Unveiling the Unseen: Harnessing Research Gaps as Inspiration to Illuminate Grey Areas

Muhammad Siddique, Zulfqar Ali**, Syed Kashan Ali Shah****

Abstract

This article seeks to inspire and guide new researchers in identifying and exploring research gaps within existing literature. By highlighting how to pinpoint these gaps and approach research with a focused methodology, it aims to motivate individuals to embark on their research journeys with confidence. The study emphasizes the importance of research gaps and outlines the methods for detecting them and advancing research in a specific field or topic. The study was conducted by reading and evaluating sixty-four papers from well-known databases, including Science Direct and Google Scholar, which provided a strong basis for knowledge of the research terrain. This study offers a thorough manual meant to enable upcoming researchers to enter academic inquiry boldly. This work stands out by providing an innovative framework for new researchers to identify significant gaps in existing literature and pursue meaningful research. Unlike traditional review studies, it directly motivates and equips researchers with the tools and understanding needed to continue research based on these gaps, fostering a fresh approach to scholarly exploration. with any review study, the availability of required data can pose challenges. In some cases, while data is accessible, it may not meet the methodological and analytical needs to support the depth of research required. This limitation can affect the ability to address the research gap fully. The findings of this study hold substantial value for researchers, policymakers, educators, and students by providing practical insights into how to recognize and utilize research gaps. These insights can directly impact future research initiatives and academic policies. This study contributes to the broader scientific and scholarly community by raising awareness of existing knowledge gaps. It encourages further investigation into these areas, ultimately benefiting society by advancing scientific progress and supporting research initiatives that address real-world challenges.

Keywords: ***Significance, guidelines, availability, policymakers, research gap, researchers***

JEL Classification: O30, D78

Correspondence:
**Professor, Faculty of Management Sciences, Hamdard University, Karachi, Pakistan. sidq_1@yahoo.com*
***Assistant Professor, Hamdard University, Karachi, Pakistanzashadab@gmail.com*
**** Assistant Professor, Hamdard University, Karachi, Pakistan alishahkashan@gmail.com*

INTRODUCTION

A research gap refers to an issue or matter that has yet to be addressed by existing studies or research areas. This gap may arise when a novel concept has not been explored or discussed in depth (Itzchakov & Reis, 2023). The identification of research gaps is crucial, as it facilitates significant contributions to the advancement of various fields, including social sciences, technology, medicine, and other research innovations. Research plays an essential role in addressing real-world problems, particularly in disciplines such as environmental science, engineering, and mathematics. It promotes creativity by expanding the boundaries of knowledge and pushing what is possible (Whiteaker & George, 2023). Additionally, research fosters the development of new products, improves educational systems, and refines instructional methods (Ono & Iwai, 2021). Moreover, it aids decision-makers in crafting effective policies aimed at improving administration, achieving desired outcomes, and ensuring a brighter future (Thibault & Pedder, 2022). This study encourages the academic community to explore and address the available research gaps in the literature (Hermansen & Mausethagen, 2023).

A research gap is defined as the absence of relevant knowledge or facts on a particular topic, often indicating a void in the body of literature (Yapa et al., 2021). It can arise when existing research becomes outdated, and there is a need for updated findings. These gaps present opportunities for researchers to explore new ideas or refine previous studies. In academic research, a research gap refers to a knowledge void that has not been fully studied or understood (Afenyo & Caesar, 2023). Identifying these gaps is essential because they serve as a guiding force for future research in the field. Research gaps offer a chance to build upon existing knowledge and address unexplored or poorly understood issues (Hallaji et al., 2022). Researchers can advance their disciplines by uncovering gaps in knowledge and offering fresh insights, discoveries, and theories. Furthermore, addressing research gaps often tackles practical or societal concerns that require attention (Ayalew et al., 2021). By recognizing these gaps, researchers can efficiently plan their studies, focusing on areas that remain underexplored or need further investigation (Tan et al., 2021). This not only prevents redundancy but also ensures that the research is valuable and contributes to advancing the field. Awareness of previously conducted studies allows researchers to focus their resources on gaps that have yet to be adequately addressed (Pace et al., 2023). Scholars across various disciplines can also collaborate to create multidisciplinary approaches to solve complex problems, and research gaps can inform policymakers about areas that require further investigation (Chistov et al., 2021). Highlighting these gaps can ultimately influence policy decisions, resource allocation, and strategies for addressing societal challenges (Singh et al., 2022).

To identify areas that require further research, scholars often conduct literature reviews, analyze previous studies, and critically assess the current state of knowledge (Athanasiadou & Theriou, 2021). This process helps researchers pinpoint areas with insufficient data, conflicting results, unexplored topics, or emerging challenges. The aim of a review paper is to offer a thorough overview, analysis, and synthesis of previous research on a given subject (Kolotylo-Kulkarni et al., 2021). It is a valuable tool for researchers, professionals, and policymakers, as it helps to guide future research, identify gaps, and provide decision-making frameworks based on the most reliable knowledge available (Mélois et al., 2022). A research gap signifies a lack of information or understanding about an issue, often creating opportunities for further study (Yazdani et al., 2021).

Research gaps highlight areas requiring more investigation, particularly where results from previous studies have been inconclusive, inconsistent, or where new issues need exploration (Dai et al., 2021). Identifying these gaps is vital as they lay the foundation for future research endeavours aimed at improving knowledge, answering unresolved questions, or resolving discrepancies in existing literature (Agbajor & Mewomo, 2022). By focusing on these gaps, researchers can enrich the field with new hypotheses, data, insights, or methodologies (Chistov et al., 2021). Several factors contribute to the creation of research gaps, including (a) lack of past research, where insufficient research on a given topic necessitates additional studies to enhance the knowledge base in that area; (b) contradictory findings, where inconsistent or conflicting results from prior studies indicate the need for further research on the specific issue; (c) emerging fields, where new technologies or areas of study necessitate additional research to address the evolving challenges; and (d) irrelevance to practice, where there is a lack of applicable research to address pressing practical issues.

As highlighted by Al-Saraf (2022), identifying a proper research gap is essential for future studies. For example, during the COVID-19 pandemic, a significant research gap in health protection measures for patients was identified, which contributed to the development of vaccines. Similarly, environmental studies have demonstrated that research gaps in different countries lead to unique studies based on the gaps in environmental change research (Wang et al., 2023).

A research gap is not only an area for further investigation but also a call for researchers to explore new knowledge, challenge hypotheses, and uncover facts that have yet to be discovered (Luo et al., 2023). Researchers are often motivated to pursue these gaps as their work is seen as innovative and valuable. They are driven by the idea that they will contribute to the broader body of knowledge and may even be recognized as pioneers in their field. In essence, identifying research gaps is a powerful tool for generating authentic and impactful studies (Pieta & Diodati, 2023).

This research focuses on three key points: (1) the relevant theories that guide review research, (2) how to identify a research gap, and (3) the best methods for finding research gaps in different contexts. Numerous factors influence researchers' motivations to fill these gaps, and these factors may vary depending on individual and environmental circumstances (Abshire et al., 2023). Researchers are often driven by intellectual curiosity, a desire to resolve real-world problems, and the opportunity to advance scientific knowledge (Dong et al., 2022). Moreover, addressing research gaps provides researchers with the potential for career growth, respect, and recognition within the academic or scientific community (Murtagh & Frost, 2023). Additionally, funding and resource availability often depend on the perceived value of the research (Zhou et al., 2022). Researchers contribute to the advancement of knowledge by investigating these gaps and addressing practical issues that benefit society (Abshire et al., 2023; Başöz & Gümüş, 2022; Vonkova et al., 2021).

Researchers are motivated to pursue these gaps not only by personal ambition but also by the societal and scientific significance of their work. Their dedication to knowledge creation and solving real-world problems drives them to investigate these gaps and contribute to academic and scientific progress (Jonek-Kowalska et al., 2021).

Data Collection Method

The relevant review papers were downloaded from Science Direct, Google Scholar, and Google websites to meet the literature requirements for the study. These websites have been used as data collection methods (DCM) or data collection tools for the data collection process.

Research Objectives

1. Evaluate the alignment between existing theories and identified research gaps to determine their suitability for further research.
2. Investigate the appropriateness and effectiveness of different research methods in identifying gaps.
3. Analyze the limitations researchers encounter when identifying research gaps and explore opportunities to address these limitations in future research.

Research Questions

1. How does the application of the research help in identifying research gaps?
2. What research methodologies and techniques are commonly used to identify research gaps, and how do they influence the accuracy and effectiveness of gap identification?
3. What challenges and limitations do researchers typically face when identifying research gaps, and how can these barriers be addressed to improve the gap identification process?

Theoretical Framework

A theoretical framework is a structured set of ideas and principles that guide the understanding and exploration of a research problem. It consists of established theories, models, and concepts that provide a foundation for formulating research questions, conducting investigations, and interpreting findings. Theoretical frameworks offer researchers a systematic approach to their topic and help position their work within the existing body of knowledge.

This article draws upon the Knowledge Gap Theory. First proposed by Tichenor, Donohue, and Olien in 1970, the theory suggests that individuals with higher socioeconomic status generally have greater access to information and can process it more efficiently than those with lower socioeconomic status. This disparity leads to knowledge gaps within society. The theory underscores the importance of addressing these gaps in existing research to ensure equitable access to information and to mitigate the risk of biased or unequal research outcomes.

Conceptual Framework

A theoretical structure known as a conceptual framework is a basis for comprehending, evaluating, and interpreting an issue, phenomenon, or topic. It acts as a roadmap for researchers to understand the links between variables and to conceptualise and arrange their work. Pictorially, these variables have been shown as:

This means that all the researchers depend on the availability of the research gap in a particular area of study. If a research gap exists, then research is possible. Finding a research gap provides the right direction for the researchers. This research has two variables: dependent and independent variables.

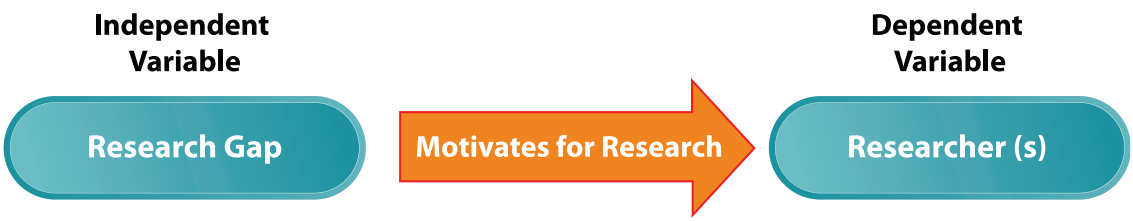

Figure 1: *Conceptual Framework*

Dependent Variable: This is the primary variable the researchers want to study, explain, or make a prediction. It depends on other variables within the framework. Researchers want to know the impact of other factors on dependent variables. Here, the researchers play the role of dependent variables.

Independent Variables: These variables impact the dependent variable(s). They are measured to see their influence on the dependent variable(s). They are potential causes or predictors of the dependent variable (s). In the study, the research gap acts as the independent variable.

EXPLORING A RESEARCH GAP

Exploring a research gap is very important for conducting any research. A researcher always focuses on the existing literature to explore the research gap, and if this succeeds, the next step is to start further research. (Pimentel da Silva et al., 2021). The research gap provides the right direction for a researcher to conduct further research or future research on a specific topic. These techniques and strategies may determine the research gap according to the situations and the existing cases. Pictorially, these methods are shown here, see figure 2:

Researchers might detect gaps in the literature by examining the results of numerous studies (Atanasovska et al., 2022). Experienced researchers can find out the research gap for future research through their strong observatory power. In their field of study, researchers frequently become aware of research gaps through their own experiences and observations (Gibbons, 2023; Scott & Singh, 2019; Vourlidas et al., 2023). A scoping review is a more comprehensive kind of literature review that seeks to map the body of work already published on a particular subject (Hamers et al., 2023; Ke et al., 2023; Nguyen et al., 2023). A meta-analysis also points out the research gaps for further or future research in a specific field (Alotaibi & Barnawi, 2023).

Compiling and statistically analysing the findings from various research on a given subject constitutes a meta-analysis. This method can find gaps, variances, or discrepancies in the available study. Like this, a meta-synthesis includes combining qualitative data from several studies to find recurring themes, patterns, or knowledge gaps (Gordon et al., 2022). According to meta-research, five research gaps were identified based on the most frequently discussed

topics in the literature: creating integrated models for the processes of nutrient transport in the interactions between surface water and groundwater, assessing the impact of crop management practices and climate change on nutrient transport in surface water and groundwater; utilising machine learning algorithms in nutrient transport; and characterising the nutrient transport and in-stream sediment in fluvial environments like rivers and creeks (Poghosyan et al., 2023). This analysis can assist in identifying areas of a topic that have received a lot of attention and those that still need further research (Christensen, 2023; Elsayed et al., 2023; Geiger, 2020).

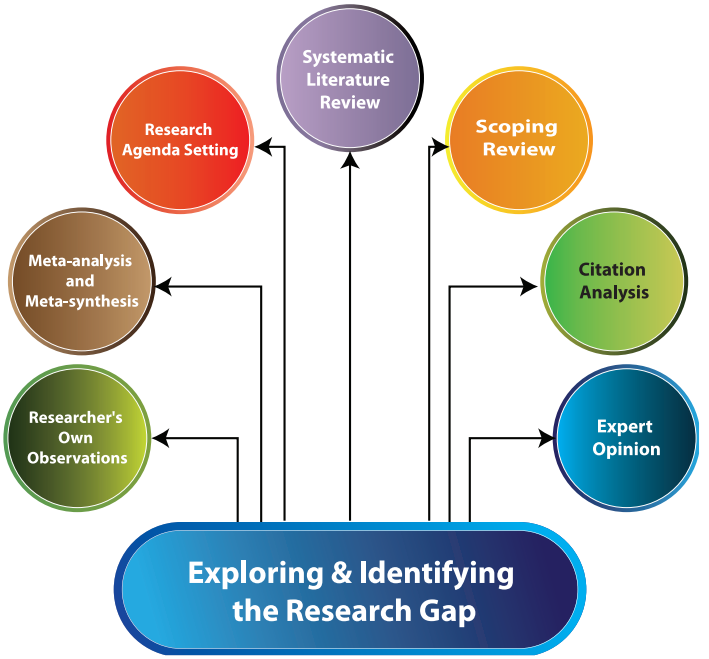

Figure 2: *How to Explore and Identify a Research Gap*

For a particular area, a research agenda is set for further research. Accordingly, the research topics on challenges and opportunities influencing the research endeavour are highlighted in the agenda. Setting a research agenda can aid in identifying research needs (Singhvi et al., 2022). Examples of such agendas come from funding organisations, professional associations, or academic institutions. These agendas frequently identify priority research areas, underrepresented sectors, or emerging subjects that need further study (Huss et al., 2022; Riar et al., 2022; Smith et al., 2023).

Systematic research review is another method of modern research that is the advanced shape of the research review and is considered more reliable than the ordinary research review method (Munro et al., 2023; Senaratne et al., 2023; Sørensen, 2021). To answer the research questions, citation analysis, bibliographic coupling, and co-word analysis are employed, and this method of finding the research gap is becoming famous day by day among researchers (Dwivedi et al., 2023). Consulting subject-matter experts can be a helpful strategy for determining research gaps (Revankar et al., 2023). Experts with in-depth knowledge and experience in each sector might shed light on areas that require more investigation. Professors, researchers, or experts actively working on the topic may be considered among these experts (Dhillon et al., 2021; Mahmood et al., 2023; Wähling et al., 2023).

Researchers can learn about topics that need more research by participating in the research community, attending conferences, and keeping up with recent advancements. It is further explained that combining the above two or more methods may be used to discover the research gap in a particular field of study (Vaishnav & Ray, 2023). If more than one gap-exploration method is used, it provides more satisfaction in finding better results (Zuo et al., 2021). Hence, a research gap provides the proper direction for a researcher to conduct further research on a particular topic or field (Debrah et al., 2022). For authentic research, the prime responsibility of a researcher is always to find the research gap first, and then further work may be started.

RESULTS

The findings of this study confirm that identifying a research gap offers a clear and structured path for conducting meaningful and successful research. Effectively applying the appropriate methods to identify these gaps is a skilful process, and researchers must prioritize this technique when pursuing research in any field. This article contributes to enhancing research literacy by encouraging critical thinking, introducing various research methodologies, and motivating readers to actively engage in advancing knowledge within their respective disciplines. By understanding and addressing research gaps, scholars can make impactful contributions that drive the progress of their fields.

DISCUSSION

The purpose of this study is to explore the research gap, the reasons for finding the research gap and its significance in future research by the relevance of the theoretical framework and methods used in this regard (Zahoor et al., 2023). The research also highlighted a conceptual framework to clarify the research path for understanding the research. The literature studied for this research has been taken from the Science Direct and Google Scholar databases. Addressed how these results filled the research gap and expanded prevailing knowledge. Discussed the pertinent theories that served as a guide for studying the research gap. Outlined how various theories contributed to identifying the main ideas, factors, and connections that make up the theoretical framework. (Amelia-Yap et al., 2022). Linked how the theoretical framework fills a vacuum in understanding the field and connects it to the research gap. In this study, the review research approach was used. Describe the advantages and disadvantages of examining the research gap. Discussed how research findings might affect further studies in the field. (Kabir et al., 2023). In light of the results, these areas need more research or improvement. Potential research avenues, techniques, or strategies that could be investigated to close the research gap (Panda et al., 2022). Various approaches to identifying unmet research needs in the literature are described. The suggestions made are very helpful for improving the efficacy of the research and for other researchers.

CONCLUSION

In conclusion, exploring research gaps is crucial for the advancement of future studies. By identifying these gaps through analytical frameworks and methodologies, researchers can push the boundaries of existing knowledge and contribute to expanding the body of expertise in

their field. This process not only leads to new discoveries and insights but also fosters a deeper understanding of the subject matter. Through a comprehensive examination of the causes behind research gaps, the study has outlined key objectives that guide further investigation and ensure the research is both relevant and impactful.

Investigating research gaps enhances the depth of knowledge by helping researchers identify untapped areas. By reviewing existing literature and focusing on underexplored topics, researchers can confidently contribute to advancing the field. Theories related to identifying research gaps have been discussed, strengthening the rationale for this approach. Additionally, the study highlights the potential limitations of the research process. However, addressing these gaps holds significant value, offering practical solutions to real-world problems and addressing societal needs. This is particularly important in fields like social sciences, technology, and medicine, where identifying gaps can lead to groundbreaking advancements that improve the quality of life.

The study also suggests that applying specific research methods can further enhance the identification of research gaps, encouraging interdisciplinary collaboration. When researchers from diverse fields come together, they can combine perspectives and expertise to address complex challenges and produce more comprehensive findings. Ultimately, exploring research gaps is essential for future progress. It promotes collaboration, broadens understanding, and leads to practical applications that benefit society. By filling these gaps, researchers not only make meaningful contributions to their respective fields but also play a key role in advancing knowledge and fostering social change. The integration of research literacy in this process introduces a new way of linking academia with real-world issues, demonstrating how research can serve the greater good.

FUTURE DIRECTIONS

1. Researchers should work together in the future to establish clear guidelines and standards for evaluating lesser-known research sources, also known as "grey literature." This standardisation will increase the process's dependability and make it easier to compare research findings across different sectors.
2. Bias in the dissemination of research should be addressed. It is critical to ensure that essential but underappreciated research, like grey literature, gets the credit it deserves. Making information more accessible to a larger audience may include the development of centralised databases.
3. Collaboration between researchers and experts in many sectors must be encouraged. By bridging the gap between academic research and lesser-known research sources, such as grey literature, this partnership attempts to improve knowledge of real-world problems and create workable solutions.
4. We must investigate and comprehend how lesser-known research, mainly grey literature, affects our viewpoints, scholarly endeavours, and decision-making procedures. Future research should evaluate this influence to emphasise its importance in knowledge diffusion and decision-making.

RECOMMENDATIONS

1. Enhancing Researcher Skills in Grey Literature

Researchers can develop the necessary skills to identify, evaluate, and integrate grey literature into their work through specialized professional programs. These programs should provide training on the value of grey literature, its role in research, and methods for assessing its credibility.

2. Creating Accessible Repositories for Grey Literature

It is crucial to establish easily accessible online repositories for grey literature, ensuring that they are regularly updated. Collaborations between research centres, universities, and governmental agencies can help maintain these databases and ensure that grey literature remains a valuable and current resource for researchers.

3. Incentivizing the Use of Grey Literature

To encourage the examination and incorporation of grey literature, funding opportunities, prizes, and publication incentives should be offered to scholars. These incentives can motivate researchers to explore and include grey literature in their studies, enriching their work and broadening the sources of information.

4. Ensuring Quality Assessment of Grey Literature

The quality of grey literature should be maintained by ensuring thorough peer assessment conducted by reputable archives and academic journals. This process will ensure the reliability of grey literature and its appropriate use in scholarly research.

5. Long-Term Research on the Impact of Grey Literature

Long-term studies should be conducted to track the evolving role and significance of grey literature in research. Such studies can provide insights into how the use of grey literature influences decision-making, policy development, and the overall advancement of knowledge across disciplines.

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Data will be provided if requested.

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