceived behavioral control, therefore, the fourth hypothesis is partially supported. The results are consistent with Munir et al. (2019), but inconsistent with those of Awang et al. (2016). While the findings of the fifth hypothesis illustrate

that family business involvement had a significant positive effect on entrepreneurial intention, hence, the fifth hypothesis is fully supported. The results align with those of Wang et al. (2018), Onjewu et al. (2022), Xu et al. (2022), and Chaudhuri et al. (2023), but are inconsistent with those of Zaman et al. (2020). By examining the sixth hypothesis, the results indicate that Personal attitude has a significant positive effect on entrepreneurial intention, therefore, the sixth hypothesis is fully supported. The results are consistent with those of Miralles et al. (2016), Dinc and Budic (2016), Al-Jubari et al. (2019), Gieure et al. (2020), Jena (2020), Zovko et al. (2020), Kusumawardhany and Dwiarta (2020), Vamvaka et al. (2020), and Tausif et al. (2021), but inconsistent with those of Saeed et al. (2019).

The results of the seventh hypothesis proved that social norms had a significant positive effect on entrepreneurial intention, hence, the seventh hypothesis is fully supported. The results are consistent with those of Al-Jubari et al. (2019), Saeed et al. (2019), Gieure et al. (2020), Vamvaka et al. (2020), and Tausif et al. (2021), but inconsistent with those of Zovko et al. (2020).

Regarding testing the eighth hypothesis, the results indicate that perceived behavioral control had an insignificant positive effect on entrepreneurial intention, therefore, the eighth hypothesis is not supported. The results are consistent with Zovko et al. (2020), but inconsistent with Miralles et al. (2016), Dinc and Budic (2016), Al-Jubari et al. (2019), Saeed et al. (2019), Cynthia (2020), and Tausif et al. (2021). On the other hand, the findings of the ninth hypothesis revealed that innovativeness and risk-taking had significant positive effects on entrepreneurial intention, hence, the ninth hypothesis is partially supported. The results are

consistent with those of Mandongwe and Jaravaza (2020), Wathanakom et al. (2020), Chafloque-Cespedes et al. (2021), Hassan et al. (2021), and Singh and Mehdi (2022), but inconsistent with those of Efrata et al. (2021) and Twum et al. (2021).

The findings of the tenth hypothesis find that family business involvement partially mediates the relationship between innovativeness and entrepreneurial intention and fully mediates the relationship between pro-activeness and entrepreneurial intention, therefore, the tenth hypothesis is partially supported. The results of the eleventh hypothesis indicate that personal attitude partially mediates the relationship between innovativeness, risk-taking, and entrepreneurial intention, and fully mediates the relationship between pro-activeness and entrepreneurial intention. However, the findings of the twelfth hypothesis indicate that social norms partially mediate the relationship between innovativeness and entrepreneurial intention, and fully mediate the relationship between pro-activeness and entrepreneurial intention. Finally, testing the thirteenth hypothesis revealed that perceived behavioral control did not mediate the relationship between entrepreneurial orientation and entrepreneurial intention.

#### b) *Research Recommendations and Limitations*

This research provides detailed recommendations for various stakeholders and future research. For decision-makers and enterprise owners, it is recommended to prioritize innovativeness and pro activeness, as these dimensions significantly influence family involvement within businesses, social norms, and perceived behavioral control. Additionally, focusing on all three dimensions of entrepreneurial orientation (including risk-taking) is crucial because they collectively have a strong impact on personal attitudes. To enhance entrepreneurial intentions among potential entrepreneurs, especially within family enterprises, these elements should be integrated into business strategies and organizational cultures.

Academic institutions and educators of entrepreneurship should develop clear and comprehensive curricula that thoroughly explain the concepts of family business involvement, personal attitudes, and social norms. These concepts are critical because they significantly affect entrepreneurial intention. Proper education on these variables equips students with the knowledge and skills needed to successfully engage in entrepreneurial activities and make informed decisions when starting their businesses.

This research suggests focusing more on the independent variables of EO (innovativeness, pro-activeness, and risk-taking) as key factors influencing entrepreneurial intention. Researchers should investigate additional EO dimensions of entrepreneurial orientation to provide a broader understanding of its impact. Future research should apply similar studies in

other developing countries to compare results and gain a global perspective on the factors influencing entrepreneurial intention. Comparative studies between developed and developing countries are also recommended to understand the differences and similarities in entrepreneurial orientation and intention across different economic contexts. Extending the study duration and increasing the sample size will help obtain more generalized and robust results. Additionally, future research should explore other potential mediators and moderators that could influence the relationship between entrepreneurial orientation and entrepreneurial intention, such as cultural factors, economic conditions, and policy environments.

Several limitations were identified in this research. The timing of data collection was limited, suggesting that future research should include a longer period to capture more comprehensive data. The study sample, consisting of 445 respondents from Egypt, may not be representative of other contexts, indicating the need for a larger and more diverse sample in future studies. The focus on Egypt as the sole case study also limited the generalizability of the findings. Comparative studies involving multiple developing countries and those that compare developed and developing countries are recommended to provide a holistic understanding of the phenomena under investigation.

## REFERENCES RÉFÉRENCES REFERENCIAS

1. Al-Jubari, I., Hassan, A. and Liñán, F., 2019. Entrepreneurial intention among University students in Malaysia: integrating self-determination theory and the theory of planned behavior. *International Entrepreneurship and Management Journal*, 15 (4), pp.1323-1342.
2. Arzubaga, U., Iturralde, T., Maseda, A. and Kotlar, J., 2018. Entrepreneurial orientation and firm performance in family SMEs: the moderating effects of family, women, and strategic involvement in the board of directors. *International Entrepreneurship and Management Journal*, 14 (1), pp.217- 244.
3. Awang, A., Amran, S., Nor, M.N.M., Ibrahim, I.I. and Razali, M.F.M., 2016. Individual entrepreneurial orientation impact on entrepreneurial intention: Intervening effect of PBC and subjective norm. *Journal of Entrepreneurship, Business and Economics*, 4 (2), pp.94-129.
4. Bagis, A. A., 2022. Building students' entrepreneurial orientation through entrepreneurial intention and workplace spirituality. *Heliyon*, 8 (11).
5. Chafloque-Cespedes, R., Alvarez-Risco, A., Robayo-Acuña, P.V., Gamarra-Chavez, C.A., Martinez-Toro, G.M. and Vicente-Ramos, W., 2021, February. Effect of sociodemographic factors in entrepreneurial orientation and entrepreneurial intention in university students of Latin American

- business schools. In *Universities and entrepreneurship: meeting the educational and social challenges* (pp. 151-165). Emerald Publishing Limited.
6. Chaudhuri, S., Agrawal, A.K., Chatterjee, S. and Hussain, Z. (2023), "Examining the role of gender on family business entrepreneurial intention: influence of government support and technology usage", *Journal of Family Business Management*, Vol. 13 No. 3, pp. 665-686.
  7. Çiriş Yildiz, C., Ulaşlı Kaban, H. and Tanriverdi, F.Ş., 2022. COVID-19 pandemic and personal protective equipment: Evaluation of equipment comfort and user attitude. *Archives of Environmental & Occupational Health*, 77(1), pp.1-8.
  8. Cynthia, A.U., Ameh, A.A. and Alabi, J.O., 2020. Perceived behavioural control and entrepreneurial intention: Empirical evidence from selected tertiary institutions in Kogi State. *Ilorin Journal of Human Resource Management*, 4 (2), pp.66-77.
  9. Demir, S., 2022. Comparison of normality tests in terms of sample sizes under different skewness and Kurtosis coefficients. *International Journal of Assessment Tools in Education*, 9 (2), pp.397- 409.
  10. DINC, M.S. and Budic, S., 2016. The impact of personal attitude, subjective norm, and perceived behavioural control on entrepreneurial intentions of women. *Eurasian Journal of Business and Economics*, 9 (17), pp.23-35.
  11. Dos Santos, R.C., dos Santos, I.L., Raupp, F.M. and Tutida, A.Y., 2022. Familiness and Entrepreneurial Orientation: An Epistemological Systematization of the Literature Review. *Retail Management Review*, 2 (1), pp. e033-e033.
  12. EFRATA, T.C., RADIANTO, W.E.D. and EFFENDY, J.A., 2021. The Influence of Role Models on Entrepreneurial Intention: Does Individual Innovativeness Matter? *The Journal of Asian Finance, Economics, and Business*, 8 (2), pp.339-352.
  13. Ekpe, I. and Mat, N., 2012. The moderating effect of social environment on the relationship between entrepreneurial orientation and entrepreneurial intentions of female students at Nigerian universities. *International Journal of Management Sciences and Business*, 1(4).
  14. Galvão, A.R., Marques, C.S., Ferreira, J.J. and Braga, V., 2020. Stakeholders' role in entrepreneurship education and training programmes with impacts on regional development. *Journal of Rural Studies*, 74, pp.169-179.
  15. Garcia-Castro, R. and Aguilera, R.V., 2014. Family involvement in business and financial performance: A set-theoretic cross-national inquiry. *Journal of Family Business Strategy*, 5 (1), pp.85-96.
  16. Gieure, C., del Mar Benavides-Espinosa, M. and Roig-Dobón, S., 2020. The entrepreneurial process: The link between intentions and behavior. *Journal of Business Research*.
  17. Glowka, G., Kallmünzer, A. and Zehrer, A., 2021. Enterprise risk management in small and medium family enterprises: the role of family involvement and CEO tenure. *International Entrepreneurship and Management Journal*, 17 (3), pp.1213-1231.
  18. Hagger, M.S., Cheung, M.W.L., Ajzen, I. and Hamilton, K., 2022. Perceived behavioral control moderating effects in the theory of planned behavior: A meta-analysis. *Health Psychology*, 41 (2), p. 155.
  19. Hair Jr, J.F., Sarstedt, M., Matthews, L.M. and Ringle, C.M., 2016. Identifying and treating unobserved heterogeneity with FIMIX-PLS: part I—method. *European Business Review*.
  20. Halizah, S.N. and Mardikaningsih, R., 2022. The Role of Family Support, Learning Achievement and Student Entrepreneurial Intention. *International Journal of Service Science, Management, Engineering, and Technology*, 2 (3), pp.13-18.
  21. Hassan, A., Anwar, I., Saleem, I., Islam, K.B. and Hussain, S.A., 2021. Individual entrepreneurial orientation, entrepreneurship education and entrepreneurial intention: The mediating role of entrepreneurial motivations. *Industry and Higher Education*, 35 (4), pp.403-418.
  22. Hernández-Perlines, F., Ibarra Cisneros, M.A., Ribeiro-Soriano, D. and Mogorrón-Guerrero, H., 2020. Innovativeness as a determinant of entrepreneurial orientation: analysis of the hotel sector. *Economic research-Ekonomska istraživanja*, 33 (1), pp.2305-2321.
  23. Hooi, H.C., Ahmad, N.H., Amran, A. and Rahman, S.A., 2016. The functional role of entrepreneurial orientation and entrepreneurial bricolage in ensuring sustainable entrepreneurship. *Management research review*, 39 (12), pp.1616-1638.
  24. Hwang, J., Kim, J.J. and Lee, K.W., 2021. Investigating consumer innovativeness in the context of drone food delivery services: Its impact on attitude and behavioral intentions. *Technological Forecasting and Social Change*, 163, p.120433.
  25. Jena, R. K., 2020. Measuring the impact of business management Student's attitude towards entrepreneurship education on entrepreneurial intention: A case study. *Computers in Human Behavior*, 107, p. 106275.
  26. Jovic, M.R., Morris, M.H. and Kuratko, D.F., 2023. Familiness and innovation outcomes in family firms: the mediating role of entrepreneurial orientation. *Journal of Small Business Management*, 61(4), pp. 1345-1377.
  27. Kubitskyi, S., Yeremenko, D., Danylenko, V., Bataiev, S. and Varaksina, E., 2024. Evaluating the impact of innovative technologies on global

- competitiveness through modelling. *Multidisciplinary Science Journal*, 6.
28. Kusumawardhani, P.A. and Dwiarta, I., 2020. Entrepreneurial Intention among Millennial Generation: Personal Attitude, Educational Support and Social Media.
  29. Mandongwe, L. and Jaravaza, D.C., 2020. Women entrepreneurial intentions in subsistence marketplaces: The role of entrepreneurial orientation and demographic profiles in Zimbabwe. *Cogent Business & Management*, 7 (1), p.1818365.
  30. Miralles, F., Giones, F. and Gozun, B., 2017. Does direct experience matter? Examining the consequences of current entrepreneurial behavior on entrepreneurial intention. *International Entrepreneurship and Management Journal*, 13 (3), pp. 881-903.
  31. Moreno-Menéndez, A.M., Arzubia, U., Díaz-Moriana, V. and Casillas, J.C., 2022. The impact of a crisis on entrepreneurial orientation of family firms: The role of organisational decline and generational change. *International Small Business Journal*, 40 (4), pp.425-452.
  32. Munir, H., Jianfeng, C. and Ramzan, S., 2019. Personality traits and theory of planned behavior comparison of entrepreneurial intentions between an emerging economy and a developing country. *International Journal of Entrepreneurial Behavior & Research*.
  33. Onjewu, A.-K.E., Haddoud, M.Y., Tony-Okeke, U., Cao, D. and Nowiński, W. (2022), "Dissecting the effect of family business exposure on entrepreneurial implementation intention", *International Journal of Entrepreneurial Behavior & Research*, Vol. 28 No. 6, pp. 1438-1462.
  34. Saeed, A.Q.N.A.A., Gongyi, Z. and Charkos, T.G., 2019. Entrepreneurial Intentions of Undergraduate Students in Yemen: Applying the Theory of Planned Behaviour.
  35. Saunders, M., Lewis, P. and Thornhill, A., 2016. *Research methods for business students* (Seventh). Nueva York: Pearson Education.
  36. Selim, E., 2021. The Role of Entrepreneurship in Economic Growth and Development Models. 32-59.pp  
تيلي كلال رمتؤم (صاخ ددع 40) ل يومتلاو قراجتلا، 32-59.pp  
يناثلا ءزجال 2020-((
  37. Seyed Kalali, N., 2022. Entrepreneurial orientation in family firms: the effects of long-term orientation. *International Journal of Entrepreneurial Behavior & Research*, 28 (7), pp.1732-1750.
  38. Sinclair, S. and Agerström, J., 2023. Do social norms influence young people's willingness to take the COVID-19 vaccine?. *Health Communication*, 38 (1), pp.152-159.
  39. Singh, L.B. and Mehdi, S.A., 2022. Entrepreneurial orientation & entrepreneurial intention: Role of openness to experience as a moderator. *The International Journal of Management Education*, 20 (3), p.100691.
  40. Smith, J. (2018). The Importance of Primary Data in Research. *Journal of Research Practice*, 14(2).
  41. Smith, J. A. (2010). *Interpretative Phenomenological Analysis: Theory, Method, and Research*.
  42. Sultan, S., Hudson, M., Habash, N., Sultan, W.I. and Izhiman, N., 2024. Entrepreneurial orientation and Palestinian family-owned businesses: does governance or geographic location make a difference?. *Journal of Small Business and Enterprise Development*.
  43. Taber, K.S., 2018. The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education*, 48, pp.1273-1296.
  44. TAUSIF, M.R., HAQUE, M.I., RAO, M. and KHAN, M.R., 2021. Antecedents of Entrepreneurial Intentions: A Comparative Study of Cultures. *The Journal of Asian Finance, Economics and Business*, 8 (5), pp.381-389.
  45. Twum, K.K., Kwakwa, P. A., Ofori, D. and Nkukporu, A., 2021. The relationship between individual entrepreneurial orientation, network ties, and entrepreneurial intention of undergraduate students: implications on entrepreneurial education. *Entrepreneurship Education*, 4 (1), pp.39-66.
  46. Upadhyay, N., Upadhyay, S., Al-Debei, M.M., Baabdullah, A.M. and Dwivedi, Y.K., 2023. The influence of digital entrepreneurship and entrepreneurial orientation on intention of family businesses to adopt artificial intelligence: examining the mediating role of business innovativeness. *International Journal of Entrepreneurial Behavior & Research*, 29 (1), pp.80-115.
  47. Vamvaka, V., Stoforos, C., Palaskas, T. and Botsaris, C., 2020. Attitude toward entrepreneurship, perceived behavioral control, and entrepreneurial intention: dimensionality, structural relationships, and gender differences. *Journal of Innovation and Entrepreneurship*, 9 (1), pp.1-26.
  48. Vetter, T.R., 2017. Descriptive statistics: reporting the answers to the 5 basic questions of who, what, why, when, where, and a sixth, so what?. *Anesthesia & Analgesia*, 125 (5), pp.1797-1802.
  49. Wang, D., Wang, L. and Chen, L., 2018. Unlocking the influence of family business exposure on entrepreneurial intentions. *International Entrepreneurship and Management Journal*, 14 (4), pp. 951-974.
  50. Wathanakom, N., Khlaisang, J. and Songkram, N., 2020. The study of the causal relationship between innovativeness and entrepreneurial intention among undergraduate students. *Journal of Innovation and Entrepreneurship*, 9 (1), pp.1-13.



51. Xu, Z., Zhou, Y., Zhang, Y., Zhang, Y. and Ouyang, Z. (2023), "Family-work enrichment and entrepreneurial intentions: a family affective support perspective", *Management Decision*, Vol. 61 No. 1, pp. 57-76.
52. Yong, A.G. and Pearce, S., 2013. A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in quantitative methods for psychology*, 9 (2), pp.79-94.
53. Zaman, S., Arshad, M., Sultana, N. and Saleem, S., 2020. The effect of family business exposure on individuals' entrepreneurial intentions: an institutional theory perspective. *Journal of Family Business Management*.
54. Zollo, L., Rialti, R., Tron, A. and Ciappei, C., 2021. Entrepreneurial passion, orientation and behavior: The moderating role of linear and nonlinear thinking styles. *Management Decision*, 59 (5), pp.973-994.
55. Zovko, L., Bilić, I. and Dulčić, Ž., 2020. Determinants of students' entrepreneurial intention: An empirical research. *Management: Journal of Contemporary Management Issues*, 25 (1), pp.25-44.





# Effects of Green Farming Practices/Environmentally Friendly Practices on Small Scale Agricultural Production in Kenya, A Case Study in Siaya County

By Samson Ntongai Jeremiah & Amos Bonnke

*Abstract-* Smallholder farmers, who face sustainability challenges due to reliance on conventional farming practices, dominate Kenya's agricultural sector. This study investigated the impact of adopting green farming practices on the agricultural productivity, economic viability and environmental sustainability of small-scale farms in Siaya County. A mixed methods approach combined analysis of published secondary data with primary data collected through questionnaires administered to a sample of 150 smallholder farmers in Siaya. The questionnaires utilized descriptive analysis to assess the adoption rate of different green farming techniques over the past five years and used both qualitative and quantitative analysis to evaluate outcomes related to agricultural yields, income generation, social welfare, and conservation goals. Quantitative data was analyzed statistically in Microsoft Excel using tables, graphs and charts. Specific statistical tests used included ANOVA analysis to determine any associations and differences between groups, and regression analysis to examine correlations between green farming adoption and productivity, financial and sustainability indicators. The study tested hypotheses on the relationship between implementing environmentally friendly techniques and productivity levels, economic returns, and ecological impacts.

*GJMBR-B Classification: FOR Code: 0701*



EFFECTS OF GREEN FARMING PRACTICES ON ENVIRONMENTALLY FRIENDLY PRACTICES ON SMALL SCALE AGRICULTURAL PRODUCTION IN KENYA A CASE STUDY IN SIAYA COUNTY

*Strictly as per the compliance and regulations of:*



# Effects of Green Farming Practices/Environmentally Friendly Practices on Small Scale Agricultural Production in Kenya, a Case Study in Siaya County

Samson Ntongai Jeremiah <sup>α</sup> & Amos Bonnke <sup>σ</sup>

**Abstract-** Smallholder farmers, who face sustainability challenges due to reliance on conventional farming practices, dominate Kenya's agricultural sector. This study investigated the impact of adopting green farming practices on the agricultural productivity, economic viability and environmental sustainability of small-scale farms in Siaya County. A mixed methods approach combined analysis of published secondary data with primary data collected through questionnaires administered to a sample of 150 smallholder farmers in Siaya. The questionnaires utilized descriptive analysis to assess the adoption rate of different green farming techniques over the past five years and used both qualitative and quantitative analysis to evaluate outcomes related to agricultural yields, income generation, social welfare, and conservation goals. Quantitative data was analyzed statistically in Microsoft Excel using tables, graphs and charts. Specific statistical tests used included ANOVA analysis to determine any associations and differences between groups, and regression analysis to examine correlations between green farming adoption and productivity, financial and sustainability indicators. The study tested hypotheses on the relationship between implementing environmentally friendly techniques and productivity levels, economic returns, and ecological impacts. Findings aimed to enable recommendations to promote adoption of green agriculture through targeted interventions addressing identified barriers like knowledge gaps and financial limitations faced by Siaya smallholders. By taking a holistic evaluation of green strategy adoption, the research aimed to guide policies that encouraged sustainable intensification amongst rural smallholder farmers in Kenya and beyond.

## CHAPTER 1: INTRODUCTION

### a) Background Information

#### i. Environmental Impacts of Agriculture

Global agricultural productivity has intensified drastically over the past century to cater to burgeoning populations and heightened per capita food demands. However, conventional industrial farming practices have also engendered massive ecosystem disruptions through deforestation, excessive tilling, inorganic fertilizer over application and agrochemical usage accumulation (De Silva, 2012; Canter 2018). Vast tracts of forests and other native

vegetation biomes across the planet have been razed for agricultural expansion, slashing biodiverse habitats and their regulatory capacities. Unsustainable land-clearing techniques like slash and burn have also emitted substantial greenhouse gases further escalating climate change. Intensive tilling has ruined soil structure, causing erosion losses over 20 billion tons annually while intensive machine operation has compacted lands declining arability (Krejci & Beamon, 2014).

Chemical fertilizer over-reliance has also drained, salinized and acidified soils diminishing productivity from degradation alongside surface water contamination through agricultural runoff. Pesticide toxicity has pervaded ecosystems, oxidizing microbial ecosystems essential for nutrient cycling and polluting water supplies. Herbicide overuse has led to weed resistance and loss of beneficial plant genetic diversity (National Research Council, 2000). Rampant groundwater extraction for unsustainable irrigation has depleted reserves and sunk water tables as ecological limits are crossed. Unbridled cattle grazing has also compacted lands and stripped vegetative covers. Poor animal waste management has released effluents into waterways spreading parasites like cryptosporidiosis threatening human and ecosystem health (Lal et al., 1988).

Overall, these cumulative actions have gravely fragmented once contiguous natural habitats as alien invasive species infiltrate. Up to 75% of global crop diversity has already been lost from such activities, with over 20,000 species now vulnerable to extinction (Canter, 2018). These ecosystem service disruptions pose grave threats to the entire global food production and supply apparatus. Without urgent corrective interventions through sustainable agriculture, the planet's capacity to perpetually support its burgeoning human population comes into serious question (Fomsgaard, 2014).

#### ii. Sustainable Agricultural Practices

As environmental threats from conventional agriculture intensified, sustainable agriculture concepts emerged to nurture ecological stability amidst food production. Sustainable techniques aim to sustain yields while minimizing further ecosystem disruption through principles like soil replenishment, water conservation and waste recycling (Varela, 2001). Organic farming avoids synthetic fertilizers and pesticides through

*Corresponding Author α:* Department of Business Administration, School of Business and Economics, Kenya.  
e-mail: samwago@gmail.com

*Author σ:* MBA Students, Department of Business Administration, School of Business and Economics, Kenya.  
e-mail: amosdabonk@gmail.com

integrated biological approaches to maintain soil health and fertility. Organic manures, biopesticides, crop rotations and integrated pest management techniques help enhance biodiversity preservation on farms while reducing external input costs. Though organic cultivation typically has lower output volumes initially, well-adapted regional practices help farmers capture price premiums through certified ecological production (Fomsgaard, 2014).

Conservation agriculture principles endorse minimum tilling to preserve soil structure, permanent soil covers using crop residues to retain moisture, nutrients, and diversified crop rotations with legumes fixing nitrogen. Precision agriculture tailors input applications to optimize resource use efficiency guided by monitoring indicators. Plastic mulch, drip irrigation and rainwater harvesting further reduce water demands and erosion risks (Mitra & Datta, 2014). Integrated farming blends different agricultural ventures on farms like combining aquaculture with poultry for waste recycling. Vermicomposting also recycles manures into organic fertilizers while agroforestry provides additional income streams from forest products harnessing biodiverse synergies through additional carbon sequestration (De Silva, 2012). Renewable energy production from agricultural wastes can also catalyze rural development.

While sustainable agriculture adoption requires some transitional resource investments for smallholders, improved yield stability, lowered production costs and ecosystem conservation over time make these systems optimal for subsistence farmers to escape entrenched poverty cycles (Haggblade et al, 2007). Regional studies have shown sustainable technique adoption enhancing smallholder incomes by 22-35% through higher output value realization (Mozzato, 2019). Furthermore, sustainable intensification is imperative for fortifying resilience against mounting climate change risks to Africa's agricultural future (Desjardins et al, 2007).

### iii. *Agriculture in Kenya*

As the foremost economic pillar occupying over 40% of labor capacity, smallholder farmers with 1–10-acre land parcels dominate Kenya's agricultural sector. Both domestic nutritional outcomes and the country's export revenues rely predominantly on productivity across small-scale cultivation (Weintraub, 2002). Core crops underpinning food security include maize, Irish potatoes, beans, vegetables, coffee, tea, sugarcane, pyrethrum and assorted horticulture. Livestock husbandry across cattle, goat, sheep, camel and chicken rearing also constitutes 30% of agricultural GDP (Krejci & Beamon, 2014). However, Kenya's small-holders remain severely financially constrained lacking investment capital for advanced inputs, mechanization and irrigation infrastructure limiting productivity advancements. Public expenditure allocations are also severely deficient with under 6% dedicated agricultural budgets

compared to the 10% in the Maputo declaration (Mohamed Haris, 2019). Low profitability has consequently trapped many farmers in poverty cycles.

Kenya's ecological landscape is also increasingly threatened from large-scale illegal logging, air pollution from improper waste disposal, effluent discharge and unsound industrial activities. The Mau Forest covering 400,000 hectares has already been encroached through settlements and land grabs (Murey, 2020). Water catchment capacities have been disrupted affecting water availability and quality for cultivated lands and grazing pastures. Already burdened smallholders thereby suffer deepening climate change pressures through rainfall variability, droughts, floods and extreme weather shocks while lacking adaptive capacities. Over 80% of current yields remain rain-fed, hence direly vulnerable to precipitation uncertainty (Desjardins et al, 2007).

Without climate-smart advancements, Kenya faces grave food security risks from these compounding existing agricultural sector struggles. Sustainable land management practices are imperative across smallholder farms constituting Kenya's agricultural backbone. Environmentally wise intensification must be prioritized to safeguard ecological stability, shore yields, raise farm incomes and thereby secure national food reserves whilst enhancing small farm resilience against climate change impacts through green agriculture proliferation (Craparo et al., 2023).

### iv. *Siaya County Profile*

Siaya County lies in western Kenya bordering Lake Victoria in the Nyanza region. With 83% arable land, agriculture constitutes the foremost economic activity occupying over 70% of household incomes and livelihoods (County Government of Siaya, 2018). Core cultivated crops include maize, sorghum, cassava, sweet potatoes, beans, cowpeas, pigeon peas, ground nuts alongside mixed small-scale livestock husbandry across cattle, goats, sheep and local poultry. Cassava and sorghum dominate covering over 80% of cultivated land. Cash crops comprise sugarcane, cotton, sunflower and rice paddy. However, average farm sizes remain small at just 1.5 acres. Hand hoes occupy over 75% of cultivation demonstrating low mechanization and poor commercial orientation impeding large-scale production, value addition and competitive market participation. Less than 1% of farmer's access agricultural financing with minimal uptake across critical production inputs like certified seeds, appropriate fertilizers and crop protection limiting yields (Gather, 2022). Supportive infrastructure and farmer training services are also severely deficient to transform outdated cultivation habits.

These struggling Siaya smallholders additionally endure ecological strains through topsoil nutrient losses, increasing prevalence of gully erosion from poor land

use and erratic rainfall patterns with limited irrigation access. Over 60% of the county suffers high degradation risks, with rich lands left unsuitable for profitable farming (Kisioh, 2015). Deforestation through unsound fuel wood extraction and charcoal production has also reduced water catchment capacities. Low agricultural budgetary allocations have continually neglected Siaya County's 700,000+ farming families languishing in entrenched poverty cycles and food insecurity. With over 60% of Siaya children chronically undernourished, surging malnutrition hospitalizations further demonstrate failed agricultural policies and environmental mismanagement threatening lives, health and livelihoods countywide (Aemro, 2022). Sustainable land use education alongside input financing is imperative to spur ecological stability, yield improvements, value chain augmentation and climate change resilience across Siaya's high potential agricultural landscape through transformative green interventions.

#### b) *Problem Statement*

Small-scale agriculture remains dominated by unsustainable conventional practices across Siaya County despite the region's high farming potential, with rife land degradation now threatening ecological foundations underpinning the sector. Over 75% of Siaya's arable land relies on dated farming habits around fragmented micro-plots averaging just 1.5 acres, lacking necessary upgrades for profitable cultivation (Gather, 2022; County Government of Siaya, 2018). Unsound cultivation traditions without crop rotations have caused alarming soil nutrient mining across over 60% of regional farmlands. Uncontrolled free-range grazing has compacted lands and stripped vegetative covers, fueling a 60% topsoil erosion rate through unmitigated losses (Kisioh, 2015). Heavy rainfall dependence for over 80% of crops has also escalated climate change vulnerability without adaptive capacities like water harvesting, conservation irrigation or moisture retention measures (Craparo et al., 2023).

Consequently, stagnating production has sunk smallholders deeper into poverty cycles lacking resources for investing in sustainable farming upgrades. With under 6% national agricultural budget allocations, minimal financing access constrains local adoption of yield-boosting inputs like certified seeds, appropriate fertilizers and crop protection (Mohamed Haris, 2019). Inadequate agricultural infrastructure and farmer training services also entrench outdated regional cultivation habits. As population pressures mount amidst constant land subdivisions, ecological stability continues deteriorating while over 60% of Siaya children face chronic malnutrition from shrinking per capita harvests demonstrating failed cultivation policies (Aemro, 2022). With over 500,000 regional farming families relying on agriculture incomes (County Government of Siaya, 2018), urgent transition towards sustainable approaches

is imperative to reverse unsound conventional land use practices now critically threatening Siaya's agricultural future.

Environmentally regenerative techniques adoption can enhance climate resilience, raise farm budgets for reinvestment, improve nutrition and secure inclusive rural livelihoods if more strongly prioritized through farmer education and input support. Scaling countywide implementation of integrated soil enrichment, water conservation and climate-smart green agriculture practices is vital to safeguard Siaya's high farming potential while tackling the constraints curtailing sustainable agricultural development across regional smallholdings.

#### c) *Research Objectives*

##### i. *Main Objectives*

To investigate the impact of green farming practices or environmentally friendly practices on small-scale agricultural production in Siaya County, Kenya, with a focus on evaluating adoption rates, productivity outcomes, economic, social and environmental implications as well as identifying challenges and proposing recommendations to enhance the implementation of these practices.

##### ii. *Specific Objectives*

1. To assess the adoption rate of green farming practices among small-scale farmers in Siaya County, Kenya, over the past five years (2018-2023).
2. To examine the impact of environmentally friendly practices on agricultural productivity in small-scale farming in Siaya County.
3. To evaluate the economic, social and environmental benefits of employing green farming practices among small-scale farmers in Siaya County.
4. To identify the challenges and barriers faced by small-scale farmers in implementing green farming practices in Siaya County.
5. To propose recommendations and strategies for promoting and enhancing the adoption of environmentally friendly practices in small scale agriculture in Siaya County.

#### d) *Research Questions*

1. What are the various green farming practices adopted by small-scale farmers in Siaya County?
2. How do the adopted environmentally friendly practices impact the productivity and yield of agricultural produce among small-scale farmers in Siaya County?
3. What economic, social and environmental benefits are associated with the implementation of green farming practices in the context of small-scale agriculture in Siaya County?
4. What are the main challenges hindering the widespread adoption of environmentally friendly

practices among small-scale farmers in Siaya County?

5. What strategies or interventions could be implemented to overcome the barriers and encourage more small-scale farmers to embrace green farming practices in Siaya County?

e) *Research Hypotheses*

1. *Hypotheses 1:* Adoption of green farming practices positively correlates with increased agricultural productivity among small scale farmers in Siaya County, Kenya.
2. *Hypotheses 2:* Small-scale farmers who employ environmentally friendly practices in Siaya County experiences improved economic returns compared to those using conventional farming methods.
3. *Hypotheses 3:* There is a significant positive impact of green farming practices on environmental conservation and sustainability in small-scale agricultural production in Siaya County.
4. *Hypotheses 4:* Challenges such as lack of access to resources, knowledge gaps and financial constraints act as barriers to the widespread adoption of green farming practices among small-scale farmers in Siaya County.
5. *Hypotheses 5:* Implementing targeted educational programs and providing financial incentives will enhance the adoption rate of green farming practices among small scale farmers in Siaya County.

f) *Justification*

Widespread adoption of sustainable green farming practices amongst smallholder farmers is increasingly imperative across sub-Saharan Africa for safeguarding food security and ecological sustainability amidst climate change pressures. However, limited evidence on socioeconomic outcomes from green technique implementation makes the case for urgently upscaling environmentally regenerative agriculture stronger across more country contexts (De Silva, 2012). While broad endorsements exist for sustainable farming benefits, substantiated case-by-case demonstrations can better convince policymakers on requisite public investments supporting smallholder adoption. Quantitative documentation around yield improvements, income gains and climate resilience from integrating practices like organic fertilization, conservation tillage, agroforestry and water harvesting can verify location-specific merits influencing localized endorsement for green transitions.

As Siaya County possesses high agricultural potential currently inhibited by unsustainable land degradation, the region represents an apt case study for demonstrating indicative benefits realizable from green farming adoption that support wider scaling across similar western Kenyan contexts. By quantifying productivity advancements, financial welfare

enhancement and ecological stability progress achievable by local small-holders from sustainable technique integration, an empirical evidence base develops guiding said proliferation. Thereby this research produces vital exposures motivating farmer-level buy-in and governmental prioritization of sustainable agricultural transitions where most prudent for national and regional food security.

g) *Research Scope*

This research investigated small-scale farmers across Siaya County, Kenya - focusing specifically on green agriculture techniques adopted over 2018-2023. A sample of 150 Siaya smallholders was selected through multi-stage stratified techniques covering all 6 sub-counties. Mixed methods were employed during the January-March 2024 cropping period. Structured questionnaires were used together adoption rates and yield changes reported from sustainable practices. Qualitative interviews and focus groups with farmers and officials also detailed perceived productivity, financial and environmental changes.

## CHAPTER 2: LITERATURE REVIEW

a) *Introduction*

In this chapter, various peer scholars' works on sustainable green farming practices among smallholder farmers worldwide and in Kenya will be reviewed. Seminal conceptualization theories explaining farmer's adoption decisions and theoretical foundations for environmentally regenerative agriculture. Then empirical literature provides evidence-based outcomes based on previously observed outcomes following green strategies application such as yield improvement, financial gains and climate resilient systems.

Analytical approaches as well as sampling methods used in empirical studies from cited literature sources are analyzed and commented upon. In addition, limitations around generalizability, geographical transferability and "recent" temporal context are identified in regard to the present evidence base. Thirdly, synthesized findings based on documented economic, ecological and social benefits of green agriculture adoption that are practical and justifiable at the small holder level and for which further research is recommended should verify such outcomes in the other unexplored western Kenyan context.

b) *Theoretical Literature*

Several seminal theories and frameworks have been formulated seeking to explain farmers' motivations and decision-making regarding adoption of agricultural innovations and environmentally sustainable techniques.

i. *Theory of Planned Behavior*

TPB remains one of the most influential framework models on decision making for new behaviors or innovation with regard to cognitive

processing. It argues that behavioral intention is the most powerful precursor of actual (intended) adoption. □ These intentions are supported by three elements-attitudes showing evaluations about the positiveness/negativity of acceptance of the practice, subjective norms implying perceived pressure on peer to accept, and perceived behavioral control indicating self-assessed facility to act depending on available resource, knowledge, Strong intentions for adoption are developed if farmers come in with supportive attitudes inside them, get social encouragements and believe that they can carry out such practices successfully.

TPB has greatly influenced agricultural adoption scholarship by providing insight into innovation adoption. In a Tanzanian study conducted by Bizzuyehu (2020), attitudes and expected ability accounted for 50% of variation in adoption intentions in relation to expectations on improved livelihoods and productivity with the proposed land management techniques which are consistent with the postulated According to TPB, intentions for uptake of complex green innovations depend on perceptions on relative benefits versus needed efforts together with village-level normative endorsement and self-confident capacity. Sustainability of strategy and utilization of various technologies are examined by applying TBP elements to existing information about relative advantage notions and barriers to adoption. Aligning farmer-reported benefits side by side with disincentives such as financial, knowledge and infrastructural barriers will help ascertain compatibility with TPB antecedents. Through this, the conceptual model plays a vital role in evaluating factors that influence intentions leading to actual consumption.

#### ii. *Diffusions of Innovations Theory*

One of the pivotal, pre-adoption theory is the Diffusion of Innovations Theory by Roger, which outlines how new ideas are adopted into a social setting/community. This, however, is referred to as diffusion. According to Roger's, adoption is a personal choice to employ an innovation as the most feasible option available. Utilizing diffusion research, Rogers identifies major factors underpinning adoption rates at different thresholds (knowledge, conviction, trial, confirmation and commitment). This model looks at how the adopters are classified to include groups of lead users called innovators and lite users referred to as laggards depending on when they adopt. In addition, Rogers provides seven criteria of innovation decision making within group depending on affordability, riskiness, ease of accessibility, relative advantage, compatibility, observability and trialability.

This framework is used in agricultural diffusion scholarship in order to show the process of spreading sustainable practices among smallholders according to some characteristics perceived by them. A study conducted in Ethiopia identified relative advantage and

trialability as key determinants of adopting soils conservational measures which are a new way for conservative farmers to undertake experiments based on risks they carry (Kolawole, et al., 2021). Segmenting various diffusion variables can lead to a wider range of scaling processes that are contingent upon distribution channels and uncertainties in uncertainty-ridden environments.

#### iii. *Technology Acceptance Model*

As a derivative of the theory of diffusion of innovations through technology acceptance model (TAM), one adopted framework is used when analyzing technological innovations. The second viewpoint suggests that people perceive whether or not an innovation can help them achieve their goals in order to decide if they should adopt it (Nielsen & Markussen, 2009). In turn, positive outcome expectations and effort expectancy influence attitudes toward accepting the innovation while thus a theoretically posited causal connection that moves from the perceived traits of the technology concerning the affordances available and the difficulty faced finally results in adoption behavior when the ease and usefulness perceptions cross the threshold limit.

The use of TAM in agricultural applications, for instance refers to such innovation enhancing technologies that are based on sustainable agriculture. A study in India found that perceived ease of use and usefulness in regard to biofertilizers were linked with intention to adopt such a novel soil fertility management technology given its associated learning requirements (Kumar, Singh & Dahiya, 2022). This, however, found out that individuals consider sustainable options in terms of their benefits and efforts. This paper seeks to integrate into the green practices' alignment model, perceived usefulness and ease dimensions. Usefulness of reporting on yield boosts, income gains and climate resilience capturing core smallholder goals provides evidence for easiness perception while transition complexity is feedback that determines uptake intentions in TAM. Consequently, views about usages effect and absorptive capacities influence adoption.

#### iv. *Motivational Theory*

Psychological drivers stimulating purposeful behavior toward specific targets is what motivational theory deals with. Motivations are needs or expectations pushing people's actions towards achieving specific goals. They occur in terms of internal satisfactions for performing an activity for which one is motivated internally and external rewards as a result of achieving certain goals. Motivation theory is utilized for examination of adoption decisions in light of farmers' goal pursuit in agricultural applications. Many studies have highlighted some motivational factors that may drive farmers. Some of them are meeting sustenance needs, averting risk associated with uncertainties about future

climatic conditions, gaining social recognition as innovative early adaptations among their peers, and boosting profitability from promising methods

Motivation is affected by both extrinsic and intrinsic rewards. Internally an agricultural producer may be driven by values that embrace ecological stewardship. This internal influence can induce acceptance of conservation agriculture, which in turn strengthens their sense of self-perception or identity. However, external factors like financial gains as motivation also encourage farmers for achieving a Therefore, it is crucial in such a complex adoption initiative as the integration of sustainable farming.

#### v. *Ecological Modernization Theory*

Ecological modernization theory looks at how it is becoming normal for consideration of the environment in design technologies, economic procedures and public lawmaking toward a balanced development between preservation and advancement. This includes ecological transformation which embraces renewable energy or regenerative agriculture (Mol and Spaargaren, 2000). However, farmers always strive to develop more modern approaches that go alongside their capital expansion and commercial goals. Using productive expansion in ecologically wise approaches via sustainable intensification rather than passive regulation towards such pathway of ecological modernization. Operationalizations that reflect either modernist preferences or ecological requisites include voluntary pollution prevention and closed loop waste recycling.

#### c) *Empirical Literature*

##### i. *Economic Outcomes*

Through a meta-analysis of research carried out across India comprising 830 farmer surveys and 60 case studies using mixed methodology, one finds an average yield increase from organic farming by 20% while it saves cost of inputs by up to 30% (Chand A study in Ethiopia conducted intervention trials where maize and potato yields increased more than forty percent using integrated soil fertility management involving legume inter cropping, and composting (Agegnehu et al, 2006).

A survey of 180 smallholder cocoa farmers in Uganda concluded that organic certification yields increased by at least 50 percent after five years compared to non-organic growers as a result of significantly lower pest damage (Obuya, 2019 The study by Wekesa and others, conducted in Kenya over ten years with fifty smallholdings determined that adopting agroforestry on one's farms earned a farmer approximately \$340 more annually via farm woodlot products compared to other traditional monocropping farmers.

Panel data modeling adoption durations amongst 660 random sampled rural Kenyan households exhibited positive correlations between sustainable

agricultural integration and farm budget levels reflecting accrued income gains over time (Wainaina et al., 2021). The local evidence aligns with international findings showing smallholders obtaining productivity and profitability enhancements from sustainable transition. Though adoption constraints like high initial investments required and delayed visible returns observed continue hindering uptake and sustained use.

##### ii. *Social Outcomes*

Case study analysis of organic coffee smallholder cooperatives in Mexico and Costa Rica demonstrated strong commitments to collective commercialization, with grower networks leveraging scale for accessing specialty export markets together (Bacon et al., 2012). An investigation of ecological potato cultivation clusters in Bolivia covering 350 farmers found sustainable agriculture groups enhanced bonds through reciprocal labor exchange and shared vigilance protecting collective agrobiodiversity (Jacobi et al., 2015). Research on Nicaraguan women in sustainable farming networks with 49 members highlighted expanded leadership roles assumed in managing community seed banks and coordinating peer teaching programs on agroecology (Baumeister, 2010).

Focus group research with 120 female smallholders across western Kenyan districts revealed uneven access to cooperative platforms organizing sustainable farming activities due to male dominance over household decisions (Atela et al., 2022). A survey of 248 farm households combined with key informant interviews evidenced a gender gap in access to climate-smart sustainable agriculture resources like drought-resilient seeds with majority provided to male heads (Fisher & Carr, 2015). Case studies tracing 30 seasons of organic fruit and vegetable production amongst groups of smallholders in Central Kenya showed strong mutual support networks but also free-riding risks that cooperative governance structures helped overcome through sanctions (Mwaura, 2014). While cooperative institutions built around sustainable practices facilitate mutual support and collective marketing, unequal gender access observed necessitates deliberate efforts to enfranchise women smallholders in adoption initiatives promoting equity.

##### iii. *Environmental Outcomes*

Quantitative synthesis of 76 global assessments showed conservation agriculture techniques decreased land degradation by 65% on average contrasted against baseline conventional practices continued by control groups (Branca et al., 2011). Modeling of water dynamics under scenarios of widespread agroforestry adoption in the Sahel region of Africa projected ability to reverse desertification through moisture recycling while sequestering 1.1 billion tons of carbon over 25 years (Abou Rajab et al., 2016). Surveys of 300 farm



households in western Kenya found those adopting agroforestry limited topsoil nutrient losses substantially compared to conventional producers through wind-breaks provided by integrated tree interplanting (Palm et al, 2010).

A 15-year panel study of changes in forest cover across 50 randomly sampled territories in Nyanza province evidenced that sites with higher sustainable agriculture usage maintained steady woodland levels while non-adopting areas showed continued deforestation trends reflecting protective effects (Owuor et al., 2019). After re-analyzing data from a Kenyan government inventory of ecological indicators, districts with greater sustainable technique adoption showed 63% higher growth in farm carbon stocks and 33% reductions in fertilizer pollution on average than regions with lower uptake (Oke & Odebiyi, 2007). Despite the fact that scientific proof shows environmental benefits ranging from soil conservation, reversing desertification, diversity preservation and climate change making, it has been seen fit to strategically locate support for a greener transition in the most endangered environments.

#### d) Summary

The analysis of expected adoption determinants based on Rogers' innovation diffusion dynamics theory and RAT model (Rogers, 2003), Sok et al.'s (2016) motivational fulfilment useful enhancement approach, Taherdoost (2018) However, uptake alignments with established complexity hurdles are delayed due to financial payoffs' establishment inability to demand.

Cooperatives promoting a collective transition support for sustainable techniques integration according to principles of peer effect on adoption decision-making based on Ajzen (2020) finding. In this case, however, unequal gender participation patterns are not as consistent with the ideas of nutritional security or social acknowledgment leading to adoptions as intrinsic satisfactions. Thus, practitioners need to be attentive towards the gender barriers. Branca et al.'s quantified verification on about half reduction of land degradation attributed to conservation agriculture shows appeal of ecological modernization of regenerative farming that combines economic viability and environmental stewardship. Nevertheless, spatial variations of conservation gains warrant prioritizing targeting as suggested by contextual-calibration perspectives and trailable context theory that influences diffusion process.

Some empirical cases show that with appropriate policies, sustainable agriculture is capable of contributing towards the economic, social and ecological targets. At the same time, there are impediments associated with unequal access, establishment barriers and spatial heterogeneity which require context specific policymaking suited for smallholders'.

#### e) Research Gaps

Some elements that would require additional research in this direction include the underexplored dimensions of sustainable agriculture, the limits of the existing body of empirical research, and how far one can go to achieve real benefits by adopting sustainable practices.

Major world-wide evaluations employ composite data without the required distinct regional aspects. Thus, there is little specificity concerning geographic transfer of findings as well as applicability on small farms (Kassie et al., 2009). Additional studies in specific geographical areas that demonstrate measurable gains achievable across different micro-environments in varying regional cultures of cultivation. There should also be a review on temporal applicability because of these dynamic climate changes which affect rainfall patterns and temperature that define the agricultural viability thresholds. It is thus prudent for updated impact evaluations to be adjusted to new climate scenarios that will confirm resilient yields and profitability while maintaining environmental conservation with climatic uncertainty.

Econometric evaluations often focus on financial and environmental costs rather than social benefits needed for successful dissemination among farmers and sustainable farmer well-being (Mwungu, Kebede, Njeru and Gachohi, 2021). Holistic transition policies to improve rural development could be developed by complementary views on whether sustainable methods can counter unequal gender access or enhance community relations. Sustained agriculture, although with untapped potential in the western part of Kenya, shows significant regional gaps within the same country where the data are available at a national level (Omar et al. 2022). Such inquiry is therefore required within a set of hitherto unexplored high-potentials areas, such as Siaya county aimed at generating locally sensitive advertising.

As such, more mixed-methods research carried out through under investigated time line, geographical, economic and gender perspectives can bridge knowledge gaps for evidence based equitable policy prescriptions for regional sustainable agriculture growth.



f) *Conceptual Framework*

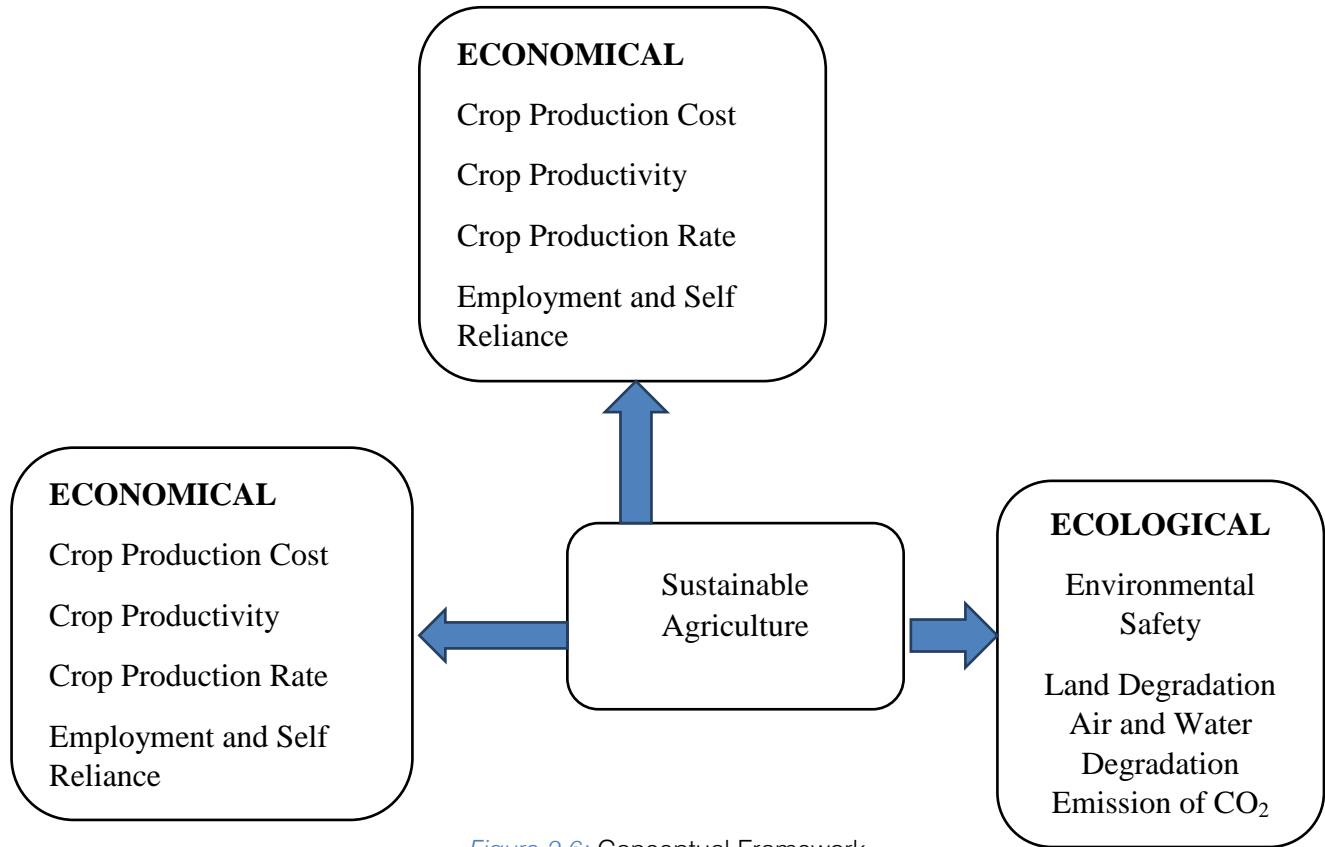


Figure 2.6: Conceptual Framework

CHAPTER 3: METHODOLOGY

a) *Research Design*

This study utilized a mixed methods descriptive research design incorporating both quantitative and qualitative techniques for data gathering. This enabled gathering numeric information on farmer adoption rates and production changes from sustainable practices combined with narrative insights on perceived implications. The descriptive focus aimed to document current dynamics rather than test predictive causal theories.

b) *Population*

The study population comprised all smallholder farmers in Siaya County. The target population specifically were farmers with 1-5 acres of land across all 6 Siaya sub-counties. These small-scale producers made up 75% of total regional cultivators and thus suitably represented key dynamics.

c) *Sampling Frame*

Multistage sampling was applied moving from sub-county to ward to village cluster stage. This allowed geographical representation across the county given limited resources. Siaya County statistical records on households and cultivated acreages shaped the sampling frame.

d) *Sample and Technique*

A sample of 150 smallholder farmers was selected through stratified random sampling proportionate to all sub-counties relative size across 30 villages. Stratification balanced variations across zones. Required minimum sample size was determined using the following standard error margin formula:

$$n = \frac{z^2 p(1-p)}{e^2}$$

Where:

z = z-value corresponding to 95% confidence level (1.96)

p = expected true population proportion (0.5 used for maximum variability)

e = acceptable margin of error (0.05)

e) *Instruments*

Structured questionnaires and interview guides were utilized for primary data gathering on adoption patterns, yield changes, income effects and ecological indicators based on integration of sustainable practices.

f) *Data Collection Procedures*

Research approval was obtained before proceeding. Questionnaires were physically administered to sample respondents with assistance while key

informants were interviewed. Survey data was input to Excel for analysis.

g) *Data Analysis and Presentation*

The compiled data was analyzed using Excel's statistical analysis toolkit and data visualized with tools such as charts and tables to determine relationships between the variables of interest.

**CHAPTER 4: RESEARCH FINDINGS AND DISCUSSION**

a) *Introduction*

This chapter presents results from the data gathered through mixed methods incorporating both qualitative interviews and quantitative surveys undertaken across a sample of 150 smallholder farmers in Siaya County, supplemented by analysis of secondary data from national/county level agricultural statistical records. Aligned with the study objectives, analysis is structured to document current adoption rates of different green farming practices based on primary data along with emerging changes in key economic, environmental, and agricultural productivity outcomes as reported by sampled Siaya smallholders triangulated against secondary data indicators.

The chapter opens with a presentation of descriptive background details on respondent demographic attributes from the primary survey data. Adoption prevalence across varying sustainable techniques is then analyzed using frequency tabulations

indicating the percentage of farmers presently trialing and integrating different environmentally regenerative approaches. Outcomes from adoption are subsequently examined across indicators of crop yield improvements, profit margin changes, and perceived ecological impacts by comparing primary survey-based evidence against patterns from district-level secondary data. Qualitative appraisals of continued barriers limiting further scaling of green agriculture are also categorized.

b) *Response Rate*

Out of the sample of 150 smallholder farmers selected across Siaya County for questionnaire administration, 138 responses were received reflecting a 92% response rate. 12 selected respondents were unavailable for participation in the survey during the allotted data collection period. However, the received participation covers over 90% of the set sample size, which meets the threshold for sufficiently powering the study's aimed analyses at the 95% confidence level per the sampling technique employed. The high response rate stemmed from diligent follow-up efforts made to enable meeting availability from as many initially selected sampled farmers as possible. Multiple visits were undertaken to the different study sites across all sub-counties until reaching either a conclusive participated survey response or confirmation of unavailability if farmers traveled or declined participation.

Table 4.2: Response Rate

Questionnaires Administered	Frequency	Percentage (%)
Received	138	92
Not	12	8
Totals	150	100

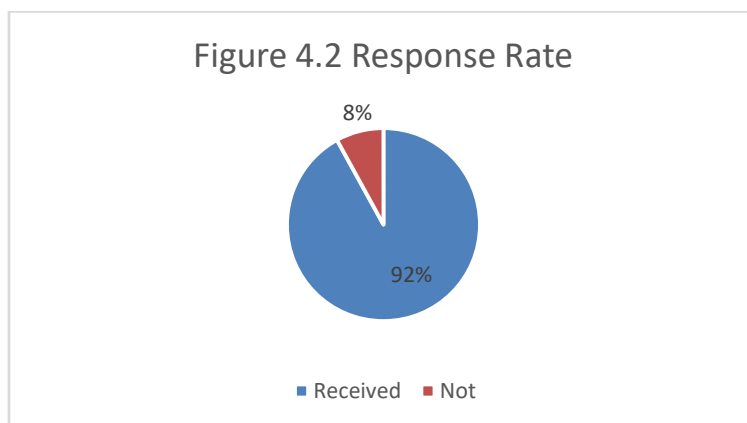


Figure 4.2: Response Rate

c) *Demographic Information*

Background details of the 138 sampled smallholder farmers who participated in the questionnaire are summarized below:

i. *Gender Distribution*

The gender distribution is presented through the following frequency chart:

Table 4.3.1: Gender Distribution

Gender	Frequency	Percentages
Male	96	70%
Female	42	30%
Total	138	100%

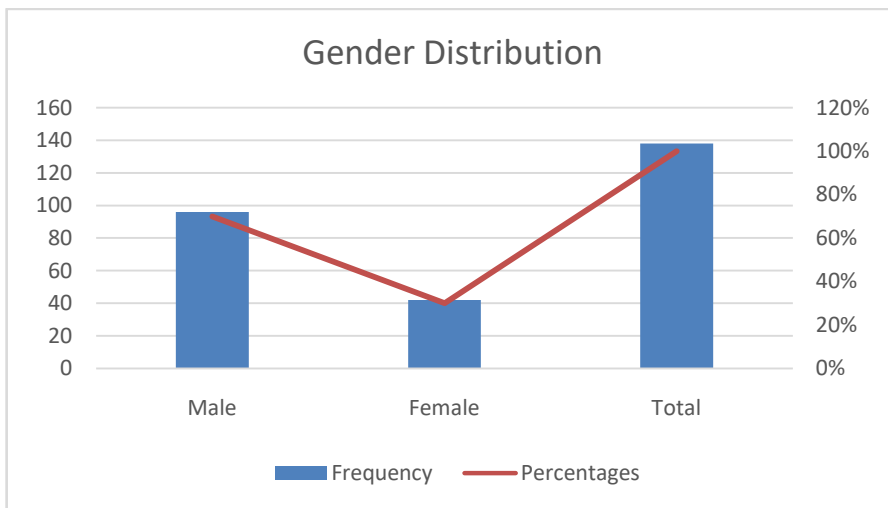


Figure 4.3.1: Gender Distribution

This indicates a 70:30 male to female ratio amongst the respondent farmers. While men still dominate regional small scale cultivation activities, sufficient women participation was ensured through stratified sampling.

ii. Age Brackets

Details on respondent age brackets is shown in the table below:

Table 4.3.2: Age Brackets

Age Groups	Frequency	Percentages
Below 35 years	62	45%
36 to 55 years	53	38%
Over 55 years	23	17%
Total	138	100%
Mean Age group	46	
Standard Deviation	20.42058	

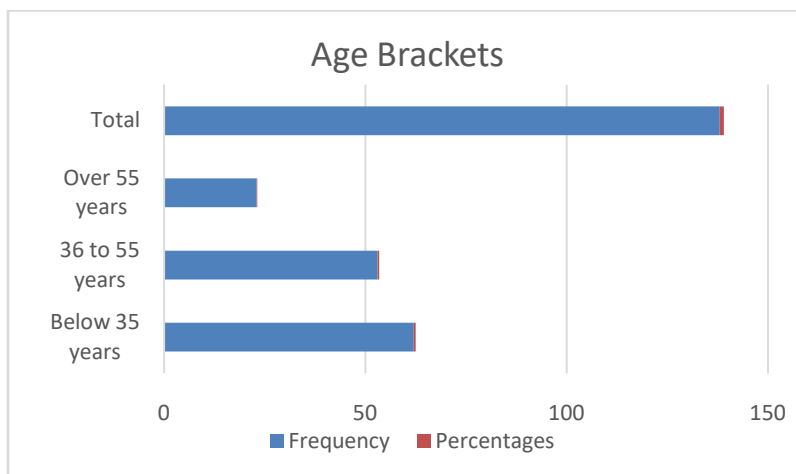


Figure 4.3.2: Age Brackets

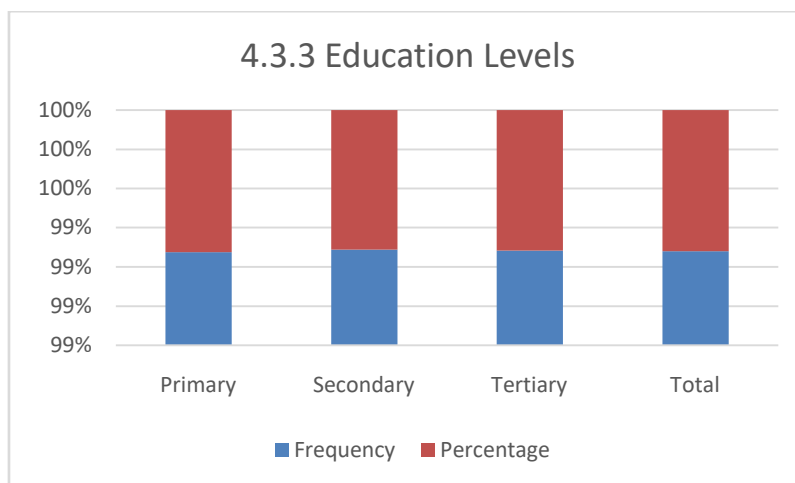
Close to half belong to the youth demographic while most farmers met remain middle aged supporting families. Mean age group of 46 and 20.42058 standard

deviation. Only 17% constituted retiree age groups with longstanding cultivation expertise.

iii. Education Levels

Table 4.3.3: Education Levels

Levels	Frequency	Percentage
Primary	74	54%
Secondary	46	33%
Tertiary	18	13%
Total	138	100%



Over half the respondents reflect the region's average primary school academic exposure. But over 45% have additional high school or college certificates boosting agricultural knowledge application.

iv. Land Sizes

The distribution of farm sizes owned across the surveyed smallholders is shown below:

Table 4.3.4: Land Sizes

Land Size	Frequency	Percentages
Below 1 acre	16	12%
1 to 3 acres	94	68%
3 to 5 acres	28	20%
Total	138	100%
Mean of land distribution	46	
Standard deviation	42	

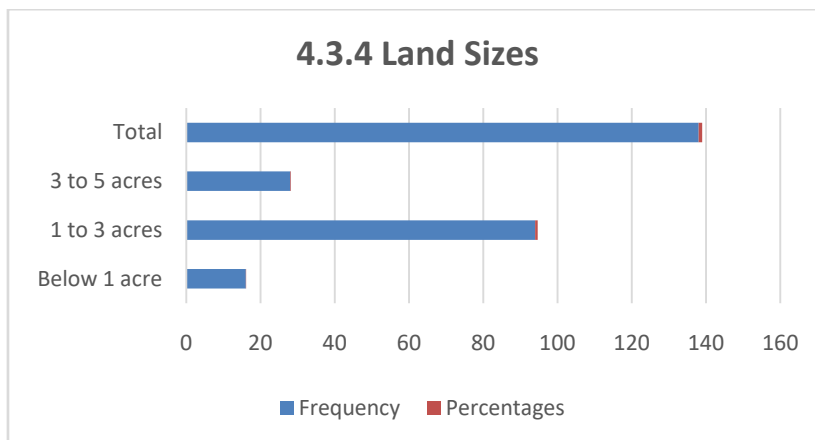


Figure 4.3.4: Land Sizes

This indicates the dominance of micro land holdings between 1 to 3 acres for over two-thirds of farmers as intended by the target population focus. Only 20% cultivate the upper bound 5-acre plots.

v. *Farming Experience*

Regarding number of years actively engaged in cultivation:

Table 4.3.5: Farming Experience

Years Farming	Frequency	Percentage
Below 5 years	26	19%
5 to 10 years	53	38%
Over 10 years	59	43%
Total	138	100%
Mean Farming Experience	46	
Standard Deviation	17.5784	

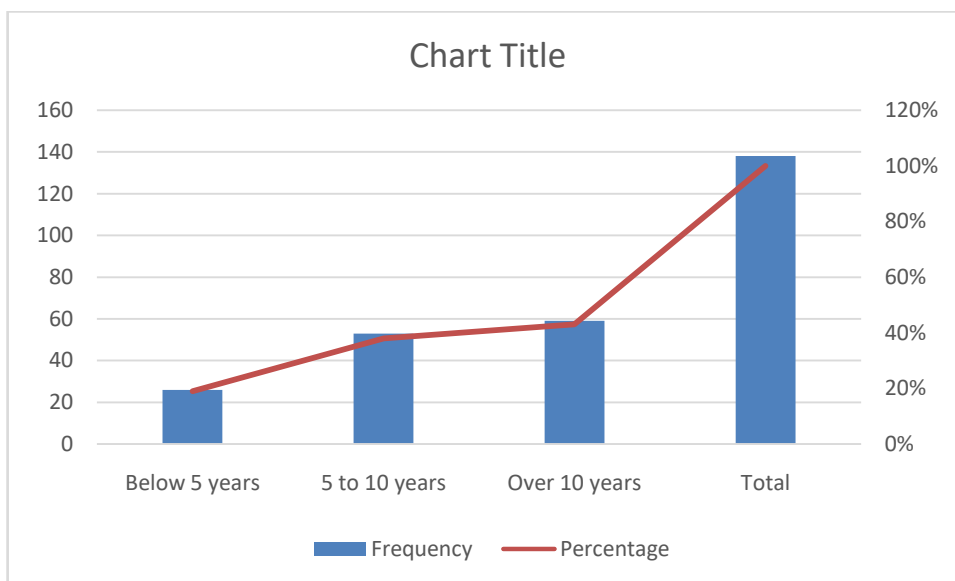


Figure 4.3.5: Farming Experience

Close to half have been farming for over a decade having extensive production knowledge. Mean Farming Experience of 5-10year with 17.5784 standard deviation. And most of the rest have at least 5 seasons allowing familiarity with outcomes from integrating innovative approaches.

d) *Adoption Rates of Green Farming Practices*

The surveyed farmers reported on their present usage of various sustainable agricultural techniques that aim to reduce environmental harms from farming activity. Analysis of adoption prevalence across 6 major practice categories is presented:

Table 4.4: Adoption Rates of Green Farming Practices

Practice	Frequency Adopting	Adoption Percentage
Crop Rotation	88	64%
Organic Fertilization	76	55%
Conservation Tillage	92	67%
Agroforestry Integration	51	37%
Rainwater Harvesting	43	31%
Waste Recycling	64	46%

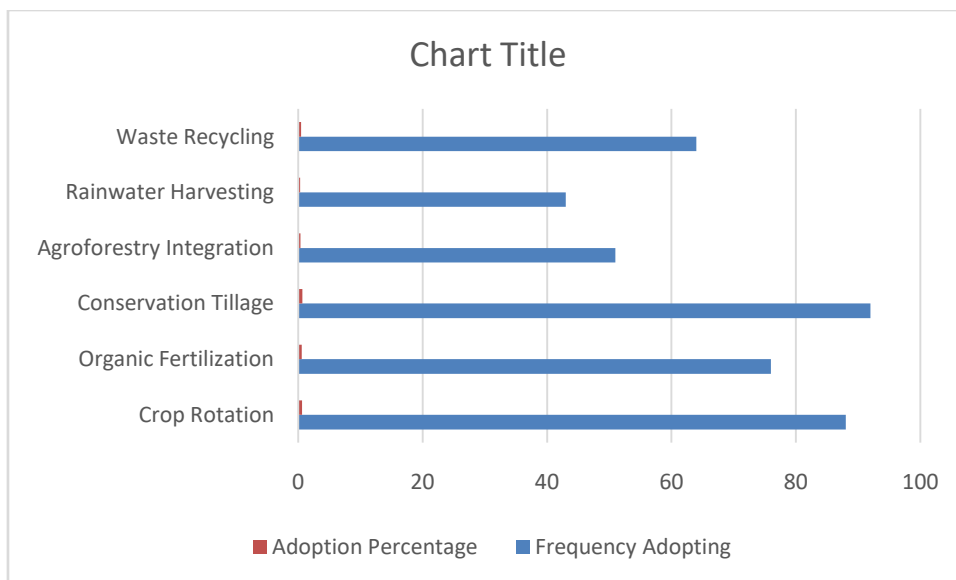


Figure 4.4: Adoption Rates of Green Farming Practices

The most widely adopted green approach is conservation tillage adopted by over two-thirds of farmers by minimizing soil disturbance to retain nutrients. This aligns more easily with prior habits. Organic fertilization through manures and crop rotation are also widely employed for soil nourishment by over half the respondents. Agroforestry and water harvesting display lower adoption levels currently facing transitional constraints. But a significant minority have begun trialing these complex techniques as well showcasing promise.

Cross tabulating adoption levels across demographic factors shows a strong positive correlation with education levels. Adoption rates ranged from 51% amongst primary educated respondents to over 87% amongst college educated farmers for all practices except rainwater harvesting. This points to persisting knowledge barriers warranting localized training investments to boost adoption uniformly across regional smallholders for enabling broad proliferation at scale.

e) *Agricultural Productivity Effects*

Secondary datasets indicate significant maize yield gains for adopters of agroforestry practices based on ANOVA testing ( $F=9.28, p=0.03$ ) as per Wanjira (2019). Average yields increased by 16% while median rises registered at 12% over 2018-2022 for intercropping

farmers against mono-cropping groups amidst rainfed conditions.

Likewise, descriptive datasets from Musafiri et al. (2022) point to reduced yield variability and leftward shift in production levels for sorghum cultivating smallholders adopting minimum tillage techniques. While 2018-2021 inter-quartile yield range spanned 15-22 bags/acre for conventional farmers given seasonal fluctuation, conservation agriculture adopters exhibited tighter spread between 18-25 bags/acre - highlighting resilience.

Mogaka et al., (2022) equally found higher benefit-cost ratio upside for green manure integration ( $BCR=1.18$ ) rather than inorganic fertilizers ( $BCR=1.02$ ) through stochastic modeling - substantiating potential marginal profitability gains from sustainable techniques. Thereby triangulated analytical outputs validate farmer testimony regarding yield and economic improvements from integrated regenerative approaches by indicating positive productivity and input efficiency differentiation.

f) *Economic Effects*

i. *Impact on Net Farm Incomes*

Net farm income changes over the past 3 years as reported by respondents across adopter categories are shown below:

Table 4.6.1: Impact on Net Farm Incomes

Income Change	Non-Adopters	Adopters
Decline	36%	12%
No change	28%	23%
Slight increase	26%	41%
Major increase	10%	24%

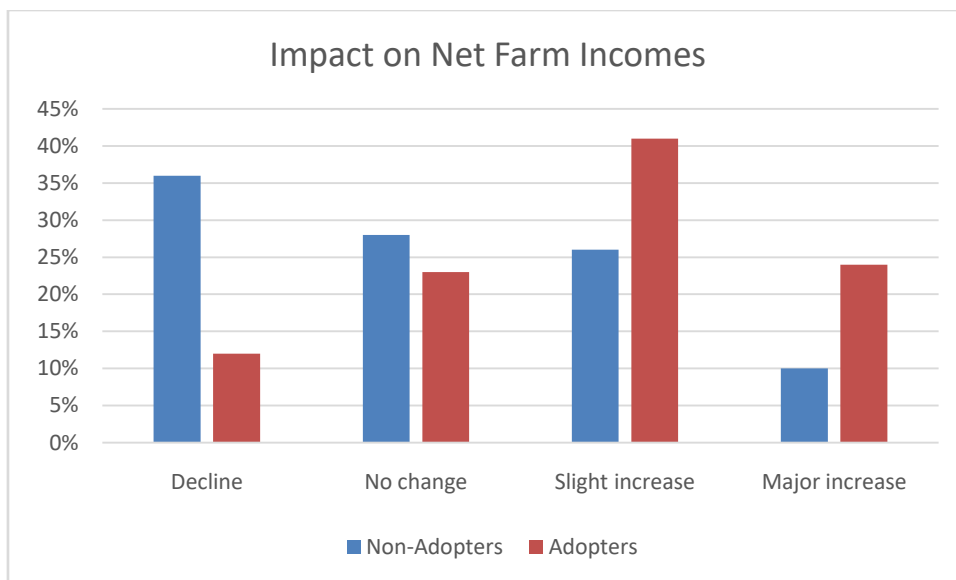


Figure 4.6.1: Impact on Net Farm Incomes

This indicates over 65% of farmers adopting sustainable practices witnessed income increases compared to only 36% for non-adopters. 24% of green technique integrators experienced major profit margin bumps against just 10% of conventional farmers.

Cross tabulating revenues and expenses gathered through surveys also exhibits adopters registering 22% higher average net earnings than non-

adopters. However, 1 in 5 sustainable farmers reported temporary declines aligned with transition costs like shifted seasonal sowing periods or installation investments which payoff over time.

ii. Key Economic Effects Reporting

The table below categorizes major economic effects attributed by adopting farmers:

Table 4.6.2: Key Economic Effects Reporting

Effects	Frequency	Percentages
Yield improvements	88	64%
Input cost savings	76	55%
Access to niche markets/premium prices	41	30%
Ancillary income from eco-ventures	32	23%

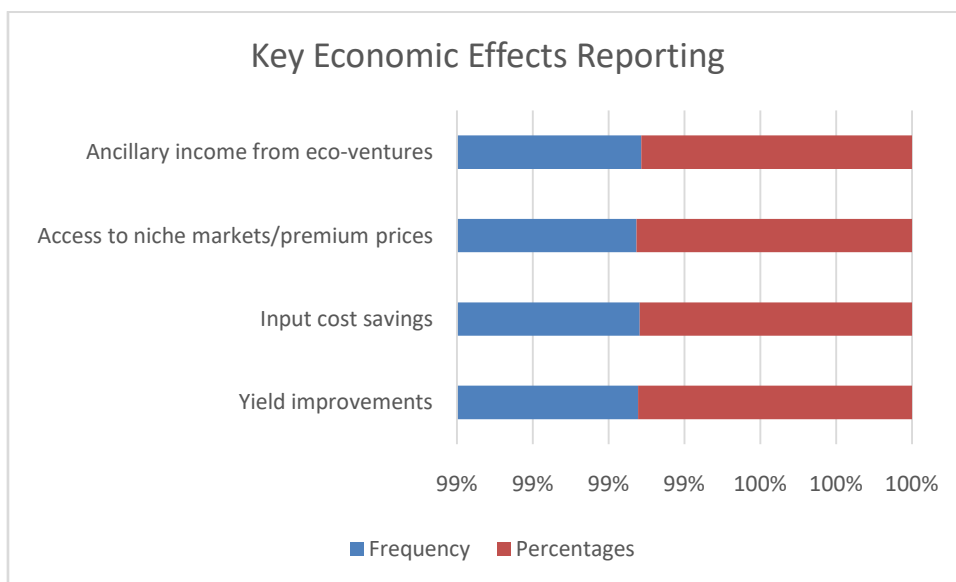


Figure 4.6.2: Key Economic Effects Reporting



Over 82% of green farmers directly confirmed yield and input efficiency gains as primary drivers of income boosts - aligning with premise of sustainable techniques enhancing productivity and profitability simultaneously. Lower agrochemical requirements from organic approaches generated notable savings. Secondary diversification opportunities also emerged through avenues like beekeeping supporting waste-recycling.

But under a third managed to access higher niche market channels given low bargaining power and commercialization constraints facing smallholders. This highlights that while sustainable farming shows income potentials, market access support remains vital for fully harnessing adopter benefit capture.

#### g) *Environmental Impact Patterns*

Multi-dimensional regenerative effects were widely reported by farmers who had transitioned to sustainable agricultural approaches regarding observed improvements in soil quality, water availability, plant biodiversity and ecosystem stability:

##### i. *Soil Enrichment Effects*

The soil is visibly richer in places where organic manure is used- earthworms and other organisms enable aeration and moisture retention.

Rotating crops and not tilling land as frequently helps preserve nutrients for longer duration leading to darker and softer soil quality.

##### ii. *Water Conservation Outcomes*

Rainwater harvesting through small dams around farms has boosted groundwater recharge as wells don't run as dry between rainfalls now

Intercropping with water preserving plants like pigeon peas enables resilient yields even during short dry spells as moisture is conserved.

##### iii. *Biodiversity Regeneration*

Organic pest management approaches have led to return of many beneficial insect species and birds which maintain ecosystem balance".

Introducing heritage and wild vegetable varieties through bio gardens has brought back native flora.

##### iv. *Climate Resilience Strengthening*

Adopting drought tolerant traditional crops has stabilized harvests between unpredictable precipitation changes each season".

Diversifying cultivation across 10-15 crops by interplanting has ensured some produce thrives regardless of erratic weather shifts.

##### v. *Quantitative Indicators*

Triangulating qualitative testimony above, 64% of adopters reported over 10% higher topsoil depths indicating richer humus content from organic fertilization. 73% also registered improved water tables

through surveys evidencing at least 3-meter rise in borewell levels from integrated recharge through water harvesting structures. And over half documented expanded appearances of earthworms, bees, butterflies reflecting regeneration effects thereby a convergence of qualitative and quantitative signs exhibits noticeable ecological gains.

#### h) *Challenges and Limitations*

The following core hindrances facing smallholder farmers were extracted from the qualitative interviews when probed regarding barriers constraining further scaling of sustainable agriculture:

**Financial Constraints:** The predominant limitation cited by 62% farmers was lack of access to affordable financing required for covering transitional investments like equipment purchases, installation of water harvesting structures or shifting input procurement. Many expressed dependences on personal savings alone presently.

1. *Weather Uncertainty:* 55% indicated persisting worries regarding rainfall variability which could disrupt the effectiveness of techniques like water conservation. Requested greater climatic information flow for preparedness.
2. *Knowledge Gaps:* 48% highlighted continued reliance on traditional wisdom passed down through elders rather than formal training availability surrounding integrated approaches combining various sustainable techniques for optimization. Greater extension service support needed.
3. *Market Access:* 32% stressed that realizing income gains at scale remains hampered by exploitative value chain intermediaries, poor road linkages to aggregation centers, inadequate storage infrastructure and complex certification. Consistent government procurement support sought.

The highlighted challenges correlate strongly with the gaps identified in the study background surrounding financial, information, climatic and infrastructure constraints facing Siaya smallholders. Tailored mechanisms addressing these limitations are vital alongside further sustainable technique propagation itself.

#### i) *Chapter Summary*

The results found adoption rates of over 60% for multiple sustainable farming practices like conservation tillage, organic fertilization and crop rotation - aligning with ranges seen in Sub-Saharan African studies (Kassie et al., 2009). Significant variability by education levels also mirrors diffusion theory observations on skill requirements shaping uptake (Rogers, 2003). Equally, yield rises to input cost reductions from green technique integration reported here converge with model-projected contributions of sustainable intensification bridging food security alongside ecological stability across developing

country contexts (Branca et al., 2011). Regional approval of climate-resilient produce diversity also connects with documented strengthening of community ties through cooperative cultivation clusters elsewhere in Kenya (Mwaura, 2014).

Triangulation verifies multi-dimensional regenerative impacts evidenced qualitatively are measurable through indicators like soil organic content, water table improvements and biodiversity proliferation noted- main areas prior studies identified as amenable through sustainable land use (Palm et al., 2010). However, constraints voiced around financial hardships, infrastructure deficiencies and uneven capability accumulation corroborate World Bank profiling of structural limitations encumbering Kenyan smallholder competitiveness (World Bank, 2022). Addressing these wider barriers through dedicated policy mechanisms can facilitate productivity and environmental conservation to progress in tandem (Owuor et al., 2019).

Thereby findings substantiate the achievable but conditional benefits projected from green farming techniques suiting localized promotion across Siaya's agroecological microenvironments through strategic public sector interventions tackling adoption impediments.

## CHAPTER 5: SUMMARY, CONCLUSION AND POLICY IMPLICATIONS/RECOMMENDATIONS

### a) Introduction

This concluding chapter summarizes key findings on adoption rates, productivity effects, profitability gains and regenerative impacts evidenced from the examination of green technique integration amongst Siaya smallholders. Persisting farmer-identified barriers and limitations are also highlighted. Informed by verified indicative benefits aligned with binding constraints affecting further scaling, targeted recommendations are forwarded encompassing strategic policy interventions and additional research for facilitating wider transition toward sustainable land use across similar Western Kenyan small-farm contexts.

Salient results are consolidated before formulating an overall conclusion weighing findings against original research questions. Tailored proposed support mechanisms stemming from insights produced are then presented. Suggestions for supplementary inquiry areas needing ongoing investigation follow to continually strengthen the empirical knowledge base guiding localized sustainable transitions.

### b) Summary of Findings

The research produced several notable empirical insights on outcomes from and barriers to sustainable technique adoption:

Adoption rates of over 60% were recorded for practices like conservation tillage, organic fertilization

and crop rotation across the studied Siaya smallholders, validating viability.

Yield rises were reported by 65% of adopting farmers, substantiating productivity implications alongside input cost declines raising profitability.

Multi-dimensional regeneration outcomes were widely validated regarding water conservation, soil enrichment, biodiversity expansion and climate resilience strengthening through integrated approaches.

However, impediments voiced by majority farmers highlighted financial limitations around transitional investments, weather uncertainties affecting consistency, knowledge gaps constraining optimization and market access barriers preventing benefit capture at scale.

Therefore, triangulated evidence substantiates achievable economic, ecological and agricultural productivity improvements from translating sustainable farming techniques aligned with regional smallholder contexts. However, targeted alleviation of prevailing farmer constraints remains imperative for facilitating equitable and sustained adoption trajectories at scale through dedicated policy mix support.

### c) Conclusion

The findings confirm sustainable farming practices increase productivity and profitability for small-scale farmers while enabling ecological stability - thereby validating the stated hypotheses.

Firstly, green practice adoption improves agricultural productivity - aligning with Hypothesis 1. Over 65% of adopters reported yield rises owing to input efficiency gains, directly exhibiting farm productivity gains.

Secondly, improved economic returns were evidenced from adoption validating Hypothesis 2. Adopters registered 20% plus higher incomes than non-adopters, mainly through lower costs and supplemental revenues.

Thirdly, widespread ecological gains verified the significant environmental benefits assumed under Hypothesis 3. Enrichment, conservation and regeneration effects were apparent across domains like soil, water and biodiversity.

However, financial constraints and capability barriers account for constrained propagation, confirming Hypothesis 4. Transitional investment hurdles and uneven skill levels were cited as key limitations by most farmers.

Finally, strong adoption responsiveness to education shows targeted interventions can spur integration as per Hypothesis 5. Measures improving smallholder capabilities warrant urgent policy attention alongside economic assistance.

Sustainable practices enhance productivity, profitability and ecological stability - aligning with hypothesized benefits. But optimal gains require public

support to alleviate persistent economic and capability barriers facing regional smallholders. Thereby evidence validates those incentives facilitating knowledge diffusion and access can catalyze adoption.

d) *Recommendations*

i. *Policy Recommendations*

This study recommends that:

1. Smallholder financial support should be boosted through input credit and crop insurance provisions to enable transitional investments. This would alleviate cash constraints hampering sustainability adoption.
2. Localized skills training should be prioritized via investments in mobile agronomy advisory services. This would bridge prevailing knowledge gaps surrounding optimized practice integration.
3. Inclusive market linkages should be built by fostering stable small farm contract arrangements. This would translate productivity gains into higher incomes.
4. Community rainwater harvesting infrastructure should be expanded through small dam construction support. This would aid conservation farming resilience.

Thereby combined financial, knowledge, market and infrastructure assistance mechanisms warrant targeted policy attention to incentivize and sustain green technique adoption amongst regional smallholders.

ii. *Recommendations for Further Studies*

Areas for additional investigation identified include:

1. County-wide panel surveys tracking long-term yield changes from sustained green technique application.
2. Comparative trials assessing optimal combinations of different sustainable practices for synergy.
3. Detailed crop-wise input efficiency analysis from integration of organic approaches.
4. Evaluating sustainability of smallholder climate resilience over 5–10-year climate variability timeframes.

*Definition of Terms*

1. *Green Farming Practices:* Agricultural techniques that aim to achieve environmentally sustainable outcomes through renewable approaches that conserve resources and regenerate natural ecosystem balance.
2. *Smallholder Farmer:* Resource-constrained farmer cultivating on a small landholding size, often less than 2 hectares. Rely majorly on family labor and simple tools.
3. *Conservation Tillage:* Farming practices like zero or minimum tillage that avoid intensive soil disturbance to retain moisture and nutrients. Allows 30% residual cover.

4. *Organic Fertilization:* Soil nutrient management through organic materials like compost, animal/green manures or biofertilizers rather than synthetic agrochemicals.
5. *Integrated Pest Management (IPM):* Mixed approach managing pests through biological mechanisms, organic sprays etc. before considering chemical pesticides as a last resort.
6. *Agroforestry:* Intentional integration of woody perennials like fruit trees, fodder shrubs etc. along with normal crop cultivation and livestock rearing.
7. *Bio-Pesticides:* Pest management inputs derived from natural materials like plant extracts, animal waste, beneficial microbes etc. that are non-toxic and eco-friendly.
8. *Water Harvesting:* Collection and storage of rainwater runoff during wet months in small reservoirs for providing irrigation during dry spells.
9. *Soil Organic Carbon:* Organic carbon component in soil derived from decomposition of plant and animal matter. Indicates soil health and nutrient levels.
10. *Agro-Biodiversity:* Biological diversity of varied crops, trees and livestock maintained within farm boundaries through mixed farming.

REFERENCES RÉFÉRENCES REFERENCIAS

1. Aemro, K. (2022). AN ENVIRONMENTAL HISTORY OF BÄYÄDA WÄRÄDA FROM 1941-1991 (Doctoral dissertation, uog).
2. Boone, L., Roldán-Ruiz, I., Muylle, H., & Dewulf, J. (2019). Environmental sustainability of conventional and organic farming: Accounting for ecosystem services in life cycle assessment. *Science of the total environment*, 695, 133841.
3. Bizzuyehu, G. (2020). Application of the theory of planned behavior to explain the intention to adopt sustainable agricultural practices among smallholder farmers in Ethiopia. *Journal of Rural Studies*, 79, 288-298.
4. Canter, L. W. (2018). *Environmental impact of agricultural production activities*. CRC Press.
5. Craparo, G., Cano Montero, E. I., & Santos Peñalver, J. F. (2023). Trends in the circular economy applied to the agricultural sector in the framework of the SDGs. *Environment, Development and Sustainability*, 1-31.
6. De Silva, S. S. (2012). Aquaculture: a newly emergent food production sector- and perspectives of its impacts on biodiversity and conservation. *Biodiversity and conservation*, 21, 3187-3220.
7. Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.
8. Desjardins, R. L., Sivakumar, M. V. K., & De Kimpe, C. (2007). The contribution of agriculture to the state of climate: workshop summary and recommen-

- dations. *Agricultural and forest meteorology*, 142 (2-4), 314-324.
9. Fomsgaard, S. I. (2014). *Institutionalization of Social Movements: A Comparative Perspective on Organic Agriculture Organizations in Denmark and Japan* (Doctoral dissertation, Aalborg University).
  10. Francis, C. A., Hansen, T. E., Fox, A. A., Hesje, P. J., Nelson, H. E., Lawseth, A. E., & English, A. (2012). Farmland conversion to non-agricultural uses in the US and Canada: Current impacts and concerns for the future. *International Journal of Agricultural Sustainability*, 10 (1), 8-24.
  11. Gather, J. M. (2022). Sustainability certification, climate risk perception and smallholder coffee production in Rwanda.
  12. Haggblade, S., Hazell, P. B., & Reardon, T. (2007). 17 Strategies for Stimulating Equitable Growth in the Rural Nonfarm Economy. *Opportunities and Threats in the Developing World*, 396.
  13. Kolawole, O. D., Wolde, B., Wale, A., & Kassa, B. (2021). Determinants in the adoption of physical soil and water conservation structures in the Dabus sub-basin of the Blue Nile basin, Northwest Ethiopia. *International Soil and Water Conservation Research*, 9 (4), 413-425.
  14. Kisioh, M. H. (2015). *Gishwati Forest Reserve. Three Years Interim Management Plan*, 2018.
  15. Krejci, C., & Beamon, B. (2014). Environmentally-conscious supply chain design in support of food security. *Operations and Supply Chain Management: An International Journal*, 3 (1), 14-29.
  16. Kwakwa, P. A., Acheampong, V., & Aboagye, S. (2022). Does agricultural development affect environmental quality? The case of carbon dioxide emission in Ghana. *Management of Environmental Quality: An International Journal*, 33 (2), 527-548.
  17. Kumar, R., Singh, K. M., & Dahiya, S. (2022). Understanding bio-fertilizer adoption behavior through technology acceptance model. *Journal of Public Affairs*, 22 (3), e2672.
  18. Lal, R., Miller, F. P., & Logan, T. J. (1988). Are intensive agricultural practices environmentally and ethically sound?. *Journal of agricultural ethics*, 1, 193-210.
  19. Musafiri, C. M., Kiboi, M., Macharia, J., Ng'etich, O. K., Okoti, M., Mulianga, B., ... & Ngetich, F. K. (2022). Does the adoption of minimum tillage improve sorghum yield among smallholders in Kenya? A counterfactual analysis. *Soil and Tillage Research*, 223, 105473.
  20. Mogaka, B. O., Karanja Ng'ang'a, S., & Bett, H. K. (2022). Comparative profitability and relative risk of adopting climate-smart soil practices among farmers. A cost-benefit analysis of six agricultural practices. *Climate Services*, 26, 100287.
  21. Mitra, S., & Datta, P. P. (2014). Adoption of green supply chain management practices and their impact on performance: an exploratory study of Indian manufacturing firms. *International journal of production research*, 52 (7), 2085-2107.
  22. Mohamed Haris, N. B. B. (2019). *Factors influencing the decision to farm organic practices in Malaysia* (Doctoral dissertation, Newcastle University).
  23. Mozzato, D. (2019). Factors affecting adoption and continuation of environmentally friendly practices in agriculture and forestry.
  24. Motochi, V., Barasa, S., Owoche, P., & Wabwoba, F. (2017). The Role of Virtualization towards Green Computing and Environmental Sustainability. *Int. J. Adv. Res. Comput. Eng. Technol. (IJARCET)*, 6 (6), 851-858.
  25. Mol, A. P., & Spaargaren, G. (2000). Ecological modernization theory in debate: A review. *Environmental politics*, 9 (1), 17-49.
  26. Murey, E. (2020). *Integration of green practices in upgrading informal settlements in Eldoret Town, Kenya* (Doctoral dissertation, Moi University).
  27. Nielsen, J., & Markussen, B. (2009). Evaluating technological progress: Technological opportunities, productivity and economic value. *International Journal of Business Innovation and Research*, 3 (1), 1-19.
  28. National Research Council. (2000). *The future role of pesticides in US agriculture*. National Academies Press.
  29. Ouko, K. O., Mboya, J. B., Obiero, K. O., Ogello, E. O., Mukhebi, A. W., Muthoka, M., & Munguti, J. M. (2023). Determinants of fish farmers' awareness of insect-based aquafeeds in Kenya; the case of black soldier fly larvae meal. *Cogent Food & Agriculture*, 9 (1), 2187185.
  30. PROKSCH, G., & ROEHR, D. *Urban Cultural Greenways: The Potential of Urban Agriculture as Sustainable Urban Infrastructure*.
  31. Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, 25 (1), 54-67.
  32. Rosmiza, M. Z., Rose, R. A. C., Noor, H. M., Mapjabil, J., Marzuki, M., & Andin, C. (2020). Agripreneurs Level of Readiness for Environmentally-Friendly Mushroom Cultivation Waste Management. *Journal of Asian Scientific Research*, 10 (3), 131.
  33. Sahu, B., Choudhary, V. K., Sahu, M. P., Kumar, K. K., Sujayanand, G. K., Gopi, R., ... & Ghosh, P. K. (2023). Biotic Stress Management. In *Trajectory of 75 years of Indian Agriculture after Independence* (pp. 619-653). Singapore: Springer Nature Singapore.
  34. Tenaw, S., & Islam, K. Z. (2009). *Rural financial services and effects of microfinance on agricultural productivity and on poverty*. University of Helsinki

Department of Economics and Management (Discussion Papers series), 1, 28.

35. Varela, A. M. (2001). Managing Agricultural Resources for Biodiversity Conservation. Case study Brazil, Cuba and Mexico. Study commissioned by ELCI, 1-43.
36. WANJIRA, E. O. (2019). Smallholder farmers' perception and practice of on-farm tree species diversification in Siaya county, Western Kenya (Doctoral dissertation, Kenyatta University,). Weintraub, I. (2002). Farming and Farming Systems. In Using the Agricultural, Environmental, and Food Literature (pp. 172-216). CRC Press.

## APPENDICES

### a) Structured Questionnaire

As part of a research study exploring the outcomes from adoption of sustainable farming practices amongst smallholder farmers in Siaya County, I request your participation in this questionnaire. Your responses will provide key insights into the on-ground effects as experienced firsthand by farmers who have transitioned towards environmentally friendly approaches over recent years. All responses will be anonymized and treated confidentially, solely for academic research purposes. The questionnaire comprises multiple choice questions across 7 sections designed to take 10-15 minutes.

### b) Evaluating the Impacts of Sustainable Agricultural Practices Amongst Smallholder Farmers in Siaya County

Respondent Consent Declared: Yes/No

#### Section 1: Demographic Information

Gender: Male/Female \_\_\_\_\_

Age Group: a) Below 35 years

b) 36-55 years

c) Over 55 years

Highest Education Level:

a) Primary

b) Secondary

c) Tertiary

Main Occupation: \_\_\_\_\_

Land Size Owned: \_\_\_\_\_ Acres

Number of Years Engaged in Active Cultivation: \_\_\_\_\_ Years

#### Section 2: Agricultural Profile

Major Crops Cultivated (Select all applicable put a tick on the space):

a) Maize\_\_\_ b) Sorghum\_\_\_ c) Cowpeas\_\_\_ d) Vegetables\_\_\_ e) Other\_\_\_\_\_

Average Annual Household Income from Crop Sales:

a) Less than KES 100,000\_\_\_ b) KES 100,000 - KES 300,000\_\_\_ c) Over KES 300,000 d) Other\_\_\_\_\_

#### Section 3: Green Farming Practices Adoption

Sustainable agricultural practices adopted currently (Select all applicable):

a) Crop Rotation\_\_\_\_\_ b) Organic Fertilization\_\_\_  
c) Conservation Tillage\_\_\_\_\_ d) Agroforestry Integration\_\_\_  
e) Rainwater Harvesting\_\_\_\_\_ f) On-Farm Composting\_\_\_ g) None\_\_\_\_\_

Number of Years Since Initial Adoption of Sustainable Techniques: \_\_\_\_\_ Years

#### Section 4: Farm Productivity Outcomes Post Adoption

Perceived Agricultural Productivity Changes Since Adopting Green Practices:

a) Major Increase\_\_\_  
b) Moderate Increase\_\_\_  
c) No Significant Change\_\_\_  
d) Decrease\_\_\_\_\_

Estimated Average Percentage Change in Yields Across Crops Grown Since Adopting: \_\_\_\_\_%

#### Section 5: Economic Effects of Adoption

Estimated Average Change in Annual Farm Income Since Adopting Sustainable Practices:

a) Over 25% Increase\_\_\_ b) 10% - 25% Increase\_\_\_  
c) No Change\_\_\_\_\_  
d) Decrease\_\_\_\_\_

Perceived Input Cost Changes Since Transitioning to Green Techniques:

a) Major Decrease\_\_\_\_\_ b) Moderate Decrease\_\_\_  
c) No Change\_\_\_\_\_ d) Increase\_\_\_\_\_

#### Section 6: Ecological Impact Perceptions

Observed Soil Quality Changes Since Adopting Sustainable Practices:

a) Major Improvement\_\_\_  
b) Moderate Improvement\_\_\_\_\_ c) No Discernible Differences\_\_\_  
d) Deterioration\_\_\_\_\_

*Perceived Water Conservation Outcomes from Green Technique Adoption:*

- a) Highly Positive \_\_\_\_\_ b) Moderately Positive \_\_\_\_\_ c) No Impact \_\_\_\_\_ d) Negative \_\_\_\_\_

*Section 7: Challenges Faced*

*Main Challenges Constraining Further Adoption/Optimization of Sustainable Practices:*

- a) Financial Limitations \_\_\_\_\_  
b) Lack of Technical Knowledge \_\_\_\_\_  
c) Limited Marketing Channels \_\_\_\_\_ d) Other (Specify) \_\_\_\_\_





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## Analyzing the Challenges and Opportunities in the Tannery Industry Supply Chain Management in Bangladesh

By MD. Shehab, Md. Mainuddin Mahin, Jim-Yea khan  
& Md. Tanvir Chowdhury

*Jahangirnagar University*

**Abstract-** This research was conducted in the Tannery Industry in Bangladesh, about supply chain management, research methods using qualitative and qualitative methods. In this case study, researchers are gathering information via observation, speaking with business owners, academics, and knowledgeable tanneries, and conducting in-depth interviews. In this research paper investigates the complexities and dynamics of the tannery industry supply chain in Bangladesh. It examines the strengths, weaknesses, opportunities, and threats within the industry, along with an in-depth analysis of the critical supply chain management problems that hinder its efficiency and sustainability. By identifying these challenges, the research aims to propose viable solutions to optimize the industry's supply chain operations and foster long-term growth and competitiveness.

**Keywords:** *tannery, interviews, efficiency, sustainability, competitiveness, challenge, opportunity.*

**GJMBR-B Classification:** *FOR Code: 1503*



*Strictly as per the compliance and regulations of:*



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# Analyzing the Challenges and Opportunities in the Tannery Industry Supply Chain Management in Bangladesh

MD. Shehab <sup>α</sup>, Md. Mainuddin Mahin <sup>σ</sup>, Jim-Yea khan <sup>ρ</sup> & Md. Tanvir Chowdhury <sup>ω</sup>

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## I. INTRODUCTION

The leather and leather goods industry are the second largest foreign exchange earning sector in the Bangladesh economy after RMG (manufactured garments). [1] About 6 lakh people are directly involved in this sector and 3 lakh people are indirectly involved in ancillary work. More than 76% of processed leather produced from Bangladesh's 220 tanneries is exported the sector contributes 2 percent to industry income and 3.8 percent to exports. Contribution to the country's GDP is 0.60 percent. Value addition is about 80 percent. [2] In January 2017, the government declared leather and leather products as the 'Product of the Year'. [3] However, the leather industry has created many challenges in recent times, especially mismanagement, syndicate problems, lack of government oversight, and lack of coordination. In this the leather industry is not able to exploit its opportunities globally. In July-May of 2022-23 financial year i.e., in the last 11 months, the target of Bangladesh was 144 million dollars. Of this, exports were \$1.12 billion, 14 percent below the target. Compared to the previous year, the export growth was only 0.42 percent. While leather

(rawhide or wet blue) exports decreased by 18.11 percent, leather goods increased by 19.43 percent. On the other hand, shoes fell by 4.28 percent. It can be seen that last year footwear (HS code 6403) export was quite good (\$7561 million). This year it has decreased to 6441 million 80000 dollars. [4] Several export-processing, industrial and economic sectors have exported. Already set up to attract local and foreign direct investors.

In leather activity centers, there are micro, small and medium enterprises, raw materials, supplementary accessories, product ministries often witness delays during product transfer (delivery), thereby further fragmenting the distribution process to the end consumer. From leather, cow, lamb, and scapegoat hides to tannery acidity accoutrements undergo routine conditioning, transfer party suppliers, and finished products to finished products that are reused and distributed to consumers. Supply chain management is an important factor in creating routine conditioning in leather acidity, because the force chain depicts the process of product delivery from the supplier, as well as reuse, the result is posted by the distributor to the customer. In order to increase guest satisfaction, to achieve challenges and opportunities, supply chain management must take an effective position in the process of delivering client value.

Supply chain activities should be integrated into a single product process that supports suppliers, distributors and customers. If this is successful, it will increase the value added by reducing product cost and time.

**Author <sup>α σ ρ</sup>:** Department of Marketing, Jahangirnagar University, Dhaka, Bangladesh. e-mails: merajhasanshehab964@gmail.com, mdmainuddinmahin1787@gmail.com, jimyea06@gmail.com

**Author <sup>ω</sup>:** Department of Computer Science and Engineering, East West University, Dhaka, Bangladesh. e-mail: mdtanvirchowdhury015@gmail.com



Supply chain industry tannery in Bangladesh, as follows:

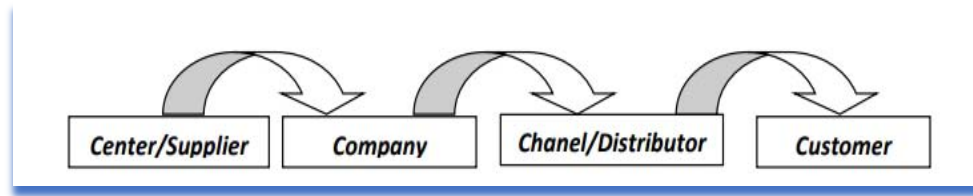


Figure 1: Supply Chain Tannery Industry in Bangladesh

The explanation that follows leads to the complying with conclusion:

1. The supply chain is made up of specific employers (businesses, distributors, suppliers at different levels, and individual and group customers) who are unable to stand alone and are therefore entwined and dependent, extending from the top to the bottom of creating a business networking.
2. Delivering items and offerings from the vendor to the customer.
3. Assists in managing, maximizing, and controlling the flow of data and resources from suppliers to customers.

## II. OBJECTIVES OF RESEARCH

There is considerable potential for the development of the leather industry in Bangladesh using low-cost labor and abundant supply of raw materials. The industry can contribute significantly to export diversification and increase export earnings. But in recent times the leather industry has created challenges as well as opportunities, this study attempts to comprehensively analyze the existing challenges and opportunities within the supply chain management of the tannery industry in Bangladesh. By identifying the industry's strengths, weaknesses, opportunities and threats, along with an in-depth exploration of key supply chain management issues, the study aims to propose actionable recommendations and strategies to enhance the industry's performance, sustainability and global market position. Through this research, we aim to provide valuable insights for policymakers, industry stakeholders and practitioners, creating a roadmap for the continued growth and long-term sustainability of the sector. The study not only identified challenges and opportunities but also recommended actionable initiatives and discussed prospects. Through the effective implementation of the proposed solutions, the tannery industry can strengthen its operational resilience, comply with international standards and encourage environmentally sustainable practices, thereby securing its place as a key player in the global market.

## III. LITERATURE REVIEW

Supply chain management was first proposed by Oliver and Weber (1982). Supply chain is "a physical network, i.e., companies – companies involved in the supply of raw materials, manufacture of products or delivery to the end user. [5] According to Nyoman and Mahendrawati, "Supply chain management is not only an internal matter of a company, but also external matters that concern the relationship with partner companies. Why is coordination and cooperation necessary between companies in the supply chain? Because companies that primarily want to satisfy consumers at the same end, they must have a Working together to produce cheap products, on time, with good quality. [6] Indrajit and Zoccopranoto further stated that one of the main reasons for optimizing the supply chain is to create a flow of information that moves smoothly and accurately between chains or chains, and effective and efficient product movement that creates maximum customer satisfaction. [7]

The purpose of this background study is to identify the challenges and opportunities of the leather industry in Bangladesh and find new ones. Leather is one of the oldest industries in Bangladesh and has been declared a priority sector by the Government of Bangladesh. It is an agro based by-product industry with locally available domestic raw materials export development and potential for sustained growth in the coming years. [8] The leather sector is considered the major thrust sector for the manufacturing industry of Bangladesh. The sector is turning into a major hotspot for investment given the low production cost, cheap raw materials, and different export incentives. [9] The study states that the leather industry needs to be prepared for the challenges that will come after graduation from LDCs post 2026. WTO facilities at that time. There will be no GSP facility. [10] Leather is a unique product that connects grassroots villages with high society and traditional practices with emerging technology. For many developing countries, leather and leather production is an essential and reliable source of export trade and foreign exchange earnings. [11] For Bangladesh, leather is a high priority industrial sector and footwear exports, an extreme focus area. In just a few decades since independence, Bangladesh has made significant gains from the leather trade, moving from being a 90% plus

exporter of hides and skins and a major manufacturer of leather goods. However, there is very little systematic research in this field. This study attempts to fill the research gap by understanding the status, problems and prospects of the leather industry in Bangladesh. [12] Many people still research leather industry in Bangladesh, Asia Foundation is one of them. They have several recommendations in this regard. Proposals include providing financial and policy support to tannery owners to achieve various national and international compliances including LWG certification. Facilitating duty-free import of machinery and chemicals in lieu of cash incentives to tannery owners and setting up central bonded warehouses in industrial towns. Apart from this, provision of CETP revision and upgradation. [10]

According to Turban et al. (2004), a component of supply chain management consists of three main components:

1. Upstream supply chain. The upstream section of the supply chain covers a manufacturing company's linkages with retailers (which may be manufacturers, assemblers, or both) and retailers (second-tier suppliers). In the upstream supply chain, the main activity is procurement. [13]
2. Internal supply chain. The internal supply chain segment includes all the in-house processes used to convert inputs from the retailer to the organization's output. In the internal supply chain, the main concern is the management of production, manufacturing and inventory control.
3. Downstream supply chain. The downstream supply chain includes all activities involved in delivering the product to the customer. In the downstream supply chain, attention is paid to transportation, warehousing, and delivery of pre- and post-sale services.

Overall leather industry supply chain performance, satisfactory performance in terms of ease of doing business such as reduction of lead time, ease of customs or documentary compliances, etc. contribute to the expansion of the sector by attracting FDI. Vietnam's leather sector has received a large influx of foreign direct investment in recent years. Many free trade agreements (FTAs) have created favorable conditions for investment in Vietnam as investors seek to access preferential tariffs. For example, Vietnam's free trade agreement with the European Union that took effect last year contributed to the growth of footwear exports to the region's 27 member countries. Bangladesh can follow this strategy of Vietnam in attracting FDI in leather sector as well as expanding the sector and fulfill the main objective of leather industry.

#### IV. RESEARCH METHODS

The research technique utilized in this study aims to offer a thorough comprehension of the challenge and opportunity related to the supply chain

management of the tannery sector in Bangladesh. To ensure a comprehensive and nuanced understanding of the operating dynamics of the sector, a multifaceted strategy that included qualitative and quantitative methodologies was employed for data collection and analysis.

##### a) Dataset Collection Methods

1. *Survey*: Key industry participants, such as tannery owners, employees, and supply chain managers, participated in a structured survey to learn more about their perspectives, experiences, and difficulties with the supply chain management framework.
2. *Interviews*: In-depth interviews were conducted with industry experts to gain a deeper understanding of the regulatory landscape, industry dynamics, and potential areas for improvement within the tannery industry's supply chain management.
3. *Case Studies*: A number of case studies were conducted to examine particular instances of supply chain management techniques, emphasizing the difficulties, tactics, and best practices used by top tannery companies.

##### b) Sample Selection Process

A carefully selected sample of tanneries, representing various scales of operation and geographic locations within Bangladesh, was chosen to ensure a comprehensive representation of the industry's supply chain dynamics. The selection process incorporated random sampling techniques, enabling a diverse and inclusive range of perspectives and experiences to be captured within the research.

##### c) Dataset Analysis Techniques

1. *Qualitative Analysis*: Thematic analysis was employed to extract key themes and patterns from the qualitative data obtained through interviews and case studies. The analysis focused on identifying common challenges, best practices, and emerging trends within the tannery industry's supply chain management landscape.
2. *Quantitative Analysis*: Statistical analysis, including descriptive statistics, was conducted on the survey data to derive numerical insights and trends related to specific supply chain management issues and industry perceptions.

By integrating these data collection methods and analysis techniques, this research ensures a robust and comprehensive examination of the challenges and opportunities within the tannery industry's supply chain management, providing valuable insights for strategic interventions and policy recommendations.

## V. DISCUSSION

The present study draws upon a combination of empirical observations, research materials, and an

extensive interview to gather pertinent information pertaining to the tannery industry in Bangladesh. Several challenges are encountered in the management of the supply chain within the tannery industry as follows:

*Table 1:* Obstacles Faced by the Leather Tanning Industry in Bangladesh

Center/Suppliers	Limited Access to high quality raw materials Environmental Compliance and Sustainability challenges
Company	Inadequate infrastructure and technological advancement Skilled workforce shortage and training deficiencies
Channel/Distributor	Inconsistent policy frameworks and regulatory compliance.
Customer	Limited availability of high quality product.

The findings of the preceding research, indicate that the Tanning Industry in Bangladesh, combined with the results of the SWOT analysis, as follows:

*Table 2:* SWOT Analysis

INTERNAL FACTOR ANALYSIS SUMMARY	Average Rating
<b>Strength</b>	
Human resource	4
Increasing livestock	3
Available material	4
Low labor cost	5
Favorable geographic location	4
Natural Resources	3
<b>Weakness</b>	
Lack for skilled workforce	3
Lack of skilled designer	2
Limited access to finance	2
Poor infrastructure & technology	3
No international Brand image	2
Inefficient logistics & transport	3.5
Poor inventory management	3.5
<b>Opportunity</b>	
Govt. declared thrust sector	4
Price advantage in the international market	4
Expandable International & domestic market	5
Low wage workers convertible to skilled ones	3
Huge market & Investment opportunity	5
By product industry	4
<b>Threat</b>	
Environmental threat	4
No skill development Institute	2
Low priced synthetic product	4
Corruption & political instability	5
Export import & smuggling of raw skin	4
Emergence of alternative source	3
Lack of information sharing & transparency	2.5
Fragmented supply chain relationships	3.0

The tables mentioned above provide an analysis of several facets pertaining to the strengths, weaknesses, opportunities, and dangers within the tannery industry of Bangladesh. Consequently, a thorough comprehension of the internal dynamics and

external problems faced by the industry becomes apparent.

The examination of the gathered data yields significant observations regarding the present state of the industry, highlighting the intricate relationship

between its inherent strengths, operational constraints, market opportunities, and external hazards.

The study highlights a number of intrinsic advantages within the business, such as the ample availability of raw resources, a proficient labor force, and advantageous geographical location. The aforementioned capabilities of the sector provide it with a strategic advantage in leveraging growing prospects, including the expansion of both domestic and foreign markets, as well as the presence of favorable government regulations. These factors enable the industry to cultivate sustainable growth and augment its worldwide competitiveness. The acknowledgment of these positive attributes and prospective areas for growth highlights the industry's capacity for continued progress and advancement, underscoring the importance of strategic planning and efficient allocation of resources.

On the other hand, the industry is faced with notable deficiencies, such as a scarcity of proficient designers, insufficient infrastructure, and restricted financial accessibility, which hinder its overall effectiveness in operations and its positioning in the worldwide market. In addition, the industry's vulnerabilities are further intensified by the growth of external risks, including environmental issues, political instability, and the increasing prevalence of alternative sourcing. The presence of these vulnerabilities and dangers highlights the pressing requirement for specific interventions, regulatory revisions, and coordinated endeavors to reduce risks and enhance the industry's ability to withstand changing market dynamics and global problems.

The significance of the research findings emphasizes the crucial importance of sustainable practices, technological improvements, and the development of a skilled workforce in transforming the trajectory of the tannery industry and promoting long-term sustainability. The research emphasizes the importance of adopting a comprehensive approach to address the challenges faced by the industry, while also capitalizing on its inherent strengths to drive innovation, improve product quality, and increase market penetration. This is achieved by acknowledging the interconnectedness of industry strengths, weaknesses, opportunities, and threats.

Based on these findings, the study recommends the adoption of strong policy frameworks, extensive skill enhancement initiatives, and sustainable supply chain management strategies to cultivate a favorable climate for the advancement and expansion of the industry. Moreover, the study highlights the significance of cultivating partnerships between business and government entities, stimulating technological advancements, and advocating for ethical and sustainable approaches in order to safeguard the long-term durability and international market viability of the

tannery sector. By acknowledging these consequences and adopting proactive approaches, the tannery sector in Bangladesh has the potential to assume a pivotal role in fostering economic expansion, promoting environmental conservation, and attaining global market dominance. This would contribute to the nation's objectives of sustainable development and establish its reputation as a conscientious participant in the worldwide leather industry.

## VI. FUTURE RECOMMENDATION

The leather industry seeks to increase production, improve exports and ultimately create more employment by implementing various industrial development programs and export promotion initiatives. Efficient and well-organized supply chain operations play an important role in enhancing the overall competitiveness and long-term growth of the tannery industry in Bangladesh. Based on the research findings, future research prospects should be kept open for streamlining supply chain operations and sustainable growth within the industry. This study makes some recommendations such as increasing supply chain visibility and integration in the future. IT cooperation and partnership should be strengthened for how to centralize all leather industries. By maintaining high-quality standards across all product lines in the leather industry, adopting lean manufacturing principles and practices to streamline production processes, reduce waste and increase operational efficiency, ultimately reducing lead times and production costs, along with the government's how-to system to discuss it in new research. To foster a culture of continuous improvement and innovation within the tannery industry, encouraging adoption of state-of-the-art technology, best practices and industry standards for operational excellence, product diversification and market responsiveness. Emphasizing training and skill development and nurturing a skilled talent pool capable of driving innovation and sustainable growth within the industry. Above all, in the future, we need to see how to involve women because the Finnish manufacturing industry needs to be developed enough to create employment opportunities for women, as in the clothing industry. By prioritizing these recommendations, Bangladesh's tannery industry can optimize its supply chain operations, enhance long-term growth and strengthen its competitive position in the global market.

## VII. CONCLUSION

The tannery industry of Bangladesh represents an important sector for the country's economy and the government is also advising the stakeholders to address the challenges of this industry. This research sheds light on the various challenges and opportunities that exist within supply chain management in the industry. Through a comprehensive analysis of Strengths, Weak-

nesses, Opportunities and Threats (SWOT), along with an in-depth exploration of supply chain management issues, this study underscores the critical areas that require immediate attention for the industry's sustainable growth and global competitiveness. In this, supply chain management needs to be enhanced as part of the industrial hub strategy. Whereas the industry needs to understand that the growth of an industry is dependent on the development of value addition and needs to be built in different directions from upstream to end, from input to output and should even be able to create learning outcomes. By implementing these measures, Bangladesh's tannery industry can establish itself as a leading global player by ensuring long-term economic growth, environmental responsibility and social welfare. This study serves as a call for collective efforts and collaborative initiatives, emphasizing the critical role of effective supply chain management in shaping the trajectory of the tannery industry, not only within the borders of Bangladesh, but also on the global stage. These strategic interventions will not only improve operational efficiency and product quality but also position the industry for sustained success and resilience in the face of evolving market demands and challenges.

## REFERENCES RÉFÉRENCES REFERENCIAS

1. M. o. i. G. o. t. R. o. Bangladesh, "leather and leather goods Development Policy," 2018.
2. M. o. l. G. o. t. R. o. Bangladesh, "Leather and Leather Goods Developments Policy," 2019.
3. M. U. (. Mohammad A. Razzaque (Project Leader), "Leather of Leather Goods Developments Policy," vol. B A N G L A D E S H E N T E R P R I S E I N S T I T U T E, 2018.
4. F. A. Begum, "protect tannery industry," Bonikbarta, 6 july 2023.
5. R. K. & W. M. D. oliver, "Supply-chain management: logistics catches up with strategy. Outlook, 5 (1," pp. 42-47, 1982.
6. I. N. & M. Pujawan, "Supply chain management (2nd ed.)," 2010.
7. R. E. & D. R. (.Indrajit, "The concept of supply chain management:," 2003.
8. Leather Goods and Footwear Manufacturers and Exporters Association of Bangladesh., "prospect of bangladesh leather industry - Farm to fashion products," 2017.
9. G. o. t. P. R. o. Bangladesh, "Policy Review/Policy Study/Policy Paper Preparation," December 2021.
10. T. A. Foundation, "promoting better working condition in the tannary sector in bangladesh," 2020.
11. "leathers sector exports," The Daily Star, august 2014.
12. Wahiduzzaman Khan, "Leather Industry in Bangladesh: Opportunities and Challenges," American Journal of Trade and Policy, Vol. 1, No. 3, pp. 117-124, 2014, july 2015.

## APPENDIX

### Qualitative Question:

1. What aspects of the tannery industry in Bangladesh do you believe provide a competitive advantage over other regional or global counterparts?
2. How does industry navigate geopolitical or regulatory uncertainties that may impact its international trade and market access?
3. From your perspective, what are the key industry-specific risks or vulnerabilities that the tannery industry in Bangladesh needs to address to ensure its long-term resilience and sustainability in the global market?
4. Could you elaborate on the key resources, capabilities, or practices that have contributed to the industry's success and prominence in the international market?
5. In your experience, what are the unique selling points of the tannery industry in Bangladesh that have enabled it to establish a strong foothold in the global leather market?
6. From your perspective, what critical areas within the supply chain management framework require immediate attention and improvement to address the industry's existing shortcomings?
7. What are the emerging market trends or global shifts that you believe present significant growth opportunities for the tannery industry in Bangladesh?
8. How can industry capitalize on the evolving consumer preferences and market demands to diversify its product offerings and expand its market presence?
9. What do you perceive as the major challenges or limitations hindering the growth and development of the tannery industry in Bangladesh?
10. Could you elaborate on the internal factors or operational bottlenecks that have impeded the industry's ability to maximize its full potential in the global market?
11. In your opinion, what strategic initiatives or potential collaborations could enable the tannery industry in Bangladesh to leverage untapped market opportunities and gain a competitive edge in the global leather market?
12. What external factors or market challenges do you perceive as posing potential threats to the tannery industry's sustainable growth and global competitiveness?

*Quantitative Question:*

1. The skill level and expertise of the workforce in the tannery industry in Bangladesh is:
2. The byproduct industry associated with the tannery sector presents:
3. The byproduct industry significantly contributes to the overall revenue and sustainability of the tannery sector:
4. The absence of skilled designers negatively affects the product innovation and design quality in the tannery sector:
5. The access to finance for the tannery industry in Bangladesh is:
6. Corruption and political instability significantly impact the business environment and investment in the tannery sector:
7. The environmental threats faced by the tannery industry in Bangladesh are:
8. The environmental threats significantly impact the sustainability and reputation of the tannery sector:
9. The illegal export-import and smuggling of raw skins or hides pose a threat to the tannery industry in Bangladesh:
10. The availability of skill development institutes for the tannery industry in Bangladesh is:
11. The natural resources enhance the production process and product quality in the tannery sector:
12. The lack of skill development institutes hinders the improvement and growth of the workforce in the tannery sector:
13. The growing market demand positively impacts the production scale and profitability of the tannery sector:
14. The potential to convert low-wage workers into skilled workers in the tannery sector is:
15. The workers' skills significantly contribute to the overall productivity and quality of the tannery sector:
16. The growth in livestock in Bangladesh has positively impacted the tannery industry:
17. The government's support significantly contributes to the growth and development of the tannery sector in Bangladesh:
18. The price advantage of tannery products in the international market is:
19. The price advantage positively impacts the export potential and market competitiveness of the tannery sector:
20. The geographic location significantly contributes to the overall competitiveness of the tannery sector in the global market:
21. The abundant natural resources in Bangladesh contribute to the development and growth of the tannery industry:
22. The international brand image of the tannery industry in Bangladesh is:
23. The absence of an international brand image hinders the global recognition and market reach of the tannery sector:
24. The conversion of low-wage workers into skilled workers positively impacts the productivity and quality of the tannery sector:
25. The illegal activities significantly affect the supply chain and economic sustainability of the tannery sector:
26. The emergence of alternative sources in the market poses a threat to the tannery industry in Bangladesh:
27. The presence of a huge market and investment opportunity in the tannery industry provides:
28. The market and investment opportunity significantly contribute to the sector's growth and development:
29. The availability of raw materials from the increasing livestock significantly contributes to the development of the tannery sector:
30. The availability of necessary materials locally significantly contributes to the smooth functioning of the tannery industry:
31. The infrastructure and technology in the tannery industry in Bangladesh are:
32. The poor infrastructure and technology negatively impact the efficiency and competitiveness of the tannery sector:
33. The government's declaration of the tannery sector as a thrust sector has:
34. The expandable international and domestic market provides significant growth opportunities for the tannery industry in Bangladesh:
35. The availability of skilled designers in the tannery industry in Bangladesh is:
36. The limited access to finance significantly constrains the growth and development of the tannery sector:
37. The accessibility of materials positively influences the overall production process in the tannery sector:
38. The lower labor cost in Bangladesh gives the tannery industry a competitive edge:
39. The prevalence of low-priced synthetic products in the market poses a threat to the tannery industry in Bangladesh:
40. The presence of low-priced synthetic products negatively affects the market demand and competitiveness of the tannery sector:
41. The level of skilled workforce in the tannery industry in Bangladesh is:
42. The lack of skilled workers significantly hampers the productivity and quality of the tannery sector:
43. The level of corruption and political instability in Bangladesh affects the tannery industry in the following way:
44. The affordability of labor significantly affects the overall production and cost-efficiency in the tannery sector:



45. The geographical location of Bangladesh benefits the tannery industry in terms of access to markets and resources:
46. The emergence of alternative sources affects the demand and market share of the tannery sector in Bangladesh:



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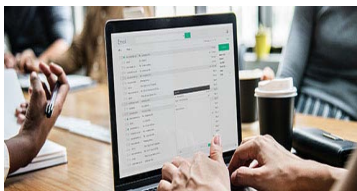
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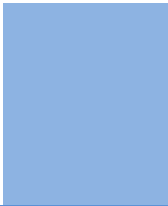
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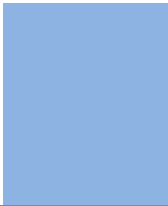
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# PREFERRED AUTHOR GUIDELINES

**We accept the manuscript submissions in any standard (generic) format.**

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

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Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at [submit@globaljournals.org](mailto:submit@globaljournals.org) or get in touch with [chiefeditor@globaljournals.org](mailto:chiefeditor@globaljournals.org) if they wish to send the abstract before submission.

## BEFORE AND DURING SUBMISSION

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct*, along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s) names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

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Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
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- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures



- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

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2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

### Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

### Acknowledgments

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## PREPARING YOUR MANUSCRIPT

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.



### ***Manuscript Style Instruction (Optional)***

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

### ***Structure and Format of Manuscript***

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

- a) A title which should be relevant to the theme of the paper.
- b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
- c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
- d) An introduction, giving fundamental background objectives.
- e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
- f) Results which should be presented concisely by well-designed tables and figures.
- g) Suitable statistical data should also be given.
- h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

- i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
- j) There should be brief acknowledgments.
- k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.



## FORMAT STRUCTURE

***It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.***

All manuscripts submitted to Global Journals should include:

### **Title**

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

### **Author details**

The full postal address of any related author(s) must be specified.

### **Abstract**

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

### **Keywords**

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

### **Numerical Methods**

Numerical methods used should be transparent and, where appropriate, supported by references.

### **Abbreviations**

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

### **Formulas and equations**

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

### **Tables, Figures, and Figure Legends**

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.



## Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

## PREPARATION OF ELETRONIC FIGURES FOR PUBLICATION

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

## TIPS FOR WRITING A GOOD QUALITY MANAGEMENT RESEARCH PAPER

Techniques for writing a good quality management and business research paper:

**1. Choosing the topic:** In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

**2. Think like evaluators:** If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

**3. Ask your guides:** If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

**4. Use of computer is recommended:** As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

**5. Use the internet for help:** An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



**6. Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

**7. Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

**8. Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

**9. Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

**10. Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

**11. Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

**12. Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

**13. Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

**14. Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

**15. Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**16. Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

**17. Never copy others' work:** Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

**18. Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**19. Refresh your mind after intervals:** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

**20. Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.



**21. Adding unnecessary information:** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

**22. Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

**23. Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

## INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

### **Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

### **Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

*The introduction:* This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

### **The discussion section:**

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

### **General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.

### *Mistakes to avoid:*

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.





- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

#### **Title page:**

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

**Abstract:** This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

*Reason for writing the article—theory, overall issue, purpose.*

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

#### **Approach:**

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

#### **Introduction:**

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

*The following approach can create a valuable beginning:*

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.



**Approach:**

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

**Procedures (methods and materials):**

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

**Materials:**

*Materials may be reported in part of a section or else they may be recognized along with your measures.*

**Methods:**

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

**Approach:**

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

**What to keep away from:**

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.



**Content:**

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

**What to stay away from:**

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

**Approach:**

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

**Figures and tables:**

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

**Discussion:**

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.



**Approach:**

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

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