

## Quantitative content analysis of graduate theses of Divine Word College of San Jose

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### ***Abstract***

The quantitative content analysis of master's theses from 2020 to 2024 aimed to gain insights into the current state of research at Divine Word College of San Jose, encompassing a review of both published and unpublished research papers. Bibliographic coding for each thesis was performed based on the variable entries. Patterns in the descriptive characteristics, thesis length, and predictors of research results were analyzed to identify research gaps. Descriptive-correlational design identified the research norms of the theses produced. Cross-tabulations, frequencies, percentages, and means described the characteristics and lengths of the theses. At the same time, regression analysis assessed the predictive value of these characteristics and lengths for the research results. Findings revealed that mixed method, sequential exploratory and descriptive-correlational designs, thematic analysis, and structural equation modeling were typically used; conclusions were predicted strongly by the conceptual framework and statistical treatment, hypothesis test results by the research method used, and research output by research locale to a moderate extent. Also, the predominant research outputs focused on action/development plans. Research at the local level accounted for a moderate share of the research output. Aside from the action/development plan, future researchers may also consider theory development. Future studies on quantitative content analysis may be initiated and focused on the theses completed by MBA students from 1995 onwards. Moreover, adoption of the IMRaD format in preparation for journal publication of the theses is recommended.

**Keywords:** content analysis, bibliographic coding, quantitative research method, IMRaD format, graduate theses

## Quantitative content analysis of graduate theses of Divine Word College of San Jose

### 1. Introduction

An analysis of research papers in the graduate school is an interesting and challenging endeavor in the academic field. Examining master's theses provides insight into the current state of research across various fields of study. The analysis covers the review of published and unpublished research papers. Quantitative content analysis is considered by Coe & Scacco (2017) as a research method in which textual and visual features of materials are systematically categorized and recorded for purposes of analysis. This is done by assigning numerical values to salient characteristics of the data, enabling statistical analysis and the identification of patterns and trends. The first documented quantitative analyses of printed manuscripts go back to the 18th century in Sweden, according to Krippendorff (2013), in the publication analysis of the Songs of Zion. Then, in the 20th century, there was an increase in the production of newsprint, followed by a demand for quantitative analysis of newspapers. A development of the computer text analysis came decades later, and content analysts employed computers in their work. Due to the growing accessibility of text in digital form, computational content analysis was developed. As defined by Lavarreda (2024), computational text analysis refers to digital approaches and tools used to explore the articulation of meaning embedded in written text. In recent years, electronic full-text databases have become available online. Furthermore, content analysis can be carried out quantitatively or qualitatively (Rose et al., 2015; Williams, 2025; Wilson, 2011). In the academic field of political communication, for instance, content analysis has been defined as the systematic, objective, and quantitative analysis of message characteristics (Neuendorf & Kumar, 2016). However, the differentiation between qualitative and quantitative analyses is sometimes challenged. Since quantitative content analysis tends to follow the scientific method, which emphasizes objectivity, reliability (Krippendorff, 2006; Coe & Scacco, 2017), validity (Rourke & Anderson, 2004), and generalizability, systematic issues arise.

Quantitative and qualitative approaches to content analysis tend to overlap, as Krippendorff (2013) underpins; hence, there can be no generalizable conclusion as to which approach is better. Despite these issues, researchers have conducted quantitative content analyses over the past decade. Results were beneficial, as they helped identify common research deficiencies and served as a starting point for improving practices and policies (Randolph et al., 2012). Considered as a research method, content analysis is used to identify patterns in recorded communication. In conducting content analysis, a systematic collection of data from a set of texts, written, oral, or visual, is undertaken (Luo, 2023). While quantitative analysis in a business context helps evaluate the performance and efficiency of operations (Saharawat, 2023), it can be applied across fields such as finance, research, and chemistry. In fact, content analyses have actually been explored across various domains, namely: media (Riffe et al., 2014); journalism (Klein, 2023); consumer research (Vespestad & Clancy, 2021); economics (Oleinik, 2021); jobs (Li & Li, 2021); library science (Singh & Saini, 2020); nursing (Bengtsson, 2016); blended learning (Drysdale et al., 2013); health (Cho et al., 2010); communication and language (Hart, 2014; Baker & King, 2016); distance education (Davies et al., 2010); social science (Bammidi, 2008); and psychology (Leavy, 2014).

Integral to content analysis, as summarized by Coe & Scacco (2017), involves following a set of instructions on which features to look for, which requires attention to segmenting the texts for analysis, appropriate data collection, consistency in coding, and the use of a coding scheme representative of the specified phenomena. Key steps in quantitative content analysis were outlined in the study by Rose et al. (2015), including a research question, conceptualization and hypothesis formulation, sampling and unitizing, coding scheme development, data collection, coding, reliability testing and analysis, and findings and conclusions. Because of this, the authors contend that it can be treated as a research design in its own right rather than merely a method of analysis. A review of trends in research among students completing a thesis found that most studies were descriptive and used self-report surveys (Davies et al., 2010). However, it also revealed a lack of graduate student research focused on

developing theory. Based on records of the college library of the Divine Word College of San Jose (DWCSJ), the graduate school students had produced 339 published and unpublished theses from the start of its operation until 2024. However, no content analysis of these theses has been undertaken to date. None of the studies was focused on the collective body of published/unpublished research in the graduate school. Thus, this study aimed to provide insights into the school's current research state, specifically in the field of education, by identifying trends in problem formulation, methodological approaches, conceptual frameworks, research methods and designs, statistical data analysis, hypothesis test results, and research outputs.

**Research Objectives** - While other studies focused on qualitative content analysis, this study diverged to analyze the contents of the DWCSJ theses quantitatively, focusing on descriptive characteristics, length, and predictors of research results. Specifically, the study aimed to: (1) determine the descriptive characteristics of DWCSJ theses considering thesis type, year of completion, subject descriptors, research locale, conceptual framework, research method, research design, sampling technique, number of participants/respondents, research instrument, and statistical treatment; (2) determine the length of the thesis by the number of pages, considering the whole manuscript, preliminary section, review of related literature, chapters I-V, and references; (3) characterizes the research results in terms of hypothesis test, conclusion, and research output (4) determine if the research results predicted by the thesis's descriptive characteristics and length of the thesis.

**Significance of the Study** - The objective of this study is to analyze the quantitative content of the DWCSJ theses. The study finds a potential impact, first, on graduate students, who can gain a better grasp of the existing research culture. Thus, it will provide them with a better way not only to identify research trends but also to identify the common characteristics of research papers undertaken. Next, this is for thesis writers; it can help them improve their research writing practices to meet research writing expectations. Third, the graduate school can implement a journal-writing format to facilitate future researchers' journal publishing.

**Scope and Delimitation of the Study** - The study primarily aims to investigate the typical characteristics of research papers done by the DWCSJ graduate students. It focuses on the 17 theses completed by students of the Master of Arts in Education (MAEd) and the Master of Arts major in Science Education (MASEd) of Divine Word College of San Jose during 2020-2024. While this study is limited to two programs in the graduate school of DWCSJ, it will serve as the first step for a province-wide and region-wide quantitative analysis of graduate theses in other programs.

## 2. Methodology

This descriptive study primarily identified the research patterns of the theses produced in the DWCSJ graduate school. It used a correlational design to examine whether the descriptive characteristics and length of the theses could predict the research results. The correlational design provides scores and explains the relationship among variables (Wubante, 2020). Unlike the experimental design, there is no attempt to control or manipulate the variables; instead, they are related using correlation statistics. Complete enumeration of the theses completed during the school years 2020-2021 through 2023-2024 was considered. This totaled 17 master's theses by graduate students in the MAEd and MASEd programs. The studies were conducted at the Divine Word College of San Jose (DWCSJ). In lieu of a survey instrument, the researcher sought access to the data from the printed theses stored in the DWCSJ Graduate School library. Permission to have access to a copy of the thesis was sought from the school's librarian. After receiving permission, the researcher examined the patterns used in the manuscripts. A bibliographic coding for each thesis was done based on the variable entries, namely: thesis type, year of completion, subject descriptors, research locale, conceptual framework, research method and design, sampling technique, number of participants/respondents, research instrument and statistical treatment, hypothesis test result, conclusion, research output, and length of thesis based on the number of pages of the manuscript. Bibliographic coding serves as a guide to the structure, coding practices, and input standards used in bibliographic records in the database (King et al., 2011). Sorting and classifying the theses were done based on their salient characteristics.

The quantitative method was employed to examine the patterns existing in the thesis and the relationship among the variables under study. Cross tabulations, frequencies, percentages, and means were used to describe the characteristics of the theses and the theses' length. Regression analysis was applied to assess the predictive value of the descriptive characteristics and their lengths on the research outcomes. Moreover, compliance with existing graduate studies guidelines was ensured by properly crediting and acknowledging the authors of references in studies and online sources. The conduct of the study ensured that there was no biased presentation of research findings nor any misleading information.

### 3. Results and Discussions

**Table 1**

*Cross-tabulation of Thesis Type and Completion Year*

Thesis Type * Year of Completion Cross-tabulation		Year of Completion					Total
		2020	2021	2022	2023	2024	
Thesis Type	MAED	1	0	2	2	3	8
	MASE	3	1	2	1	2	9
Total		4	1	4	3	5	17

Table 1 shows the cross-tabulation of thesis type and completion year. The theses were written by 8 Master of Arts in Education (MAEd) and 9 Master of Arts in Science Education students. The theses covered in the study were completed during 2020-2024, with the highest number in 2024, followed by 2020, 2022, and 2023. Only one thesis was completed during the 2021 pandemic period. While thesis types range from argumentative to explanatory, as noted by Surdzial (2019), this study adopts the analytical type and focuses on the content analysis of students' theses in graduate programs. Thus, the analysis focuses on examining the parts, identifying the features to look for, evaluating, and then presenting the ideas and content to the readers.

**Table 2**

*Distribution by Subject Descriptor*

Subject Descriptor	Frequency	Percent
Science Pedagogy—Spiral Progression	1	5.9
Science-Learning Competencies	1	5.9
Teaching-Distance Learning	3	17.6
Teaching-Academic Performance	1	5.9
Teaching-Job Satisfaction	1	5.9
Management of Learning-School Performance	1	5.9
Mathematics Learning-Spiral Progression	1	5.9
Teaching Style-Learning Achievement	1	5.9
Science—Species Diversity	3	17.6
Environmental Literacy	2	11.8
Teaching-Gamification Strategy	1	5.9
Learning Camp	1	5.9
<b>Total</b>	<b>17</b>	<b>100.0</b>

Note: Percentages are based on the total number of subjects within the thesis type.

Table 2 presents the distribution by subject descriptor. Also known as subject headings, subject descriptors categorize and index research materials, providing a consistent way to describe the topic of a study. Simultaneous descriptors of research design were discussed in the databases of The National University Library (2025), Berkeley Library (2024), and in Andrade's (2022) article highlighting that descriptors do not necessarily have to be mutually exclusive, as studies can be described as prospective or retrospective, as cross-sectional or longitudinal, as randomized or nonrandomized, as open label or blinded, and as uncontrolled or controlled. In examining the content, one aim is to identify the extent to which the subject areas studied in the thesis are present. These were quantified into measurable units for statistical analysis. Diverse subject descriptors were generated across all types of theses and years completed. The most frequently occurring subject descriptors focused on teaching—distance learning and science—species diversity—had an equal frequency of 3 (17.6%), followed by environmental literacy

with 2 (11.8%). The rest delved into teaching and learning, science pedagogy, and spiral progression in mathematics and science. This result aligns with Cam's (2022) findings, which revealed teaching methods as the most frequently assigned descriptors in the studies analyzed in ERIC publications, based on data mining. In the field of teaching and learning, according to Fleming (2009) as cited in Subagja & Rubini (2023), it uses both horizontal and vertical dimensions to highlight similarities and differences in expectations and outcomes across subjects.

**Table 3***Distribution by Descriptive Characteristics (n=17)*

Descriptive Characteristics (Research Locale)	Frequency (n=17)	Percent (100)
San Jose	8	47.1
Magsaysay	3	17.6
Rizal	3	17.6
Sablayan	2	11.8
Calamba	1	5.9
Conceptual Framework		
IV-DV	13	76.5
Input-Process-Output	3	17.6
Simulacrum	1	5.9
Research Method		
Qualitative	1	5.9
Quantitative	6	35.3
Mixed	10	58.8
Research Design		
Experimental	3	17.6
Exploratory Sequential	7	41.2
Descriptive-Correlational	6	35.3
Phenomenology	1	5.9
Sampling Technique		
Simple Random	4	23.5
Systematic	2	11.8
Stratified Random	2	11.8
Purposive	5	29.4
Complete Enumeration	4	23.5
Number of Participants (Mean=12.2)		
10 - 14	4	23.5
15 - 19	5	29.4
20 - 24	1	5.9
25 - 30	2	11.8
Not applicable	5	29.4
Number of Respondents (Mean=189.1)		
30 - 129	6	35.3
130 - 229	2	11.8
230 - 329	1	5.9
330 and above	4	23.5
Not applicable	4	23.5
Research Instrument		
Researcher-Made Questionnaire	3	17.6
Diversity Survey	1	5.9
Reconnaissance Survey	1	5.9
Observation Checklist	1	5.9
Ecological Survey	1	5.9
Interview Guide & Researcher-Constructed Questionnaire	9	52.9
Validation Checklist & FGD	1	5.9
Descriptive Characteristics		
Statistical Treatment		
Thematic Analysis & Regression Analysis	2	11.8
Thematic Analysis & SEM	6	35.3
Paired Samples t-test	3	17.6
Regression Analysis	1	5.9
Diversity Index & ANOVA	1	5.9
Diversity Index & Paired Samples t-test	2	11.8
Thematic Analysis	1	5.9
Structural Equation Modeling (SEM)	1	5.9

Table 3 shows the distribution by descriptive characteristics. Selecting the appropriate locale is essential to the success of a research project, as it can affect both the methodology and the applicability of the findings. Moreover, selecting a research locale involves several considerations, such as research objectives, the availability of research participants and respondents, population characteristics, and the feasibility of conducting the study in that specific setting. Regarding the study's location, the majority of the research locales are from different areas, with four from the towns of Occidental Mindoro province. Since one of the researchers teaches outside Mindoro, the setting is in Calamba City, Laguna. Some of the popularly used locales in research, as disclosed in 25+ Research Locale Samples (Examples.com, 2024), include educational institutions, communities, workplaces, public places, healthcare facilities, and online environments. The importance of describing the research locale, as detailed by Fonseca (2023), includes contextualization of the research, identifying the potential confounding factors that may have influenced the results, increasing replicability, facilitating generalization of the study results to other populations, and enhancing transparency and credibility through a broad picture of the study.

As a guide for defining research questions, the conceptual framework is presented as a diagram depicting the relationships among variables and presumes relationships among the concepts in the study. The general presentation is usually in a visual format. The independent variable-dependent variable (IV-DV) was adopted by the majority, 13 (or 76.5%) of the researchers, in their conceptual frameworks, followed by the Input-Process-Output with 17.6% and Simulacrum. Since the majority used the quantitative method, the Independent Variable-Dependent Variable (IV-DV) framework is preferred. The experimental researchers applied the Input-Process-Output (IPO) framework. The role of the conceptual framework has been underscored in the study by Luft et al. (2022), which highlights the understanding of the primary concepts. Hence, as compared with the theoretical framework, Charlesworth (2022) emphasized that the conceptual framework is developed before the start of the experiment and represents the hypothesized relationship between variables. In contrast, in the conceptual framework, one has to identify themes in literature reviews, list all constructs, and check whether each is related to a theory.

Researchers chose varied methods, with mixed methods as the most commonly used (10, 58.8%). A pure quantitative method was applied by six (35.3%), and one (5.9%) opted for a qualitative method. Writing a methodology starts by describing the problem statement and the type of data to be used to answer it. Sample quantitative methodology has been discussed by Chris (2021), underscoring the aim of increasing research credibility for reproducibility and transparency. When the researcher intends to establish cause-and-effect relationships, test hypotheses, and develop generalizable findings for a larger population, quantitative research is favored over qualitative research. The reason for this, according to Verhoef & Casebeer (2025), is that, in addition to generating factual, reliable outcomes, it is strong in inductive reasoning. However, by combining quantitative and qualitative methods, known as mixed methods, a certain level of completeness can be achieved (George, 2021). Exploratory sequential design is used by 41.2% of the researchers, as they opted for a mixed-methods approach. This design starts with qualitative data collection and analysis and builds to quantitative data collection and analysis, leading to interpretation. In this design, the qualitative results were used to develop a new quantitative instrument. Six (35.3%) researchers used a descriptive-correlational design. Due to the nature of the qualitative research method, a phenomenological design was adopted. Three (17.6%) researchers used the experimental design. While various research designs have been offered to researchers, whether the study involves qualitative or quantitative work, Thomas and Zubkov (2023) discussed one particular design: the exploratory design. As explained, exploratory design intends to develop research problems, helping to determine what the researcher wants to describe. Quantitative research designs also provide a systematic discussion of how research questions are addressed in a quantitative study, and among these designs are survey, descriptive, correlational, experimental, and causal-comparative designs. In inferring vital information from a population using samples, the researcher uses sampling techniques. Thus, for a study to attain accuracy, careful sample selection is required.

Purposive sampling was chosen by 29.4%, followed by simple random (23.5%), and four researchers did not use sampling, as they considered complete enumeration of the population. Systematic and stratified random sampling were also used to select the samples at a rate of 11.8%. As underpinned by Makwana et al. (2023), there

should be a careful assessment of the study's objectives, the population's characteristics, and the resources. One of these techniques is purposive sampling, also known as judgmental sampling, in which respondents are selected based on their relevance to the research objectives. One advantage of purposive sampling, according to Andrade (2021), is that it makes the samples homogeneous, making statistical significance easier to obtain due to reduced variance. However, it has the drawback of limited external validity. Aside from purposive sampling, a study by Ahmed (2024) explained other commonly used sampling techniques, including simple random, stratified, and systematic sampling. A basic method that reduces selection bias is simple random sampling (Noor et al., 2022). When using a population divided into strata based on similar categories such as salary, education, or status, stratified sampling is used to derive a sample representative of the entire strata (McLeod, 2023). The result increases the accuracy of the estimates, as every stratum is well represented. An efficient and easier-to-conduct technique is systematic sampling, in which the  $n$ th respondent is selected systematically from the list (Rahman et al., 2022). Overall, these sampling techniques are fundamental for obtaining statistically significant inferences about a larger population.

In studies with interviews, the mean number of participants was 12, comprising groups of 15-19 and 10-14. Larger sets were covering 20-24 and 25-30 participants. In qualitative research, data saturation is applied to determine the number of participants, ensuring that once data collection stops, no new themes emerge. The purpose, as emphasized by Ahmed (2025), is to enhance the credibility and completeness of the research findings. In terms of the number of respondents, the highest frequency was in the 30-129 range, followed by 330 and above. The mean frequency of respondents considered is 189. No respondents were included in the four research studies, as they were experimental in nature. While determining an appropriate sample size is important for drawing realistic conclusions from research findings (Memon et al., 2020), the number of respondents still varies depending on the study's population size. Moreover, the appropriate sample size should be determined based on the research topic, population, research aim, and analysis techniques. The results of this study align with those of Delice (2010), underscoring that when a parametric test is to be employed, the necessary sample size ranges from 30 to 500 respondents. The most commonly used instruments for data collection were an interview guide and a researcher-made questionnaire, with 52.9%. Three studies (or 17.7%) used the researcher-constructed questionnaire; in the experimental studies, diversity, reconnaissance, and ecological surveys were used. Observation and validation checklists, along with focus group discussions, were also used as research instruments. These results align with Taherdoost's (2016) findings, emphasizing the questionnaire as one of the most widely used tools for collecting data to obtain relevant information most reliably and validly.

Meanwhile, in ecology and biodiversity research, diversity, reconnaissance, and ecological surveys are commonly used to help researchers understand species distribution and abundance, habitat characteristics, and species-environment relationships. Findings from Cleland's (2011) species-diversity survey showed that similar relationships between species diversity and ecosystem productivity exist in human-managed ecosystems. The combined thematic analysis and structural equation modeling were used to analyze the data from 6 studies (35.3%). In 2 (11.8%) of the studies, a combined thematic and regression analysis was used. Three (17.6%) experimental studies used the paired-samples  $t$ -test, and three used the diversity index. Thematic analysis is used to explain the qualitative findings, while regression analysis and sequential equation modeling address the quantitative problems. As one of the widely used methods for analyzing textual data, Ahmed et al. (2025) underscored the centrality of thematic analysis to generating trustworthy and insightful qualitative research. While thematic analysis was compared to other methods such as phenomenological analysis and grounded theory, it was found that thematic analysis emphasizes interpretive depth and flexibility, allowing for both descriptive and rich conceptual analysis across diverse topics. Another statistical treatment applied is structural equation modeling (SEM), which combines the principles of factor analysis (Vogelsmeier et al., 2024) and regression analysis (Ali & Younas, 2021). A literature review by Hidayat & Wulandari (2022) argues that SEM has greater predictive power than path analysis and multiple regression because it can analyze the variables under study at the deepest level.

**Table 4***Length of Thesis by Pages*

Number of Pages	Frequency	Percent
Whole Manuscript (Mean=148.2)		
100 - 149	11	64.7
150 - 199	4	23.5
200 - 249	2	11.8
Preliminary Section (Mean=11.4)		
10 - 12	15	88.2
13 - 15	1	5.9
16 - 18	1	5.9
Review of Related Literature (Mean=22.6)		
11 - 17	5	29.4
18 - 24	7	41.2
25 - 31	2	11.8
32 - 39	3	17.6
Chapters I-V (Mean=84.9)		
55 - 74	5	29.4
75 - 94	7	41.2
95 - 114	5	29.4
References (Mean=7.8)		
3 - 5	5	29.4
6 - 8	5	29.4
9-11	4	23.5
12 - 14	3	17.6

Table 4 presents the length of thesis by pages. The majority of studies produced manuscripts with total page counts of 100-149. Four studies have more than 150 pages, while two have more than 200. The mean (average) number of pages across the 17 completed studies was 148. This is due to the varied topics covered in the study. The preliminary section includes the approval sheet, abstract, acknowledgment, dedication, table of contents, and list of tables and figures. The preliminary pages of 15 studies ranged from 10 to 12 pages, and the rest ranged from 16 to 18 pages. Conducting a literature review is considered essential for every research undertaking. Ulz (2022) enumerated the reasons for its importance, highlighting the primary purpose of creating new knowledge, identifying knowledge gaps, and providing an overview of interdisciplinary research areas. For the comprehensive review of related literature (RRL) for the completed studies, 18 to 24 pages were found across seven studies. The fewest pages covered 11 to 17, while the longest covered 32 to 39, with an average of 23 pages for this section. The main body of the thesis, comprising five chapters, was written in 75 to 94 pages across seven studies, followed by 95 to 114 pages across five studies, and the fewest pages were 55 to 74. On average, the main body has 85 pages. While the number of pages is considered for a written thesis, some universities, as in the formatting manual issued by UC Irvine Libraries (2024), place no limit on the length of the thesis or dissertation but set a limit on the thickness of the manuscript to a maximum of 2.25 inches. Using ideas, data, or quotes from other sources requires acknowledging these sources through in-text citations of the author and publication details and a reference list at the end of the manuscript. Depending on the study, the reference pages ranged from 3 to 5 in 5 studies and from 12 to 14 in 3 studies. The average number of pages in the reference section is 8.

Understanding the average length of the manuscript helps the research writer stay on track and avoid unnecessary processes. No set length for a thesis is defined; however, a concisely written thesis may comprise 50 pages in double-spaced format, according to the EMS Guidelines for Thesis (2019). While master's theses typically differ in length by field of study, the standard length may change over time in line with academic standards and expectations. While there is no one-size-fits-all ideal length, meeting the minimum word count requirements and ensuring sufficient depth and clarity should be considered. The findings above align with the overview provided by Elliot (2025), which states approximately 60 to 100 pages for a master's thesis and 150 to 300 pages for a dissertation. The length of related literature, for instance, varies depending on how much previous work has been conducted. According to the EMS Guidelines for Thesis (2019), fewer than 10 pages is likely too brief a review. With new media technology, the variables of interest and the theoretical understanding of the processes and effects related to its use may be established in other contexts.

**Table 5***Description of Research Results (n=17)*

Research Results	Frequency	Percent
Hypothesis Test		
Reject Ho1	4	23.5
Reject Ho1 & Ho2	9	52.9
Reject Ho1, Ho2 & Ho3	2	11.8
Accept Ho1 & Reject Ho2	1	5.9
Not applicable	1	5.9
Conclusion		
Significant Relationship	11	64.7
Significant Difference	4	23.5
No Significant Diff. (Ho <sub>1</sub> ) & Significant Diff. (Ho <sub>2</sub> )	1	5.9
RRR Compliant	1	5.9
Research Output		
Action/Devt/Mgt Plan/Program	8	47.1
Module	3	17.6
Framework	1	5.9
None	5	29.4
Total	17	100.0

Table 5 discloses the description of research results. While the number of hypotheses ranges from 1 to 3, the results yield 11 studies, with 52.9% and 11.8% leading to the rejection of two hypotheses. Rejection of the null hypothesis implies the existence of either a significant difference or a significant relationship between the variables under study. One study found support for the first hypothesis and rejection of the second. The qualitative study did not require hypothesis testing. While a single study may have one or many hypotheses, not all studies have a hypothesis (Trochim, 2025). As a hypothesis is formally set up, two hypothesis statements are presented: one describing the prediction and the other describing all possible outcomes with respect to the hypothesized relationship. The hypothesis forms the foundation of a research proposal, as underscored by Misra & Agarwal (2020). Thus, a study based on a sound hypothesis is more likely to make a meaningful contribution to science.

The findings reveal significant relationships in 11 (64.7%) studies and 4 (23.5%) showing significant differences. One study yielded opposing conclusions for the two hypotheses. The conclusion of the qualitative study presents compliance with the RRR (Reduce, Reuse, Recycle) program. As the last section of the research paper, the conclusion provides a clear understanding of the study's findings and answers the statement of the problem. To arrive at a clear conclusion, George and McCombers (2022) suggested that the answer to the main research question be stated clearly, that the research process be summarized, that recommendations for future studies be provided, and that new knowledge contributed to the field of study be highlighted. In writing a conclusion, as emphasized by Caulfield (2023), its content varies depending on the paper: it may present the results of original empirical research or construct an argument through engagement with primary or secondary sources.

A variation of action/development plan and management program was the research output of 8 (47.0%) studies; 3 (17.6%) produced a module, and 1 constructed a framework. No research output was indicated in five (29.4%) studies. Output has been differentiated from outcome in the study by Steinebach (2023), highlighting policy outputs as the direct result of the decision-making process, while policy outcomes capture the consequences that follow from these outputs. In research, outputs are what are produced, while outcomes are what are achieved as a result of the outputs. While a research outcome involves aligning actions with goals, Hearn et al. (2025) identified an approach that provides a framework for assessing the results. As a result of the decision-making process, policy outputs are produced to improve practices or implement policy changes (Steinebach, 2023).

The regression analysis highlights a significant relationship between the thesis's descriptive characteristics as predictors and the research results, as reflected in the hypothesis test, conclusion, and research output, with correlation coefficients (*R*-values) ranging from 0.520 to 0.851 is shown in Table 6. Multiple correlations were run on all variables of interest, and computations were based on the 0.05 significance level. It should be noted that regression can help identify causal relationships between variables, whereas correlation does not imply causation

(Maryati et al., 2021). The strongest predictors of the conclusive statements come from the combined contributions of the conceptual framework and the statistical treatment ( $R=0.851, p=0.001, 0.023$ ). The large, significant effect of these combined variables is supported by an  $R^2$  of 0.685 ( $R^2 = 0.685$ ). This implies that a well-constructed conceptual framework and an appropriate statistical treatment of the data may yield a sound conclusion for the study. In fact, a study by Salawu et al. (2023) recommended leveraging both conceptual and theoretical frameworks in research to enhance study stability and make findings generalizable.

**Table 6**

*Regression Analysis Between Descriptive Characteristics and Research Results*

Predictors	Dependent Variable	R value	Adjusted $R^2$	p value	Interpretation
Research Method	Hypothesis Test Result	0.520	0.222	0.032	Significant
Conceptual Framework	Conclusion	0.851	0.685	0.001	Significant
Statistical Treatment				0.023	Significant
Research Locale	Research Output	0.617	0.340	0.008	Significant

A moderate predictive level of research locale on research output is indicated by an  $R$ -value of 0.617 and a  $p$ -value of 0.008, disclosing a 34% significant effect. This suggests that the research output, in whatever form, be it an action plan, development plan, management program, learning module, or framework, should provide applicability to the same locale where the study is conducted. A valuable learning module developed by the researcher should benefit learners in the locale, ensuring its availability for use. While the research locale serves as a contextual backdrop, as Fonseca (2023) underscores, it can influence the entire research process and shape the knowledge and insights emerging from the research.

Another moderate correlation is observed between the research method and the hypothesis test result, yielding an  $R$ -value of 0.520 and a  $p$ -value of 0.032. This implies that the chosen research method is moderately contributing to the results; however, other factors may also be at play (Schober et al., 2018). About 22.2% of variations in research methods affect the hypothesis result, indicating whether it is rejected or accepted. These confirm that the choice of a suitable research method plays a decisive role in the expected hypothesis test result. Thus, choosing the wrong method can lead to misleading conclusions (Thattamparambil, 2020). These findings provide evidence to reject the null hypothesis, confirming that the conceptual framework, statistical treatment, research locale, and research method can predict the results of the research study. Therefore, the results section of a research paper presents the findings based on the information gathered as a result of the methodology.

**Table 7**

*Regression Analysis Between Length of Thesis and Research Results*

Predictors	Dependent Variable	R value	Adjusted $R^2$	p value	Interpretation
None	Hypothesis Test Result	-	-	-	Not Significant
None	Conclusion	-	-	-	Not Significant
None	Research Output	-	-	-	Not Significant

The analysis discloses in Table 7 that none of the length-of-thesis predictors of research results entered the regression model, indicating that the length of the thesis, measured by the number of pages, was not significant and did not contribute to the multiple regression model. In other words, the length of the thesis may not directly determine the quality of the research results. Regardless of the length of the manuscript, research results are generated from other parts of the thesis, specifically from the findings and information gathered through the methodology. While thesis length may vary by academic level and field, as Gilbert (2024) reiterated, the focus should be on thorough, clear research findings rather than page count. Given that the thesis's length does not affect the research results, this supports Elliot's (2025) contention that a well-crafted manuscript can yield strong findings. While the length of the thesis is a guide to be considered, the quality and depth should be given utmost importance.

#### 4. Conclusions

Upon considering the findings, the following conclusions were drawn: Thesis types by MASE and MAED were almost equal in number, and the majority were completed in 2024, 2022, and 2020. Subject descriptors primarily focused on teaching, distance learning, and science—species diversity. San Jose, Magsaysay, and Rizal were the majority's selected research locales. The most common conceptual framework adopted is IV-DV. The majority of the research used a mixed-methods approach, applying the exploratory sequential and descriptive-correlational designs. The commonly used sampling techniques were purposive and simple random. The composition of participants and respondents was typical in terms of numbers. Data collection generally employed an interview guide and a researcher-made questionnaire. Mixed-methods studies mostly used thematic analysis and sequential equation modeling, while experimental studies used the paired-samples t-test for statistical analysis. The sections of the theses comprise a typical number of pages. The majority of the results disclosed rejection of the hypotheses, indicating a significant difference or relationship between the variables under study and concluding the study as significant. The predominant research outputs focused on action/development plans. The research method predicted the hypothesis test result. The conceptual framework and the statistical treatment strongly predicted research conclusions. Research locale accounted for a moderate amount of the research output.

**Recommendations** - In light of the findings and conclusions, it is recommended that the research writers ensure their study employs a well-defined, clear methodology to provide an accurate assessment of the evidence's strength in supporting or refuting the hypothesis. The IMRaD format may be implemented at the graduate school level starting in the 2025-26 academic year for use by graduate research students in preparation for journal publication. Content analysis of MA, MAED, and MASE theses may be continued by the graduate school students covering the school years before 2020 and from 2025 onwards. Future researchers may always include research outputs in their thesis. Aside from the action/development plan, future researchers may also consider theory development. Future studies on quantitative content analysis may be initiated and focused on the theses completed by MBA students from 1995 onwards.

#### 5. References

- Ahmed, S. K. (2024). How to choose a sampling technique and determine sample size for research: A simplified guide for researchers. *Oral Oncology Reports*. <https://doi.org/10.1016/j.oor.2024.100662>
- Ahmed, S. K., Mohammed, R. A., Nashwan, A. J., Ibrahim, R. H., Abdalla, A. Q., Ameen, B. M., Khdhir, R. M. (2025). Using thematic analysis in qualitative research. *Journal of Medicine, Surgery, and Public Health*. <https://doi.org/10.1016/j.glmedi.2025.100198>
- Ahmed, S.K. (2025). Sample size for saturation in qualitative research: Debates, definitions, and strategies. *Journal of Medicine, Surgery, and Public Health*. <https://doi.org/10.1016/j.glmedi.2024.100171>
- Ali, P., & Younas, A. (2021). Understanding and interpreting regression analysis. <https://doi.org/10.1136/ebnurs-2021-103425>
- Andrade, C. (2021). The inconvenient truth about convenience and purposive samples. *Indian Journal of Psychological Medicine*. 43(1):86–88. <https://journals.sagepub.com/home/szj>  
DOI:10.1177/0253717620977000
- Andrade, C. (2022). Simultaneous descriptors of research design. *Indian Journal of Psychological Medicine*, 44(1):83–84. <https://journals.sagepub.com/doi/full/10.1177/02537176211061654>
- Baker, L. M., & King, A. H. (2016). Let's get theoretical: A quantitative content analysis of theories and models used in the Journal of Applied Communications. *Journal of Applied Communications*: 100:1. <https://doi.org/10.4148/1051-0834.1021>
- Bammidi, D. P. (2008). Content analysis: A method of social science research, In D.K. Lal Das (ed). *Research Methods for Social Work*. DOI: 10.13140/RG.2.1.148.1448
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*. 2, 8-14. <https://doi.org/10.1016/j.npls.2016.01.001>

- Berkeley Library (2024). ISF 189 & 190: Thesis: Keywords and Descriptors. Retrieved from <https://guides.lib.berkeley.edu/c.php?g=1298358&p=9656512#:~:text=What%20are%20they?,will%20bring%20back%20perfect%20results>.
- Bibformat (2025). Bibliographic Standards and Formats. <https://www.oclc.org/bibformats/en/home.html>
- Cam, E. (2022). Research trends and features of Robotics studies in educational technology and STEM education: Data mining on ERIC samples. *Sakarya University Journal of Education*, 12, 545–572. 10.19126/suje.1188142.
- Carle, H. (2020). An academic guide to content analysis. <https://heathercarle.com/2020/03/25/an-academic-guide-to-content-analysis/>
- Caufield, J. (2023). Writing a research paper conclusion | Step-by-step guide. <https://www.scribbr.com/research-paper/research-paper-conclusion/>
- Charlesworth Author Services (2022). Conceptual framework vs. Theoretical framework and constructing each. <https://www.cwauthors.com/article/conceptual-framework-versus-theoretical-framework-in-research>
- Cho, H., Hall, J., Kosmoski, C., Fox, R. L., & Mastin, T. (2010). Tanning, skin cancer risk, and prevention: A content analysis of eight popular magazines that target female readers, 1997-2006. *Health Communication*, 25, 1–10. doi:10.1080/10410230903265938
- Chris, M. J. (2021). Methodology section for research papers. San José State University Writing Center. <https://www.sjsu.edu/writingcenter>
- Cleland, E.E. (2011). Biodiversity and ecosystem stability. *Nature Education Knowledge*, 3(10):14.
- Coe, K., & Scacco, J. (2017). Quantitative content analysis. *Communication Faculty Publications* 939. <https://doi.org/10.1002/9781118901731.iecrm0045>
- Davies, R. S., Howell, S. L., & Petrie, J. (2010). A review of trends in distance education scholarship at research universities in North America, 1998-2007. *International Review of Research in Open and Distance Learning*, 11(3), 42–56. <https://doi.org/10.19173/irrodl.v11i3.876>
- Delice, A. (2010). The sampling issues in quantitative research. *Educational Sciences: Theory & Practice* 10 (4).
- Dickinson, G., & Hendricks, B. (2023). Shannon-Weaver model of communication: history & examples. Retrieved from <https://study.com/academy/lesson/shannon-weaver-model-of-communication-history-features-application.html>
- Drysdale, J. S., Graham, C. R., Spring, K. J., & Halverson, L. R. (2013). An analysis of research trends in dissertations and theses studying blended learning. *The Internet and Higher Education*, 17, 90–100. <https://doi.org/10.1016/j.iheduc.2012.11.003>
- Elliot, D. (2025). How long is a thesis? Length guidelines for different thesis papers. <https://prothesiswriter.com/how-long-is-a-thesis>
- EMS Guidelines for Thesis (2019). Guidelines for the preparation of the Master's Thesis. [https://www.bu.edu/com/files/2019/11/ems\\_guidelines\\_for\\_thesis.pdf](https://www.bu.edu/com/files/2019/11/ems_guidelines_for_thesis.pdf)
- Fleming, M. (2009). The use of descriptors in learning, teaching, and assessment. <https://rm.coe.int/the-use-of-descriptors-in-learning-teaching-and-assessment/16805a2353>
- Fonseca, M. (2023). Infographic: Importance of describing the setting of a study in your manuscript. <https://www.editage.com/insights/importance-of-describing-the-setting-of-a-study-in-your-manuscript>
- George, T. (2021). Mixed methods research: Definition, guide & examples. <https://scribbr.com/methodology/mixed-methods-research/>
- George, T., & McCombes, S. (2022). How to write a thesis or dissertation conclusion. <https://www.scribbr.com/dissertation/write-conclusion/>
- Gilbert, B. (2024). Thesis length. <https://www.scribd.com/document/710655034/Thesis-Length#>
- Hart, R. P. (2014). Communication and language analysis in the corporate world. Hershey, PA: IGI Global.
- Hearn, S., Stevens, K., & Dewata, P. R. (2025). Outcome mapping. <https://www.betterevaluation.org/methods-approaches/outcome-mapping>
- Hidayat, R., & Wulandari, P. (2022). Structural equation modelling (SEM) in research: Narrative literature review. *Open Access Indonesia Journal of Social Sciences*, 5(6), 852-858. <https://doi.org/10.37275/oaijss.v5i6.141>
-

- Jones, M. M., & Grant, J. (2013). Making the grade: methodologies for assessing and evidencing research impact. 7 Essays on Impact. DESCRIBE the Project Report for Jisc. *University of Exeter*.  
<https://www.theinternationalschoolonria.com>
- King, R., Hooper, B., & Wood, W. (2011). Using bibliographic software to appraise and code data in educational systematic review research. *Medical Teacher*. 33:719-723. 10.3109/0142159X.2011.558138
- Klein, M. (2023). Content analysis in the research on reporting styles. *Standardized Content Analysis in Communication Research*. Springer VS, Wiesbaden. [https://doi.org/10.1007/978-3-658-36179-2\\_6](https://doi.org/10.1007/978-3-658-36179-2_6)
- Krippendorff, K. (2006). Reliability in content analysis. *Human Communication Research*.  
<https://doi.org/10.1111/j.1468-2958.2004.tb00738.x>
- Krippendorff, K. (2013). Content analysis: An introduction to its methodology. 3rd Ed.  
<https://web.stanford.edu/class/comm1a/readings/krippendorff-ch1and4.pdf>
- Lavarreda, C. (2024). Meet the method: Computational text analysis. The NULab for Digital Humanities and Computational Social Science.
- Leavy, P. (2014). The Oxford Handbook of Qualitative Research. <https://doi.org/10.1093/oxford/hb/9780199811755.001.0001>
- Li, X., & Li, T. (2021). The evolving responsibilities, roles, and competencies of East Asian studies librarians: A content analysis of job postings from 2008 to 2019.  
<https://crl.acrl.org/index.php/crl/article/view/24983/32849>
- Luft, J. A., Jeong, S., Idsardi, R., & Gardner, G. (2022). Literature reviews, theoretical frameworks, and conceptual frameworks: *An introduction for new Biology Education researchers*.  
<https://doi.org/10.1187/cbe.21-05-0134>
- Luo, A. (2023). Content Analysis: Guide Methods & Examples. <https://www.scribbr.com/methodology/content-analysis/>
- Makwana, D., Engineer, P., Labhubha, A., & Chudasama, H. (2023). Sampling methods in research: A review. *International Journal of Trend in Scientific Research and Development*. 7(3):762–768. <https://ijtsrd.com/eISSN:2456-6470>.
- Maryati, I., Sumartini, T. S., & Sofyanet, D. (2021). Experiences of the Pearson formula in regression analysis. *IOP Conference Series: Materials Science and Engineering*. 1098 032088. DOI 10.1088/1757-899X/1098/3/032088.
- McLeod, S. (2023). Sampling methods in research: Types, techniques & examples.  
<https://simplypsychology.org/sampling.html>
- Memon, M. A., Ting, H., Cheah, J., Ramayah, T., Chuah, F., & Cham, T. (2020). Sample size for survey research: Review and recommendations. *Journal of Applied Structural Equation Modeling* 4(2):i-xx. DOI:10.47263/JASEM
- Misra, D. P., & Agarwal, V. (2020). Generating working hypotheses for original research studies. *Central Asian Journal of Medical Hypotheses and Ethics*, 1(1), 14–19. <https://scholar.google.com/>
- Neuendorf, K. A., & Kumar, A. (2016). Content analysis. *The International Encyclopedia of Political Communication*. DOI: 10.1002/9781118541555.wbiepc065
- Noor, S., Golzar, J., & Tajik, O. (2022). Simple random sampling. 1(2):78–82. DOI:10.22034/ijels.2022.162982.
- Oleinik, A. N. (2021). Uses of content analysis in economic sciences: An overview of the current situation and prospects. *Voprosy Ekonomiki, NP Voprosy Ekonomiki*. (4). <https://ideas.repec.org/a/nos/voprec/y2021id3098.html>
- Rahman, M., Tabash, I., Salamzadeh, A., Abdul, S., & Rahaman, S. (2022). Sampling techniques (probability) for quantitative social science researchers: A conceptual guideline with examples. *SEEU Review*. 17(1). DOI: 10.2478/seeur-2022-0023
- Randolph, J. J., Gaiek, L. S., White, T. A., Slappey, L. A., Chastain, A., Prejean-Harris, R., & Hansard, C. (2012). A Quantitative Content Analysis of Mercer University Theses. *Georgia Educational Researcher*, 9(1). DOI: 10.20429/ger.2012.090106
- Riffe, D., Lacy, S., & Fico, F. (2014). Analyzing media messages: Using quantitative content analysis in research (3rd ed.). *New York: Routledge*. <https://doi.org/10.4324/9780203551691>

- Riffe, D., Lacy, S., Watson, B., & Lovejoy, J. (2023). Using quantitative content analysis in research. *5th Ed. New York: Routledge*. <https://doi.org/10.4324/9781003288428>
- Rose, S., Spinks, N., & Canhoto, A. (2015). Management research: Applying the principles.
- Rourke, L., & Anderson, T. (2004). Validity in quantitative content analysis. *Educational Technology Research and Development*. <https://researchgate.net/publication/226751197>
- Saharawat, V. (2023). Quantitative Data Analysis: Types, Analysis & Examples. <https://www.pwskills.com/quantitative-data-analysis-types-analysis-examples/>
- Salawu, R. O., Shamsuddin, A. B., Bolatitio, S., & Masibo, S. (2023). Theoretical and conceptual frameworks in research: *Conceptual Clarification*. *European Chemical Bulletin*. 12(12):2103–2117. DOI: 10.48047/ecb/2023.12.12.139
- Schober, P., Boer, C. & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia*. 126(5):1. DOI: 10.1213/ANE.0000000000002864
- Singh, M. P., & Saini, O. P. (2020). Job opportunities in Indian academic libraries: A content analysis of job advertisements 2012-2019. *Library Philosophy and Practice* 4822.
- Steinebach, Y. (2023). Environmental policy outputs, outcomes, and impacts. *Routledge Handbook of Environmental Policy*.
- Subagja, S., & Rubini, B. (2023). Analysis of student learning styles using Fleming’s VARK model in the science subject. *Jurnal Pembelajaran Dan Biologi Nukleus*, 9(1), 31-39. 31-39. <https://doi.org/10.36987/jpbn.v9i1.3752>
- Surdzial, J. (2019). Writing a thesis statement. Academic Resource Center. [https://Thesis%20Statements%20Types%20\(W21\).pdf](https://Thesis%20Statements%20Types%20(W21).pdf)
- Taherdoost, H. (2016). Validity and reliability of the research instrument: How to test the validation of a questionnaire/survey in research. *SSRN Electronic Journal*. 5(3):28–36. DOI: 10.2139/ssrn.3205040.
- Thattamparambil, N. (2020). How to choose the research methodology best suited for your study. <https://www.editage.com/insights/>
- The National University Library (2025). The Research Process. <https://resources.nu.edu/researchprocess/subjectterms>
- Thesis/Dissertation Formatting Manual (2024). UC Irvine Libraries. <https://guides.lib.uci.edu/gradmanual/paper-formatting#>
- Thomas, D., & Zubkov, P. (2023). Quantitative research designs. [https://www.researchgate.net/publication/370630979\\_Quantitative\\_Research\\_Designs](https://www.researchgate.net/publication/370630979_Quantitative_Research_Designs)
- Trochim, W. (2025). Research methods: Knowledge base. <https://conjointly.com/kb/hypotheses-explained/>
- Ulz, J. (2022). How to Write a Review of Related Literature (RRL) in Research. <https://researcher.life/article/how-to-write-review-of-related-literature-rrl-in-research/>
- Verhoef, M.J., & Casebeer, A.L., (2025). Broadening horizons: Integrating quantitative and qualitative research. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3327344>
- Vespestad, M. K., & Clancy, A. (2021). Exploring the use of content analysis methodology in consumer research. <https://doi.org/10.1016/j.jretconser.2020.102427>
- Vogelsmeier, L., Saqr, M., Pernas, S. L., & Jongerling, J. (2024). Factor analysis in education research using R. <https://doi.org/10.1007/978-3-031-54464-4>
- Williams, B. (2024). Content Analysis Theories for Research. <https://insight7.io/top-7-content-analysis-theories-for-research/>
- Williams, B. (2025). Qualitative vs. quantitative content analysis: A comparison. <https://insight7.io/qualitative-vs-quantitative-content-analysis-a-comparison/>
- Wilson, V. (2011). Research methods: Content analysis. *Evidence-Based Library and Information Practice*. 6(4). DOI:10.18438/B8CG9D.
- Wubante, M. (2020). Review of correlation research. *Inter. J. Eng. Lit. Cult.* 8(4): 99-106