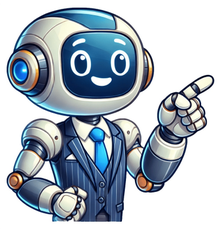
Click to prove you're human



Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Introduction to Quantitative ResearchQuantitative research is outlined as a scientific investigation of phenomena by gathering quantitative information and activity applied mathematics, or procedure techniques. Quantitative research is a research method where you gather and analyze numerical data to understand and explain various phenomena. The different types of quantitative research are survey, descriptive, experiential, correlational, and causal-comparative.It focuses on using mathematical and statistical techniques to understand and investigate the subject. This is why the collected information must be in numerical form. Different Types of Quantitative ResearchThe following are the different types of Quantitative research types with the description of each.1. Survey ResearchSurvey Research is one of the most common types of quantitative research techniques. In this research method, you can use surveys to collect numerical data from a particular group or population. After that, you can analyze the data and explain the characteristics of the group. Both small and large organizations typically employ it for a proper understanding of their customers and to understand the merchandise and product views. It is of two types:Cross-sectional: In a cross-sectional survey, you collect information from a large group of people at a specific time. These are mostly useful in retail stores, education, etc.Longitudinal: In a longitudinal survey, you collect information from a small group of people over a long period of time, usually years. These are useful in medical trials and applied sciences.Real Example:In April 2020, during the COVID-19 pandemic, a survey was conducted in Bangladesh to investigate sleep patterns. The researchers collected quantitative data like regular sleeping hours, age, nap durations, etc., from 9,730 participants. The results showed that age and exposure to COVID-19 had a negative effect on sleep.2. Descriptive ResearchDescriptive research aims to explain and understand the current state of things like people, places, conditions, or events. Here, the researchers goal is to gather general observational data without exploring the reasons behind them. Also, you dont need to begin with a hypothesis; instead, you gather data first and then create a hypothesis if needed. Importantly, descriptive research doesnt try to prove or disprove the hypothesis. It is mainly about creating a research hypothesis.Real Example:In September 2009, an EndoCost study was performed to find the cut-off period for diagnosis of endometriosis for the German population. The participants included 788 people who were previously diagnosed with endometriosis. The researcher analyzed data, including the time it took for individuals to report symptoms to a doctor and the time it took for a doctor to make the final diagnosis. The study concluded that a diagnosis within five years was crucial to managing the condition effectively. However, note that this is just a hypothesis.3. Experimental ResearchExperimental research, as the name suggests, uses the scientific method to establish the cause-effect relationship among a group of variables using experiments. Researchers can use multiple theories to conduct this research. The major components of experimental research are:A comparison group of participants who are randomly selected and assigned to experimental and control groups.An independent variable, referred to as the experimental variable that can be applied to the experimental group.A dependent variable, referred to as the effect or posttest variable that can be measured in an identical manner for all groups.Real Example:In 2022, Nicholas Epley, a behavioral scientist, conducted experimental research where he asked actors to perform random acts of kindness. Then, he asked both the actor and the receiver to fill out questionnaires to recognize the resulting patterns. It showed that people performing these random acts of kindness often underestimate how much recipients value their actions.4. Correlational ResearchCorrelational research establishes a relationship between two close entities and determines how one impacts the other. For this, a researcher needs at least two separate groups. This type of research will recognize trends and patterns in data, but it does not go so far in its analysis to observe the different patterns.Real Example:In 2021, two researchers created a report based on correlation research studying how climate change affects mental health. They studied previous quantitative researches that compared an increase in climate temperature and citizens mental health. They found that climate change can both directly (PTSD, Anxiety, etc.) and indirectly (Sleep disorder, depression, etc.) affect mental health.5. Casual-Comparative ResearchCausal-comparative research is employed to conclude the cause-effect equation between two or more variables, where one variable depends on the opposite experimental variable. The experimenter does not manipulate the independent variable and then measures the effects of the independent variable on the dependent variable.Real Example:From 2010 to 2019, health researchers performed causal-comparative research to see the effects of four different drugs on people with type 2 diabetes already using metformin. The experimenter gave the participants glimepiride, liraglutide, sitagliptin, or insulin glargine drug at different HbA1c levels. It was found that the drug liraglutide worked better than others in maintaining good blood sugar when HbA1c levels were above 7.0% or 7.5%.Types of Quantitative Research InfographicHere is a detailed infographic explaining the different types of quantitative research.CharacteristicsHere are the common characteristics of different types of quantitative research. 1. Numerical Data:Quantitative research primarily deals with numerical data, which can be quantified and measured. Researchers use structured instruments like surveys, experiments, or observations to collect this data.2. Large Sample Sizes:Quantitative research typically involves large sample sizes to ensure statistical validity and generalize findings to a broader population. This allows for greater confidence in the results.3. Statistical Analysis: Statistical analysis plays a central role in quantitative research. Researchers use statistical methods to analyze and interpret the data, identify patterns and relationships, and draw conclusions. Common statistical techniques include regression analysis, correlation analysis, t-tests, ANOVA, and chi-squared tests.4. Structured Research Design:Quantitative research often employs a structured and pre-defined research design. Researchers develop hypotheses, select variables, and design experiments or surveys before data collection begins. This structured approach helps maintain consistency and rigor in the research process.5. Generalizability: Quantitative research often aims to generalize findings to a larger population. When conducted correctly, quantitative studies can provide insights that are applicable beyond the specific sample studied.6. Closed-Ended Questions:Surveys and questionnaires used in quantitative research often employ closed-ended questions with predetermined response options. This facilitates data analysis and allows for comparisons between participants.ProcessHere is a step-by-step process of performing different types of quantitative research.Step 1: Clearly define your research problem or question.Step 2: Conduct a literature review to identify relevant studies and theories related to your research topic.Step 3: Develop specific hypotheses or research questions that you aim to answer through your research.Step 4: Decide on the research design (e.g., experimental, cross-sectional, longitudinal) and your target population, and select a representative sample. Also, develop a data collection plan and choose appropriate data collection methods (e.g., surveys, experiments, observations).Step 5: Choose valid and reliable measurement instruments (e.g., questionnaires, scales) to collect data. Make sure to test your measurement tools before actual research.Step 6: Administer your selected data collection methods to your sample population.Step 7: Select appropriate statistical techniques (e.g., descriptive statistics, inferential statistics) based on your research design and hypotheses. Analyze the data to test your hypotheses or answer your research questions.Step 8: Interpret the statistical findings and summarize them to determine if they support or refute your hypothesis.Step 9: Prepare a research report or paper that includes the research process, methodology, results, and conclusions to share your findings. Note: Throughout the research process, adhere to ethical guidelines and principles, ensuring the rights and well-being of participants are protected. Following are some of the common uses of various types of quantitative research.ApplicationDescriptionExampleMarket ResearchAnalyzing consumer preferences and trendsConducting a survey to determine which smartphone brand is most popular among young adults.Experimental StudiesTesting cause-and-effect relationshipsConducting a clinical trial to determine the efficacy of a new drug in treating a specific medical condition.Data AnalysisStatistical analysis for decision-makingAnalyzing sales data to identify the most profitable products for a retail company.Performance EvaluationAssessing the effectiveness of programs or productsEvaluating the impact of a training program on employee productivity in a corporate setting.Trend AnalysisIdentifying patterns and forecasting future trendsUsing historical stock market data to predict future market trends and investment opportunities.Risk AssessmentQuantifying potential risks and mitigationsAssessing the financial risk associated with a particular investment portfolio.Health StudiesStudying disease prevalence and treatment outcomesInvestigating the relationship between smoking and lung cancer using patient data.Education ResearchMeasuring student performance and learning outcomesAnalyzing standardized test scores to assess the effectiveness of a new teaching method.Financial AnalysisEvaluating investment opportunities and risksCalculating the return on investment (ROI) for a potential real estate investment.Advantages and DisadvantagesSome of the key advantages and disadvantages of types of quantitative research are:AdvantagesDisadvantagesQuantitative research offers objectivity by relying on numerical data and reducing subjectivity.Sampling issues, such as bias, can impact the reliability of findings.It enables generalizability by collecting data from large, representative samples.The approach may reduce validity by not capturing all aspects of a problem.The structured approach allows other researchers to duplicate the study.It lacks depth as it may oversimplify complex phenomena.It is efficient for studying large populations or conducting surveys.Large-scale projects can be costly and resource-intensive.Final ThoughtsQuantitative research is an effective method that helps us build statistically reliable insights across numerous fields. However, researchers should select the appropriate quantitative approach considering the limitations and benefits of each method. Moreover, new emerging technologies like artificial intelligence (AI) can simplify data collection, analysis, and visualization of research outcomes.Frequently Asked Questions (FAQs)Q1. What are the methods of data analysis in quantitative research?Answer: Quantitative research uses different ways to analyze data. It uses descriptive stats, like averages and spreads, to summarize data. It also uses inferential statistics, like tests and regression, to check ideas and connections. For more complex situations, it uses multivariate methods like ANOVA and factor analysis to look at how different things interact. Researchers often use special software like SPSS or R to do these analyses.Q2. How to interpret data in quantitative research?Answer: Interpreting quantitative data involves looking at the statistical results and assessing the present relationships or trends. You must also discuss if the data is applicable in both theoretical and practical sense. It is also crucial to present results clearly with tables and graphs and think about any problems or biases in collecting data. When interpreting, stay objective and let the data guide you, avoiding making guesses or assumptions.Q3. What is quantitative vs. qualitative research?Answer: Quantitative research involves collecting and analyzing numerical data to uncover patterns, relationships, and trends. It relies on structured surveys, experiments, and statistical methods to draw objective conclusions. In contrast, qualitative research focuses on exploring the depth and meaning of phenomena through non-numerical data, such as interviews, observations, and open-ended questions. It aims to understand the underlying context and subjective experiences.Recommended ArticlesThis is a guide to Types of Quantitative Research. Here, we also discuss the introduction and different types of quantitative research, which include survey, descriptive, experimental research, etc. You may also have a look at the following articles to learn more Quantitative research is a systematic investigation that primarily focuses on quantifying data, variables, and relationships. It involves the use of statistical, mathematical, and computational techniques to collect and analyze data. Quantitative research is often used to establish patterns, test hypotheses, and make predictions. It is widely applied in fields such as psychology, sociology, economics, health sciences, and education. Quantitative research is a research approach that seeks to quantify data and generalize results from a sample to a larger population. It relies on structured data collection methods and employs statistical analysis to interpret results. This type of research is objective, and findings are typically presented in numerical form, allowing for comparison and generalization. Key Characteristics of Quantitative Research: Objective: Focuses on numbers and measurable variables rather than subjective opinions. Structured: Employs well-defined research questions, hypotheses, and data collection methods. Statistical: Utilizes statistical tools to analyze data and validate findings. Replicable: Enables repetition of the study to verify results and increase reliability. Example: A survey on the correlation between exercise frequency and stress levels among adults, using a Likert scale to measure responses. Quantitative research can be categorized into several types, each serving a specific purpose. The most common types include descriptive, correlational, experimental, and causal-comparative research. Definition: Descriptive research describes characteristics or behaviors of a population without examining relationships or causes. It provides a snapshot of current conditions or attitudes. Purpose: To gather information and create an overview of a particular phenomenon, population, or condition. Example: A survey describing the demographics and academic performance of students at a university. Definition: Correlational research examines the relationship between two or more variables but does not imply causation. It analyzes patterns to determine if variables are associated or occur together. Purpose: To identify associations or trends among variables without establishing cause and effect. Example: Investigating the relationship between social media use and self-esteem among teenagers. Definition: Experimental research manipulates one or more independent variables to observe the effect on a dependent variable, establishing cause-and-effect relationships. This type of research involves control and experimental groups. Purpose: To test hypotheses by isolating and controlling variables to establish causality. Example: Testing the effect of a new medication on blood pressure by administering it to one group (experimental) and comparing it to a placebo group (control). Definition: Causal-comparative research investigates the cause-effect relationship between variables when experimental manipulation is not possible. It compares groups that differ on a particular variable to determine the effect of that variable. Purpose: To explore cause-and-effect relationships retrospectively by comparing pre-existing groups. Example: Studying the impact of different teaching methods on student performance by comparing classes taught with traditional versus technology-assisted instruction. Quantitative research methods focus on systematic data collection and analysis using structured techniques. Common methods include surveys, experiments, and observations. Definition: Surveys are a popular quantitative method that involves asking participants standardized questions to collect data on their opinions, behaviors, or demographics. Surveys can be conducted via questionnaires, interviews, or online forms. Purpose: To gather data from a large sample, allowing researchers to make inferences about the larger population. Example: Conducting a survey to collect customer satisfaction data from a random sample of customers in a retail store. Advantages: Cost-effective and time-efficient for large sample sizes. Provides structured data that is easy to analyze statistically. Disadvantages: Limited depth, as responses are often restricted to specific options. Potential for response bias, where participants may not answer truthfully. Definition: Experiments involve manipulating one or more variables in a controlled environment to observe the effect on another variable. Experiments are often conducted in laboratories or controlled settings to maintain precision and limit external influences. Purpose: To test hypotheses and establish cause-and-effect relationships. Example: Conducting a laboratory experiment to test the effect of light exposure on sleep patterns. Advantages: High level of control over variables. Establishes causality, which can support theory-building. Disadvantages: Limited external validity, as findings may not always apply outside of the controlled setting. Ethical considerations may limit experimentation on certain subjects or groups. Definition: Observational research involves systematically observing and recording behavior or events as they occur naturally, without interference. While often used in qualitative research, structured observational methods can yield quantitative data. Purpose: To gather real-world data in a non-intrusive manner. Example: Observing customer behavior in a store to track time spent in different areas and identify shopping patterns. Advantages: Provides data on actual behaviors rather than self-reported responses. Useful for gathering data on situations where surveys or experiments may not be feasible. Disadvantages: Observer bias may affect results. Can be time-consuming, especially if behaviors are infrequent or complex. Quantitative research relies on various tools to collect and quantify data, including: Questionnaires: Standardized forms with close-ended questions, often using scales (e.g., Likert scale) for responses. Tests and Assessments: Used to measure knowledge, skills, or other measurable attributes. Digital Tracking Tools: Software or digital applications that collect data, such as website traffic metrics or physiological monitoring devices. Data analysis in quantitative research involves statistical techniques to interpret numerical data and determine relationships or trends. Key techniques include descriptive statistics, inferential statistics, and correlation analysis. Definition: Descriptive statistics summarize and organize data, providing basic information such as mean, median, mode, standard deviation, and range. Purpose: To give an overview of the dataset, allowing researchers to understand general trends and distributions. Example: Calculating the average test scores of students in a school to assess overall performance. Common Measures: Mean: Average of all data points. Median: Middle value of an ordered dataset. Standard Deviation: Measure of variability around the mean. Definition: Inferential statistics allow researchers to make predictions or inferences about a population based on sample data. Techniques include hypothesis testing, t-tests, ANOVA, and regression analysis. Purpose: To determine if observed results are statistically significant and can be generalized to a larger population. Example: Using a t-test to compare average scores between two different teaching methods to see if one is significantly more effective. Common Tests: t-Test: Compares the means of two groups to determine if they are statistically different. ANOVA (Analysis of Variance): Compares means among three or more groups. Regression Analysis: Examines the relationship between independent and dependent variables. Definition: Correlation analysis measures the strength and direction of the relationship between two variables. It is used to determine if changes in one variable are associated with changes in another. Purpose: To identify associations between variables without implying causation. Example: Calculating the correlation coefficient between screen time and academic performance to determine if there is an association. Common Measures: Pearson Correlation Coefficient (r): Measures linear correlation between two continuous variables. Spearmans Rank Correlation: Measures correlation between two ranked variables.Objective: Minimizes researcher bias by focusing on numerical data. Generalizable: Findings from large, random samples can often be applied to a broader population. Replicable: Structured methods make it possible for other researchers to replicate studies and verify results.Limited Depth: Quantitative research often lacks the depth of qualitative insights. Rigid Structure: Limited flexibility in data collection and analysis. Potential Bias: Response or sampling biases can affect results, especially in survey-based studies.Define Clear Objectives: Develop specific research questions or hypotheses to guide the study. Choose the Right Method: Select a quantitative method that aligns with the research goals and type of data needed. Ensure Sample Representativeness: Use appropriate sampling techniques to ensure results can be generalized. Employ Proper Statistical Tools: Choose analysis techniques that match the nature of the data and research questions. Interpret Results Accurately: Avoid overgeneralizing findings and consider limitations when interpreting results. Quantitative research provides a structured, objective approach to investigating research questions, allowing for statistical analysis, pattern recognition, and hypothesis testing. With methods like surveys, experiments, and observational studies, quantitative research offers valuable insights across diverse fields, from social sciences to healthcare. By applying rigorous statistical analysis, researchers can draw meaningful conclusions, contributing to the body of scientific knowledge and helping inform data-driven decisions. Creswell, J. W., & Creswell, J. D. (2018). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (5th ed.). SAGE Publications. Punch, K. F. (2014). Introduction to Social Research: Quantitative and Qualitative Approaches (3rd ed.). SAGE Publications. Field, A. (2013). Discovering Statistics Using IBM SPSS Statistics (4th ed.). SAGE Publications. Trochim, W. M., & Donnelly, J. P. (2008). The Research Methods Knowledge Base (3rd ed.). Cengage Learning. Babbie, E. R. (2021). The Practice of Social Research (15th ed.). Cengage Learning.,the free encyclopedia that anyone can edit.117,937 active editors 7,001,078 articles in EnglishThe English-language Wikipedia thanks its contributors for creating more than seven million articles! Learn how you can take part in the encyclopedia's continued improvement.GL Mk.II transmitter vanRadar, Gun Laying, MarkI, or GL Mk.I for short, was an early World WarII radar system developed by the British Army to provide information for anti-aircraft artillery. There were two upgrades, GL/EF (elevation finder) and GL Mk.II (pictured), both improving the ability to determine a target's bearing and elevation. GL refers to the radar's ability to direct the guns onto a target, known as gun laying. The first GL sets were developed in 1936 using separate transmitters and receivers mounted on gun carriages. Several were captured in 1940, leading the Germans to believe falsely that British radar was much less advanced than theirs. The GL/EF attachment provided bearing and elevation measurements accurate to about a degree: this caused the number of rounds needed to destroy an aircraft to fall to 4,100, a tenfold improvement over early-war results. The Mk.II, which was able to directly guide the guns, lowered the rounds-per-kill to 2,750. About 410 Mk.Is and 1,679 Mk.IIs were produced. (Fullarticle...)Recently featured: Andrea NavageroNosy KombaMcDonnell Douglas Phantom in UK serviceArchiveBy emailMore featured articlesAboutLieke Klaver ahead in the women's 400 metres final... that a 400-metre race in 2025 (pictured) was won by Lieke Klaver, who pretended that an absent competitor was running in front of her?... that the land snail Drymaeus poecilus is notable for the striking variety of colors and patterns on its shell?... that a forensic investigation of Signalgate has determined how a journalist was included in a group chat about Operation Rough Rider?... that two of the players involved in the 2005 Vietnamese football match-fixing scandal did not accept payment because they felt ashamed?... that a rebellion against a peace treaty with the Yuan dynasty operated out of the Historic Site of Anti-Mongolian Struggle on Jeju Island?... that Nathan Frink fled the United States with enslaved children to settle in Canada, where he was elected as a Member of the Legislative Assembly and caught in a smuggling conspiracy?... that Seattle's women's ice hockey team has an expected rival, despite not even having played their first game?... that Cave Johnson Couts was separately acquitted for shooting his foreman, firing on funeral mourners, and whipping a native laborer to death?... that characters' scars in an episode of The Last of Us were made with a paste-based appliance and a food mixer?ArchiveStart a new articleNominate an articleNgg wa Thiong'oKenyan writer and activist Ngg wa Thiong'o (pictured) dies at the age of 87.In sumo, nosato Daiki is promoted to yokozuna.In association football, Liverpool win the Premier League title.In motor racing, lex Palou wins the Indianapolis 500.Ongoing: Gaza warM23 campaignRussian invasion of UkrainetimelineSudanese civil wartimelineRecent deaths: Phil RobertsonMary K. GaillardPeter DavidAlan YentobGerry ConnollySebastio SalgadoNominate an articleMay 30: Statehood Day in Croatia (1990)Johann Sebastian Bach1431 Hundred Years' War: After being convicted of heresy, Joan of Arc was burned at the stake in Rouen, France.1723 Johann Sebastian Bach (pictured) assumed the office of Thomaskantor in Leipzig, presenting the cantata Die Elenden sollen essen in St.Nicholas Church.1922 The Lincoln Memorial in Washington, D.C., featuring a sculpture of the sixteenth U.S. president Abraham Lincoln by Daniel Chester French, opened.1963 Buddhist crisis: A protest against pro-Catholic discrimination was held outside the National Assembly of South Vietnam in Saigon, the first open demonstration against President Ng nh Dim.2008 The Convention on Cluster Munitions, prohibiting the use, transfer, and stockpiling of cluster bombs, was adopted.Ma Xifan (d.947)Colin Blythe (b.1879)Norris Bradbury (b.1909)Wynonna Judd (b.1964)More anniversaries: May 29May 30May 31ArchiveBy emailList of days of the yearAboutSeventeen performing "Oh My!" in 2018South Korean boy band Seventeen made their debut on May 26, 2015, when they performed a showcase for their debut EP 17 Carat in front of a crowd of 1,000 people. Since then, the group have held 9 concert tours, 13 fan meetings, and have performed at a number of music festivals and awards shows. Their concert tours include the Right Here World Tour, which sold over one million tickets, and the Follow Tour, which was noted by Billboard as being the top grossing K-pop tour of 2023. In 2024, Seventeen made their first appearances at festivals in Europe, when they were the first South Korean act to perform at Glastonbury Festival's Pyramid Stage and as headliners for Lollapalooza Berlin. Seventeen's live performances are well regarded by fans and critics alike, and garnered them the award for Top K-pop Touring Artist at the 2024 Billboard Music Awards. (Fulllist...)Recently featured: Accolades received by Top Gun: MaverickNational preserve76th Primetime Emmy AwardsArchiveMore featured listsIgnace Tonen (1840 or 1841 15 March 1916), also known as Nias or by his Ojibwe name Maiagizis ('right/correct sun'), was a Teme-Augama Anishnabai chief, fur trader, and gold prospector in Upper Canada. He was a prominent employee of the Hudson's Bay Company. Tonen was the elected deputy chief before being the lead chief and later the life chief of his community. In his role as deputy, he negotiated with the Canadian federal government and the Ontario provincial government, advocating for his community to receive annual financial support from both. His attempts to secure land reserves for his community were thwarted by the Ontario premier Oliver Mowat. Tonen's prospecting triggered a 1906 gold rush and the creation of Kerr Addison Mines Ltd., although one of his claims was stolen from him by white Canadian prospectors. This photograph shows Tonen in 1909.Photograph credit: William John Winter; restored by Adam CuerdenRecently featured: Australian white ibisHell Gate BridgeAnemonoides blandaArchiveMore featured picturesCommunity portal The central hub for editors, with resources, links, tasks, and announcements.Village pump Forum for discussions about Wikipedia itself, including policies and technical issues.Site news Sources of news about Wikipedia and the broader Wikimedia movement.Teahouse Ask basic questions about using or editing Wikipedia.Help desk Ask questions about using or editing Wikipedia.Reference desk Ask research questions about encyclopedic topics.Content portals A unique way to navigate the encyclopedia.Wikipedia is written by volunteer editors and hosted by the Wikimedia Foundation, a non-profit organization that also hosts a range of other volunteer projects: CommonsFree media repository MediaWikiWiki software development Meta-WikiWikimedia project coordination WikibooksFree textbooks and manuals WikidataFree knowledge base WikinewsFree-content news WikiquoteCollection of quotations WikisourceFree-content library WikispeciesDirectory of species WikiversityFree learning tools WikivoyageFree travel guide WiktionaryDictionary and thesaurusThis Wikipedia is written in English. Many other Wikipedias are available; some of the largest are listed below. 1,000,000+ articles DeutschEspaolFranaisItalianoNederlandsPolskiPortugusSvenskaTing Vit 250,000+ articles Bahasa IndonesiaBahasa MelayuBn-lm-gCataletinaDanskEestiEsperantoEuskaraMagyarNorsk bokmlRomnSimple EnglishSloveninaSrpskiSrpskohrvatskiSuomiTrkeOzbekcha 50,000+ articles AsturianuAzrbaycancaBosanskiFryskGaeilgeGalegoHrvatskiKurdLatvieuLietuviNorsk nynorskShqipSlovenina Retrieved from " 2EP by Seventeen17 CaratEP by SeventeenReleasedMay29,2015(2015-05-29)GenreK-popdance-pophip hopLength16:48LanguageKoreanLabelPledis EntertainmentLOEN EntertainmentSeventeen chronology17 Carat(2015)Boys Be(2015)Singles from 17 Carat "Adore U"Released: May 29, 201517 Carat is the debut extended play (EP) by South Korean boy group Seventeen. It was released on May 29, 2015, by Pledis Entertainment and distributed by LOEN Entertainment. "Adore U" serves as the lead single for the EP.17 Carat features five tracks written, co-written, and co-produced by Seventeen's group members. "Adore U" was chosen as the lead single for the EP and was performed on multiple music shows by the group. "Shining Diamond" was used as a pre-single on the group's reality debut show. The group stated that the tracklist was chosen to reflect Seventeen's core concept of "boys' passion".[1] The album has two physical versions: one with a "black" themed photo card set, and the other with a "white" themed photo card set. All copies include a CD containing the songs and a fold-up poster/lyric sheet."Adore U" is the lead single of the extended play. It was written by Woozi, S.Coups, and Yeon Dong-geon.[2] The Korea Herald states "'Adore U' is a funky pop song about a teenage boy trying to navigate through puppy love."[3] It marks the beginning of the group's trilogy composed of the singles Adore U, Mansae, and Pretty U about a boy meeting, falling in love and asking out a girl. The track was composed and arranged by Woozi, Bumzu, and Yeon Dong-geon. The music video for the single was released on May 29, 2015, and was directed by Dee Shin. The dance choreography accompaniment to the song was choreographed by Hoshi and focuses on "storytelling, and on highlighting each member's strengths onstage".[4] The single has sold more than 38,000 digital copies and peaked at number 13 on the Billboard US World Chart.The EP has sold over 82,972 copies in South Korea.[5] It peaked at number 4 on the Korean Gaon Album Chart[6] and number 8 on the US World Billboard Chart.[7]Year-end listsCritic/publicationListRankRef.BillboardThe 10 Best K-pop Album of 2015Placed[8]Hoshi participated in the choreography of "Adore U" and "Shining Diamond", Dino choreographed "Jam Jam".[9]Official track list[10]No.TitleLyricsMusicArrangementsLength1."Shining Diamond"WooziVernonS.CoupsKim Min-jeongWooziMasterKeyRishiMasterKeyRishi3:242.""Adore U"" (; Akkinda)WooziVernonS.CoupsBumzuWooziBumzuYeon Dong-geonWooziBumzuYeon Dong-geon3:073."Ah Yeah" (Hip-Hop unit)S. CoupsVernonWonwooMingyuCream DoughnutRishiCream DoughnutRishi3:294."Jam Jam" (Performance unit + Vernon)WooziHoshiDinoVernonWooziCream DoughnutCream Doughnut3:255."20" (Vocal unit)WooziWooziWon Yeong-heonWon Yeong-heonDong Ne-hyeong3:23Weekly chart performance for 17 CaratChart (2015-2023)PeakpositionJapanese Albums (Oricon)[11]46South Korean Albums (Gaon)[12]4US World Albums (Billboard)[13]8Year-end chart performance for 17 CaratChart (2015)PeakpositionSouth Korean Albums (Gaon)[14]47^ "Seventeen hopes to shine like diamonds with '17 Carat'". The Korea Herald. 26 May 2015. Retrieved 30 November 2016.^ "Adore U". Color Coded Lyrics. 29 May 2015. Retrieved 29 November 2016.^ "Seventeen hopes to shine like diamonds with '17 Carat". The Korea Herald. 26 May 2015. Retrieved 30 November 2016.^ "Seventeen hopes to shine like diamonds with '17 Carat'". The Korea Herald. 26 May 2015. Retrieved 30 November 2016.^ Cumulative sales of 17 Carat:"2015 Album Chart"."2016 12 Album Chart"."2017 11 Album Chart".^ "2015 Albums". Gaon Music Chart. Korea Music Content Industry Association. Archived from the original on September 10, 2016. Retrieved November 29, 2016.^ "June 27, 2015". Billboard. Retrieved 29 November 2016.^ Benjamin, Jeff; Oak, Jessica (December 12, 2015). "The 10 Best K-Pop Albums of 2015". Billboard. Archived from the original on September 18, 2021. Retrieved October 31, 2021.^ , (18 June 2015). "[My Name] (3) - , , , | ". (in Korean). The Korea Economic Daily. . Retrieved 18 July 2021.^ "SEVENTEEN 1st Mini Album '17 CARAT'".^ " 20230710" [Weekly album ranking as of July 10, 2023]. Oricon News (in Japanese). Archived from the original on July 5, 2023. Retrieved February 18, 2024.^ "2015 27 Album Chart". Gaon Chart (in Korean). Archived from the original on August 7, 2016. Retrieved February 18, 2024.^ "Seventeen Chart History (World Albums)". Billboard. Retrieved February 17, 2024.^ "2015 Album Chart". Gaon Chart (in Korean). Archived from the original on May 7, 2017. Retrieved February 17, 2024.Retrieved from " 3The following pages link to 17 Carat External tools(link counttransclusion countsorted list) See help page for transcluding these entriesShowing 50 items.View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Main Page (links | edit)Pledis Entertainment discography (links | edit)List of 2015 albums (links | edit)2015 in South Korean music (links | edit)Seventeen (South Korean band) (links | edit)S.Coups (links | edit)Vernon (rapper) (links | edit)Wonwoo (links | edit)List of awards and nominations received by Seventeen (links | edit)Seventeen discography (links | edit)Love & Letter (links | edit)Joshua (singer) (links | edit)Seventeen TV (links | edit)17 carat (redirect page) (links | edit)Going Seventeen (links | edit)List of Seventeen live performances (links | edit)Teen, Age (links | edit)Al1 (links | edit)Bumzu (links | edit)Boys Be (EP) (links | edit)You Make My Day (links | edit)You Made My Dawn (links | edit)Jun (Chinese entertainer) (links | edit)List of Stray Kids live performances (links | edit)The8 (links | edit)An Ode (links | edit)Seungkwan (links | edit)Fallin' Flower (links | edit)Heng:gar (links | edit)Semicolon (EP) (links | edit)Your Choice (links | edit)Going Seventeen (web series) (links | edit)Not Alone (Seventeen song) (links | edit)Attacca (EP) (links | edit)Rock with You (Seventeen song) (links | edit)Woozi (links | edit)Hoshi (South Korean singer) (links | edit)Don't Wanna Cry (Seventeen song) (links | edit)Darl+ing (links | edit)Face the Sun (links | edit)Left & Right (Seventeen song) (links | edit)24H (EP) (links | edit)We Make You (links | edit)Hot (Seventeen song) (links | edit)Dream (Seventeen EP) (links | edit)BSS (band) (links | edit)FML (EP) (links | edit)Super (Seventeen song) (links | edit)Always Yours (album) (links | edit)Seventeenth Heaven (links | edit)View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Retrieved from " WhatLinksHere/17_Carat" Quantitative research is a systematic investigation that primarily focuses on quantifying data, variables, and relationships. It involves the use of statistical, mathematical, and computational techniques to collect and analyze data. Quantitative research is often used to establish patterns, test hypotheses, and make predictions. It is widely applied in fields such as psychology, sociology, economics, health sciences, and education. Quantitative research is a research approach that seeks to quantify data and generalize results from a sample to a larger population. It relies on structured data collection methods and employs statistical analysis to interpret results. This type of research is objective, and findings are typically presented in numerical form, allowing for comparison and generalization. Key Characteristics of Quantitative Research: Objective: Focuses on numbers and measurable variables rather than subjective opinions. Structured: Employs well-defined research questions, hypotheses, and data collection methods. Statistical: Utilizes statistical tools to analyze data and validate findings. Replicable: Enables repetition of the study to verify results and increase reliability. Example: A survey on the correlation between exercise frequency and stress levels among adults, using a Likert scale to measure responses. Quantitative research can be categorized into several types, each serving a specific purpose. The most common types include descriptive, correlational, experimental, and causal-comparative research. Definition: Descriptive research describes characteristics or behaviors of a population without examining relationships or causes. It provides a snapshot of current conditions or attitudes. Purpose: To gather information and create an overview of a particular phenomenon, population, or condition. Example: A survey describing the demographics and academic performance of students at a university. Definition: Correlational research examines the relationship between two or more variables but does not imply causation. It analyzes patterns to determine if variables are associated or occur together. Purpose: To identify associations or trends among variables without establishing cause and effect. Example: Investigating the relationship between social media use and self-esteem among teenagers. Definition: Experimental research manipulates one or more independent variables to observe the effect on a dependent variable, establishing cause-and-effect relationships. This type of research involves control and experimental groups. Purpose: To test hypotheses by isolating and controlling variables to establish causality. Example: Testing the effect of a new medication on blood pressure by administering it to one group (experimental) and comparing it to a placebo group (control). Definition: Causal-comparative research investigates the cause-effect relationship between variables when experimental manipulation is not possible. It compares groups that differ on a particular variable to determine the effect of that variable. Purpose: To explore cause-and-effect relationships retrospectively by comparing pre-existing groups. Example: Studying the impact of different teaching methods on student performance by comparing classes taught with traditional versus technology-assisted instruction. Quantitative research methods focus on systematic data collection and analysis using structured techniques. Common methods include surveys, experiments, and observations. Definition: Surveys are a popular quantitative method that involves asking participants standardized questions to collect data on their opinions, behaviors, or demographics. Surveys can be conducted via questionnaires, interviews, or online forms. Purpose: To gather data from a large sample, allowing researchers to make inferences about the larger population. Example: Conducting a survey to collect customer satisfaction data from a random sample of customers in a retail store. Advantages: Cost-effective and time-efficient for large sample sizes. Provides structured data that is easy to analyze statistically. Disadvantages: Limited depth, as responses are often restricted to specific options. Potential for response bias, where participants may not answer truthfully. Definition: Experiments involve manipulating one or more variables in a controlled environment to observe the effect on another variable. Experiments are often conducted in laboratories or controlled settings to maintain precision and limit external influences. Purpose: To test hypotheses and establish cause-and-effect relationships. Example: Conducting a laboratory experiment to test the effect of light exposure on sleep patterns. Advantages: High level of control over variables. Establishes causality, which can support theory-building. Disadvantages: Limited external validity, as findings may not always apply outside of the controlled setting. Ethical considerations may limit experimentation on certain subjects or groups. Definition: Observational research involves systematically observing and recording behavior or events as they occur naturally, without interference. While often used in qualitative research, structured observational methods can yield quantitative data. Purpose: To gather real-world data in a non-intrusive manner. Example: Observing customer behavior in a store to track time spent in different areas and identify shopping patterns. Advantages: Provides data on actual behaviors rather than self-reported responses. Useful for gathering data on situations where surveys or experiments may not be feasible. Disadvantages: Observer bias may affect results. Can be time-consuming, especially if behaviors are infrequent or complex. Quantitative research relies on various tools to collect and quantify data, including: Questionnaires: Standardized forms with close-ended questions, often using scales (e.g., Likert scale) for responses. Tests and Assessments: Used to measure knowledge, skills, or other measurable attributes. Digital Tracking Tools: Software or digital applications that collect data, such as website traffic metrics or physiological monitoring devices. Data analysis in quantitative research involves statistical techniques to interpret numerical data and determine relationships or trends. Key techniques include descriptive statistics, inferential statistics, and correlation analysis. Definition: Descriptive statistics summarize and organize data, providing basic information such as mean, median, mode, standard deviation, and range. Purpose: To give an overview of the dataset, allowing researchers to understand general trends and distributions. Example: Calculating the average test scores of students in a school to assess overall performance. Common Measures: Mean: Average of all data points. Median: Middle value of an ordered dataset. Standard Deviation: Measure of variability around the mean. Definition: Inferential statistics allow researchers to make predictions or inferences about a population based on sample data. Techniques include hypothesis testing, t-tests, ANOVA, and regression analysis. Purpose: To determine if observed results are statistically significant and can be generalized to a larger population. Example: Using a t-test to compare average scores between two different teaching methods to see if one is significantly more effective. Common Tests: t-Test: Compares the means of two groups to determine if they are statistically different. ANOVA (Analysis of Variance): Compares means among three or more groups. Regression Analysis: Examines the relationship between independent and dependent variables. Definition: Correlation analysis measures the strength and direction of the relationship between two variables. It is used to determine if changes in one variable are associated with changes in another. Purpose: To identify associations between variables without implying causation. Example: Calculating the correlation coefficient between screen time and academic performance to determine if there is an association. Common Measures: Pearson Correlation Coefficient (r): Measures linear correlation between two continuous variables. Spearmans Rank Correlation: Measures correlation between two ranked variables.Objective: Minimizes researcher bias by focusing on numerical data. Generalizable: Findings from large, random samples can often be applied to a broader population. Replicable: Structured methods make it possible for other researchers to replicate studies and verify results.Limited Depth: Quantitative research often lacks the depth of qualitative insights. Rigid Structure: Limited flexibility in data collection and analysis. Potential Bias: Response or sampling biases can affect results, especially in survey-based studies.Define Clear Objectives: Develop specific research questions or hypotheses to guide the study. Choose the Right Method: Select a quantitative method that aligns with the research goals and type of data needed. Ensure Sample Representativeness: Use appropriate sampling techniques to ensure results can be generalized. Employ Proper Statistical Tools: Choose analysis techniques that match the nature of the data and research questions. Interpret Results Accurately: Avoid overgeneralizing findings and consider limitations when interpreting results. Quantitative research provides a structured, objective