



Category	Sub-Categories	Definition	Example
1. General Information	1.1 Personal Data	Information such as name, address, contact details, and date of birth.	John Doe, 123 Main St, Anytown, USA, 12345, born 1985-01-01.
1. General Information	1.2 Financial Data	Information related to financial transactions, bank accounts, and investment portfolios.	\$1000 deposit into checking account, \$5000 investment in stocks, etc.
1. General Information	1.3 Health Data	Medical history, health records, and physical fitness information.	Diagnosed with hypertension, takes blood pressure medication daily.
1. General Information	1.4 Employment Data	Work history, job titles, and professional qualifications.	Worked as a software engineer at Acme Corp. from 2015-2020.
2. Behavioral Data	2.1 Purchase History	Records of past purchases, including items bought, prices, and dates.	Bought a new laptop on 2021-05-15 for \$1200.
2. Behavioral Data	2.2 Browsing History	Log of websites visited and time spent on each page.	Visited Amazon.com on 2021-05-15 at 14:00 UTC.
2. Behavioral Data	2.3 Social Media Activity	Information from social media platforms like Facebook, Twitter, and LinkedIn.	Posted a status update on Facebook on 2021-05-15 at 15:00 UTC.
3. Geolocation Data	3.1 GPS Location History	Historical locations tracked by GPS devices.	Lived in New York City from 2015-2020.
3. Geolocation Data	3.2 IP Address Location	Geolocation based on the IP address assigned to a device.	Visited Tokyo, Japan via public Wi-Fi on 2021-05-15 at 16:00 UTC.
4. Biometric Data	4.1 Fingerprint	Unique patterns of ridges and valleys on a person's fingers.	Used fingerprint to unlock smartphone.
4. Biometric Data	4.2 Facial Recognition	Computer analysis of facial features for identification.	Identified as John Doe by facial recognition software.
4. Biometric Data	4.3 Voiceprint	Unique characteristics of a person's voice.	Used voiceprint to unlock smartphone.

and the second column contains the mean values for each of the four groups. The third column contains the standard deviation of the mean for each group. The fourth column contains the standard deviation of the variance for each group. The fifth column contains the value of the F-ratio for each group.

The results of the two-way ANOVA are shown in Table 1. The first column contains the factor being tested.

Table 1. Results of the two-way ANOVA showing the effect of the independent variables on the dependent variables.

	Mean	S.D. of mean	S.D. of variance	F-ratio
Task	1.55	0.05	0.05	2.53
Group	1.55	0.05	0.05	1.99
Task * Group	1.55	0.05	0.05	0.82
Task + Group	1.55	0.05	0.05	2.67
Task * Task	1.55	0.05	0.05	0.37
Group * Group	1.55	0.05	0.05	0.65
Task * Group * Task	1.55	0.05	0.05	0.14
Task * Group * Group	1.55	0.05	0.05	0.02
Task * Task * Group	1.55	0.05	0.05	0.01
Task * Task * Task	1.55	0.05	0.05	0.00
Group * Group * Task	1.55	0.05	0.05	0.00
Group * Group * Group	1.55	0.05	0.05	0.00
Task * Task * Group * Task	1.55	0.05	0.05	0.00
Task * Task * Group * Group	1.55	0.05	0.05	0.00
Group * Group * Task * Task	1.55	0.05	0.05	0.00
Group * Group * Task * Group	1.55	0.05	0.05	0.00
Task * Task * Group * Task * Task	1.55	0.05	0.05	0.00
Task * Task * Group * Task * Group	1.55	0.05	0.05	0.00
Group * Group * Task * Task * Task	1.55	0.05	0.05	0.00
Group * Group * Task * Task * Group	1.55	0.05	0.05	0.00

Group	Number of subjects	Mean age (SD)		Mean height (SD)		Mean weight (SD)	
		Years	Months	Meters	Centimeters	Kilograms	Pounds
<i>Control group</i>							
	35	10.5	2.2	1.51	10.8	39.1	86.1
<i>Obese children</i>							
	35	10.5	2.2	1.51	10.8	39.1	86.1
<i>Obese adolescents</i>							
	35	13.5	2.2	1.57	10.2	49.1	108.1
<i>Overweight children</i>							
	35	10.5	2.2	1.51	10.8	39.1	86.1
<i>Overweight adolescents</i>							
	35	13.5	2.2	1.57	10.2	49.1	108.1

Parameter	Definition	Value	Reference	Performance Metrics			
				Training Loss	Validation Loss	Test Loss	Test Accuracy
α	Learning rate	0.001	[4]	-	-	-	-
β_1	Moving average coefficient	0.9	[4]	-	-	-	-
β_2	Moving average coefficient	0.999	[4]	-	-	-	-
d	Number of hidden units	100	[4]	-	-	-	-
L	Number of layers	2	[4]	-	-	-	-
l_1	Layer index	1	[4]	-	-	-	-
l_2	Layer index	2	[4]	-	-	-	-
m	Number of training samples	1000	[4]	-	-	-	-
n	Number of testing samples	100	[4]	-	-	-	-
η	Initial learning rate	0.001	[4]	-	-	-	-
ρ	Decay factor	0.9	[4]	-	-	-	-
T	Number of epochs	5000	[4]	-	-	-	-
T_{stop}	Number of epochs to stop	100	[4]	-	-	-	-
W	Weights	Randomly initialized	[4]	-	-	-	-
b	Biases	Randomly initialized	[4]	-	-	-	-
z	Activation function	\tanh	[4]	-	-	-	-
x	Input	\mathbb{R}^n	[4]	-	-	-	-
y	Output	\mathbb{R}^m	[4]	-	-	-	-

Category	Sub-Categories	Definition	Example
1. General Information	1.1 Personal Data	Information such as name, address, date of birth, gender, and contact details.	John Doe, 123 Main St, Anytown USA, 1990-01-01, Male, 555-1234
1. General Information	1.2 Financial Data	Information related to financial transactions, bank accounts, and investment portfolios.	\$1000 deposit into checking account, \$5000 in stocks, 401k balance \$200k
1. General Information	1.3 Health Data	Information about physical health, medical history, and prescription medications.	Diagnosed with hypertension, takes lisinopril 10mg daily, blood pressure 130/80 mmHg
1. General Information	1.4 Employment Data	Information about current and past employment, job titles, and salary information.	Software engineer at Acme Corp, 5 years experience, salary \$80k
1. General Information	1.5 Education Data	Information about educational background, degrees, and academic records.	Graduated from Harvard University with a degree in Computer Science, GPA 4.0
1. General Information	1.6 Social Media Data	Information from various social media platforms, including posts, comments, and friend lists.	Facebook profile: JohnDoe123, 150 friends, 20 posts in last month
1. General Information	1.7 Geolocation Data	Information about the location of the individual, including IP address and GPS coordinates.	IP address: 192.168.1.1, GPS coordinates: 40.7128° N, 74.0060° W
1. General Information	1.8 Device Data	Information about the devices used by the individual, including mobile phones, laptops, and tablets.	iPhone X, Android smartphone, MacBook Pro, iPad Air
1. General Information	1.9 Biometric Data	Information about biological characteristics, such as fingerprints, DNA, and facial recognition data.	Fingerprint scan: 1234567890, Facial recognition score: 98.5%
1. General Information	1.10 Other Data	Information that does not fit into the other categories, such as hobbies, interests, and preferences.	Likes: Traveling, Photography, Music, Sports; Dislikes: Politics, Religion, Religious Beliefs
2. Behavioral Data	2.1 Purchase History	Information about products or services purchased, including dates, amounts, and categories.	Bought a new laptop on 2023-01-01 for \$1200, bought a car on 2022-07-01 for \$30000
2. Behavioral Data	2.2 Web Browsing History	Information about websites visited, search terms used, and time spent on each site.	Searched for "best travel destinations" on Google, visited "Travelocity" website, spent 2 hours on site
2. Behavioral Data	2.3 App Usage Data	Information about apps used, frequency of use, and specific features utilized.	Spent 3 hours on "Facebook" app, 2 hours on "Instagram" app, 1 hour on "Twitter" app
2. Behavioral Data	2.4 Location History	Information about the locations visited, including GPS coordinates and timestamps.	Visited New York City on 2023-01-01, Los Angeles on 2022-12-01, San Francisco on 2022-11-01
2. Behavioral Data	2.5 Communication Data	Information about communication patterns, including messaging, email, and phone calls.	Received 50 messages from work colleagues, 20 messages from family members, 10 messages from friends
2. Behavioral Data	2.6 Social Network Data	Information about interactions with others on social media platforms.	Received 10 likes on Facebook post, 5 comments on Instagram post, 2 shares on Twitter post
2. Behavioral Data	2.7 Financial Transaction Data	Information about financial transactions, including deposits, withdrawals, and transfers.	Made a \$500 transfer to savings account on 2023-01-01, withdrew \$200 from ATM on 2022-12-01
2. Behavioral Data	2.8 Health Monitoring Data	Information about health monitoring, including fitness activity, sleep patterns, and medical alerts.	Wore fitness tracker, recorded 10,000 steps, 8 hours of sleep, no medical alerts
2. Behavioral Data	2.9 Work Productivity Data	Information about work productivity, including time spent on tasks, completion rates, and performance metrics.	Completed 10 tasks in 8 hours, average completion rate 90%, performance metric 85%
2. Behavioral Data	2.10 Other Behavioral Data	Information that does not fit into the other behavioral categories.	Spent 2 hours on "Gmail" app, 1 hour on "LinkedIn" app, 30 minutes on "Zoom" app
3. Environmental Data	3.1 Weather Data	Information about weather conditions, including temperature, humidity, and precipitation.	Temperature: 72°F, Humidity: 50%, Precipitation: 0%
3. Environmental Data	3.2 Air Quality Data	Information about air quality levels, including particulate matter, ozone, and carbon dioxide.	PM2.5: 12, Ozone: 50, CO2: 400
3. Environmental Data	3.3 Light Pollution Data	Information about light pollution levels, including artificial light sources and moonlight.	Light pollution level: Low, Moonlight level: High
3. Environmental Data	3.4 Noise Pollution Data	Information about noise pollution levels, including traffic, construction, and industrial noise.	Noise pollution level: Moderate, Traffic noise level: High
3. Environmental Data	3.5 Geopolitical Data	Information about geopolitical events and their impact on the environment.	Global warming, climate change, political protests against environmental policies
3. Environmental Data	3.6 Natural Resource Data	Information about natural resources, including water, land, and energy usage.	Water usage: 100 gallons, Land usage: 1 acre, Energy usage: 1000 kWh
3. Environmental Data	3.7 Climate Data	Information about climate patterns, including temperature trends, precipitation patterns, and sea level rise.	Global temperature rise: 1.2°C, Global sea level rise: 1.5 mm, Global precipitation patterns: Drier in some regions, wetter in others
3. Environmental Data	3.8 Environmental Impact Data	Information about the environmental impact of individual actions and behaviors.	Carbon footprint: 10 tons CO2, Water footprint: 100 liters per day
3. Environmental Data	3.9 Other Environmental Data	Information that does not fit into the other environmental categories.	Plastic waste: 100 kg, Carbon emissions: 1000 kg
4. Geolocation Data	4.1 GPS Data	Information about the location of the individual, including GPS coordinates and timestamps.	GPS coordinates: 40.7128° N, 74.0060° W, timestamp: 2023-01-01 12:00:00
4. Geolocation Data	4.2 IP Address Data	Information about the IP address of the device, including geographical location and network information.	IP address: 192.168.1.1, location: New York City, network: Home WiFi
4. Geolocation Data	4.3 Cell Tower Data	Information about the cell tower signal received by the device, including location and signal strength.	Cell tower: AT&T Tower 123, location: Manhattan, signal strength: 95%
4. Geolocation Data	4.4 WiFi Network Data	Information about the WiFi networks available and connected to, including location and signal strength.	WiFi network: Home WiFi, location: New York City, signal strength: 95%
4. Geolocation Data	4.5 Satellite Image Data	Information about satellite images of the area, including terrain, buildings, and landmarks.	Satellite image: New York City skyline, timestamp: 2023-01-01 12:00:00
4. Geolocation Data	4.6 Location History Data	Information about the locations visited, including GPS coordinates and timestamps.	Visited New York City on 2023-01-01, Los Angeles on 2022-12-01, San Francisco on 2022-11-01
4. Geolocation Data	4.7 Geofencing Data	Information about geofencing, including entry and exit points and times.	Entered geofence: Home, timestamp: 2023-01-01 08:00:00, exited geofence: Home, timestamp: 2023-01-01 18:00:00
4. Geolocation Data	4.8 Navigation Data	Information about navigation routes and directions, including GPS coordinates and timestamps.	Navigation route: Home to Work, timestamp: 2023-01-01 08:00:00
4. Geolocation Data	4.9 Other Geolocation Data	Information that does not fit into the other geolocation categories.	Location: New York City, timestamp: 2023-01-01 12:00:00
5. Demographic Data	5.1 Age Group	Information about the age group of the individual.	Age group: 18-24
5. Demographic Data	5.2 Gender	Information about the gender of the individual.	Gender: Male
5. Demographic Data	5.3 Race	Information about the race of the individual.	Race: White
5. Demographic Data	5.4 Ethnicity	Information about the ethnicity of the individual.	Ethnicity: Caucasian
5. Demographic Data	5.5 Nationality	Information about the nationality of the individual.	Nationality: American
5. Demographic Data	5.6 Marital Status	Information about the marital status of the individual.	Marital status: Single
5. Demographic Data	5.7 Education Level	Information about the education level of the individual.	Education level: Bachelor's Degree
5. Demographic Data	5.8 Income Level	Information about the income level of the individual.	Income level: Middle Class
5. Demographic Data	5.9 Employment Status	Information about the employment status of the individual.	Employment status: Full-time Employee
5. Demographic Data	5.10 Other Demographic Data	Information that does not fit into the other demographic categories.	Demographic: 30-40, Male, Caucasian, Single, Bachelor's Degree, Full-time Employee

Condition	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Control	2.08 (1.25)	2.32 (1.38)	2.43 (1.28)	2.52 (1.37)
Anterior	2.11 (1.32)	2.26 (1.35)	2.35 (1.32)	2.42 (1.38)
Posterior	2.07 (1.30)	2.28 (1.37)	2.33 (1.29)	2.43 (1.35)
Anterior + Posterior	2.06 (1.28)	2.29 (1.36)	2.34 (1.32)	2.44 (1.35)
Control	2.25 (1.28)	2.32 (1.35)	2.43 (1.28)	2.52 (1.37)
Anterior	2.27 (1.32)	2.36 (1.35)	2.45 (1.32)	2.52 (1.38)
Posterior	2.22 (1.30)	2.43 (1.37)	2.48 (1.29)	2.58 (1.35)
Anterior + Posterior	2.21 (1.28)	2.44 (1.36)	2.50 (1.32)	2.58 (1.35)

Category	Sub-Categories	Definition	Example
1. General Information	1.1 Personal Details	Name, Age, Gender, Address, Contact Information.	Jane Doe, 30, Female, 123 Main St, 555-1234.
1. General Information	1.2 Professional Details	Employment Status, Job Title, Company Name, Work Address.	Full-time, Software Engineer, TechCorp, 456 Elm St.
2. Academic Record	2.1 High School	Grade, Diploma Type, Major Subjects, Class Year.	Grade 12, Diploma, English, Math, Science, 2023.
2. Academic Record	2.2 Postsecondary	Degree Program, University/College, Graduation Date.	Bachelor's in Computer Science, University of Michigan, 2025.
3. Extracurricular Activities	3.1 Sports	Team, Position, Years Played, Achievements.	Soccer, Forward, 5 years, State Cup Winner.
3. Extracurricular Activities	3.2 Clubs	Organization, Role, Years Involved, Projects.	Robotics Club, Member, 3 years, Project Alpha.
4. Work Experience	4.1 Internships	Company, Role, Duties, Duration.	ABC Corp, Software Intern, Data Entry, 3 months.
4. Work Experience	4.2 Part-time Jobs	Job Title, Company, Hours, Duties.	Customer Service Representative, XYZ Store, 10 hours/week, Sales Support.
5. Personal Interests	5.1 Hobbies	Activity, Duration, Skills Developed.	Photography, 2 years, Camera Operation.
5. Personal Interests	5.2 Travel	Destinations Visited, Countries, Languages Learned.	Europe, France, Germany, French, German.
6. References	6.1 Personal	Relationship, Name, Contact Information.	Mother, Jane Doe, 555-1234.
6. References	6.2 Professional	Relationship, Name, Contact Information.	Supervisor, Mr. Smith, 555-1234.

Category	Sub-category	Definition	Description	Notes
Geographic	Location	Exact location of the event or object.	Latitude: 40.7128° N Longitude: -74.0060° W	Exact coordinates provided.
	Region	Geographical area where the event occurred.	New York City, USA	Major city status confirmed.
Temporal	Date	Exact date and time of the event.	2023-10-15T12:00:00Z	Time zone UTC confirmed.
	Duration	Length of time the event lasted.	1 hour	Estimated based on witness reports.
Event Type	Event Type	Type of event or phenomenon.	Lightning strike	Confirmed by multiple witnesses.
	Severity	Intensity or severity of the event.	High	Caused significant damage to buildings.
Witnesses	Number of Witnesses	Total number of individuals who witnessed the event.	Multiple	Estimated from witness statements.
	Details	Qualitative details about the witnesses' experiences.	Witness A: "I heard a massive boom and saw bright light in the sky." Witness B: "Felt the ground shake and saw trees fall."	Witness statements collected.
Impact	Direct Impact	Direct effects of the event on the environment or structures.	Buildings collapsed, power outages, minor injuries	Reported damage levels.
	Indirect Impact	Indirect effects or secondary impacts resulting from the event.	Water main break, gas leak, traffic disruption	Reported secondary effects.
Mitigation	Actions Taken	Measures taken to respond to or mitigate the event.	Emergency services responded, power restored, structural assessments conducted	Response and recovery efforts documented.
	Outcomes	Results or outcomes of the mitigation actions.	No further damage reported, emergency services relieved	Mitigation effectiveness evaluated.

