CHAPTER – 4

INTERPRETATION, RESULTS AND DISCUSSION

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INTERPRETATION, RESULTS AND DISCUSSION

4.1 RESPONDENTS DEMOGRAPHIC ASPECTS:

4.1.1. Gender Wise Classification:

Table 4.1: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	100	50.0	50.0	50.0
	Male	100	50.0	50.0	100.0
	Total	**200**	**100.0**	**100.0**	

About 50% respondents as Big Data Analytics and Business Intelligence Systems users either senior officials, managers or executives were male and 50% respondents as Big Data Analytics and Business Intelligence Systems users either senior officials, managers or executives were female. Which account for 100 respondents each from overall sample size of 200 respondents.

4.1.2 Classification Age Wise:

Table 4.2: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-30 Years	62	31.0	31.0	31.0
	31- 40 Years	102	51.0	51.0	82.0
	41 – 50 Years	36	18.0	18.0	100.0
	Total	**200**	**100.0**	**100.0**	

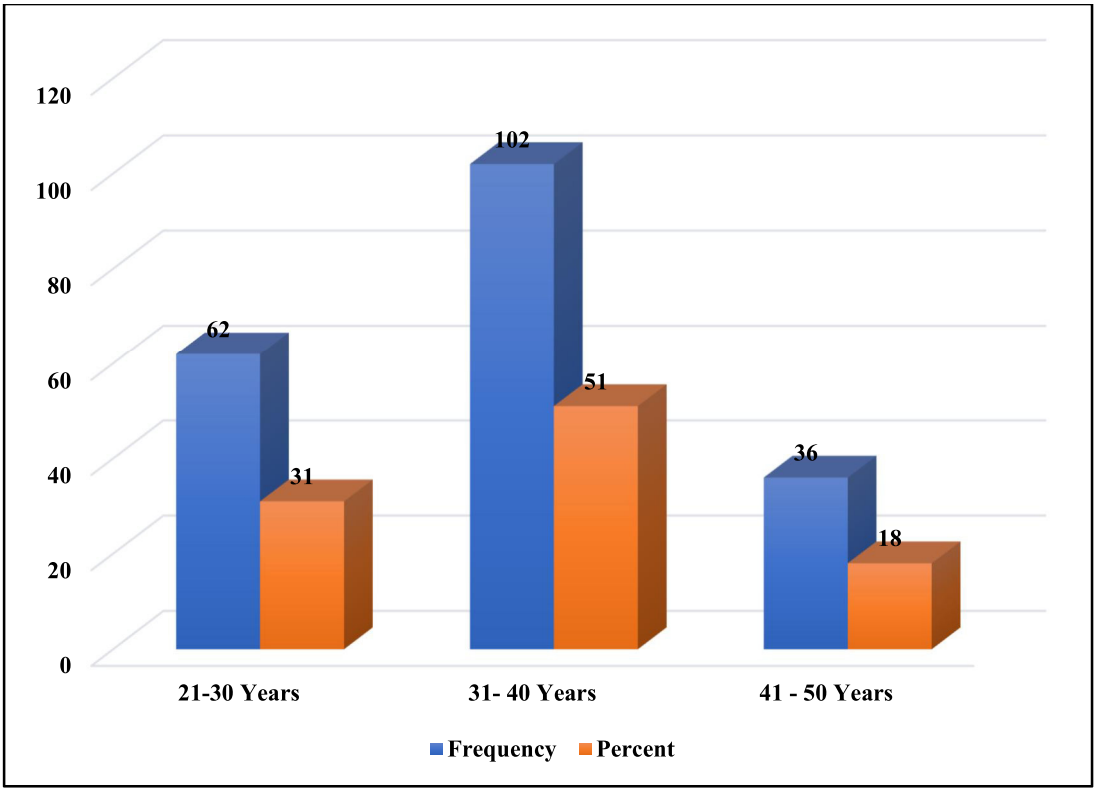

Figure 4.1: Age

Majority of respondents about 51% were between the age group 31- 40 years of age, about 31% respondents were between the age group between 21-30 years and 18% were from the age group between 41-50 years.

4.1.3 Year of Experience:

Table 4.3: Year of Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 - 3 years	86	43.0	43.0	43.0
	4 - 6 years	40	20.0	20.0	63.0
	Less than a year	34	17.0	17.0	80.0
	More than six years	40	20.0	20.0	100.0
	Total	**200**	**100.0**	**100.0**	

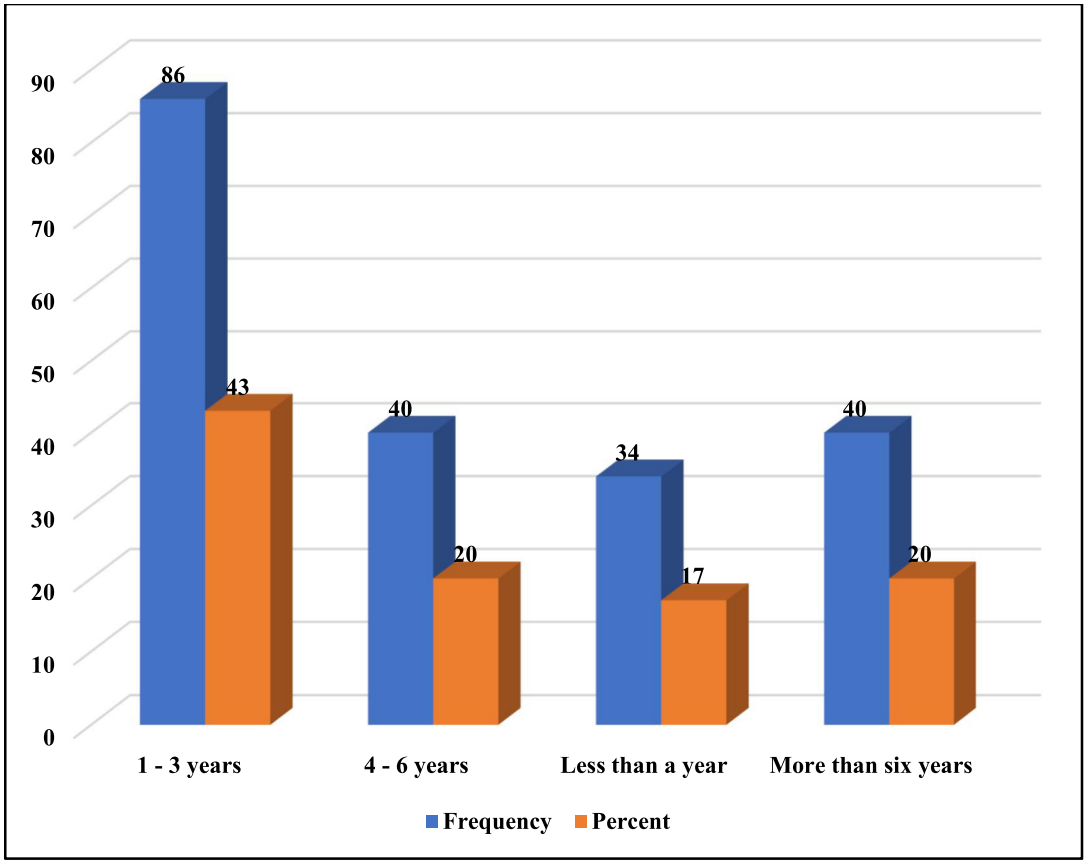

Figure 4.2: Year of Experience

Majority of respondents about 43% were having total experience between 1-3 years which accounts for about 86 respondents whereas about 20% respondents were having experience between 4 – 6 years, about 17% were having experience less than one year also about 20% users of BDA & BIS were having more than 6 years of experience.

4.1.4 Education Qualification:

Table 4.4: Educational Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctorate	22	11.0	11.0	11.0
	Graduate	155	77.5	77.5	88.5
	PG	23	11.5	11.5	100.0
	Total	**200**	**100.0**	**100.0**	

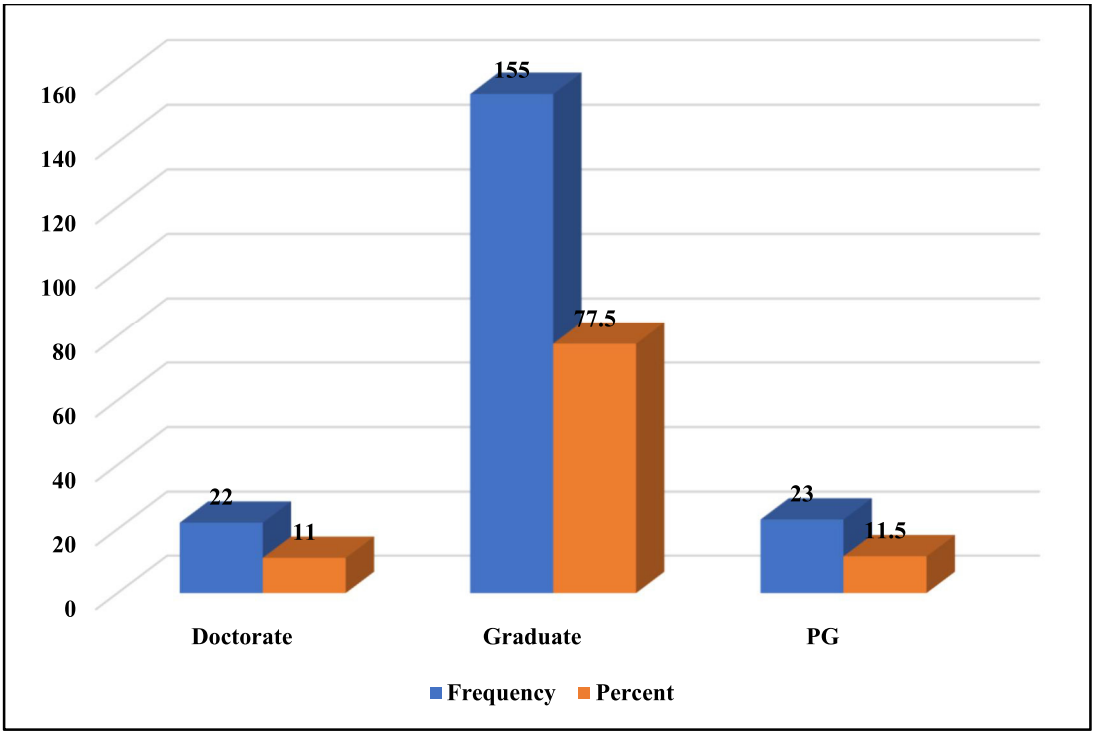

Figure 4.3: Educational Qualification

About 77.5% users as respondents were having the educational qualification as graduate, 11% were having doctorate degree whereas about 11.5% were having post-graduation qualification.

Table 4.5: Type of Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Private	100	50.0	50.0	50.0
	Public	100	50.0	50.0	100.0
	Total	**200**	**100.0**	**100.0**	

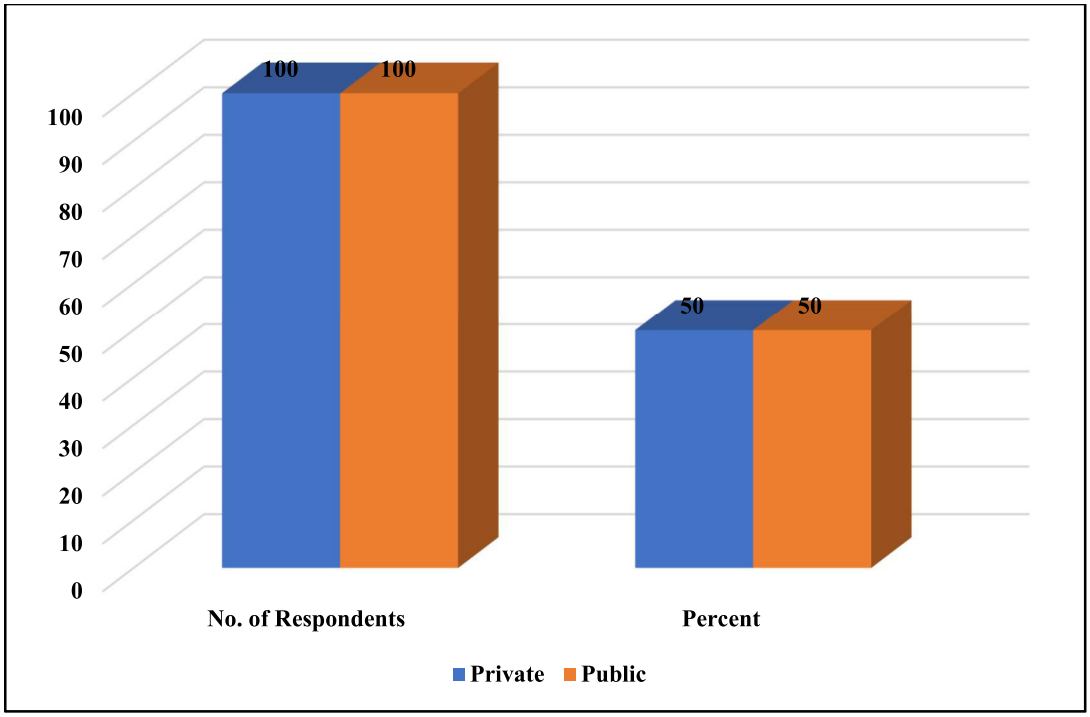

Figure 4.4: Type of Organization

Based on type of organization the respondents can be categorized into private and public organizations employees. About 50% respondents were from public organizations and 50% were from private organizations.

4.1.5 Department Wise:

Table 4.6: Department

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Finance	14	7	7	7
	HR[1]	5	2.5	2.5	9.5
	Marketing	101	50.5	50.5	60
	IT	50	25	25	85
	Production	30	15	15	100
	Total	**200**	**100.0**	**100.0**	

[1]Human Resource

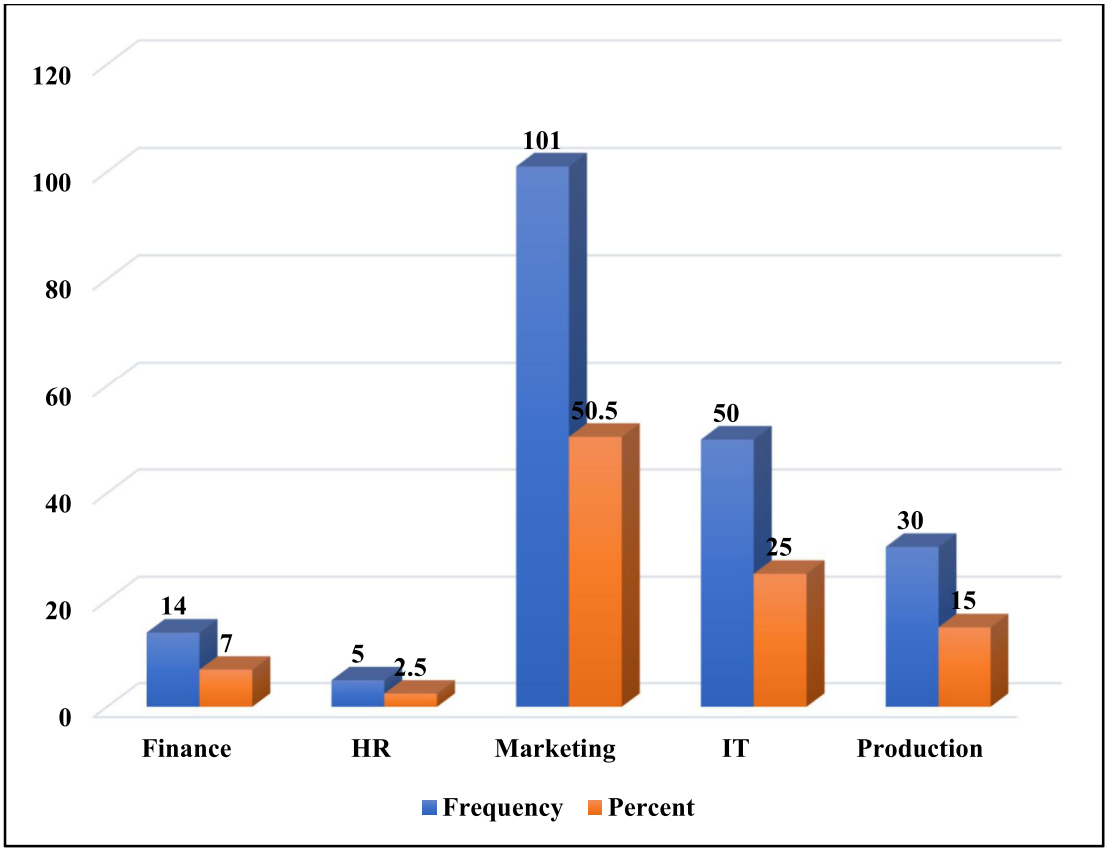

Figure 4.5: Department Wise Classification

About 50.5% respondents were from the marketing department, 25% were from IT, about 15% respondents were from the production department whereas only 7% and 2.5% were form the finance and HR department.

4.1.6 Region Wise Classification:

Table 4.7: Region

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	100	50.0	50.0	50.0
	Urban	100	50.0	50.0	100.0
	Total	**200**	**100.0**	**100.0**	

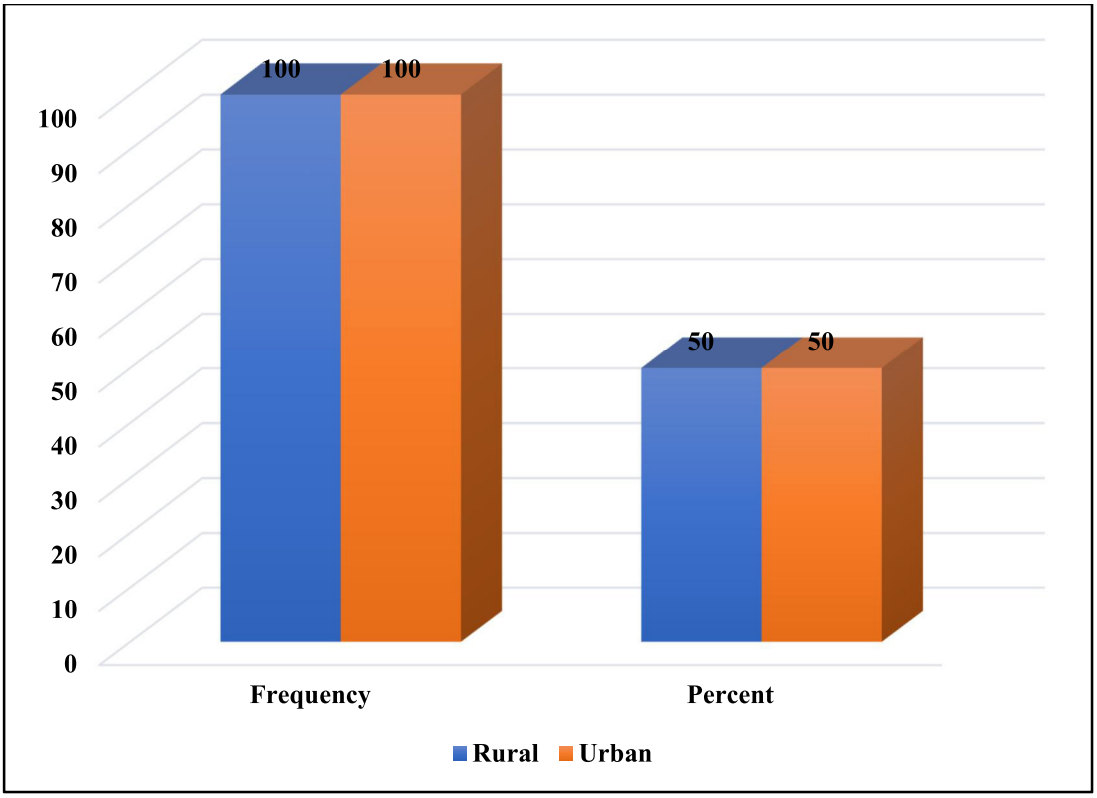

Figure 4.6: Region Wise Classification

The study considered two regions rural and urban, about 50% were from the rural region and 50% were from urban area.

4.1.7 Position Wise Respondents:

Table 4.8: Position in organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BI Executive	98	49.0	49.0	49.0
	Top officials	102	51.0	51.0	100.0
	Total	**200**	**100.0**	**100.0**	

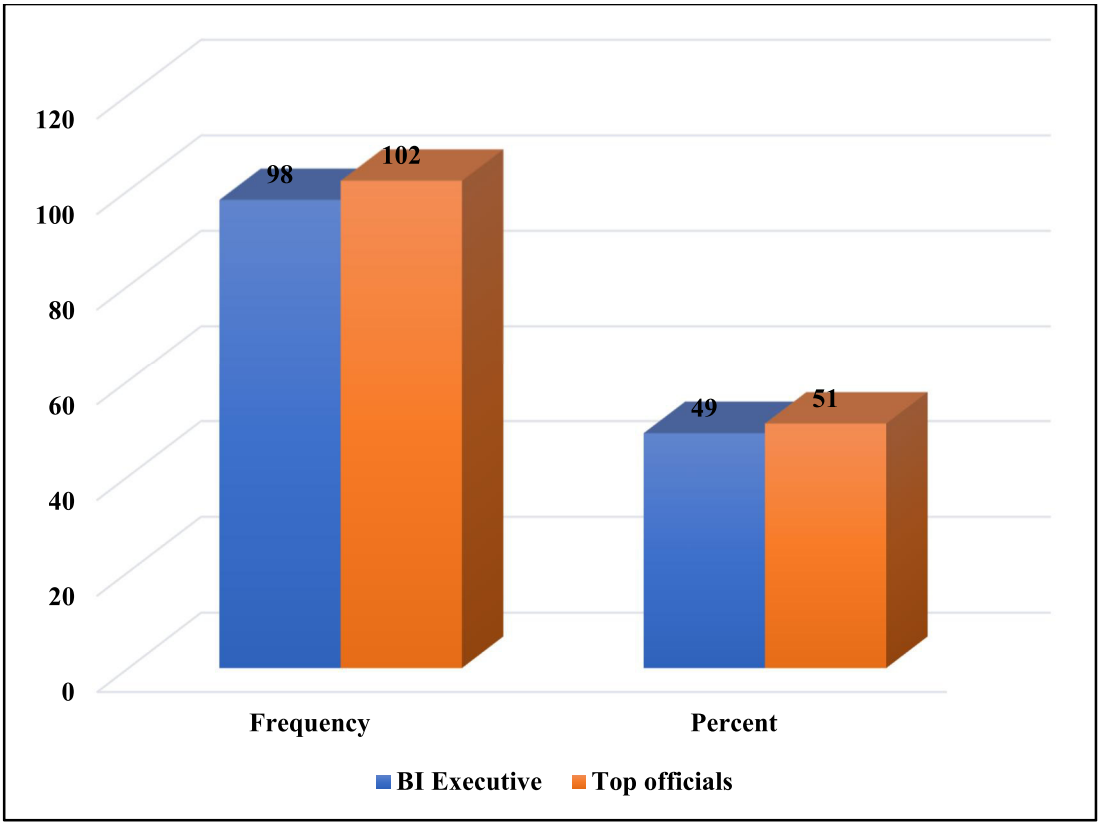

Figure 4.7: Position in Organization

Classification based on position it was found that about 49% respondents were BI executives and 51% respondents were from top official positions.

4.2 ANALYSIS OF BIG DATA ANALYTICS & BIS TOOLS & TECHNIQUES:

4.2.1 Spreadsheet Use:

Table 4.9: Spreadsheet Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low Usage	13	6.5	6.5	6.5
	Low Usage	18	9.0	9.0	15.5
	Medium Usage	13	6.5	6.5	22.0
	High Usage	45	22.5	22.5	44.5
	Very High Usage	111	55.5	55.5	100.0
	Total	**200**	**100.0**	**100.0**	

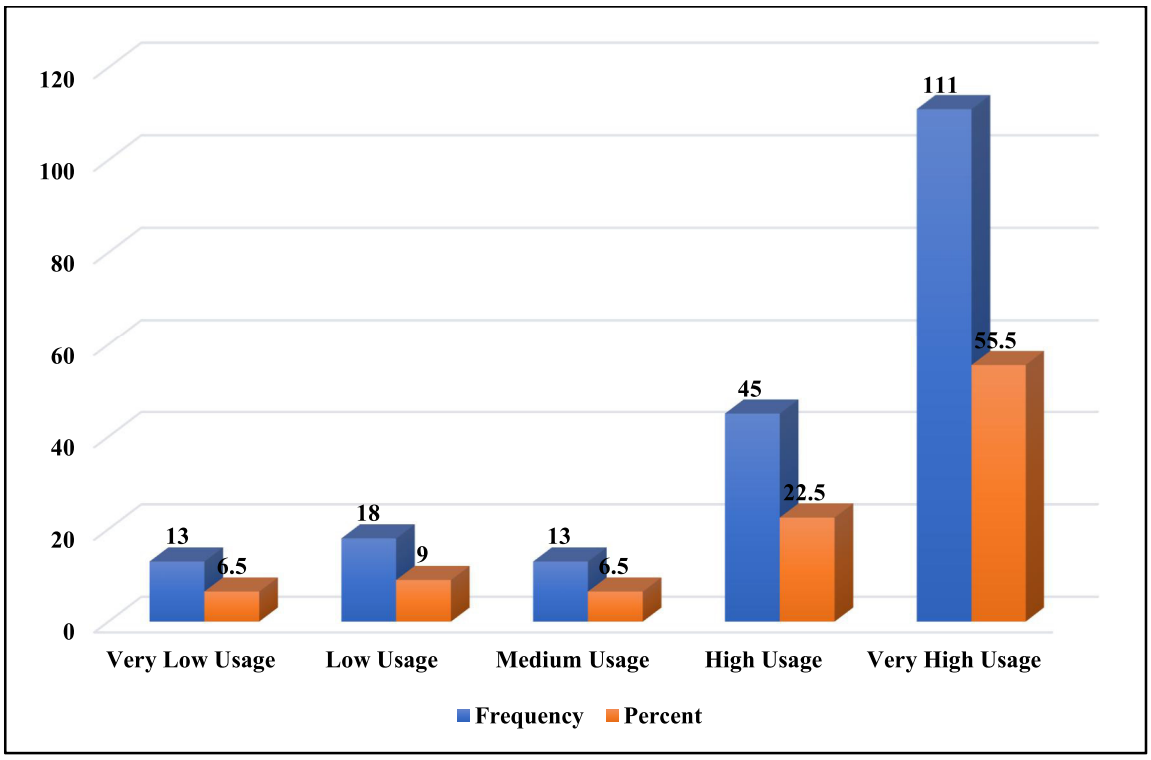

Figure 4.8: Spreadsheet Use

Big Data Analytics & BIS users as respondents confirmed that about 6.5% use spreadsheets very less while handling the data, about 9% respondents have confirmed less usage of spreadsheets whereas about 55.5% confirmed very high usage, 22.5% confirmed high usage of spreadsheets for big data handling also 6.5% confirmed medium usage.

4.2.2 BI Planning/Reporting Suites:

Table 4.10: BI Planning/Reporting Suites

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low Usage	32	16.0	16.0	16.0
	Low Usage	11	5.5	5.5	21.5
	Medium Usage	28	14.0	14.0	35.5
	High Usage	72	36.0	36.0	71.5
	Very High Usage	57	28.5	28.5	100.0
	Total	**200**	**100.0**	**100.0**	

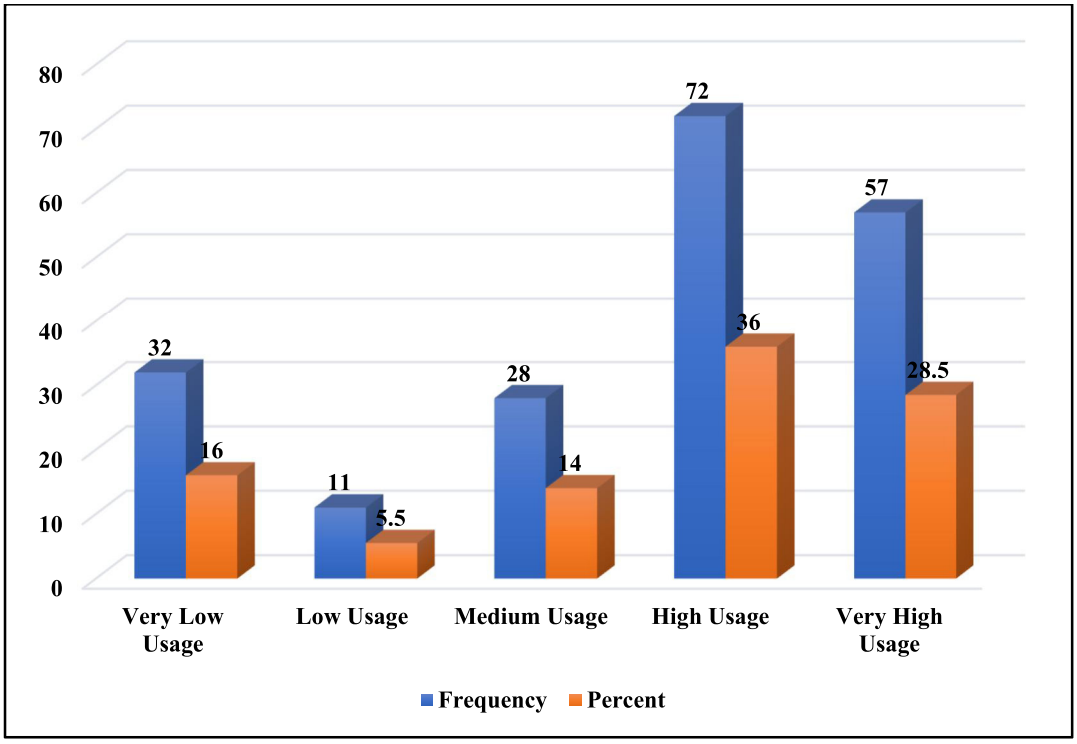

Figure 4.9: BI Planning/Reporting Suites

Majority of respondents about 36% were with the opinion that there is high use of BI planning / reporting suites in the companies of India in order to handle the big data and apply analytics for business solutions, also about 28.5% were in favour of the opinion whereas 16% were consider very low usage of BI planning/reporting suites.

4.2.3 Data ETL/Management Solutions:

Table 4.11: Data ETL/Management Solutions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low Usage	2	1.0	1.0	1.0
	Low Usage	20	10.0	10.0	11.0
	Medium Usage	27	13.5	13.5	24.5
	High Usage	133	66.5	66.5	91.0
	Very High Usage	18	9.0	9.0	100.0
	Total	**200**	**100.0**	**100.0**	

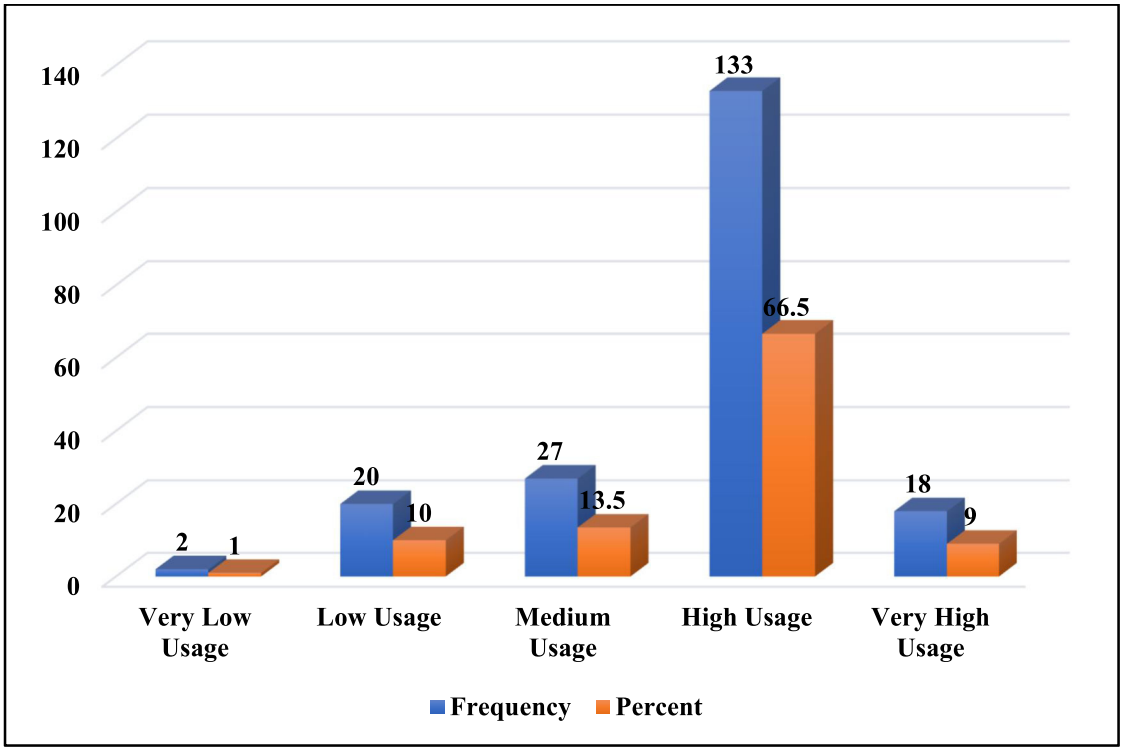

Figure 4.10: Data ETL/Management Solutions

The data represents the frequency distribution of usage levels for Data ETL/Management Solutions among a sample of 200 respondents. The majority of respondents fall into the "High Usage" category, accounting for 66.5% of the sample, indicating that a significant portion of users extensively utilize these solutions. "Medium Usage" is the next most common category, with 13.5% of respondents falling into this group. In contrast, only a small proportion of respondents reported "Very Low Usage" (1%) and "Low Usage" (10%), suggesting that a relatively small number of users rarely utilize these solutions. Lastly, "Very High Usage" represents 9% of the sample, signifying a noteworthy but smaller proportion of users who make extensive use of these solutions. Overall, these findings highlight a wide range of usage levels for Data ETL/Management Solutions, with a substantial portion of the sample heavily relying on them.

4.2.4 Data Visualization Tools:

Table 4.12: Data Visualization Tools

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low Usage	20	10.0	10.0	10.0
	Low Usage	16	8.0	8.0	18.0
	Medium Usage	64	32.0	32.0	50.0
	High Usage	56	28.0	28.0	78.0
	Very High Usage	44	22.0	22.0	100.0
	Total	**200**	**100.0**	**100.0**	

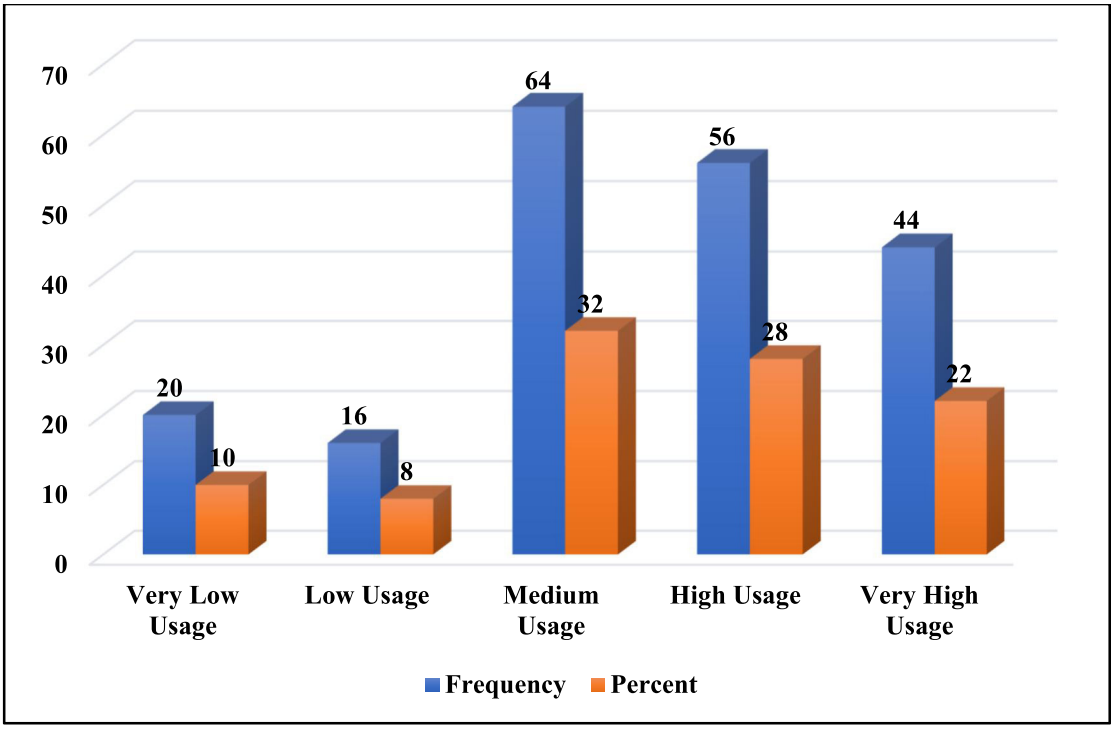

Figure 4.11: Data Visualization Tools

About 22% respondents confirmed that business analytics and business intelligence systems are very highly used in data visualization tasks in the organization both public and private, also about 28% confirmed that these systems have high usage whereas 18% in total were against the above-mentioned view point.

4.2.5 Data Mining Suits:

Table 4.13: Data Mining Suits

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low Usage	24	12.0	12.0	12.0
	Low Usage	107	53.5	53.5	65.5
	Medium Usage	37	18.5	18.5	84.0
	High Usage	16	8.0	8.0	92.0
	Very High Usage	16	8.0	8.0	100.0
	Total	**200**	**100.0**	**100.0**	

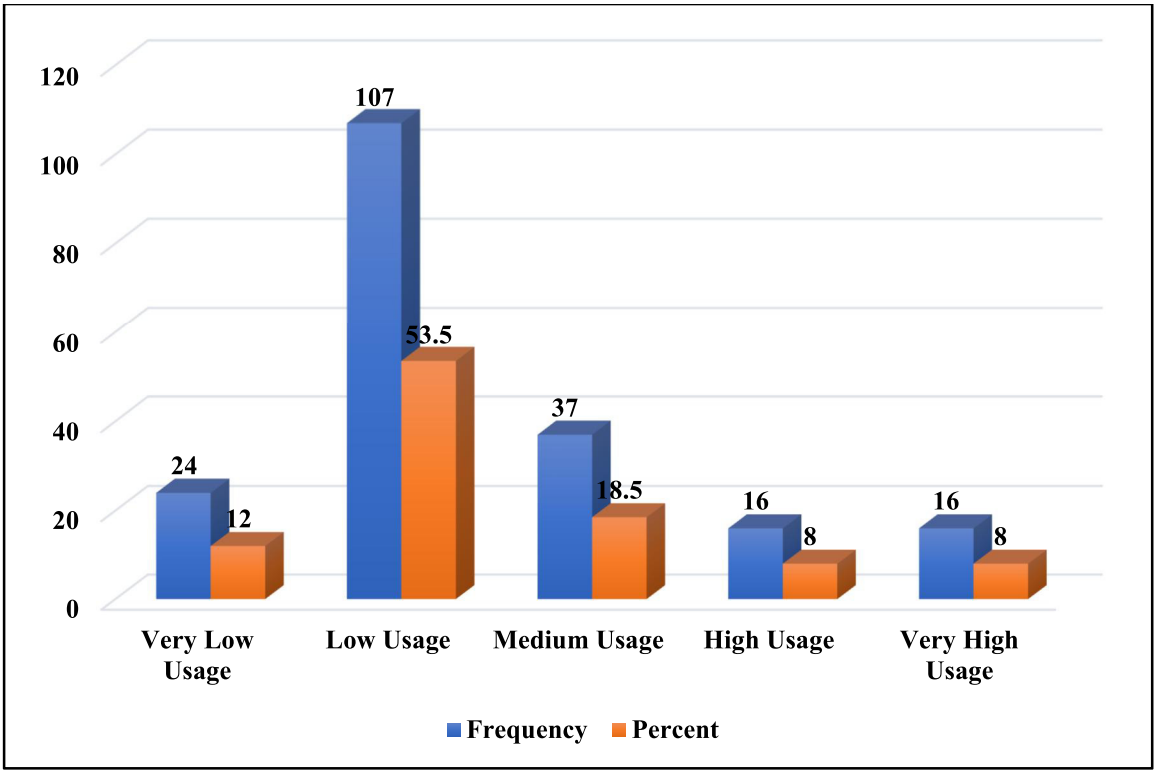

Figure 4.12: Data Mining Suits

Big Data Analytics & BIS users as respondents confirmed that about 12% use data mining suits very less while doing the tasks related to classification and clustering, about 53.5% respondents have confirmed less usage of data mining suits whereas about 8% confirmed very high usage, 8% confirmed high usage of data mining suits and about 18.5% confirmed medium usage.

4.2.6 Advance Statistical Suits:

Table 4.14: Advance Statistical Suits

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	21	10.5	10.5	10.5
	Low	94	47.0	47.0	57.5
	Medium	56	28.0	28.0	85.5
	High	20	10.0	10.0	95.5
	Very High	9	4.5	4.5	100.0
	Total	**200**	**100.0**	**100.0**	

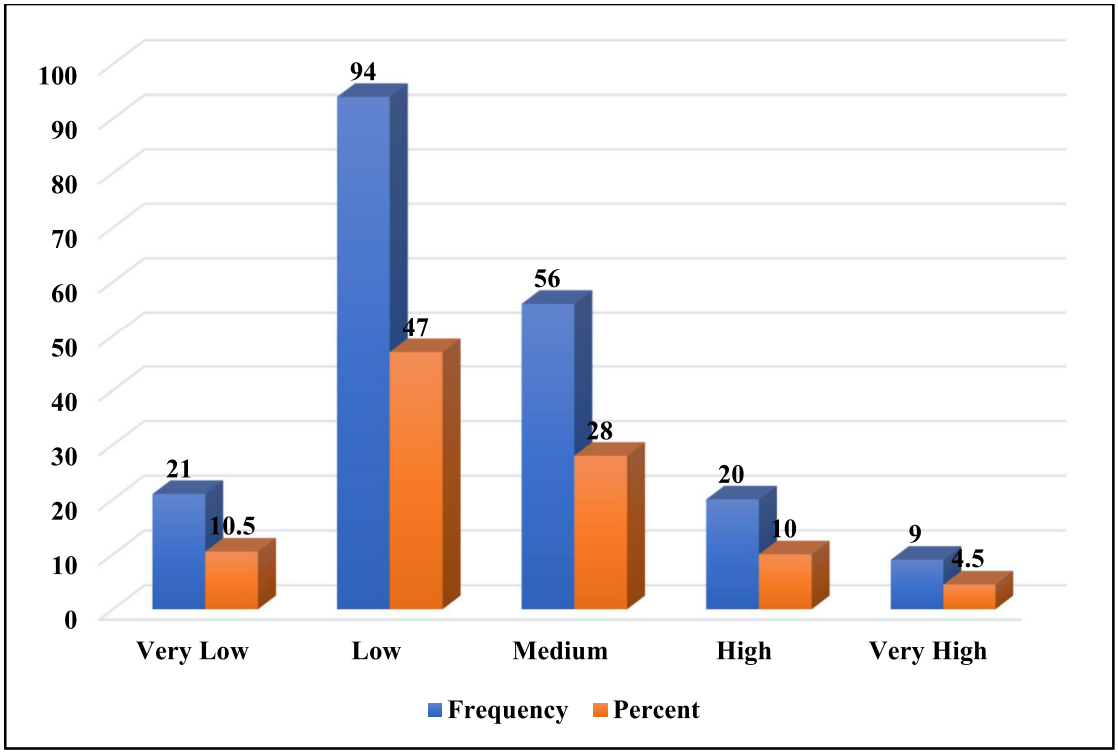

Figure 4.13: Advance Statistical Suits

Among 200 respondents, 47% use advanced statistical software to some extent ("Low" usage), with 28% falling into the "Medium" usage category. Smaller proportions of respondents are distributed across "Very Low," "High," and "Very High" usage levels, indicating varying levels of engagement with these advanced statistical tools.

4.2.7 BD[2]/High Performance Computing Tools:

Table 4.15: BD/High Performance Computing Tools

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	21	10.5	10.5	10.5
	Low	98	49.0	49.0	59.5
	Medium	45	22.5	22.5	82.0
	High	32	16.0	16.0	98.0
	Very High	4	2.0	2.0	100.0
	Total	**200**	**100.0**	**100.0**	

[2]Big Data

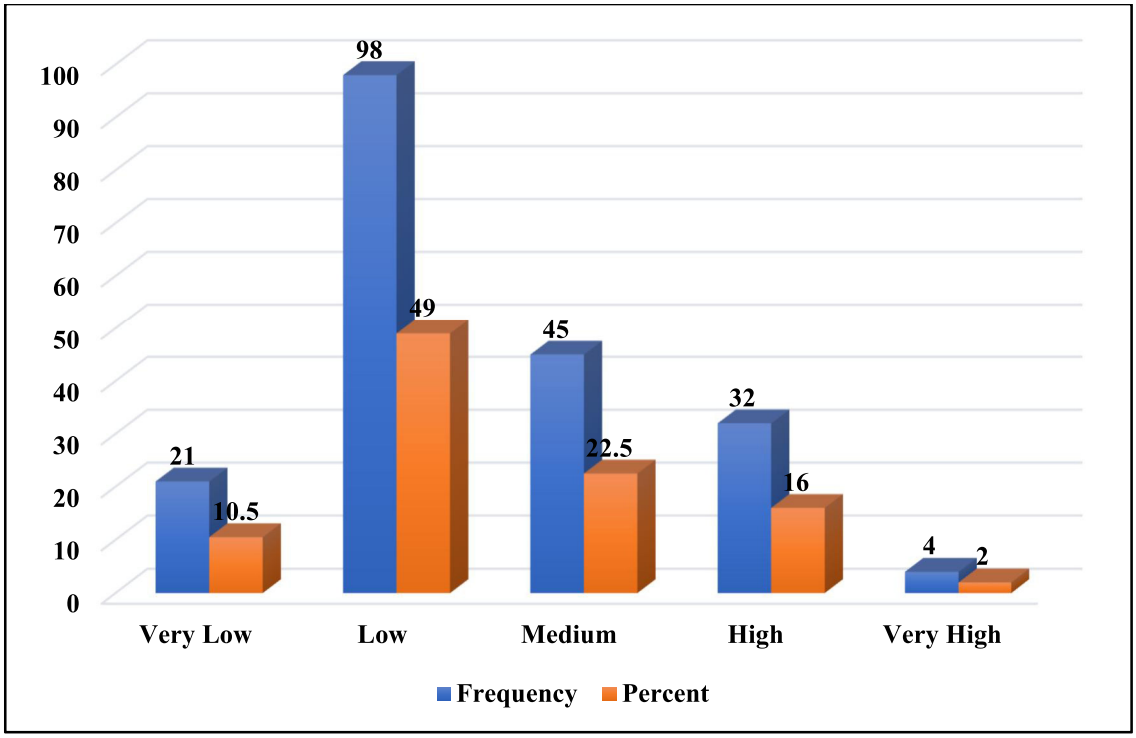

Figure 4.14: BD/High Performance Computing Tools

Only 2% respondents confirmed that business analytics and business intelligence systems are very highly used in BD/High Performance Computing also about 16% confirmed that these systems have high usage in BD/High Performance Computing whereas approx. 59.5% in total were against the above-mentioned view point.

4.2.8 AI Enabled BI Tools:

Table 4.16: AI Enabled BI Tools

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	39	19.5	19.5	19.5
	Low	69	34.5	34.5	54.0
	Medium	46	23.0	23.0	77.0
	High	38	19.0	19.0	96.0
	Very High	8	4.0	4.0	100.0
	Total	**200**	**100.0**	**100.0**	

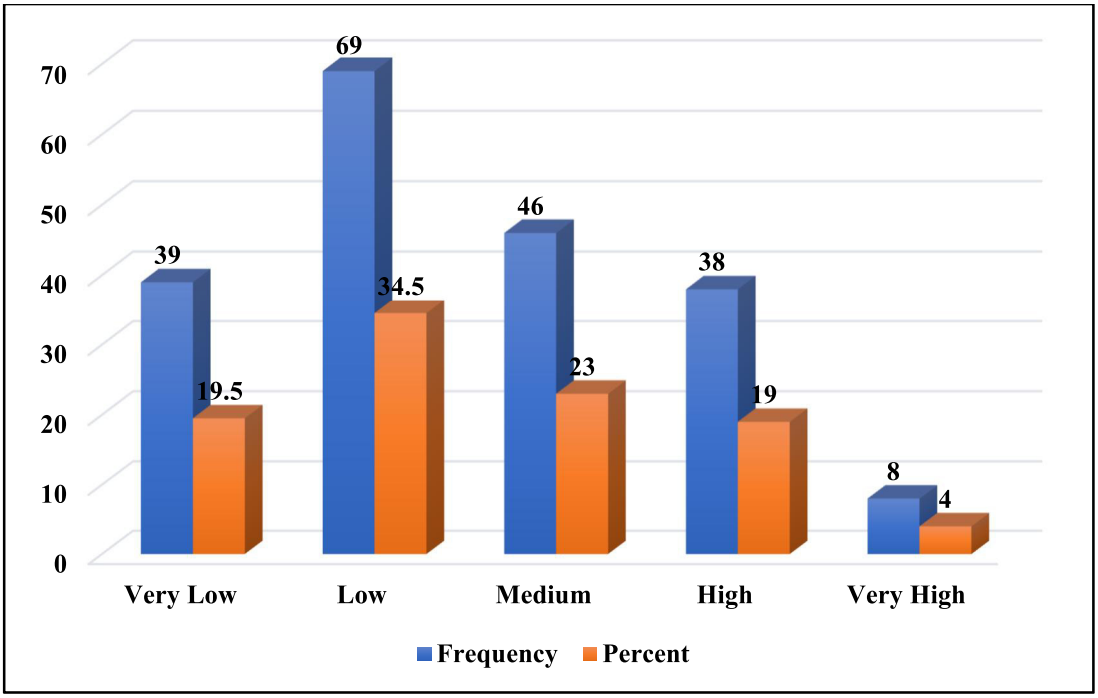

Figure 4.15: AI Enabled BI Tools

About 23% respondents in all were with the opinion that AI enabled BI tools are basically used by the companies for predictive modelling whereas about 54% were against the opinion and about 23% were not sure about it.

4.2.9: Automated System in Organization for Data Gathering:

Table 4.17: Automated system in Organization for data Gathering

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	57	28.5	28.5	28.5
	Low	31	15.5	15.5	44.0
	Medium	97	48.5	48.5	92.5
	High	15	7.5	7.5	100.0
	Total	**200**	**100.0**	**100.0**	

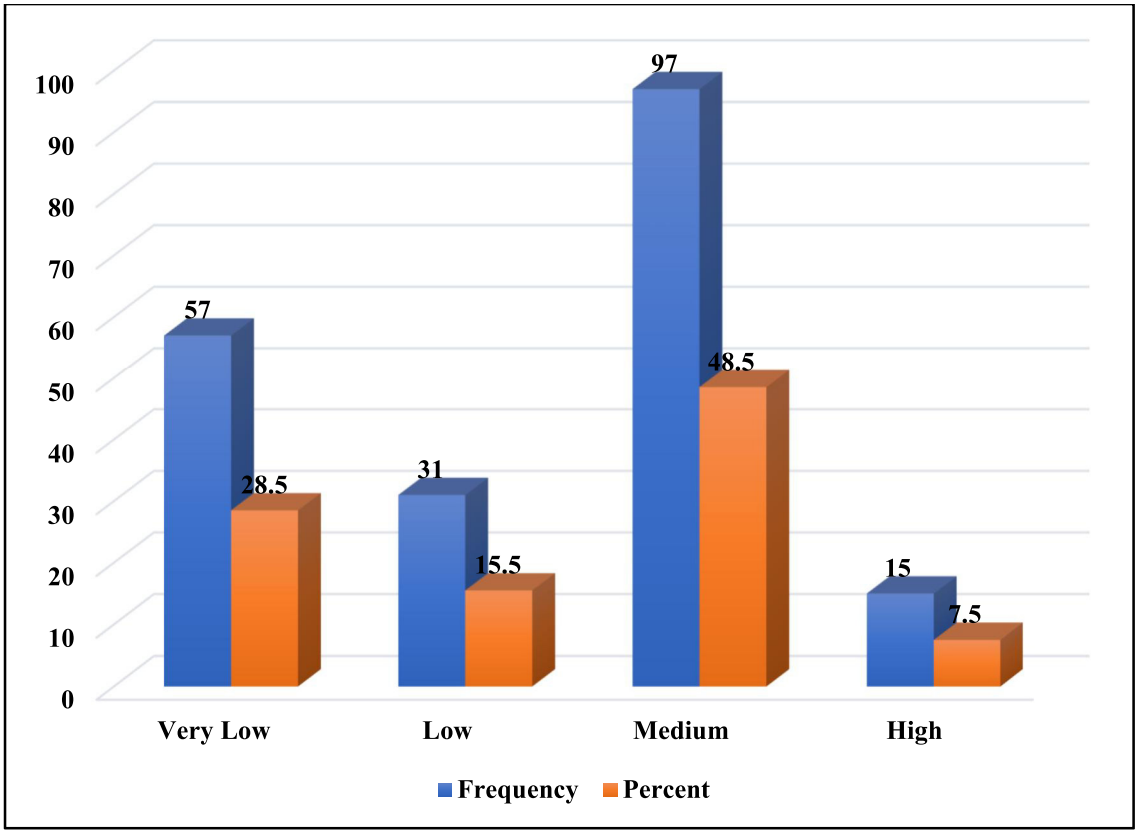

Figure 4.16: Automated system in Organization for data Gathering

Only 7.5% respondents in all were with the opinion that automated system in organization are being used for data gathering by the organizations whereas about 44% were against the opinion and majority about 48.5% were not sure about it.

4.3: BA & BIS USE:

Table 4.18: BA & BI for strategic reporting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	0	0.0	0.0	0.0
	Disagree	40	20.0	20.0	20.0
	Not Sure	58	29.0	29.0	49.0
	Agree	70	35.0	35.0	84.0
	Strongly Agree	32	16.0	16.0	100.0
	Total	**200**	**100.0**	**100.0**	

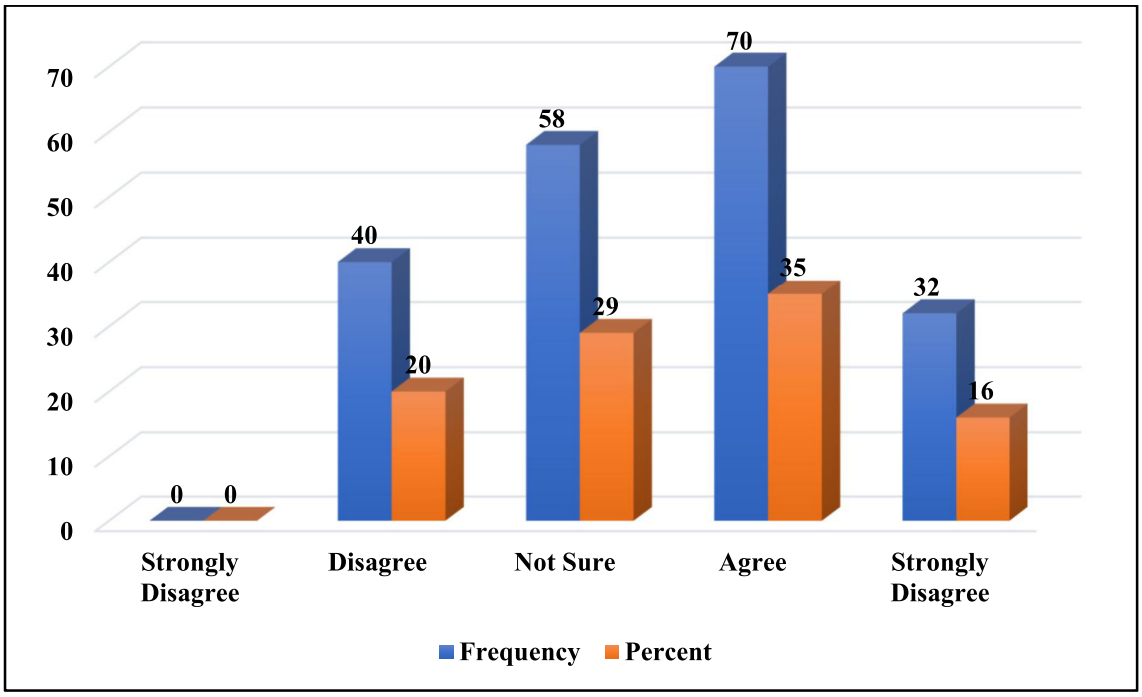

Figure 4.17: BA & BI for Strategic Reporting

Among the respondents, 20% "Disagree" with using these tools, while 29% are "Not Sure." On the positive side, 35% "Agree" and 16% "Strongly Agree" with using BA and BI for strategic reporting. This suggests that a significant portion of respondents are open to or supportive of using these tools for strategic reporting, with a combined 51% showing agreement, but there is also a notable contingent (29%) that remains uncertain about their utility, and a minority (20%) that disagrees with their use.

Table 4.19: Tactical reporting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	12.0	12.0	12.0
	Disagree	83	41.5	41.5	53.5
	Not Sure	41	20.5	20.5	74.0
	Agree	21	10.5	10.5	84.5
	Strongly Agree	31	15.5	15.5	100.0
	Total	**200**	**100.0**	**100.0**	

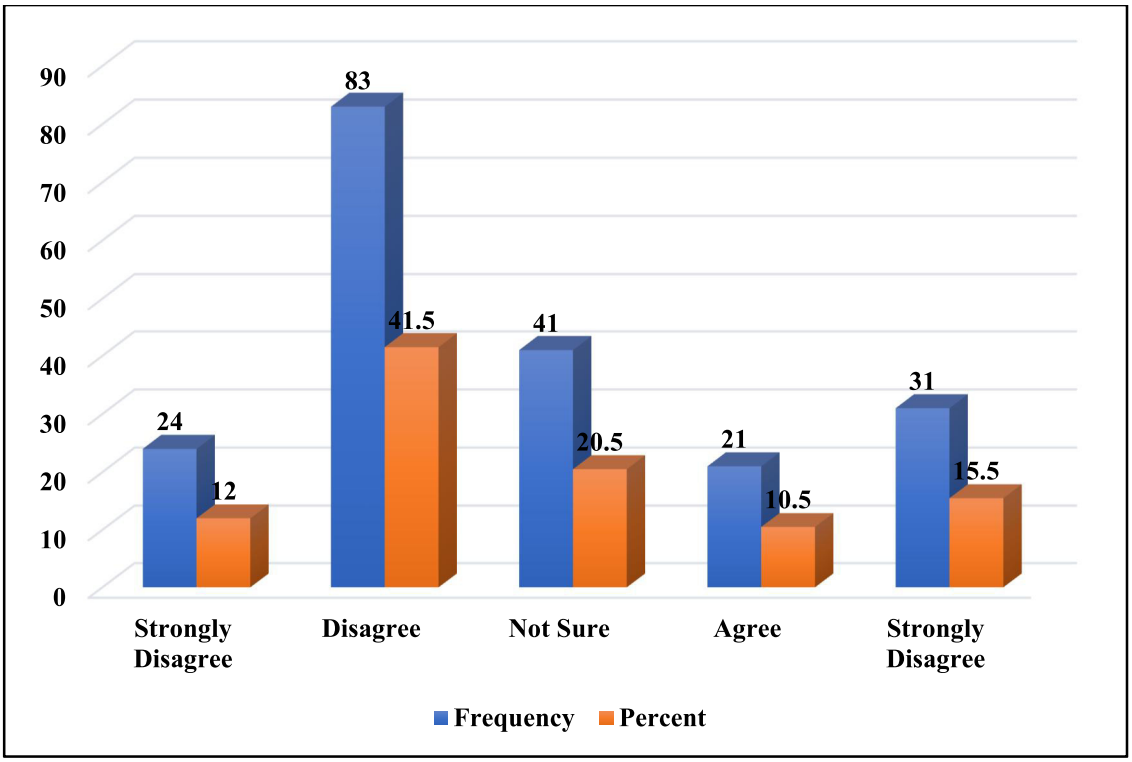

Figure 4.18: Tactical Reporting

About 15.5% respondents were strongly in favour of the statement that BA and BIS are used for tactical reporting also 10.5% agreed that business analytics and intelligent systems are being used for tactical reporting whereas in all about 53.5% were against of the above-mentioned view point.

Table 4.20: Operational reporting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	4.0	4.0	4.0
	Disagree	105	52.5	52.5	56.5
	Not Sure	42	21.0	21.0	77.5
	Agree	27	13.5	13.5	91.0
	Strongly Agree	18	9.0	9.0	100.0
	Total	**200**	**100.0**	**100.0**	

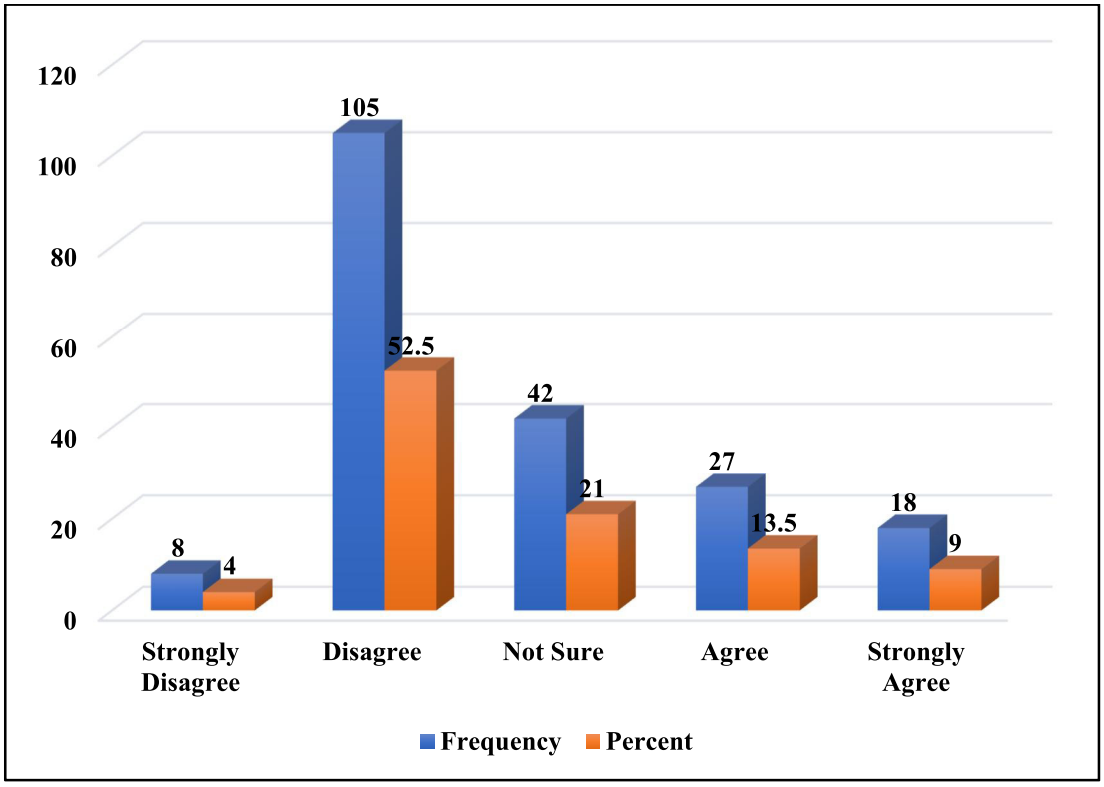

Figure 4.19: Operational Reporting

Nearly about 9% of the respondents were strongly in favour of the statement that BA and BIS are used for operational reporting also 13.5% agreed that business analytics and intelligent systems are being used for operational reporting whereas in all about 56.5% were against of the above-mentioned view point.

Table 4.21: BA-BIS helpful to derive insightful conclusion from data

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	0	0.0	0.0	0.0
	Disagree	67	33.5	33.5	33.5
	Not Sure	112	56.0	56.0	89.5
	Agree	12	6.0	6.0	95.5
	Strongly Agree	9	4.5	4.5	100.0
	Total	**200**	**100.0**	**100.0**	

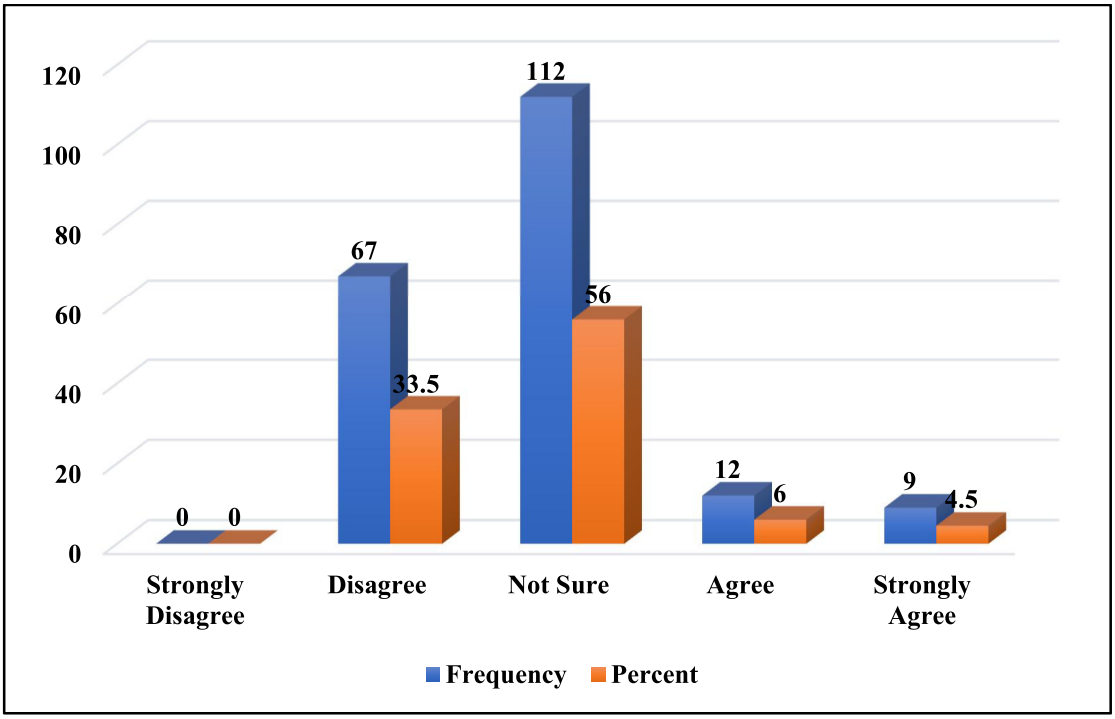

Figure 4.20: BA-BIS Helpful to Derive Insightful Conclusion from Data

Only 4.5 % respondents were strongly in favour of the statement that BA-BIS helpful to derive insightful conclusion from data also 6% agreed that business analytics and intelligent systems are being used to derive insightful conclusion from data whereas in all about 33% were against of the above-mentioned view point and majority of respondents about 56% were not sure about it.

Table 4.22: BA-BIS helpful to provide comparison in current and past data

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	15	7.5	7.5	7.5
	Not Sure	61	30.5	30.5	38.0
	Agree	88	44.0	44.0	82.0
	Strongly Agree	36	18.0	18.0	100.0
	Total	**200**	**100.0**	**100.0**	

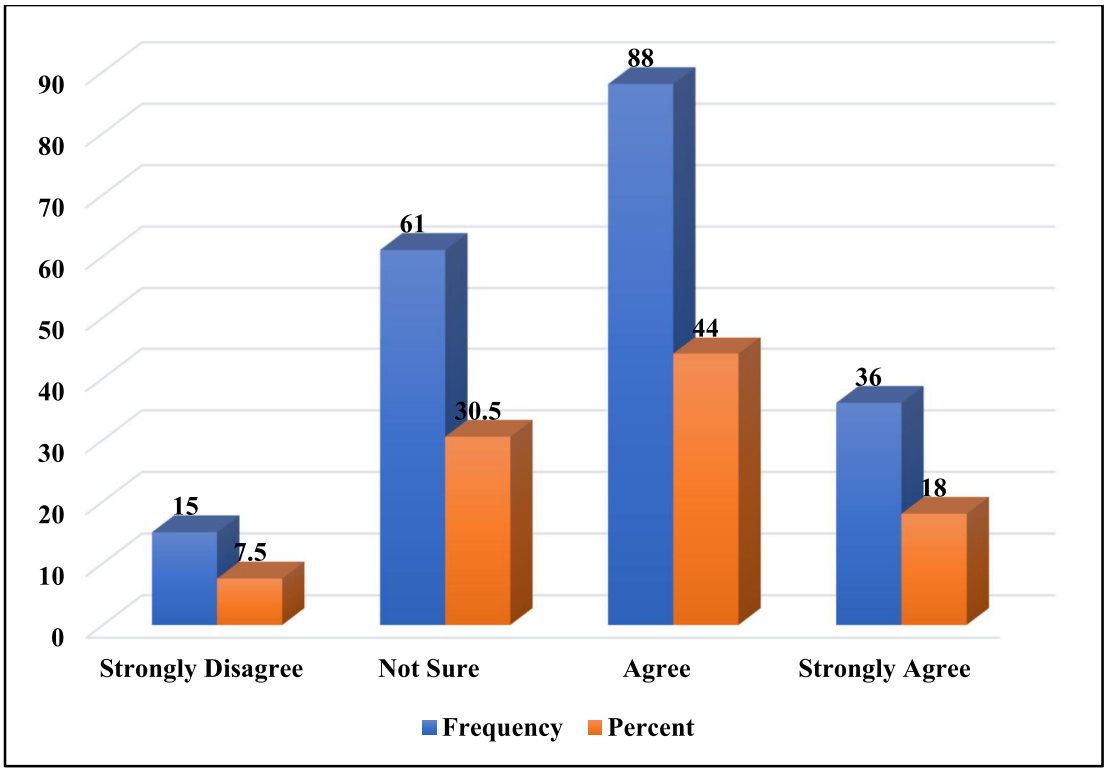

Figure 4.21: BA-BIS Helpful to Provide Comparison in Current and Past Data

Nearly about 18% of the respondents were strongly in favour of the statement that BA-BIS helpful to provide comparison in current and past data also 44% agreed that BA-BIS helpful to provide comparison in current and past data whereas in all about 7.5% were against of the above-mentioned view point.

Table 4.23: BIS helpful for statistical analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	16	8.0	8.0	8.0
	Not Sure	49	24.5	24.5	32.5
	Agree	52	26.0	26.0	58.5
	Strongly Agree	83	41.5	41.5	100.0
	Total	**200**	**100.0**	**100.0**	

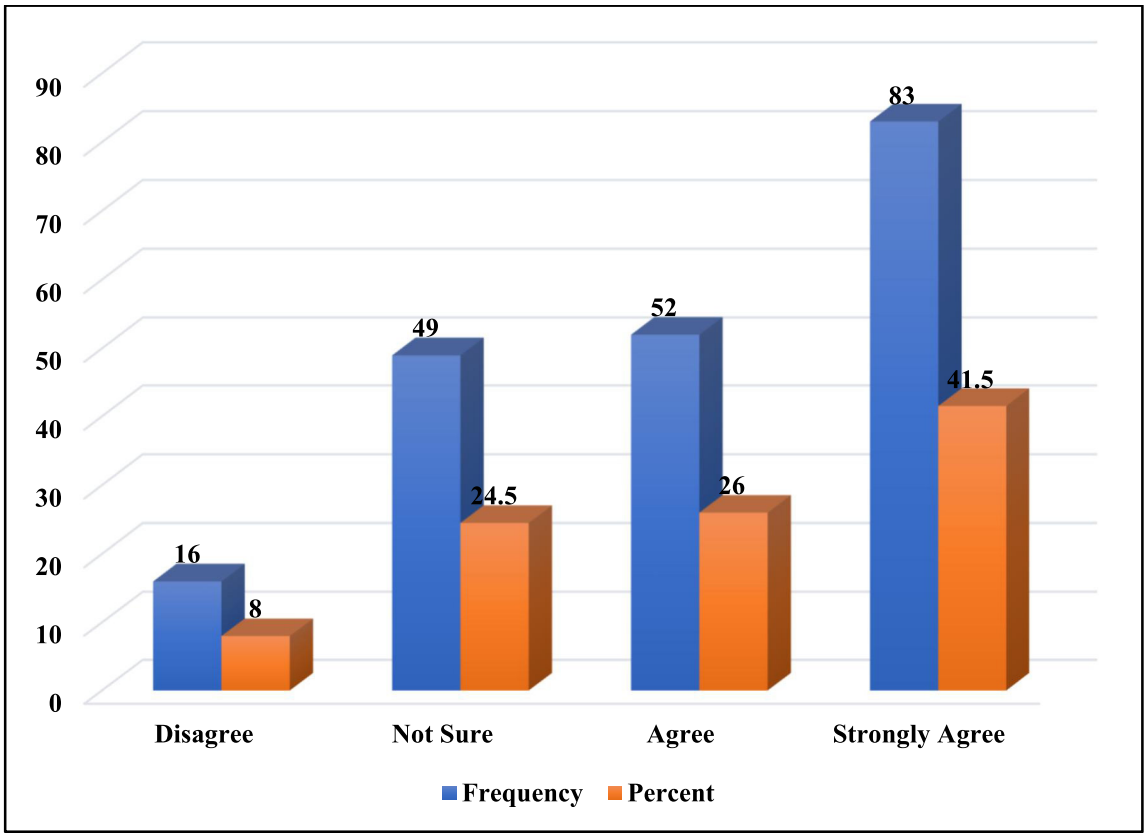

Figure 4.22: BIS Helpful for Statistical Analysis

About 41.5% of the respondents were strongly in favour of the statement that BIS helpful for statistical analysis, 26% agreed that BA-BIS used for doing statistical analysis data whereas in all about 8% were against of the above-mentioned view point.

Table 4.24: Effective data storage system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	2.5	2.5	2.5
	Disagree	57	28.5	28.5	31.0
	Not Sure	32	16.0	16.0	47.0
	Agree	81	40.5	40.5	87.5
	Strongly Agree	25	12.5	12.5	100.0
	Total	**200**	**100.0**	**100.0**	

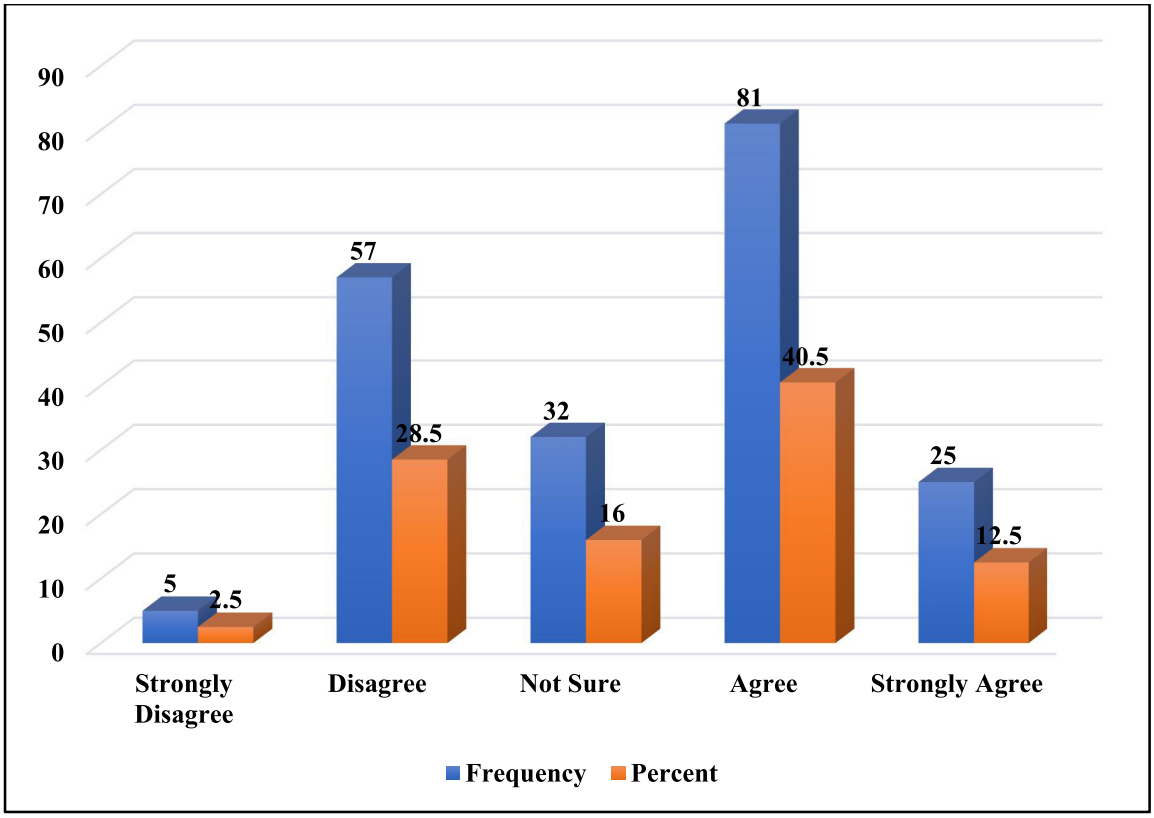

Figure 4.23: Effective Data Storage System

Approximately about 12.5% respondents strongly agreed that BA-BIS are used for effective data storage, 40.5% were also in agreement, around 16% respondents as BA-BIS users were not sure about it whereas about 28.5% disagreed with the statement and 2.5% were strongly against the view point.

Table 4.25: Effective data transformation process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	13	6.5	6.5	6.5
	Disagree	21	10.5	10.5	17.0
	Not Sure	42	21.0	21.0	38.0
	Agree	52	26.0	26.0	64.0
	Strongly Agree	72	36.0	36.0	100.0
	Total	**200**	**100.0**	**100.0**	

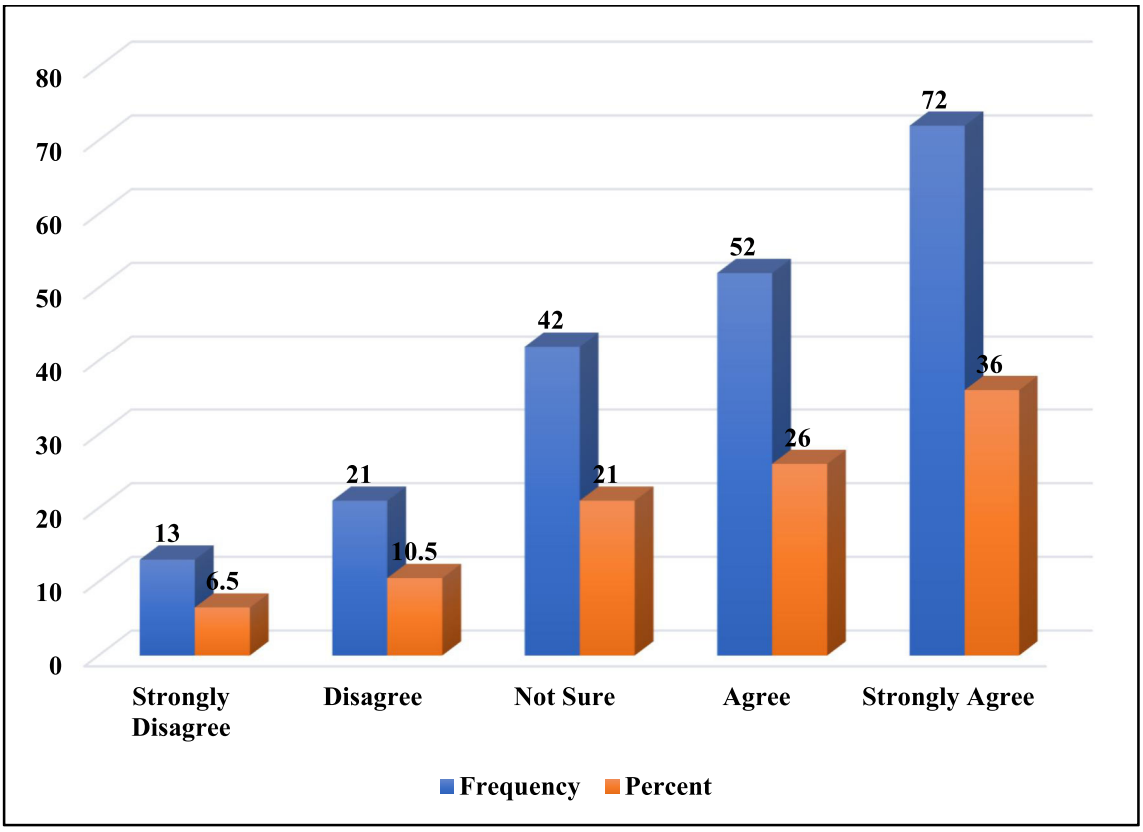

Figure 4.24: Effective Data Transformation Process

About 36% respondents strongly agreed that BA-BIS are used for effective data transformation process, 26% were also in agreement, around 21% respondents as BA-BIS users were not sure about it whereas about 10.5% disagreed with the statement and 6.5% were strongly against the view point.

Table 4.26: Capability of monitoring important sources of information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	45	22.5	22.5	22.5
	Disagree	33	16.5	16.5	39.0
	Not Sure	28	14.0	14.0	53.0
	Agree	90	45.0	45.0	98.0
	Strongly Agree	4	2.0	2.0	100.0
	Total	**200**	**100.0**	**100.0**	

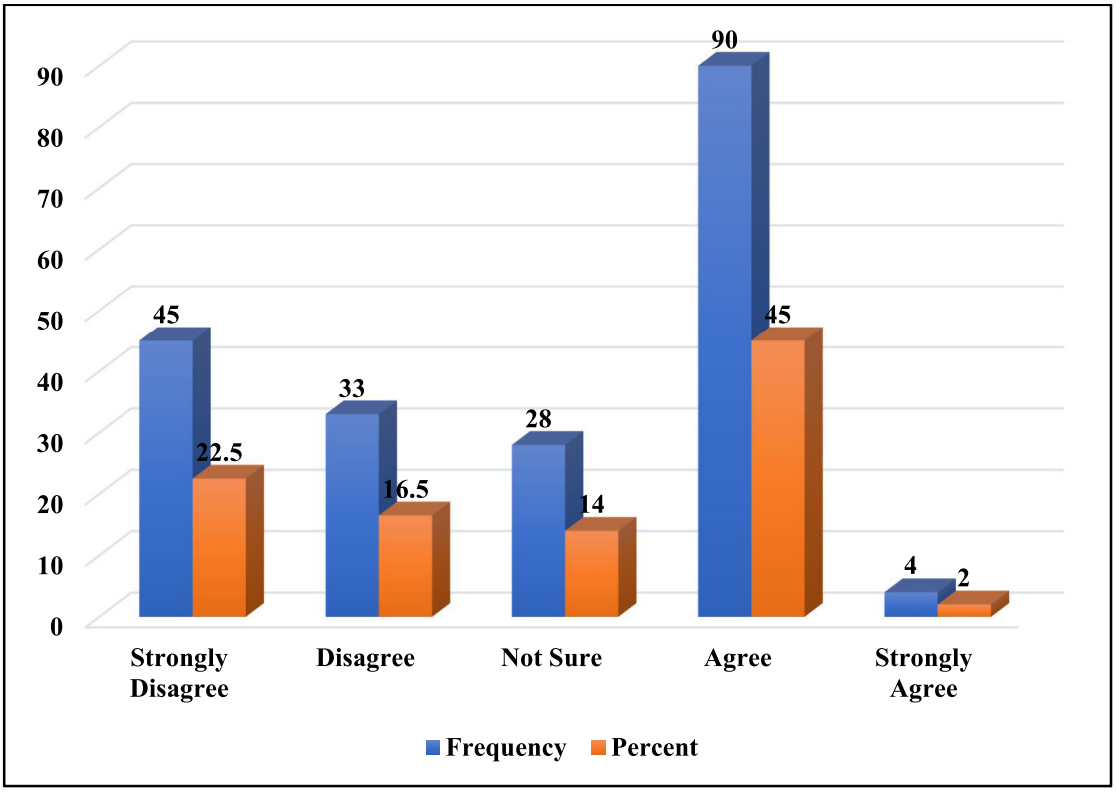

Figure 4.25: Capability of Monitoring Important Sources of Information

Approximately about 2% respondents strongly agreed that BA-BIS have the capability of monitoring important sources of information, 45% were also in agreement, around 14% respondents as BA-BIS users were not sure about it whereas about 16.5% disagreed with the statement and 22.5% were strongly against the view point.

4.4 BA-BIS AND DATA QUALITY:

Table 4.27: Data Quality: Data volume adequacy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	3.5	3.5	3.5
	Not Sure	33	16.5	16.5	20.0
	Agree	155	77.5	77.5	97.5
	Strongly Agree	5	2.5	2.5	100.0
	Total	**200**	**100.0**	**100.0**	

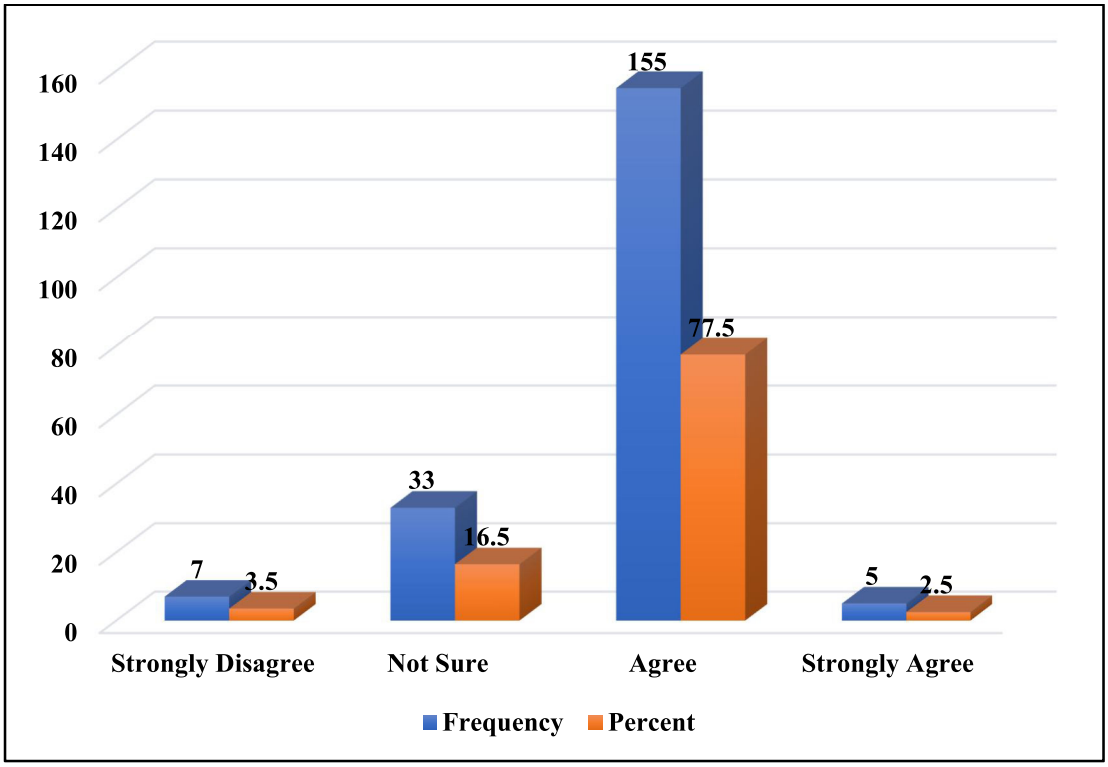

Figure 4.26: Data Quality: Data Volume Adequacy

About 2.5% respondents strongly agreed that BA-BIS are used for data quality: data volume adequacy, 77.5% were also in agreement, around 16.5% respondents as BA-BIS users were not sure about it whereas about 3.5% disagreed with the statement and none were strongly in disagreement with view point.

Table 4.28: Data Quality: Access

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	46	23.0	23.0	23.0
	Not Sure	28	14.0	14.0	37.0
	Agree	45	22.5	22.5	59.5
	Strongly Agree	81	40.5	40.5	100.0
	Total	**200**	**100.0**	**100.0**	

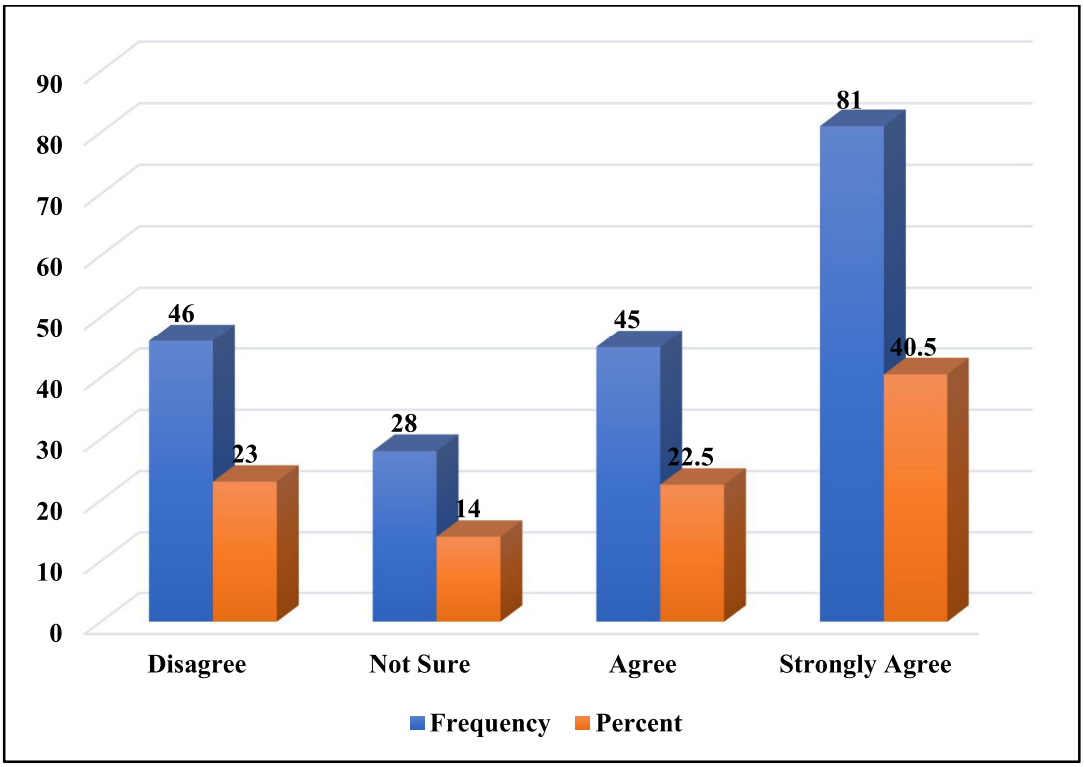

Figure 4.27: Data Quality: Access

Accordingly, about 40.5% respondents strongly agreed that BA-BIS are used for data quality: Access, 22.5% were also in agreement, around 14% respondents as BA-BIS users were not sure about it whereas about 23% disagreed with the statement and none were strongly in disagreement with view point.

Table 4.29: Data Quality: Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	26	13.0	13.0	13.0
	Disagree	4	2.0	2.0	15.0
	Not Sure	27	13.5	13.5	28.5
	Agree	84	42.0	42.0	70.5
	Strongly Agree	59	29.5	29.5	100.0
	Total	**200**	**100.0**	**100.0**	

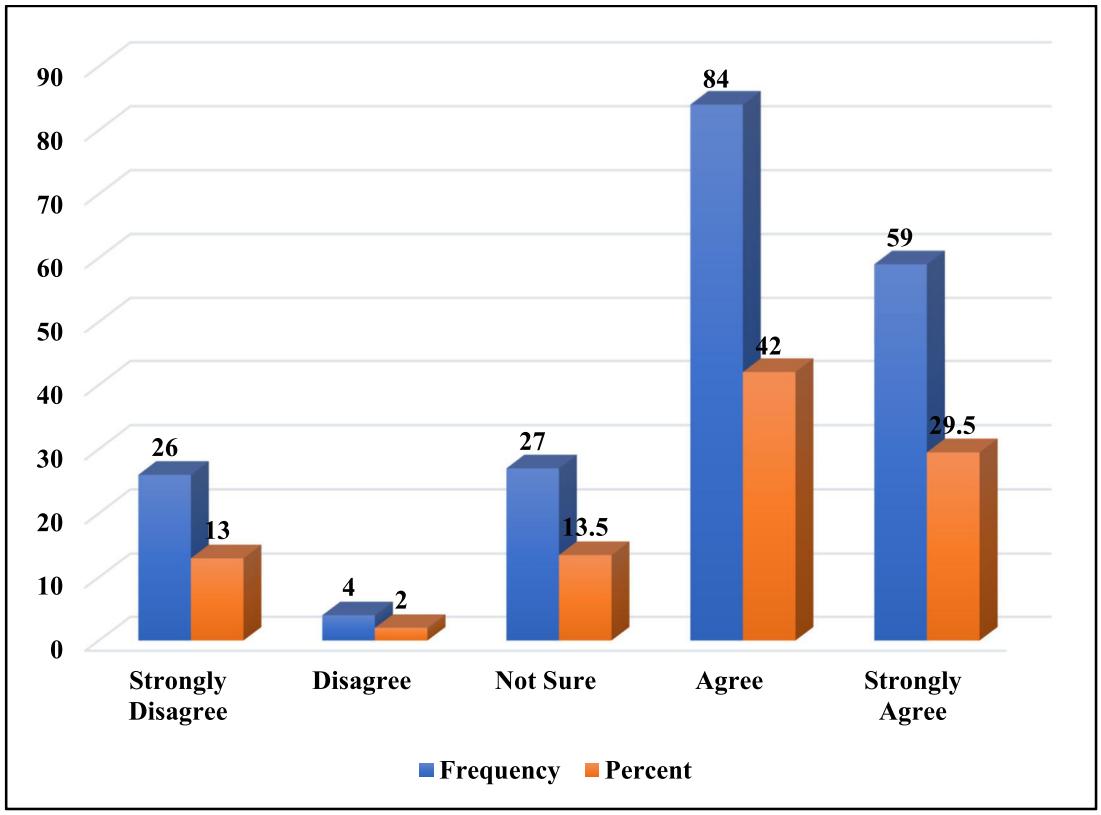

Figure 4.28: Data Quality: Use

About 29.5% respondents strongly agreed that BA-BIS are used for data quality: use, 42% were also in agreement, around 13.5% respondents as BA-BIS users were not sure about it whereas about 2% disagreed with the statement and 13% were strongly in disagreement with view point.

Table 4.30: Data Variety : Diversity of Unstructured Data – Access

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	12.0	12.0	12.0
	Disagree	6	3.0	3.0	15.0
	Not Sure	65	32.5	32.5	47.5
	Agree	101	50.5	50.5	98.0
	Strongly Agree	4	2.0	2.0	100.0
	Total	**200**	**100.0**	**100.0**	

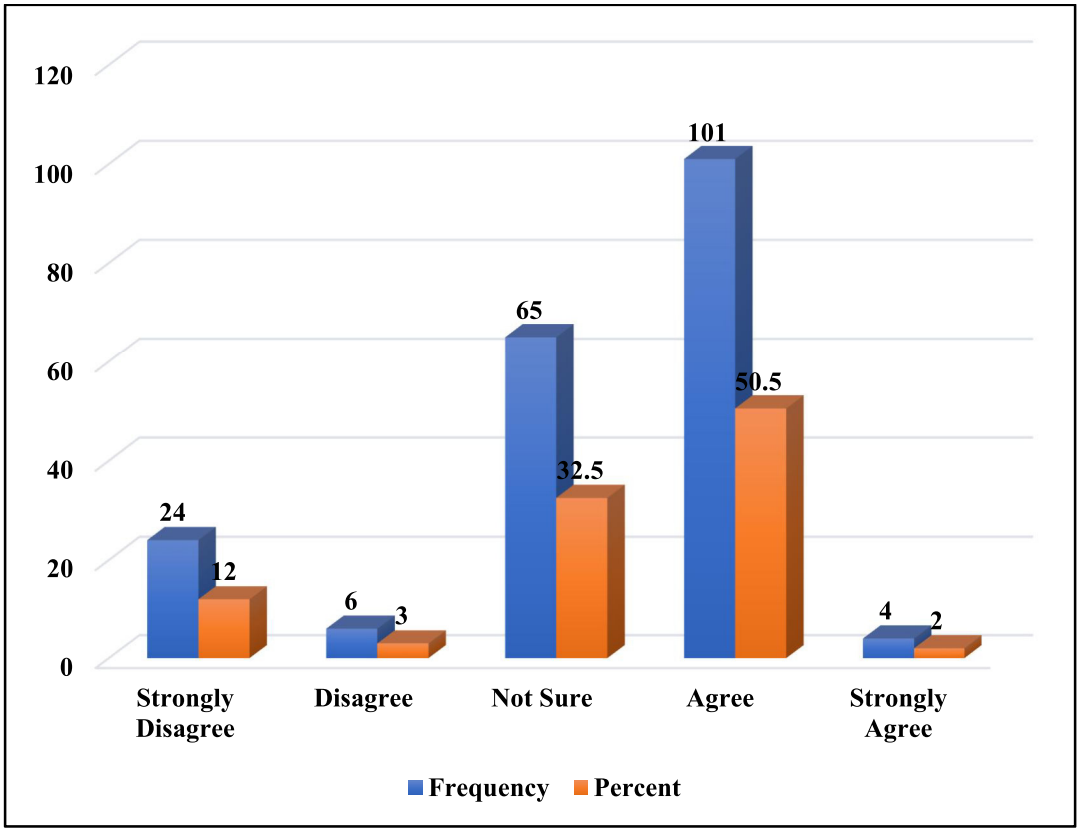

Figure 4.29: Data Variety: Diversity of Unstructured Data – Access

About 2% respondents strongly agreed that BA-BIS are used for data variety: diversity of unstructured data – access, 50.2% were also in agreement, around 32.5% respondents as BA-BIS users were not sure about it whereas about 3% disagreed with the statement and 12% were strongly in disagreement with view point.

Table 4.31: Data Variety: Diversity of Unstructured Data – Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.0	1.0	1.0
	Disagree	29	14.5	14.5	15.5
	Not Sure	47	23.5	23.5	39.0
	Agree	76	38.0	38.0	77.0
	Strongly Agree	46	23.0	23.0	100.0
	Total	**200**	**100.0**	**100.0**	

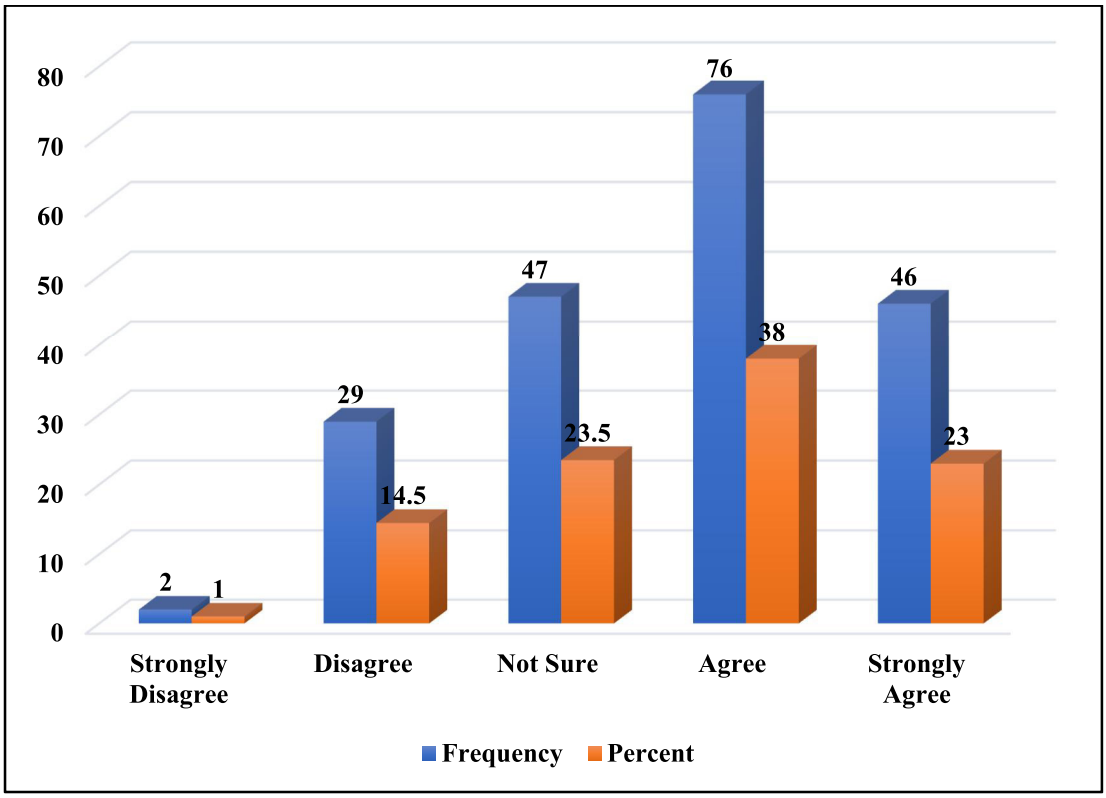

Figure 4.30: Data Variety: Diversity of Unstructured Data – Use

23% respondents strongly agreed that BA-BIS are used for data variety: diversity of unstructured data – use, 38% were also in agreement, around 23.5% respondents as BA-BIS users were not sure about it whereas about 14.5% disagreed with the statement and 1% were strongly in disagreement with view point.

Table 4.32: Data Velocity: Rate of Change of Data – Access

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	3.5	3.5	3.5
	Disagree	83	41.5	41.5	45.0
	Not Sure	80	40.0	40.0	85.0
	Agree	2	1.0	1.0	86.0
	Strongly Agree	28	14.0	14.0	100.0
	Total	**200**	**100.0**	**100.0**	

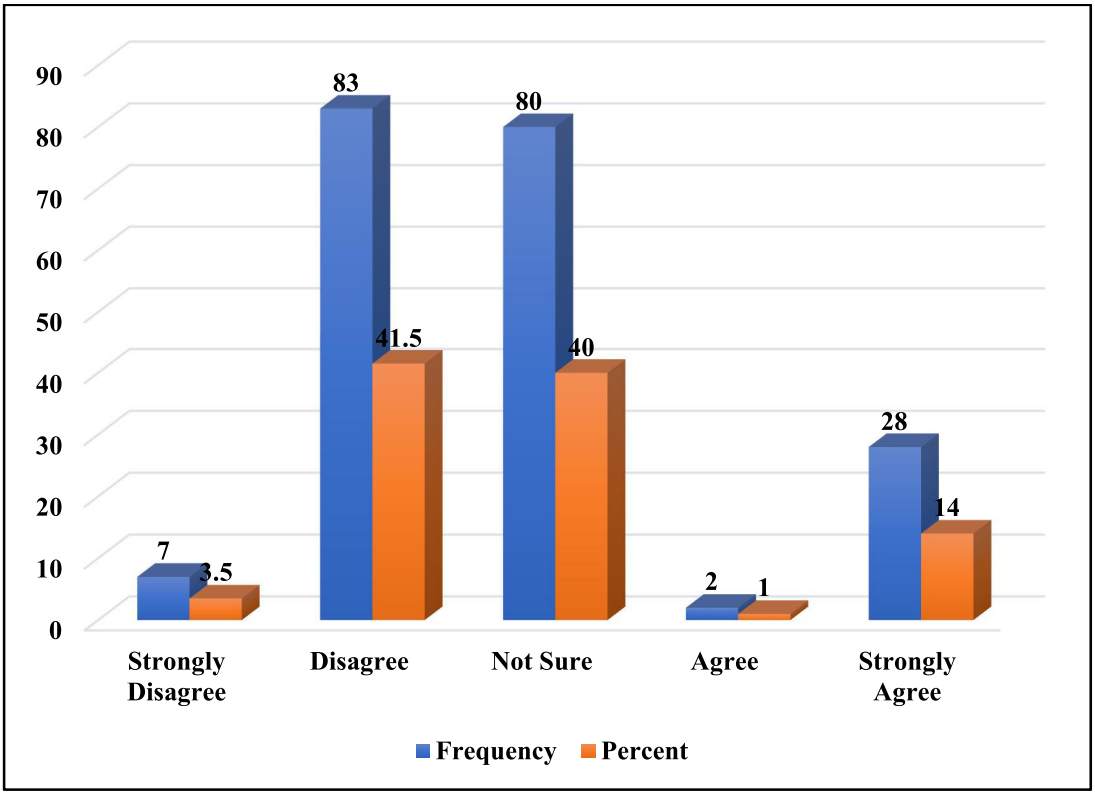

Figure 4.31: Data Velocity: Rate of Change of Data – Access

About 14% respondents strongly agreed that BA-BIS are used for data velocity: rate of change of data – access, 1% were also in agreement, around 40% respondents as BA-BIS users were not sure about it whereas about 41.5% disagreed with the statement and 3.5% were strongly in disagreement with view point.

Table 4.33: Data Velocity: Rate of Change of Data – Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	4.0	4.0	4.0
	Disagree	18	9.0	9.0	13.0
	Not Sure	117	58.5	58.5	71.5
	Agree	57	28.5	28.5	100.0
	Total	**200**	**100.0**	**100.0**	

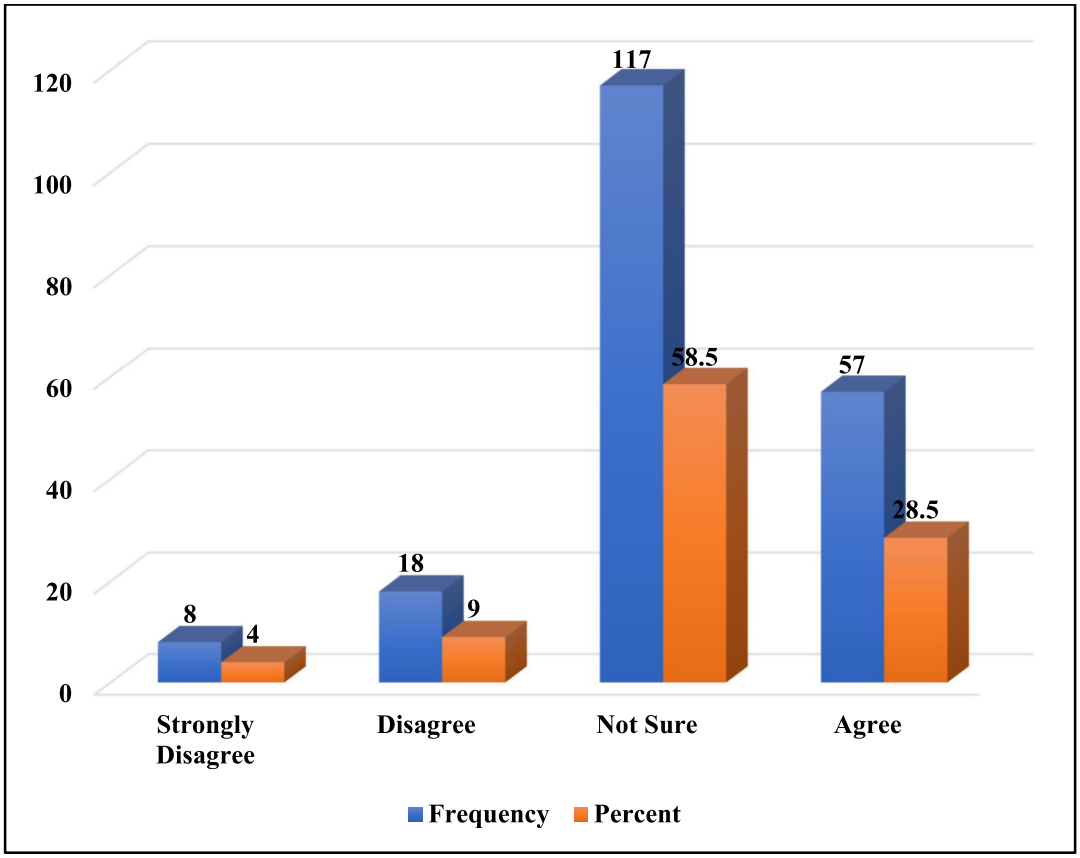

Figure 4.32: Data Velocity: Rate of Change of Data – Use

28.5% respondents strongly agreed that BA-BIS are used for data velocity: rate of change of data – use, around 58.5% respondents as BA-BIS users were not sure about it whereas about 9% disagreed with the statement and 4% were strongly in disagreement with view point.

4.5 BA-BIS AND LEVEL OF USER SATISFACTION:

Table 4.34: User Satisfaction: Effectiveness & efficiency of BI system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	18	9.0	9.0	9.0
	Disagree	15	7.5	7.5	16.5
	Not Sure	37	18.5	18.5	35.0
	Agree	88	44.0	44.0	79.0
	Strongly Agree	42	21.0	21.0	100.0
	Total	**200**	**100.0**	**100.0**	

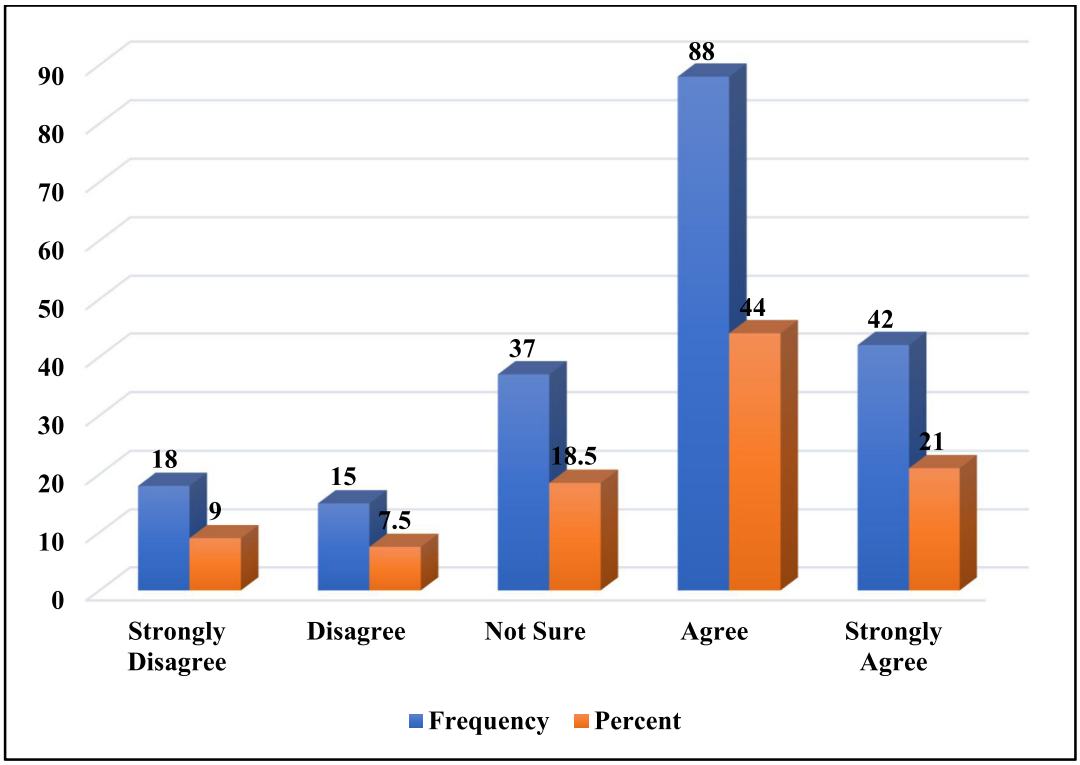

Figure 4.33: User Satisfaction: Effectiveness & efficiency of BI system

About 21% respondents strongly agreed that BA-BIS are used for user satisfaction: effectiveness & efficiency of BI system, 44% were also in agreement, whereas about 7.5% disagreed with the statement and 9% were strongly in disagreement with view point.

Table 4.35: User Satisfaction: Suitability/task relevance of BI info.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	31	15.5	15.5	15.5
	Agree	79	39.5	39.5	55.0
	Strongly Agree	90	45.0	45.0	100.0
	Total	**200**	**100.0**	**100.0**	

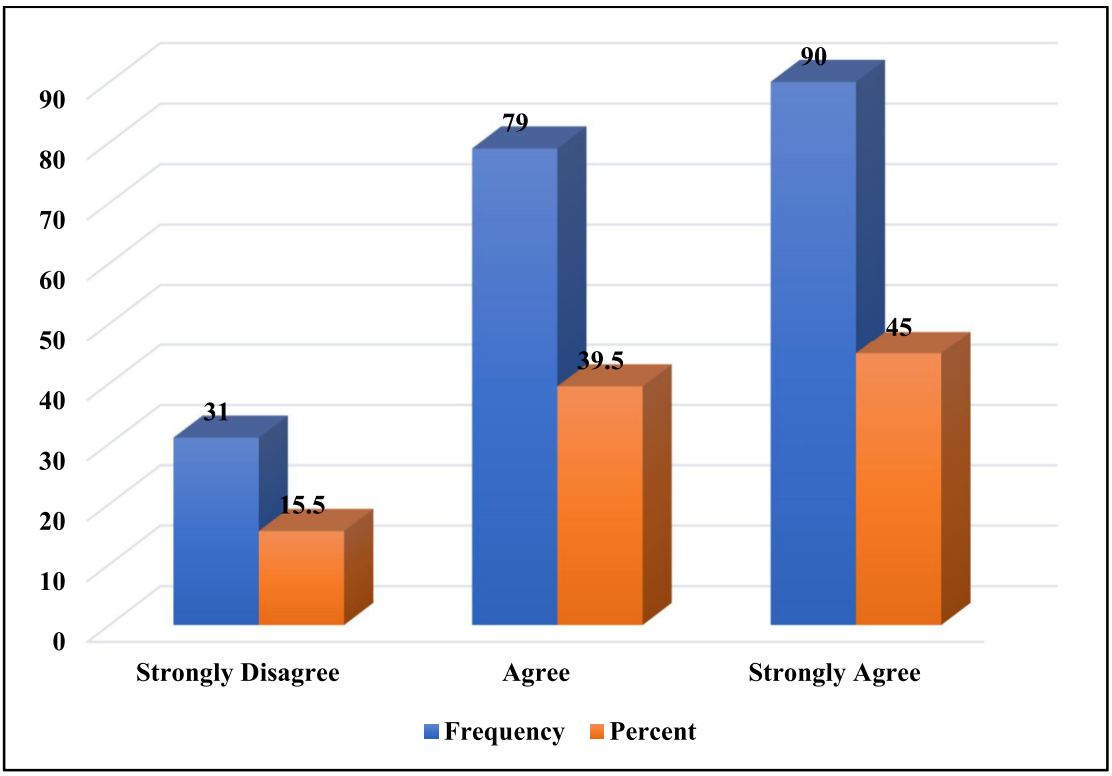

Figure 4.34: User Satisfaction: Suitability/task relevance of BI info.

About 45% respondents strongly agreed that BA-BIS are used for user satisfaction: suitability/task relevance of BI information, 39.5% were also in agreement, whereas about none disagreed with the statement and 15.5% were strongly in disagreement with view point.

Table 4.36: User Satisfaction: BI system meeting user requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	12	6.0	6.0	6.0
	Disagree	41	20.5	20.5	26.5
	Not Sure	45	22.5	22.5	49.0
	Agree	91	45.5	45.5	94.5
	Strongly Agree	11	5.5	5.5	100.0
	Total	**200**	**100.0**	**100.0**	

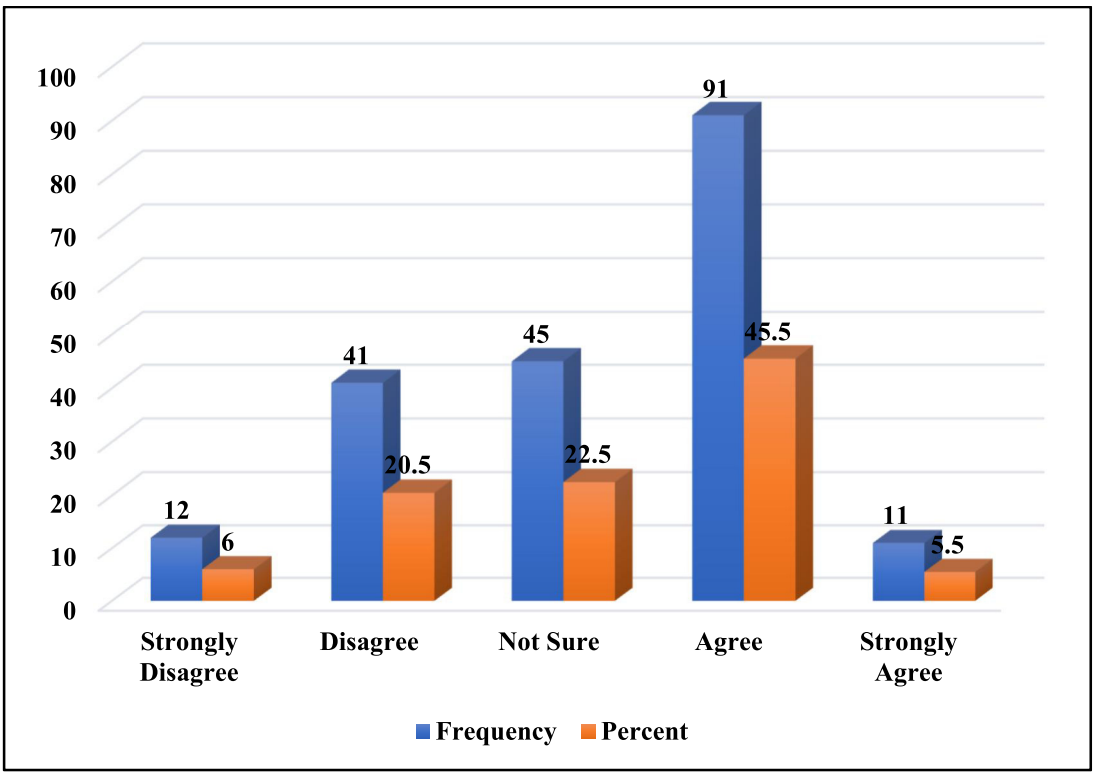

Figure 4.35: User Satisfaction: BI System Meeting User Requirements

5.5% respondents strongly agreed that BA-BIS system meeting user requirements, 45.5% were also in agreement, around 22.5% respondents as BA-BIS users were not sure about it whereas about 20.5% disagreed with the statement and 6% were strongly in disagreement with view point.

Table 4.37: User Satisfaction: General end-user satisfaction with BI system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	12	6.0	6.0	6.0
	Disagree	7	3.5	3.5	9.5
	Agree	90	45.0	45.0	54.5
	Strongly Agree	91	45.5	45.5	100.0
	Total	**200**	**100.0**	**100.0**	

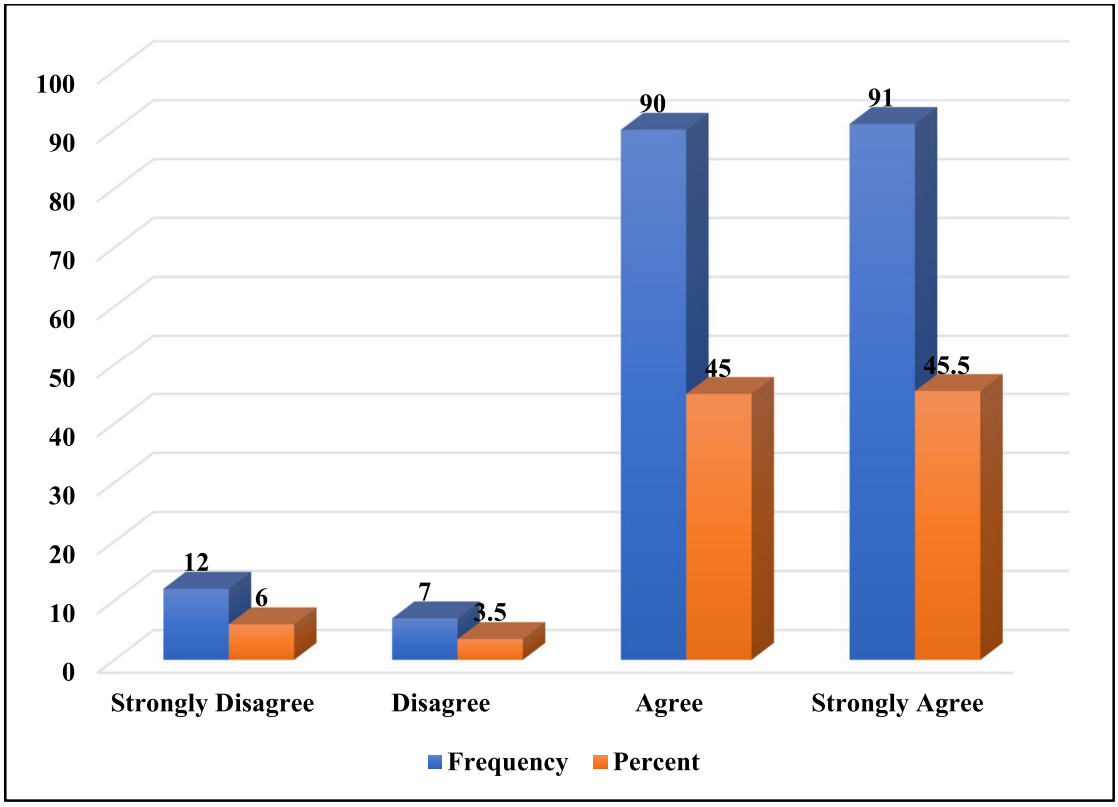

Figure 4.36: User Satisfaction: General End-User Satisfaction with BI System

About 45.5% respondents strongly agreed that they find general end-user satisfaction with BI system, 45% were also in agreement whereas about 3.5% disagreed with the statement and 6% were strongly in disagreement with view point.

4.6 BA-BIS AND MANAGERIAL DECISION MAKING:

Table 4.38: Managerial Decision Making: Decision effectiveness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	3.5	3.5	3.5
	Disagree	46	23.0	23.0	26.5
	Not Sure	19	9.5	9.5	36.0
	Agree	128	64.0	64.0	100.0
	Total	**200**	**100.0**	**100.0**	

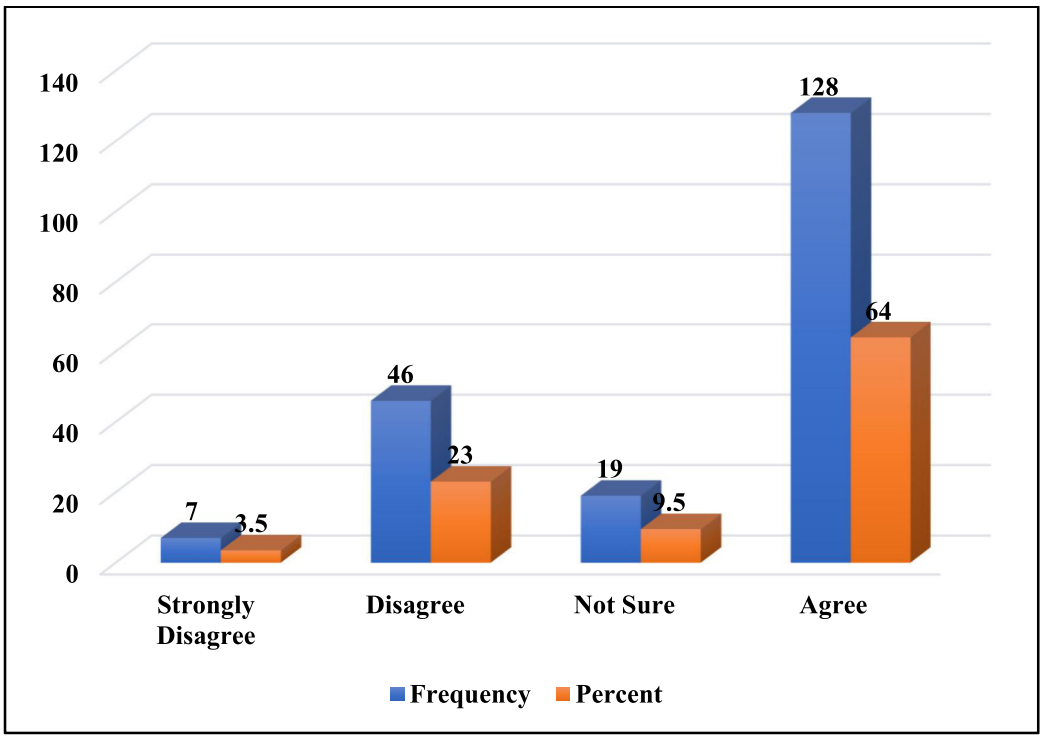

Figure 4.37: Managerial Decision Making: Decision Effectiveness

About 64% respondents strongly agreed that BA-BIS are used for effective decision making, 9.5% respondents as BA-BIS users were not sure about it whereas about 23% disagreed with the statement and 3.5% were strongly in disagreement with view point.

Table 4.39: Managerial Decision Making: Accuracy/correctness of decision making

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	38	19.0	19.0	19.0
	Disagree	7	3.5	3.5	22.5
	Not Sure	5	2.5	2.5	25.0
	Agree	117	58.5	58.5	83.5
	Strongly Agree	33	16.5	16.5	100.0
	Total	**200**	**100.0**	**100.0**	

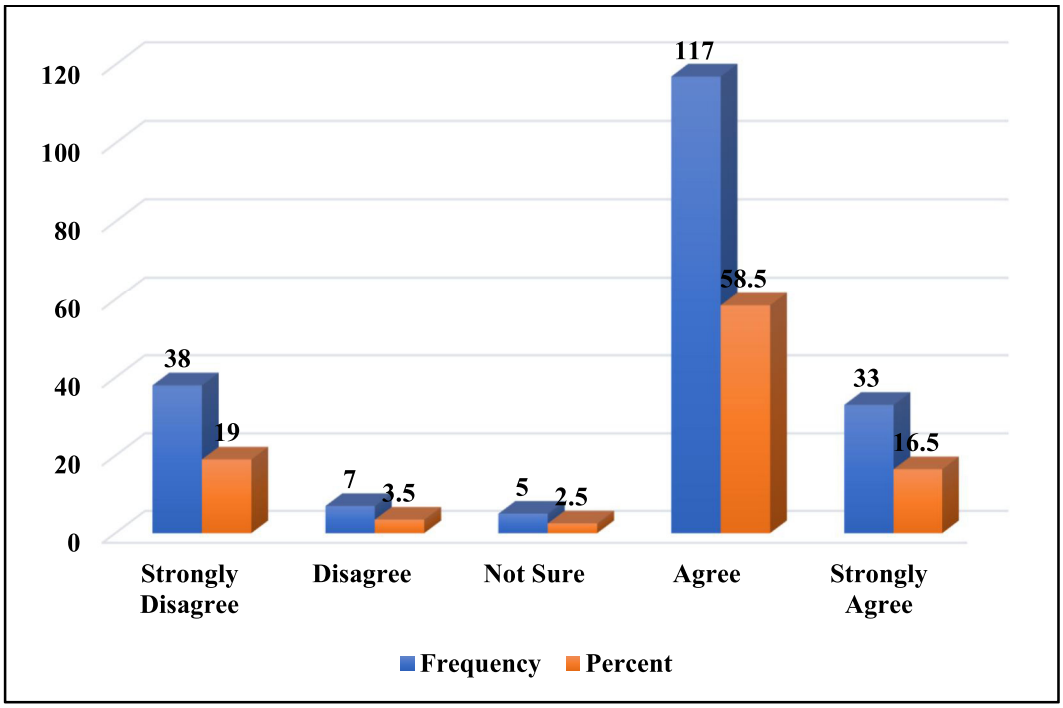

Figure 4.38: Managerial Decision Making: Accuracy/Correctness of Decision Making

About 16.5% respondents strongly agreed that BA-BIS are used for accuracy/correctness of decision making, 58.5% were also in agreement, around 2.5% respondents as BA-BIS users were not sure about it whereas about 3.5% disagreed with the statement and 19% were strongly in disagreement with view point.

Table 4.40: Managerial Decision Making: Timeliness/speed of decision making

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	2.0	2.0	2.0
	Disagree	14	7.0	7.0	9.0
	Not Sure	18	9.0	9.0	18.0
	Agree	68	34.0	34.0	52.0
	Strongly Agree	96	48.0	48.0	100.0
	Total	**200**	**100.0**	**100.0**	

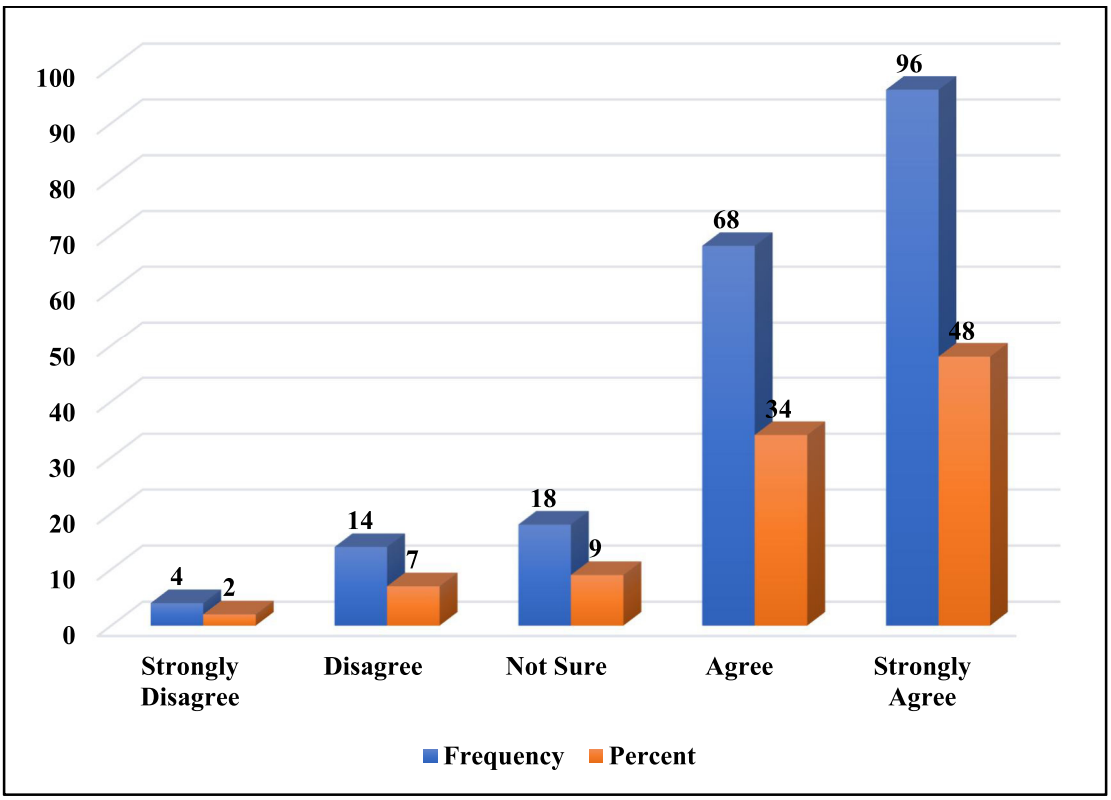

Figure 4.39: Managerial Decision Making: Timeliness/Speed of Decision Making

48% respondents strongly agreed that BA-BIS are used for Timeliness/speed of decision making, 34% were also in agreement, around 9% respondents as BA-BIS users were not sure about it whereas about 7% disagreed with the statement and 2% were strongly in disagreement with view point.

Table 4.41: Managerial Decision Making: rationale/informed decisions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	.5	.5	.5
	Not Sure	32	16.0	16.0	16.5
	Agree	80	40.0	40.0	56.5
	Strongly Agree	87	43.5	43.5	100.0
	Total	**200**	**100.0**	**100.0**	

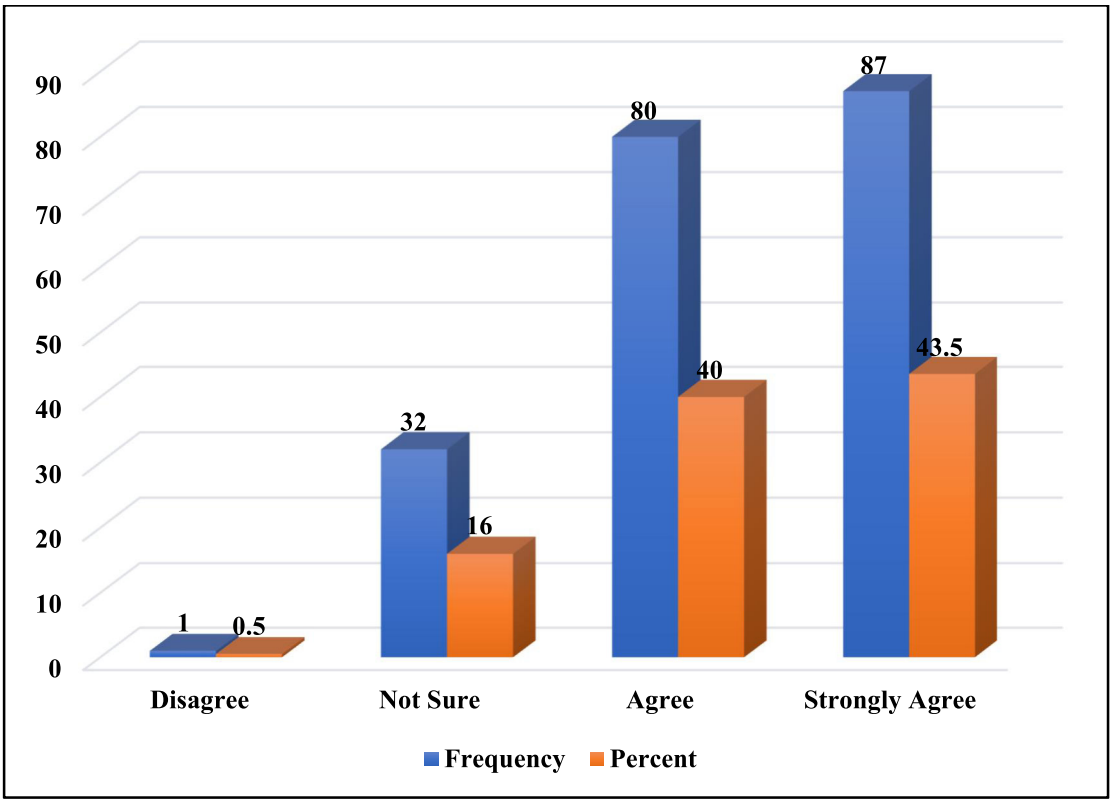

Figure 4.40: Managerial Decision Making: Rationale/Informed Decisions

43.5% respondents strongly agreed that BA-BIS are used for rationale/informed decision making, 40% were also in agreement, around 16% respondents as BA-BIS users were not sure about it whereas about 0.5% disagreed with the statement.

Table 4.42: Managerial Decision Making: Timeliness/speed of decision making

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	11	5.5	5.5	5.5
	Disagree	14	7.0	7.0	12.5
	Not Sure	59	29.5	29.5	42.0
	Agree	30	15.0	15.0	57.0
	Strongly Agree	86	43.0	43.0	100.0
	Total	**200**	**100.0**	**100.0**	

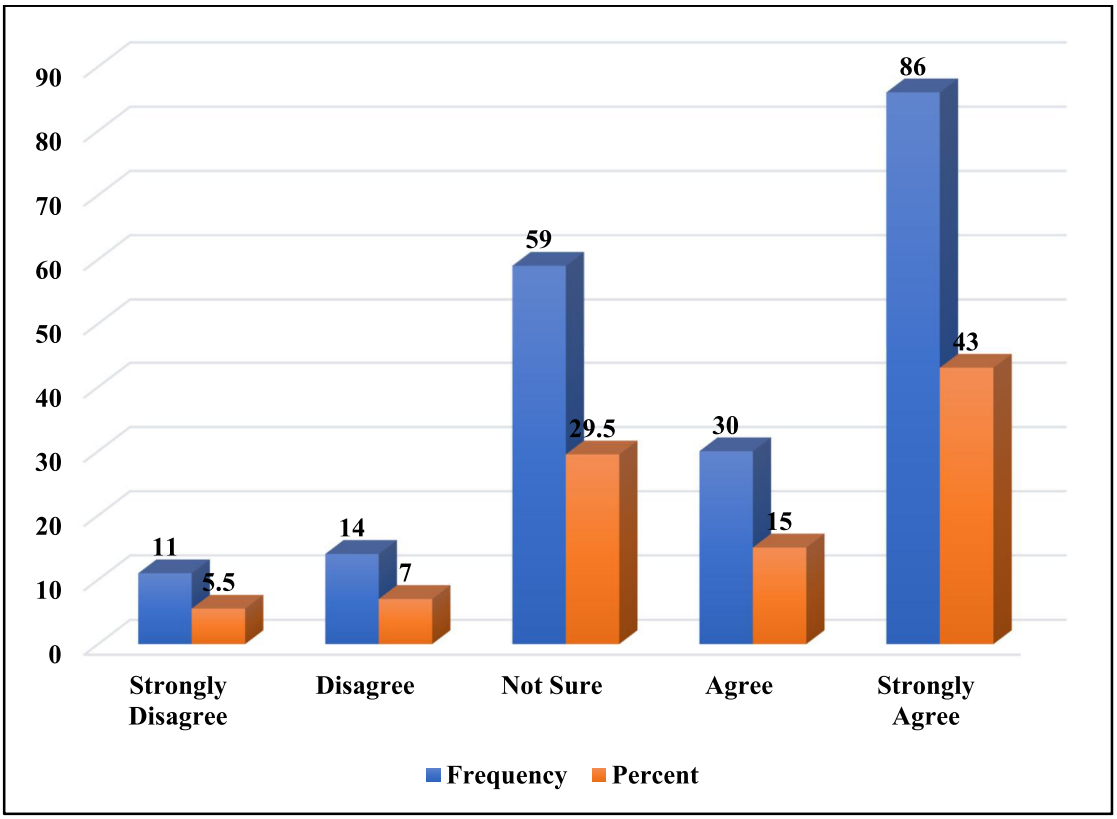

Figure 4.41: Managerial Decision Making: Timeliness/Speed of Decision Making

Majority of respondents about 43% strongly agreed that Business analytics and intelligent systems are basically used for timeliness/speedy decision making, 15% also agreed whereas about 12.5% disagreed and about 5.5% strongly disagreed with the above-mentioned view point.

Table 4.43: Decisions about New Products/Services/Market

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	20	10.0	10.0	10.0
	Disagree	14	7.0	7.0	17.0
	Not Sure	35	17.5	17.5	34.5
	Agree	99	49.5	49.5	84.0
	Strongly Agree	32	16.0	16.0	100.0
	Total	**200**	**100.0**	**100.0**	

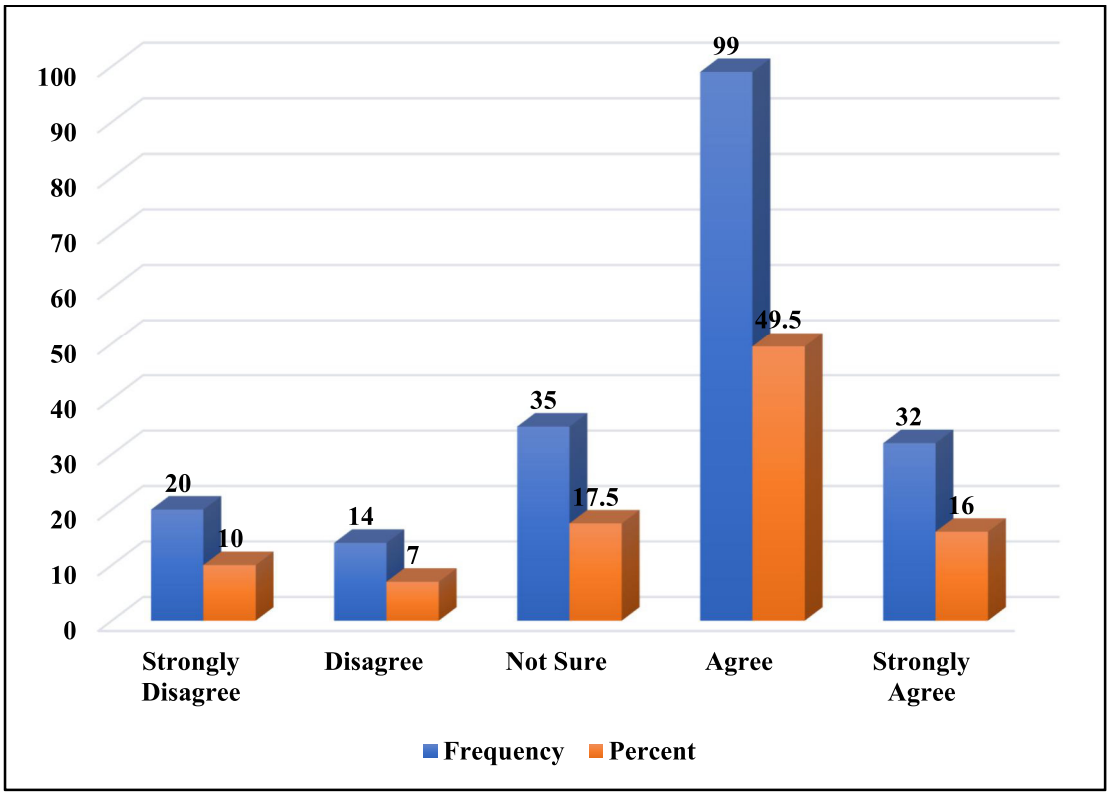

Figure 4.42: Decisions about New Products/Services/Market

16% respondents strongly that BA-BIS are used for decisions about new products /services /market, 49.5% were also in agreement, around 17.5% respondents as BA-BIS users were not sure about it whereas about 7% disagreed with the statement and 10% were strongly in disagreement with view point.

Table 4.44: Decisions about Strategic/Key Suppliers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	4.0	4.0	4.0
	Disagree	34	17.0	17.0	21.0
	Not Sure	59	29.5	29.5	50.5
	Agree	67	33.5	33.5	84.0
	Strongly Agree	32	16.0	16.0	100.0
	Total	**200**	**100.0**	**100.0**	

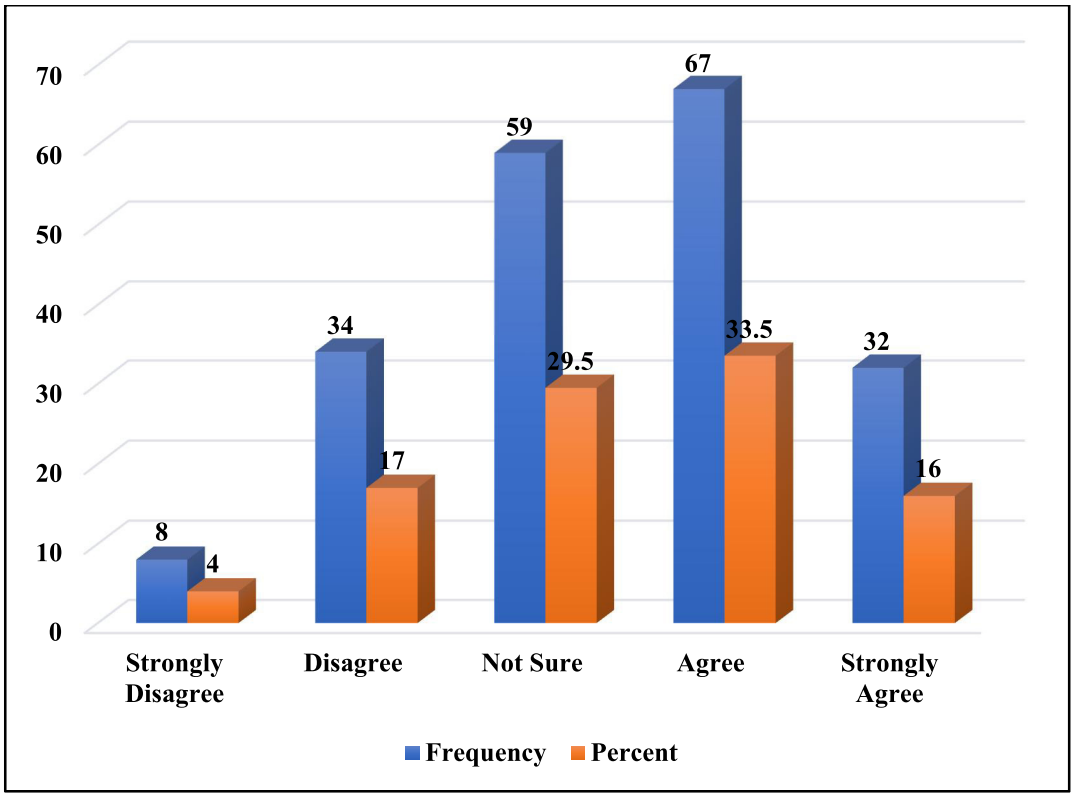

Figure 4.43: Decisions about Strategic/Key Suppliers

Majority of respondents about 33.5% agreed that Business analytics and intelligent systems are being used for decisions about strategic/key suppliers, 16% strongly agreed whereas about 17% disagreed and about 4% strongly disagreed with the above-mentioned view point.

Table 4.45: Decisions about Outsourcing/BPM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	35	17.5	17.5	17.5
	Disagree	43	21.5	21.5	39.0
	Not Sure	46	23.0	23.0	62.0
	Agree	45	22.5	22.5	84.5
	Strongly Agree	31	15.5	15.5	100.0
	Total	**200**	**100.0**	**100.0**	

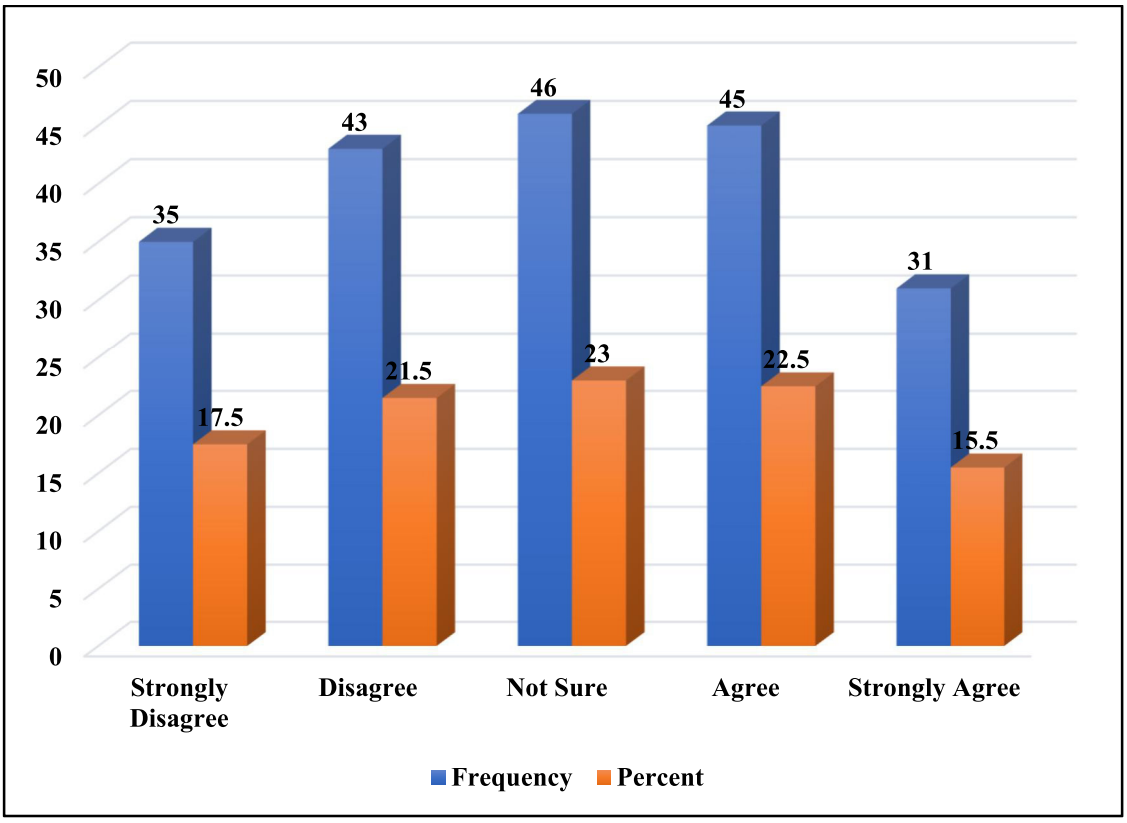

Figure 4.44: Decisions about Outsourcing/BPM

15.5% respondents strongly agreed that BA-BIS are used for decisions about outsourcing / BPM, 22.5% were also in agreement, around 23% respondents as BA-BIS users were not sure about it whereas about 21.5% disagreed with the statement and 17.5% were strongly in disagreement with view point.

Table 4.46: Decisions about Sales and Marketing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	27	13.5	13.5	13.5
	Disagree	18	9.0	9.0	22.5
	Not Sure	27	13.5	13.5	36.0
	Agree	56	28.0	28.0	64.0
	Strongly Agree	72	36.0	36.0	100.0
	Total	**200**	**100.0**	**100.0**	

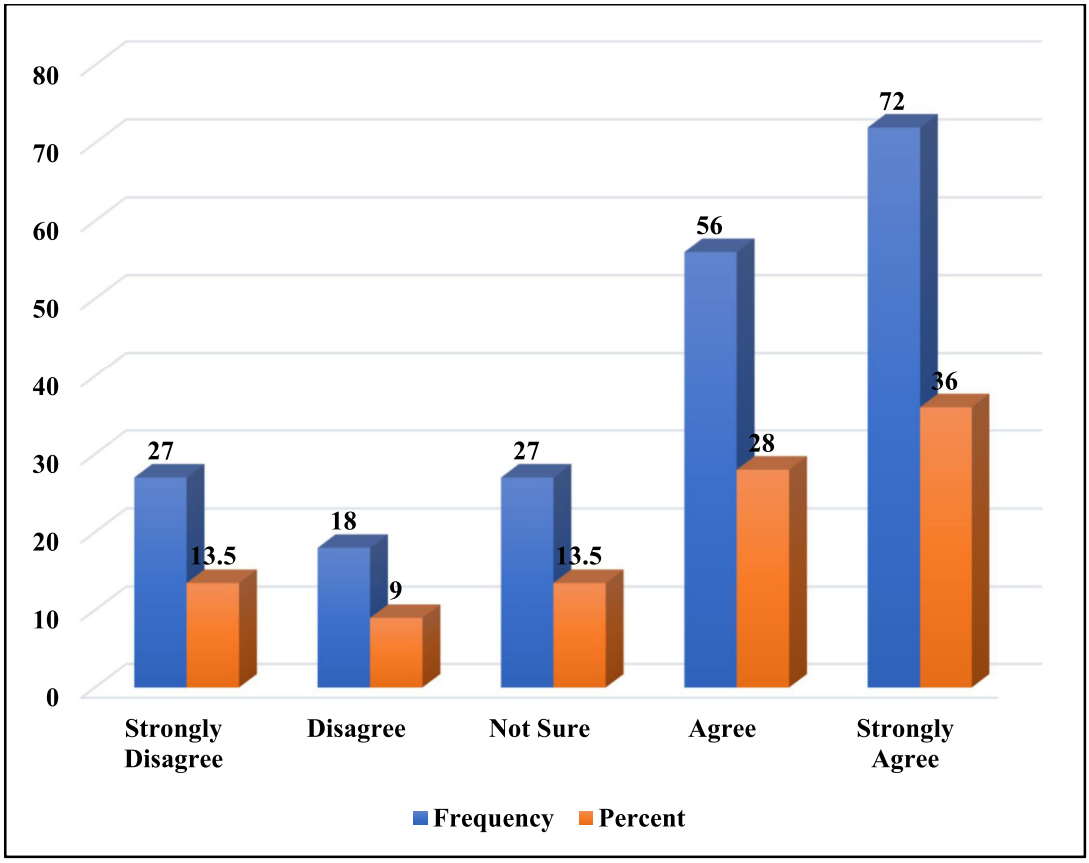

Figure 4.45: Decisions about Sales and Marketing

Majority of respondents about 36% strongly agreed that Business analytics and intelligent systems are being used for decision making in sales and marketing whereas about 13.5% strongly disagreed with the above-mentioned view point.

Table 4.47: Overall, Organisation Acts on Insights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	30	15.0	15.0	15.0
	Disagree	24	12.0	12.0	27.0
	Not Sure	18	9.0	9.0	36.0
	Agree	96	48.0	48.0	84.0
	Strongly Agree	32	16.0	16.0	100.0
	Total	**200**	**100.0**	**100.0**	

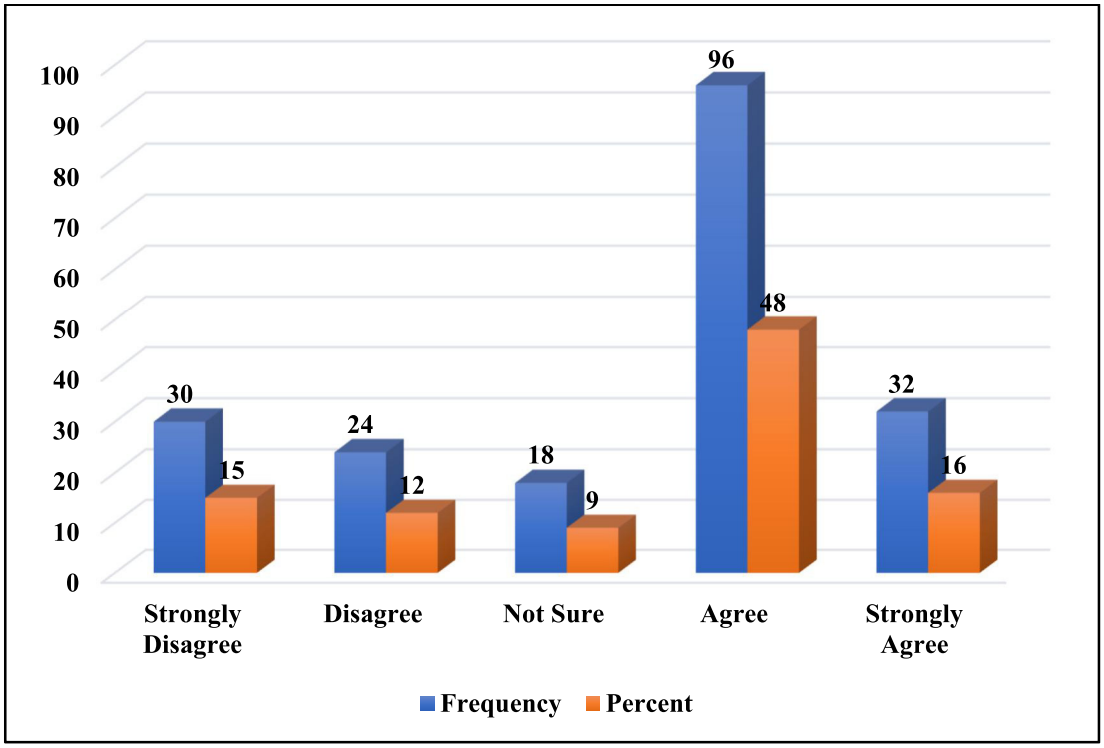

Figure 4.46: Overall, Organisation Acts on Insights

16% respondents strongly agreed that overall, organisation acts on insights, 48% were also in agreement, around 9% respondents as BA-BIS users were not sure about it whereas about 12% disagreed with the statement and 15% were strongly in disagreement with view point.

4.7 BIG DATA ANALYTICS & BUSINESS INTELLIGENCE SYSTEM AND ORGANIZATIONS PERFORMANCE:

H_01 : Big data analytics and business intelligence system do not have a significant impact on organizations performance.

H_a1 : Big data analytics and business intelligence system have a significant impact on organizations performance.

The null hypothesis was being divided various sub hypotheses (shown in the form models) in order to identify the impact of big data analytics and business intelligence system on organization performance. The significant impact being measured through the correlation, ANOVA, and regression techniques.

Model 1: Association between organization performance measure sales growth (P1) and overall use of BABIS.

$H_01.1$: There is no association between organization performance measure sales growth (P1) and overall use of BABIS

Performance: Sales Growth (P1) ⟶ Overall Use of BABIS

Table 4.48: Model: 1 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.905[a]	.819	.818	.25215
a. Predictors: (Constant), Overall Use of BABIS				

The table shows the model 1 summary which includes the correlation and error values. R-value of 0.905 shows strong positive correlation between organization performance measure sales growth (P1) and overall use of BABIS also the R Square value of 0.819 support the results.

Table 4.49: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.991	1	56.991	896.374	.000[b]
	Residual	12.589	198	.064		
	Total	**69.580**	**199**			
a. Dependent Variable: Performance: Sales Growth (P1)						
b. Predictors: (Constant), Overall Use of BABIS						

The ANOVA test results with F-statistic value of 896.374 and the corresponding p-value of 0.00 confirms that the model is significant enough as the p-value is found to be lesser than the standard alpha value of 0.05. This concludes that there is significant association between "Overall Use of BABIS" and "Performance: Sales Growth (P1)" further it can be interpreted that overall use of BABIS is very important factor or aspect while explaining the variability in sales growth performance.

Table 4.50: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.249	.130		1.910	.058
	Overall Use of BABIS	.934	.031	.905	29.940	.000
a. Dependent Variable: Performance: Sales Growth (P1)						

The regression equation showing the relationship between "Overall Use of BABIS" and "Performance: Sales Growth (P1)" can be represented as:

Performance: Sales Growth (P1) = 0.943 (Overall Use of BABIS) + 0.249

Model 2: Association Between organization performance measure market share (P2) and overall use of BABIS.

Performance: Market Share (P2) ⟶ Overall Use of BABIS

Table 4.51: Model: 2 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.765[a]	.585	.582	.40641
a. Predictors: (Constant), Overall Use of BABIS				

The table shows the model 2 summary which includes the correlation and error values. R-value of 0.765 shows strong positive correlation between organization performance measure market share (P2) and overall use of BABIS also the R Square value of 0.585 support the results.

Table 4.52: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	46.017	1	46.017	278.606	.000[b]
	Residual	32.703	198	.165		
	Total	**78.720**	**199**			
a. Dependent Variable: Performance: Market share (P2)						
b. Predictors: (Constant), Overall Use of BABIS						

The ANOVA test results with F-statistic value of 278.606 and the corresponding p-value of 0.00 confirms that the model is significant enough as the p-value is found to be lesser than the standard alpha value of 0.05. This concludes that there is significant association between "Overall Use of BABIS" and "Performance: Market share (P2)" further it can be interpreted that overall use of BABIS is very important factor or aspect while explaining the variability in market share (P2).

Table 4.53: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	.610	.210		2.908	.004
	Overall Use of BABIS	.839	.050	.765	16.691	.000
a. Dependent Variable: Performance : Market share (P2)						

The regression equation showing the relationship between "Overall Use of BABIS" and "Performance: Market share (P2)" can be represented as:

Performance: Market Share (P2) = 0.839 (Overall Use of BABIS) + 0.610

So, in summary, the equation tells that there is a positive relationship between "Overall Use of BABIS" and "Performance: Market Share (P2)." As the use of BABIS increases, market share is expected to increase, based on the coefficients provided in the equation.

Model 3: Association Between organization performance measure cost reductions (P3) and overall use of BABIS.

Performance: Cost Reductions (P3) ⟶ Overall Use of BABIS

Table 4.54: Model : 3 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.864[a]	.746	.744	.27087
a. Predictors: (Constant), Overall Use of BABIS				

The table shows the model 3 summary which includes the correlation and error values. R-value of 0.864 shows strong positive correlation between organization performance measure cost reductions (P3) and overall use of BABIS also the R Square value of 0.746 support the results.

Table 4.55: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	42.592	1	42.592	580.494	.000[b]
	Residual	14.528	198	.073		
	Total	**57.120**	**199**			
a. Dependent Variable: Performance: Cost Reductions (P3)						
b. Predictors: (Constant), Overall Use of BABIS						

The ANOVA test results with F-statistic value of 580.494 and the corresponding p-value of 0.00 confirms that the model is significant enough as the p-value is found to be lesser than the standard alpha value of 0.05. This concludes that there is significant association between "Overall Use of BABIS" and "Performance: Cost Reductions (P3)" further it can be interpreted that overall use of BABIS is very important factor or aspect while explaining the variability in cost reductions (P3).

Table 4.56: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.782	.140		5.590	.000
	Overall Use of BABIS	.807	.034	.864	24.093	.000
a. Dependent Variable: Performance : Cost Reductions (P3)						

The regression equation showing the relationship between "Overall Use of BABIS" and "Performance: Cost Reductions (P3) can be represented as:

Performance: Cost Reductions (P3) = 0.807 (Overall Use of BABIS) + 0.782

So, in summary, the equation tells that there is a positive relationship between "Overall Use of BABIS" and "Performance: Cost Reductions (P3)." This suggests that the use of BABIS is associated with better cost reduction.

Model 4: Association between organization performance measure profitability (P4) and overall use of BABIS.

Performance: Profitability (P4) ⟶ Overall Use of BABIS

Table 4.57: Model : 4 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
4	.900[a]	.810	.809	.26340
a. Predictors: (Constant), Overall Use of BABIS				

The table shows the model 4 summary which includes the correlation and error values. R-value of 0.900 shows strong positive correlation between organization performance measure profitability (P4) and overall use of BABIS also the R Square value of 0.810 support the results.

Table 4.58: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
4	Regression	58.618	1	58.618	844.912	.000[b]
	Residual	13.737	198	.069		
	Total	**72.355**	**199**			
a. Dependent Variable: Performance : Profitability (P4)						
b. Predictors: (Constant), Overall Use of BABIS						

The ANOVA test results with F-statistic value of 58.618 and the corresponding p-value of 0.00 confirms that the model is significant enough as the p-value is found to be lesser than the standard alpha value of 0.05. This concludes that there is significant association between "Overall Use of BABIS" and "Performance: Profitability (P4)" further it can be interpreted that overall use of BABIS is very important factor or aspect while explaining the variability in profitability (P4).

Table 4.59: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
4	(Constant)	.199	.136		1.463	.145
	Overall Use of BABIS	.947	.033	.900	29.067	.000
a. Dependent Variable: Performance: Profitability (P4)						

The regression equation showing the relationship between "Overall Use of BABIS" and "Performance: Profitability (P4)" can be represented as:

Performance: Profitability (P4) = 0.947 (Overall Use of BABIS) + 0.199

So, in summary, the equation tells that there is a positive relationship between "Overall Use of BABIS" and "Performance: Profitability (P4)." As the use of BABIS increases, the performance metric related to profitability (P4) is expected to improve or increase, based on the coefficient provided in the equation. This suggests that the use of BABIS is associated with higher profitability.

Model 5: Association between organization performance measure customer loyalty (P5) and overall use of BABIS.

Performance: Customer loyalty (P5) ⟶ Overall Use of BABIS

Table 4.60: Model : 5 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
5	.821[a]	.674	.672	.40973
a. Predictors: (Constant), Overall Use of BABIS				

The table shows the model 5 summary which includes the correlation and error values. R-value of 0.821 shows strong positive correlation between organization performance measure customer loyalty (P5) and overall use of BABIS also the R Square value of 0.674 support the results.

Table 4.61: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
5	Regression	68.635	1	68.635	408.839	.000[b]
	Residual	33.240	198	.168		
	Total	**101.875**	**199**			
a. Dependent Variable: Performance : Customer loyalty (P5)						
b. Predictors: (Constant), Overall Use of BABIS						

The ANOVA test results with F-statistic value of 408.839 and the corresponding p-value of 0.00 confirms that the model is significant enough as the p-value is found to be lesser than the standard alpha value of 0.05. This concludes that there is significant association between "Overall Use of BABIS" and "Performance: Customer loyalty (P5)" further it can be interpreted that overall use of BABIS is very important factor or aspect while explaining the variability in customer loyalty (P5).

Table 4.62: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
5	(Constant)	-.162	.212		-.768	.443
	Overall Use of BABIS	1.025	.051	.821	20.220	.000
a. Dependent Variable: Performance : Customer loyalty (P5)						

The regression equation showing the relationship between "Overall Use of BABIS" and "Performance: Customer loyalty (P5)" can be represented as:

Performance: Customer loyalty (P5) = 1.025 (Overall Use of BABIS) – 0.162

So, in summary, the equation tells that there is a positive relationship between "Overall Use of BABIS" and "Performance: Customer Loyalty (P5)." As the use of BABIS increases, customer loyalty is expected to increase, based on the coefficient provided in the equation. However, it's important to note that the intercept term is negative, which implies that very low or no use of BABIS might have a negative impact on customer loyalty.

4.8 BIG DATA ANALYTICS & BUSINESS INTELLIGENT SYSTEM AND ECONOMIC / FINANCIAL PERFORMANCE:

H_02 : Big data analytics & business intelligent system do not have better economic and financial performance.

H_a2 : Big data analytics & business intelligent system have better economic and financial performance.

Model 6: Association between big data analytics & business intelligent system economic and financial performance.

Economic and Financial Performance ⟶ Overall Use of BABIS

Table 4.63: Model : 6 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
6	.730[a]	.533	.531	.47771
a. Predictors: (Constant), Overall Use of BABIS				

The table shows the model 5 summary which includes the correlation and error values. R-value of 0.730 shows strong positive correlation between Economic / Financial Performance and overall use of BABIS also the R Square value of 0.533 support the results.

Table 4.64: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
6	Regression	51.570	1	51.570	225.983	.000[b]
	Residual	45.185	198	.228		
	Total	**96.755**	**199**			
a. Dependent Variable: Economic & Financial Performance						
b. Predictors: (Constant), Overall Use of BABIS						

The ANOVA test results with F-statistic value of 225.983 and the corresponding p-value of 0.00 confirms that the model is significant enough as the p-value is found to be lesser than the standard alpha value of 0.05. This concludes that there is significant association between "Overall Use of BABIS" and "Performance: Economic & Financial" further it can be interpreted that overall use of BABIS is very important factor or aspect while explaining the variability in Economic / Financial performance.

Table 4.65: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
6	(Constant)	.362	.247		1.467	.144
	Overall Use of BABIS	.888	.059	.730	15.033	.000
a. Dependent Variable: Economic & Financial Performance						

The regression equation showing the relationship between "Overall Use of BABIS" and " Economic & Financial Performance" can be represented as:

Economic & Financial Performance = 0.888 (Overall Use of BABIS) + 0.362

So, in summary, the equation tells that there is a positive relationship between "Overall Use of BABIS" and "Economic & Financial Performance". As the use of BABIS increases, Economic & Financial Performance is expected to increase, based on the coefficient provided in the equation.

4.9 IMPACT OF BABIS SYSTEM ON DECISION MAKING:

H_03 : There is no significant difference between the impact of big data analytics & business intelligence system on decision making in both type of organizations (Private and Public).

H_a3 : There is significant difference between the impact of big data analytics & business intelligence system on decision making in both type of organizations (Private and Public).

Type of Organization and Decision effectiveness:

$H_03.1$: There is no significant difference between the impact of big data analytics & business intelligence system on decision effectiveness in both type of organizations (Private and Public).

The table below shows the cross tabulation between type of organization and decision effectiveness in order to find dependency between them.

Table 4.66: Crosstabulation: Decision effectiveness and Type of Organization

		Managerial Decision Making: Decision effectiveness				**Total**
		Very Low	**Low**	**Medium**	**High**	
Type of Org.	Private	7	34	19	40	100
	Public	0	12	0	88	100
Total		**7**	**46**	**19**	**128**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Managerial Decision Making: Decision effectiveness." Accordingly, the Chi-Square test results are shown below in the table:

Table 4.67: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	54.522[a]	3	.000
Likelihood Ratio	65.456	3	.000
N of Valid Cases	200		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 3.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis $H_0$3.1 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant difference between the impact of big data analytics & business intelligence system on decision effectiveness in both type of organizations (Private and Public).

Type of Organization and Accuracy/correctness of decision making:

$H_0$3.2 : There is no significant difference between the impact of big data analytics & business intelligence system on accuracy/correctness of decision making in both type of organizations (Private and Public).

The table below shows the cross tabulation between type of organization and accuracy/correctness of decision making in order to find dependency between them.

Table 4.68: Crosstabulation: Accuracy/correctness of decision making and Type of Organization

		Accuracy/correctness of decision making and Type of Organization					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	31	7	0	50	12	100
	Public	7	0	5	67	21	100
Total		**38**	**7**	**5**	**117**	**33**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Managerial Decision Making: accuracy/correctness of decision making" Accordingly, the Chi-Square test results are shown below in the table:

Table 4.69: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.083[a]	4	.000
Likelihood Ratio	37.973	4	.000
N of Valid Cases	200		
a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 2.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis $H_0$3.2 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant difference between the impact of big data analytics & business intelligence system on accuracy/correctness of decision making in both type of organizations (Private and Public).

Type of Organization and Timeliness/speed of decision making:

$H_0$3.3 : There is no significant difference between the impact of big data analytics & business intelligence system on timeliness/speed of decision making in both type of organizations (Private and Public).

The table below shows the cross tabulation between type of organization and timeliness/speed of decision making in order to find dependency between them.

Table 4.70: Crosstabulation: Timeliness/speed of decision making and Type of Organization

		Timeliness/speed of decision making and Type of Organization					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	1	0	18	40	41	100
	Public	3	14	0	28	55	100
Total		**4**	**14**	**18**	**68**	**96**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Managerial Decision Making: timeliness/speed of decision making" Accordingly, the Chi-Square test results are shown below in the table:

Table 4.71: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.159[a]	4	.000
Likelihood Ratio	49.586	4	.000
N of Valid Cases	200		
a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis $H_0$3.3 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant difference between the impact of big data analytics & business intelligence system on timeliness/speed of decision making in both type of organizations (Private and Public).

Type of Organization and Managerial Decision Making- rationale/informed decisions:

$H_0$3.4 : There is no significant difference between the impact of big data analytics & business intelligence system on rationale/informed decisions in both type of organizations (Private and Public).

The table below shows the cross tabulation between type of organization and rationale/informed decisions in order to find dependency between them.

Table 4.72: Crosstabulation: Rationale/Informed Decisions and Type of Organization

		Rationale/Informed decisions				Total
		Low	Medium	High	Very High	
Type of Org.	Private	0	13	26	61	100
	Public	1	19	54	26	100
Total		**1**	**32**	**80**	**87**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Managerial Decision Making: rationale/informed decisions" Accordingly, the Chi-Square test results are shown below in the table:

Table 4.73: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26.005[a]	3	.000
Likelihood Ratio	27.016	3	.000
N of Valid Cases	200		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis $H_0$3.4 is being rejected, indicating strong evidence against the null hypothesis further it can be

concluded that there is significant difference between the impact of big data analytics & business intelligence system on rationale/informed decisions in both type of organizations (Private and Public).

Type of Organization and Decision Making Related to Key Indicators:

$H_0$3.5 : There is no significant difference between the impact of big data analytics & business intelligence system on decision making related to key indicators in both type of organizations (Private and Public).

The table below shows the cross tabulation between type of organization and decision making related to key indicators in order to find dependency between them.

Table 4.74: Crosstabulation: Decision Making Related to Key Indicators and Type of Organization

		Managerial Decision Making: Decision Making Related to Key Indicators					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	11	11	25	4	49	100
	Public	0	3	34	26	37	100
Total		**11**	**14**	**59**	**30**	**86**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Managerial Decision Making: decision making related to key indicators" Accordingly, the Chi-Square test results are shown below in the table:

Table 4.75: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.752[a]	4	.000
Likelihood Ratio	41.196	4	.000
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis $H_0 3.5$ is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant difference between the impact of big data analytics & business intelligence system on decision making related to key indicators in both type of organizations (Private and Public).

4.10 BABIS SUCCESS FACTORS AND TYPE OF ORGANIZATION:

$H_0 4$: There is no significant relationship between big data & business intelligence system success factors and type of organizations.

$H_0 4$: There is significant relationship between big data & business intelligence system success factors and type of organizations.

Type of Organization and Data volume adequacy:

$H_0 4.1$: There is no significant relationship between big data & business intelligence system success factor: data volume adequacy and type of organizations.

The table below shows the cross tabulation between type of organization and Data Quality: Data volume adequacy in order to find dependency between them.

Table 4.76: Crosstabulation: Data Volume Adequacy and Type of Organization

		Data Quality: Data volume adequacy				Total
		Very Low	Medium	High	Very High	
Type of Org.	Private	0	33	62	5	100
	Public	7	0	93	0	100
Total		**7**	**33**	**155**	**5**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, “Type of Organization” and “Data Quality: Data volume adequacy”. Accordingly, the Chi-Square test results are shown below in the table:

Table 4.77: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	51.200[a]	3	.000
Likelihood Ratio	68.625	3	.000
N of Valid Cases	200		
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.1 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is a significant relationship between big data & business intelligence system success factor: data volume adequacy and type of organizations (Private and Public).

Type of Organization and Data Access:

H_0 4.2 **:** There is no significant relationship between big data & business intelligence system success factor: data Access and type of organizations.

The table below shows the cross tabulation between type of organization and data access in order to find dependency between them.

Table 4.78: Crosstabulation: Data Quality: Access and Type of Organization

		Data Quality: Access				Total
		Low	Medium	High	Very High	
Type of Org.	Private	46	4	19	31	100
	Public	0	24	26	50	100
Total		**46**	**28**	**45**	**81**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and “data access”. Accordingly, the Chi-Square test results are shown below in the table:

Table 4.79: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	65.831[a]	3	.000
Likelihood Ratio	85.211	3	.000
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.2 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is a significant relationship between big data & business intelligence system success factor: data access and type of organizations (Private and Public).

Type of Organization and Data Quality: Use:

H_0 4.3 **:** There is no significant relationship between big data & business intelligence system success factor data quality: use and type of organizations.

The table below shows the cross tabulation between type of organization and data quality: use in order to find dependency between them.

Table 4.80: Crosstabulation: Data Quality: Use and Type of Organization

		Data Quality: Use					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	26	4	0	34	36	100
	Public	0	0	27	50	23	100
Total		**26**	**4**	**27**	**84**	**59**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and “Data Quality: Use”. Accordingly, the Chi-Square test results are shown below in the table:

Table 4.81: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	62.912[a]	4	.000
Likelihood Ratio	84.973	4	.000
N of Valid Cases	200		
a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.3 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor: data quality: use and type of organizations (Private and Public).

Type of Organization and Data Variety: Diversity of Unstructured Data – Access:

H_0 4.4 **:** There is no significant relationship between big data & business intelligence system success factor diversity of unstructured data: access and type of organizations.

The table below shows the cross tabulation between type of organization and diversity of unstructured data: access in order to find dependency between them.

Table 4.82: Crosstabulation: Diversity of Unstructured Data – Access and Type of Organization

		Data Variety: Diversity of Unstructured Data – Access					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	24	6	15	51	4	100
	Public	0	0	50	50	0	100
Total		**24**	**6**	**65**	**101**	**4**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and " Data Variety: Diversity of Unstructured Data – Access". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.83: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	52.856[a]	4	.000
Likelihood Ratio	67.027	4	.000
N of Valid Cases	200		
a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 2.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.4 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor diversity of unstructured data: access and type of organizations

Type of Organization and Data Variety: Diversity of Unstructured Data – Use:

H_0 4.5 **:** There is no significant relationship between big data & business intelligence system success factor diversity of unstructured data - use and type of organizations.

The table below shows the cross tabulation between type of organization and diversity of unstructured data - use in order to find dependency between them.

Table 4.84: Crosstabulation: Diversity of Unstructured Data (Use) and Type of Orgabization

		Data Variety: Diversity of Unstructured Data – Use					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	2	12	16	26	44	100
	Public	0	17	31	50	2	100
Total		**2**	**29**	**47**	**76**	**46**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, “Type of Organization” and “Data Variety: Diversity of Unstructured Data – Use”. Accordingly, the Chi-Square test results are shown below in the table:

Table 4.85: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	53.576[a]	4	.000
Likelihood Ratio	63.537	4	.000
N of Valid Cases	200		
a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.5 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor diversity of unstructured data - use and type of organizations.

Type of Organization and Data Velocity: Rate of Change of Data – Access:

H_0 4.6 **:** There is no significant relationship between big data & business intelligence system success factor rate of change of data – access and type of organizations.

The table below shows the cross tabulation between type of organization and rate of change of data – access in order to find dependency between them.

Table 4.86: Crosstabulation: Rate of Change of Data – Access and Type of Organization

Count							
		Data Velocity: Rate of Change of Data - Access					**Total**
		Very Low	**Low**	**Medium**	**High**	**Very High**	
Type of Org.	Private	7	33	32	0	28	100
	Public	0	50	48	2	0	100
Total		**7**	**83**	**80**	**2**	**28**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, “Type of Organization” and “Data Velocity: Rate of Change of Data – Access”. Accordingly, the Chi-Square test results are shown below in the table:

Table 4.87: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.682[a]	4	.000
Likelihood Ratio	58.021	4	.000
N of Valid Cases	200		
a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.6 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor rate of change of data – access and type of organizations.

Type of Organization and Data Velocity: Rate of Change of Data-Use:

H_0 4.7 **:** There is no significant relationship between big data & business intelligence system success factor rate of change of data-use and type of organizations.

The table below shows the cross tabulation between type of organization and rate of change of data-use in order to find dependency between them.

Table 4.88: Crosstabulation: Rate of Change of Data (Use) and Type of Organization

		Data Velocity: Rate of Change of Data : Use				Total
		Very Low	Low	Medium	High	
Type of Org.	Private	8	18	55	19	100
	Public	0	0	62	38	100
Total		**8**	**18**	**117**	**57**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, “Type of Organization” and “Data Velocity: Rate of Change of Data-Use” Accordingly, the Chi-Square test results are shown below in the table:

Table 4.89: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.752[a]	3	.000
Likelihood Ratio	42.919	3	.000
N of Valid Cases	200		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 4.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.7 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor rate of change of data-use and type of organizations.

Type of Organization and User Satisfaction: Effectiveness & efficiency of BI system:

H_0 4.8 **:** There is no significant relationship between big data & business intelligence system success factor user satisfaction: effectiveness & efficiency of BI system and type of organizations.

The table below shows the cross tabulation between type of organization and user satisfaction: effectiveness & efficiency of BI system in order to find dependency between them.

Table 4.90: Crosstabulation: User Satisfaction: Effectiveness & Efficiency of BI System and Type of Organization

		User Satisfaction: Effectiveness & Efficiency of BI System					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	18	15	12	38	17	100
	Public	0	0	25	50	25	100
Total		**18**	**15**	**37**	**88**	**42**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "User Satisfaction: Effectiveness & Efficiency of BI System". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.91: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	40.728[a]	4	.000
Likelihood Ratio	53.589	4	.000
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.8 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor user satisfaction: effectiveness & efficiency of BI system and type of organizations.

Type of Organization and User Satisfaction: Suitability/task relevance of BI information:

H_0 4.9 : There is no significant relationship between big data & business intelligence system success factor user satisfaction: suitability/task relevance of BI information and type of organizations.

The table below shows the cross tabulation between type of organization and user satisfaction: suitability/task relevance of BI information in order to find dependency between them.

Table 4.92: Crosstabulation: User Satisfaction: Suitability/Task Relevance of BI information and Type of Organization

		User Satisfaction: Suitability/Task Relevance of BI info.			Total
		Very Low	High	Very High	
Type of Org.	Private	31	29	40	100
	Public	0	50	50	100
Total		**31**	**79**	**90**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "User Satisfaction: Suitability/task relevance of BI information". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.93: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.693[a]	2	.000
Likelihood Ratio	49.738	2	.000
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.9 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor user satisfaction: suitability/task relevance of BI information and type of organizations.

Type of Organization and User Satisfaction: BI system meeting user requirements:

H_0 4.10 : There is no significant relationship between big data & business intelligence system success factor user satisfaction: BI system meeting user requirements and type of organizations.

The table below shows the cross tabulation between type of organization and user satisfaction: BI system meeting user requirements in order to find dependency between them.

Table 4.94: Crosstabulation: User Satisfaction: BI System Meeting User Requirements and Type of Organization

		User Satisfaction: BI system meeting user requirements					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	12	21	28	39	0	100
	Public	0	20	17	52	11	100
Total		**12**	**41**	**45**	**91**	**11**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "User Satisfaction: BI system meeting user requirements". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.95: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	27.570[a]	4	.000
Likelihood Ratio	36.489	4	.000
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.10 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor user satisfaction: BI system meeting user requirements and type of organizations.

Type of Organization and User Satisfaction: General end-user satisfaction with BI system:

H_0 4.11 : There is no significant relationship between big data & business intelligence system success user satisfaction: general end-user satisfaction with BI system and type of organizations.

The table below shows the cross tabulation between type of organization and user satisfaction: general end-user satisfaction with bi system in order to find dependency between them.

Table 4.96: Crosstabulation: User Satisfaction: General End-User Satisfaction with BI System and Type of Organization

		User Satisfaction: General end-user satisfaction with BI system				Total
		Very Low	Low	High	Very High	
Type of Org.	Private	12	7	40	41	100
	Public	0	0	50	50	100
Total		**12**	**7**	**90**	**91**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "User Satisfaction: General End-User Satisfaction with BI System". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.97: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	21.001[a]	3	.000
Likelihood Ratio	28.345	3	.000
N of Valid Cases	200		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 3.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.11 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence

system success User Satisfaction: general end-user satisfaction with BI system and type of organizations.

Type of Organization and Decisions about New Products/Services/Market:

H_0 4.12 : There is no significant relationship between big data & business intelligence system success factor decisions about new products/services/market and type of organizations.

The table below shows the cross tabulation between type of organization and decisions about new products/services/market in order to find dependency between them.

Table 4.98: Crosstabulation: Decisions about New Products/Services/Market and Type of Organization

		Decisions about New Products/Services/Market					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	3	0	13	72	12	100
	Public	17	14	22	27	20	100
Total		**20**	**14**	**35**	**99**	**32**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Decisions about New Products/Services/Market ". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.99: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	48.569[a]	4	.000
Likelihood Ratio	55.812	4	.000
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.12 is being rejected, indicating strong evidence against the null hypothesis further it can be

concluded that there is significant relationship between big data & business intelligence system success factor decisions about new products/services/market and type of organizations.

Type of Organization and Decisions about Strategic/Key Suppliers:

H_0 4.13 : There is no significant relationship between big data & business intelligence system success factor decisions about strategic/key suppliers and type of organizations.

The table below shows the cross tabulation between type of organization and decisions about strategic/key suppliers in order to find dependency between them.

Table 4.100: Crosstabulation: Type of Organization and Decisions about Strategic/Key Suppliers

		Decisions about Strategic/Key Suppliers					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	8	17	28	29	18	100
	Public	0	17	31	38	14	100
Total		**8**	**34**	**59**	**67**	**32**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Decisions about Strategic/Key Suppliers ". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.101: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.861[a]	4	.043
Likelihood Ratio	12.957	4	.011
N of Valid Cases	200		
a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 4.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.13 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor decisions about strategic/key suppliers and type of organizations.

Type of Organization and Decisions about Outsourcing/BPM:

H_0 4.14 : There is no significant relationship between big data & business intelligence system success factor decisions about outsourcing/BPM and type of organizations.

The table below shows the cross tabulation between type of organization and decisions about outsourcing/BPM in order to find dependency between them.

Table 4.102: Crosstabulation: Decisions about Outsourcing/BPM and Type of Organization

		Decisions about Outsourcing/BPM					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	12	26	9	37	16	100
	Public	23	17	37	8	15	100
Total		**35**	**43**	**46**	**45**	**31**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Decisions about Outsourcing/BPM". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.103: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	41.105[a]	4	.000
Likelihood Ratio	44.002	4	.000
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.50.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 4.14 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant relationship between big data & business intelligence system success factor decisions about outsourcing/BPM and type of organizations.

Type of Organization and Decisions about Sales and Marketing:

H_0 4.15 : There is no significant relationship between big data & business intelligence system success factor decisions about sales and marketing and type of organizations.

The table below shows the cross tabulation between type of organization and decisions about sales and marketing in order to find dependency between them.

Table 4.104: Crosstabulation: Decisions about Sales and Marketing & Type of Organization

		Decisions about Sales and Marketing					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	12	10	13	36	29	100
	Public	15	8	14	20	43	100
Total		**27**	**18**	**27**	**56**	**72**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, "Type of Organization" and "Decisions about Sales and Marketing". Accordingly, the Chi-Square test results are shown below in the table:

Table 4.105: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.886[a]	4	.096
Likelihood Ratio	7.969	4	.093
N of Valid Cases	200		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is 0.096 and 0.093 respectively. This p-value is greater than the standard alpha value of 0.05. So, the null hypothesis H_0 4.15 is being accepted, indicating strong evidence in favour of the null hypothesis further it can be concluded that there is no significant relationship between big data & business intelligence system success factor decisions about sales and marketing and type of organizations.

4.11 IMPACT OF BIG DATA ANALYTICS & BUSINESS INTELLIGENT SYSTEM ON ADMINISTRATIVE EFFECTIVENESS:

H_05 : There is no significant impact of big data analytics & business intelligent system on administrative effectiveness of private and public sector organizations in India.

H_a5 : There is significant impact of big data analytics & business intelligent system on administrative effectiveness of private and public sector organizations in India.

The table below shows the cross tabulation between type of organization and administrative effectiveness in order to find dependency between them.

Table 4.106: Type of Organization and Administrative Effectiveness: Crosstabulation

		Administrative Effectiveness					Total
		Very Low	Low	Medium	High	Very High	
Type of Org.	Private	2	5	8	26	59	100
	Public	0	0	15	47	38	100
Total		**2**	**5**	**23**	**73**	**97**	**200**

The Chi-Square Test is used to determine whether there is a statistically significant association between the two categorical variables, “Type of Organization” and “Administrative Effectiveness”. Accordingly, the Chi-Square test results are shown below in the table:

Table 4.107: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.718[a]	4	.001
Likelihood Ratio	22.579	4	.000
N of Valid Cases	200		
a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.00.			

The p-value for both the Pearson Chi-Square Test and the Likelihood Ratio Test is .001. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 5 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is significant impact of big data analytics & business intelligent system on administrative effectiveness of private and public sector organizations in India.

$H_0$6 : There is no impact of big data analytics & business intelligent system on the effectiveness of organizations in Indian perspective.

H_a6 : There is impact of big data analytics & business intelligent system on the effectiveness of organizations in Indian perspective.

The table below shows the one sample statistics for user satisfaction: effectiveness & efficiency of BABIS system which includes mean, standard deviation and standard error mean with values 3.6050, 1.16437 and 0.08233 respectively.

Table 4.108: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
User Satisfaction: Effectiveness & efficiency of BABIS system	200	3.6050	1.16437	.08233

The T-Test is being used to determine whether there is a statistically significant association between big data analytics & business intelligent system and effectiveness of organizations. Accordingly, the one sample T-Test results are shown below in the table:

Table 4.109: One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Effectiveness & efficiency of BABIS system	43.785	199	.000	3.60500	3.4426	3.7674

The p-value for both the one sample T- Test is .000. This p-value is lesser than the standard alpha value of 0.05. So, the null hypothesis H_0 6 is being rejected, indicating strong evidence against the null hypothesis further it can be concluded that there is impact of big data analytics & business intelligent system on the effectiveness of organizations in Indian perspective.