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Investigation of the Function of Photo Placement in Conveying Meaning and Directing the Audience

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Abstract

Usually, each media has a specific function. Photography is also no exception to this, and in most cases it has been a political, social, promotional, and artistic performer, besides the delightful and individual functions. Since the photo is important as the bearer of reality in creating meaning and knowledge, it is considered as an appropriate tool for various institutions. Each institution carries out specific goals by placing photos in specific backgrounds, and as one of the foundations, culture plays an important role in reading photos and message transmission, which sometimes favors the photo as a message and even being used as complements of main message. Photos such as texts are composed of semiotics and codes that form the content of the photo, and the audience receives it from its history, such as age, gender, culture, etc. Of course, the channels and the context in which the photo is presented to the audience are also effective in the meaning and message of the photo, since every context has a specific function and effect. The question of research is how can the background of photo be able to impose meaning on it? How do extract the meaning from the photo? The research method is descriptive-analytical and information is gathered from library resources. Entries were categorized and discussed in specific groups. Findings show that the photos exhibit different meanings and properties depending on their context; since the codes in the photo, depending on the context of that, as well as the way with the text, which is often used as a text-based photo, undergoes a change of function. Each context highlights and deconstructs the meaning of the photo, so that the meaning of a particular photo can be completely affected by the context. Providing context for a photo is effective in creating a message and meaning specific to the audience. Context can apply its function and purpose in the photo to persuade the audience in a particular direction which is specified by the users.

Keywords: Context, Photo, Context's Function, Creation of Meaning

1. Introduction

One of the important issues of semiotics is the role of context and context in the creation and transformation of the meaning of the signs and sign text. Texture provides context conditions for receiving and reading text. According to this principle, any, its meaning, is constructed according to the context in which it is located. Texts are constantly finding new and different patterns according to the context they are in (Sujoudi, 2004: 150). In this respect, photos also have no fixed meanings and do not appear to be the same for all their audiences. One of the factors that influence the meaning and context of the photos is their presentation. On the other hand, texture is also effective in changing the implicit meaning of each. Pervasive presence of this medium has made it possible for photographic images to always be published in contexts or textures other than their original context. In addition, it should be kept in mind that there is no unique, intrinsic, and eternal meaning in the photos. There are, of course, many ways

to understand the photo; however, we rely on many contextual clues outside the realm of photography to understand the meaning of the photo. We rarely get a photo in its original form, as we usually see photos on large billboards in magazines, in newspapers, on gallery walls or on bus stops. The social meanings of these photos have been told in advance and implicitly (Price, 2013: 82). As stated above, the purpose of this article is to explain the features and function of the context of the photo that has a significant effect on the meaning of the photo. Along the way, the different contexts of photo placement are separated and the carriers are identified, then photos are examined as examples in each section. In the end, a photo of Russell Lee was tested. The questions are: how can the background of photo be able to impose meaning on it? How do extract the meaning from the photo?

2. Review of the related literature

Mohammad Khodadadi Motarjemzadeh (2016), in the article "Photography: The Challenge of Objective Significance and the Subjective Concept," explores the function of variables such as the intentions of the photographer, the cultural beliefs of the audience, the socio-political orientation by powerful media, and the function of the production and presentation media to distinguish explicit and objective implications from implicit ones. Liz Wells (2013), in his book "Photography: Critical Income," takes a brief look at issues of photography theory and ways of thinking about photography, and in chapters she discusses the different ways and situations in which photography is used. Terry Barrett (2007) discusses the role of external and internal contexts in the reading of a photograph in "Photo Criticism" in a chapter, and points out that viewers cannot easily obtain a reliable interpretation unless they consider the function of these factors. Roland Barthes (2012), in his "Photographic Message", which contains a series of articles on photography, photo message content and photo reading, addresses the photo message and the issue that photo reading is highly biased and he does not consider the structure of the photo to be isolated from the context. The present study seeks to distinguish between artistic, political, documentary, and propaganda fields, by focusing on research in the field of context and its function with photography, and to describe and explain incorporate a specific photograph into their various functions. It also offers independent research to be used by researchers, photographers, and institutions, as one of the new aspects of this research to provide an applied discussion for photographers and advertising agencies.

3. Research method

The research method is descriptive-analytical and data is collected using library resources. For this purpose, a variety of in-media and intra-media codes are presented in a table, then the description and explanation of the different contexts of the photograph are discussed and each section of a photo is examined as an example. Finally, a photograph of Russell Lee as a research case study in various contexts has been evaluated.

4. Photo as message

If you consider a photo as a message, it consists of a sending source, a transmission channel, and a reception center. Sending source is the broadcast media editorial board such as magazine, television and so on. A group of expertssome take photos and some others select, arrange and process the photos and eventually others choose a title for the photo and add a commentary to it. The reception center is the same people that are faced with photos through the media. The channel of transmission is either magazine, a newspaper, a television or, more precisely, a collection of messages centered on the photo, but surrounded by text, title, photo description, layout, and more abstractly forms the name of the transmission channel (magazine, television, etc.).Because the name implies a conscious and cognitive audience that can greatly direct the reading of the message, for example, a photograph in a highly conservative magazine is very different from the meaning of that photograph in a Communist magazine. Naturally, even from the point of view of a completely internal analysis, the photo structure is not a single structure, and at least will be associated with another structure which is the same text as the photo (title, caption, or article) because the photo itself has poor meaning. As such, all information is transmitted through two different structures (one of which is linguistics). These two structures are co-operative, but since their components are heterogeneous, they cannot be combined or integrated. In the context of the content of the message the words are formed, in the opposite the content is composed of lines, surfaces, and colors. (Barthes: 2010, 11-11).In other words, a photo is

a message with different codes, such as text with the photo, polishing and corrections (photo manipulation) and context. Changes in each of these factors lead to semantic and purposeful changes in the message of the photo.

5. Codes

Photo is a message made from cultural and social references; a message based on codes. As John Tag has put it, "An image cannot have just one explicit message - all messages are created"(1988: 5-1 Tag). The concept of code is very fundamental in semiotics. Saussure dealt with linguistic codes and emphasized that signs alone are not meaningful and can solely be interpreted when they are related to one another. In fact, coders from Chandler's idea create a framework in which the signs are meaningful. Coding transforms signs into meaningful systems, thereby creating a relationship between sign and signifier. A code is a set of processes that users of a medium such as photography and cinema use. In fact, as Stewart Hall put it, "there is no comprehensible discourse without the function of a code"(Chandler, 2015: 221). Each text is a system of symbols organized according to codes and sub-criteria that reflect certain values, attitudes, beliefs, assumptions and actions. Coders whose scope is more than a few specific texts relate these texts to an interpretative framework that requires producers and interpreters. Media selection clearly influences the choice of codes. That is why we normally judge the content of a book by its covers (Ibid, 234). Daniel Chandler divides all passwords involved in the creation of meaning and reading of human products (codes in media, communication and cultural studies) into three major categories: Social or intra-media codes, text-based or inter-media codes and interpretive codes; depending on the structure of the research, the first two codes are presented in table form.

Table 1: Photo structure

Inter-media codes	Intra-media codes
<ul style="list-style-type: none"> - Aesthetic codes in various arts (poetry, music, painting, photography, etc.). - Stylish and genre codes - Technical codes (light, texture, colors or being black and white) - Media codes (press, technical), page layout. - Vocabulary codes include magazine titles, photos, headlines, photo accompanying text. - Layout (Photo Mode) 	<ul style="list-style-type: none"> - Social codes include physical codes (physical contact, proximity, physical orientation, appearance, facial expressions, looks, head and body movements); commodity codes (fashion, clothing, car); - Ideological codes include the image of political leaders, flags and political symbols.

6. The interplay of inter-media and intra-media structures

Photography is a work of discourse and its performance is measured by the context in which it is placed. Context is something with a specific function that tries to shape everything that is inside it, turning into that being; that is, the function of the context. The message of the photo is also suggested because it acts in the direction of achieving the objectives of the context. The flexibility of the photo media, along with its ability to link different media to one another, has also become a reason for linking inter-media and intra-media elements. One of the most important examples that has given rise to extensive photographic experiences is the connection between text and photography. In the postmodern world of photography, we find many examples where the written text are, or in other words, any verbal explanation such as the title of the work, the subtitle, the artist's point of view, poetry and pre-speech, have an influential role in the photos that cannot be distinguished. In fact, the text plays quite an intrinsic role in the photograph and is an integral part of it (Moghimnejad, 2014: 332).

7. Photo ExternalContext

The exterior background is the position where the photo is presented or found. Each photo is deliberate or accidental in context. We usually see photos in certain situations like books, gallery, museum, newspaper, magazine, bulletin board and classroom. How and where a photo is viewed has a profound effect on its meaning. As Sontag puts it "Every photo is just one piece, its emotional and emotional burden depends on where it stands"(Nojournian, 2004: 113). As Barthes puts it we do not need to consider photos separately from its use

(Barthes, 1988: 52). In 1953, for example, French photojournalist Robert Doisneau took several photos of his favorite French cafes, and eventually a photo in the magazine *Lopuan*, one of France's leading publications, in a special issue of cafes featuring photographs had been published. The photograph was then used in other journals for different purposes even without the knowledge of the art director (Figure 1). The environments in which the cafe photo was presented overshadowed the content of the photo and imposed predetermined concepts that resulted in unfairness to the photographer, the persons in the photo, and the photo itself. Of course, all of this must be attributed to the power of the external context. The photo is framed at the New York Museum of Art and hangs behind a glass, as it stands beside the wall, with a tablet on it which has this sentence on it: "Robert Doisneau, French, Born 1912, in Café, Fers de la Alle, Paris, 1958, 24 x 30 cm". In this exterior context, it's not part of a popular magazine featuring a special letter to cafes, it doesn't preach against drinking; but it has been hung as artwork in one of the most prestigious museums in the world (Barrett: 2007, 143-141). This suggests that the external context of the photo is very powerful and does not allow the viewer to have a personal, unbiased view. Because the external context, such as the caption or the caption of the photo, affects the photo in some way, as if it was message from the sender to the receiver that should be accepted as such.



Figure 1: In Café Fers, Robert Doisneau, 1958

Source: Barrett, 2007: 137

8. Photo and artistic context (museum and gallery)

To be able to think in terms of a means of communication about photography, we must consider both theory of communication in general and, in particular, photography as a kind of visual sign that is produced and used in specific but different contexts. Therefore, photography can be considered as a crossroads of theoretical perception of its production, publication, consumption or reading. "Instead of limiting our attention to the structure of the text, we should study its receptive structure," says Kristeva. This will put the text in the totality of previous or contemporaneous texts and will result in changes (Chandler, 2015: 284). Douglas Crimp believes that the entry of the photo into the privileged space of the museum deprives it of its many potential meanings. In order to emphasize the dignity of the photo as a separate object; as a photo, it was separated from the many territories that were significant in its scope. Crimp's interest is in particular in the work of the Museum of Modern Art in New York, which transforms the photograph into an object that attracts purely aesthetic attention. However, he is the only one attracting our attention to how the Museum of Modern Art of New York embraced the photo as an art object, bringing it into the exhibition space and involving it with the mechanism of research, art criticism, and sculpture that was previously dedicated to painting and sculpture. But Crimp has also explored how the New York Public Library works; he created a photographic section when he became aware of the number of photographs he possessed as well as their historical and financial value. They were searched for photos in all sections of this library, separated from their countless categories and subject areas, and re-classified as photographs, often under the photographer's name (Price, 2013: 83). Crimp says of this type of photography as such a separated form from

its original context which will no longer be useful in the domain of other discourse practices. This photography no longer suffers from information, documenting, certification, visualization, and reporting, because the context of the museum and the library highlights some codes, such as the aesthetic codes in the photo, and limits the function of some of them. From now on, the formerly multiplied fields of photography will be reduced to just one: the aesthetic domain (Crimp, 1995: 72). What is missing is the ability of photography to produce knowledge and information through its interaction with other discourses. A photo that is like an artifact, out of sight and in isolation in a museum, loses its multiplicity and ability to transcend the realms of meaning. Because factors such as photo layout and other complementary elements such as text accompanying the photo are very meaningful and in the museum space no longer considers photography an industrial object that can reproduce in large numbers, instead they look at it as if it were a unique object (Price, 2013: 84). Many critics, including Beaumont Newhall, a prominent American historian and musician, said: "The potential for photography gives it a special form of perception that comes from both the ability to capture moment-by-moment photography and from artistic sensibilities. The striking thing is that photographers did not necessarily consider themselves artists. For example, Julia Margaret Cameron or Lady Clementina Hawarden, British photographers, never claimed to do so, even though their work today is a work of art and has a special place in museum treasures (Wells, 2013: 312). Photographers have a great deal of geographical and aesthetic shifts throughout their lives, reflecting different political contexts. Photography was prominent in the avant-garde movements between the 1910s and 1930s, but it was not necessarily in the form of artistic images and would not be displayed in galleries. At that time, photo montage was a common method used both to express political views and to reflect more generally on social change. For example, the assembled photo of Herbert Bayer of hands and eyes in an urban space can be both an exaggeration and a sign of constant care and supervision, as well as a sign of constant care and supervision, and it can be seen that the hands and eyes are the object of observation and craftsmanship that are central to artistic action (Ibid., 314) (Figure 2). Here, the context of the photo can determine or limit the meaning of the photo.



Figure 2: The Lonely Metropolis, Herbert Bayer, 1932

Source: Liz Wells, 2013: 7

Art galleries are places of some special sort and often have cafes or bookstores. Certainly, the network of galleries offers both visual enjoyment and the development of an intellectual and cultural elitism in the audience. Part of the fun is looking at the images in a conversation about them and their shared reactions. It assumes and reaffirms the biographical and cultural similarities within the context of class, gender, ethnicity, education and the common interests involved in the arts. Art galleries have a particular image in this regard and sometimes become explicitly political campaigns. For example, organizations such as Camerawork and Sid Motion Gallery, both of which had a prominent role in the 1980s, were founded with socialist commitments. In fact, photography is often used in a variety of contexts with a commitment to political empowerment to challenge the dominant aesthetic. On the other hand, private collections, government museums and galleries, along with financial support and government subsidies, have a significant economic impact on the arts (Ibid, 363). In the gallery space, of course, the freedom

of the audience is of a different kind. It is true that the gallery space can also serve political or economic interests, but its primary function is to show the artist's artistic path and to critique the status quo at a later stage, or at least to reveal and present the facts, however biased. Consequently, if the respondent does not feel free to choose meaning and reading in this context, the context loses much of its function.

9. Photo and Documentary Context (Cultural-Social)

It is difficult to create a boundary and separation between documentary, social, cultural, and so forth. Documentary photography can also be promoted through cultural, artistic use, so that each one of them has a special impact on the audience. Documentary photography and press photography are closely linked, and many photographers who work in the field of explicit photography are sometimes referred to as press photographer and sometimes documentary photographer. However, as the name implies, the press photographer has a special connection to other texts and in his/her classical form is seen as a way of narrating current events or illustrating written news reports. Press photography and documentary photography relate to each other in that they both claim to have a special relationship with the real world and provide a precise and authentic view of the world (Price: 2013, 92). Beaumont Newhall believed that photography, which uses the citation strategy, seeks to convey more information and aims to persuade. To this end, they try to represent and construct meaning by ideological codes like using patriotic images that try to influence audiences and public opinion by using social codes such as facial expression and look. Persuasive processes of this kind involve not only the psychology of individuals and collective psychology but also the macro psychology of all cultures and societies. William Stott's book, *Documentary Expression and the American 1930s*, states that what documentary photography provides is not information but an inevitable form of communication that is equally present in all its existential forms. Stott hypothesizes, in their simplest form, on the recognition of the title "information" remain as always a subject of documentary photography (Jussim: 1984, 153). In the 1930s, the ideal form of documentary photography emerged; a form that found its subjects in "social dilemmas" while at the same time advocating a policy of reform and social education. William Stott' (1973) writes in his influential book on documentary photography: *Documentary photography works this way; it does not interpret but imposes its meaning. In the face of the audience, there is such empirical evidence that makes the argument impossible and the interpretation unnecessary. It relies entirely on this evidence; its reality speaks for itself, because what really matters is the truth, so any justified media can convey it. Documentation is not form or style or media, but always content* (Stott, 1973: 14). According to this notion, the documentary genre has such a capacity that it can go beyond the discursive structures of any particular form and become an ideological burden of common sense. In the 1930s, for example, the important task of the documentary photography project was to draw the attention of the audience to specific issues that were often accompanied by a view of changing social or political circumstances. A photo of the Ansel Adams seems to be convincing to describe Stott. It is a bit unlikely to imagine landscapes as a subject of advertising. There is a story of the effect of Adams' photographs in his book "Sierra Nevada" (Figure 3). John Muir Trai was influenced by this book when he was Secretary of State. Harold X was the one who promptly took the book to President Franklin Roosevelt and was impressed by the greatness of these photos. The result was that Congress established half a million acres of King Canyon National Park in 1939 (Jussim, 1984, : 156). This story is an example of how the ideological and patriotic codes of the United States have been highlighted such as the pristine and pure nature of America and the preservation of this national heritage in the photo. Providing an image to the audience at the right time and place promptly provokes action and delivers the required result in a simple cause-and-effect way.



Figure 3: Ansel Adams, Sierra Nevada, 1939

Source : <https://theculturetrip.com/north-america/usa/articles/ansel-adams-the-father-of-american-nature-photography>



Figure 4: Hess, Wang, The Chinese Child, 1937

Source: <http://100photos.time.com/photos/hs-wong-bloody-saturday>

10. Photo and press context

Another area where you can see the performance of the theater community is the field of press photography. Although press photography was a type of documentary photography that made the disasters open and provided information and news, it was also deeply aware of the need for spectacular images and society; images that draw people's attention to newsstands and drive more sales than competitors. With the emergence of publications such as Life Magazine, Picture Post in Britain and the United States in the 1930s, there was a photographic image that determined what was worth the news. Controversial and dramatic images were considered newsworthy for news. Press photographers often interfered in wars and conflicts in order to create more dramatic images. For example in 1937, Wang put a child in the Shanghai bombed-in railway station and showed the audience the harsh image of war by using the codes of moods and faces and choosing the child as the subject and making the play more emotional to create a captivating picture of the devastation and despair of the Japanese bombing (Figure 4). Frequent changes to the scene by photographers have led to the ever-evolving viewer. Such a play is not always available in real life. Magazines refer to events and photos that have this dramatic aspect (Ramamurthy: 2011, 252-250).

11. Photo and political context

We have seen that the press as a context is working to create a flow to bring some together; that's when their message is heard. Every group and faction needs to be supported by a number of people in the community and this requires awareness and propaganda through various media to gain public support. The word propaganda means political propaganda. The first attempt to provide a comprehensive definition of propaganda in 1927 by Harold Lasswell. He defines propaganda as the control of thoughts by special symbols, or rather stories, rumors, reports, images and other communication tools. They use a variety of methods to believe lies and rumors. Techniques such

as photomontage and image manipulation are often used by politicians to confirm big lies. Use of photomontage or manipulated images is very common in election campaigns. For example, during the 1950 US congressional election Helen Douglas was not elected by the people because of a number of photos showing her in the arms of a Communist leader. After the election, she was able to prove that the photos were photomontages (McDonald, 2007: 27). Even simple, distorted photos can be used in different ways. One prominent example of this can be seen in the publication of the photo of Edward (Edmund) Muskie, a serious rival to Richard Nixon during the 1972 US presidential election. This photo shows Muskie in a passive and upset mood (figure 5). Based on the elements in the photo, it appears that he was exposed to dust or snow during the interview, lowering his head and closing his eyes. The viewer of this image may think the interviewee's importance of seeing the interviewer inappropriately in this photo. But the countless publications of this photo in the American newspapers called "Big Man Crying" gave a strange result. Muskie was eventually defeated by his rival Richard Nixon in pre-election polls, and the plurality of the photo was considered one of his defeats, because the codes in the photo were chosen as the carrier, it meant that this person could not continue the path of the powerful presidents of the 1960s. The downward looking face and the half-closed eyes of Muskie, along with the title of "Big Man Crying", could tarnish the image of the former presidents. Even comparing it to his rival Nixon's photo at the same time makes it very pitiful (Figure 6). This skepticism and uncertainty in the public mind, along with multiplying this image and other election campaign tricks led to Muskie's defeat. In this way, it can be assumed that primordial factors can also govern the meaning of the image (Motarjemzadeh, 2016: 72-71). A political advertiser considers guides and codes in his promotional projects as both an incentive to read the message and a contributor to the intended political message. The principle of repetition is one of the most important principles of political propaganda. We deal with unwanted dozens of portraits of political leaders every day, all of which come from the principle of repetition. The photographer first begins to unravel the facts based on his ideology and thinking, in fact he passes the reality through his mental filter, after which the photo editor adjusts the images according to the newspaper's policy. Finally, the editor will allow printing by monitoring the images. So in printing an image report in the absence of any kind of censorship, the reality goes through several filters and the so-called opting out (Nikzad: 2009, 18-18).



Figure 5: Edward (Edmund) Muskie - anonymous photographer

Source: Khodadadi Motarjemzadeh, 2016: 70



Figure 6: Richard Nixon, anonymous photographer

Source: Khodadadi Motarjemzadeh, 2016: 71

12. Photo & Advertising Context (View Products)

View of a scene in which the commodity occupies the whole of social life. The process of commodification is not only seen, but is the only thing that we can see. The world we see is the commodity world (Debord, 1967: 42). There is a photography that does not imply an event and is not exclusively related to promotional photography which is called ready photography. As Michin writes, "These photos are easy to identify; exquisite and light images of attractive models, with crisp, flat colors and white backgrounds. These photos are clearly not so realistic" (Michin, 2004) Quoted by (Ramamurthy, 2013: 255). The main reason for this is that the more generic and multipurpose these images are, the more they can be reused and as a result there would be more sales. "White and simple context, by de-texturing the subject, make the images become more generic. Public spaces are generic like windows, sea, mountains, ocean and a typical street in the city" (Michin, 2004) Quoted by (Ramamurthy, 2013: 256). Michin believes that images change the way we view photography and its uses. Here the photo is not a document and has a symbolic application. Interestingly, these images and codes inside them don't say much. It is the texture that gives meaning. According to Mitchin, this change is partly due to the culture of branded consumption goods. Here the goods are represented with passwords and concepts such as friendship, love, or adventure. These ready-made images must be "remarkable and technically superb but meaningless so they never conflict with the message of the customer" (Marish, 2001) quoted (Ramamurthy, 2013: 256). Advertising photography itself has not created any particular category of photography and instead lends and imitates every genre in photography and other cultural work to modify and transform the meaning of goods. Helen Wilkinson suggests that advertising photography first incorporated seemingly 'realistic' style journalistic approaches and also incorporated narrative through image and text integration, then took advantage of commercial cinematic contracts. The glamor of ordinary works is part of the process by which photography helps the production become full of meanings and attributes that they had no relation to at first. As Karl Marx points out, commodities are usually non-specific objects that are marketed by various social characteristics. Marx calls this process the commodification of commodities, because in the market (wherever things are bought and sold) social nature of other people's work is not evident but the product of their work is highlighted and interacts. Promotional photography plays a pivotal role in Marxists' promulgation of false meanings in commodities in the process of increasing commodification. The essence of advertising in general and advertising photography in particular is to make something seemingly ordinary into an exciting image. This form of commercial photography is a sophisticated yet elaborate visual creation that invites the viewer to visualize a story based on the image rather than merely seeing objects in one view. This final essay shows how business photographers have a good understanding of what advertisers and critics are doing about prominent advertising; the role we play in creating meaning in advertising (Ramamurthy: 2013, 264-259). Advertising explains everything in its own specialized vocabulary. Advertising is interpreting the world. The whole world is turning to the context for fulfilling the promises of a good life. The world smiles at us. The world presents itself to us. Since it seems to present itself "everywhere," "So it must be everywhere" is almost identical (Berger, 2012: 105).

13. Case study photo of "Instruction at Home" in different contexts

Photo by Russell Lee, "Instruction at Home" (1939) (Figure 7) seems to be useful for analyzing contextual function; a young black woman with a cloth on her head wearing an old jumper on a blouse and dusty shoes. There are signs of home objects, including a blackboard. Part of this blackboard is written with: "It's raining" and then an alphabetical row. Two black teenagers are sitting on chair learning and calculating. Environmental factors such as a pitcher of water, a fireplace are also seen.



Figure 7: Russell Lee, Instruction at Home, 1939

Source: http://www.shorpy.com/node/14451?size=_original

Russell Lee's photo is passionate, humane and influential, but for whom and in what fields? Even a single, untranslatable photo can bear sometimes conflicting meanings in different contexts. If this photo is printed in a left party magazine and the title and text accompany it, the following reaction can be deduced from the perspective of a reformist: Blacks in the South are not allowed to read and write. Black villagers lived in the inhumane conditions of poverty, but they courageously worked to teach each other the most important skills to improve their community. So Russell Lee's photo captures the true nature of the black situation before the civil rights struggle of the 1960s. Now the same photo is printed in a right-wing magazine; a right-wing viewer gives a completely different inference: Blacks are a threat to American whites; they are despicable. Look at the phrase "it's raining" every 6-year-old white kid knows this better than them. Teaching them to read and write; they can only have right to vote among themselves. Blacks should not be sent to white schools because their general literacy is lower, they are likely to have food and social security vouchers, and they are precisely the burden of the white (Jussim, 1984: 154-155). Also, if this photo is displayed in an artistic space like a museum, it will have another function. In the museum space, the photo provides a special form of perception that comes from both the ability to capture a moment's recording and the sensitivity of art. As a result, both its qualitative and aesthetic potentials are judged as an art photograph and the visual narrative of the work is viewed from a historical period. The audience is almost free to highlight and give meaning to the work. For example, if the observer is a photographer, he would find the technique and aesthetic issues in this photograph far more prominent than its historical narrative, and if blacks see it, remember the oppression inflicted on blacks and their struggle for rights. This shows that a single photo, explicitly "Instruction at Home" and describing the same elements within the photo can produce different meanings. Also, the context of the photo is effective in the process of meaning and orientation of the meaning of the photo, so the meaning and understanding of the photo can be the result of the users' desire and context.

14. Conclusion

According to the above, one of the determining factors in understanding the image, texture or context is its presentation. Media owners are pursuing their goals and trying to bring the audience with new tools and methods. This is done through the technical facilities of the media and with the help of other media such as the art of photography to bring the concepts and messages desired into a new and attractive mode. Like other cultural-artistic products, photography usually promotes the dominant concepts in society as they are mass-produced. Photo media flexibility, along with its ability to link different media to one another, has become a reason for linking inter-media and intra-media elements such as photo-text linkage. Even the analysis of the internal factors of the photo is not possible without considering external factors such as subtitles and text. As noted in the text, in artistic spaces such as museums and galleries, photographs are deprived of their former meaning and function and are regarded as an artwork capable of aesthetic criticism and judgment. In such an environment, the audience has a greater freedom

to understand the effect because anyone can highlight and decipher the code in the photo, and ultimately judge and criticize it in terms of political, gender and age. In the field of documentary, the purpose is more to show the reality and convey information, to inform the viewer of a subject or to draw attention to it. To this end, the photographer or messenger tries to make sense of it and even stimulate public opinion to improve social conditions and problems by choosing intra-media codes such as text or media, technical uses and even for photography like the photo of Ansel Adams who made these lands a national park because of his photos of Sierra Nevada. The same is true in the political and press contexts. However, the political advertiser, by choosing reality in his or her photos, encodes encryption that has both the incentive to read the message and the helping role to induce the political message they want. Like the political context, the media provides individuals with the means by which they create identities and meanings. Also, every ruling class needs to penetrate public opinion to survive and expand its ideology in order to expand and consolidate its control over society. In this regard, it is the most important propaganda tool, and photography has always been used as a medium for dealing with the community as a propaganda tool in such systems. On the other hand, governments or societies that are in need of self-defense and justification, use ideological methods to add to their followers. Throughout the history of photography, mono-graph has influenced hundreds of films, articles alone, and has played a key role in changing and directing public opinion. Induction of message and meaning in advertising is such that it turns something seemingly ordinary into an exciting and appealing commodity and, by symbolizing and magnifying the commodity, arouses a sense of need and fear in the audience."Advertising belongs to the future but getting to that future is endlessly delayed but still achievable, because the honesty of advertising is not judged by the actual fulfillment of its promises, but by the power of linking its fantasies to the viewer and the buyer. Its main application is not in the realm of reality but in the realm of fantasy. The individual is either fully aware of this contradiction and its causes and is pursuing a conflict that requires the destruction of capitalism or continues to live under the jealousy that derives from his/her unfinished feeling and lives on his/her fantasies (Burger, 2012: 101-100).

Post script

- Robert Doisneau: French photographer (1912-1 1994) photographing on the streets of Paris in the 1930s. He is one of the most famous and influential photographers of the 20th century and one of the pioneers of news photography.
- Beaumont Newhall: Author, Historian and American Photographer (1908-1993), his famous book is The History of Photography.
- William Stott: Born 1940, American scholar and author
- Ansel Adams: (1902-1988), an American photographer. Most famous for his photos of nature and the landscapes of the American West
- John Muir
- Franklin Roosevelt: (1882-1945) 32th US president of the Democratic Party
- King canyon: The name of the national park in northern Sierra Nevada
- Life Magazine: It's an American weekly that focuses on news photos
- Picture Post: It is a magazine focused on news photos in England (1938-1938).
- Propaganda
- Harold Lasswell
- Helen Douglas
- Edward (Edmund) Muskie (1914-1996).
- Richard Nixon (1913-1994)
- Michin
- Carl Marx: he (1818-1883) is a revolutionary thinker, sociologist, historian, German economist and one of the most influential thinkers of all time. Marx, together with Friedrich Engels, published The Communist Declaration (1848), the most famous treatise in the history of the socialist movement. He is the author of the book "Capital".
- Marxist: Followers of the school of Marxism, founded by Marx in the late 19th century.
- Instruction at Home

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Telling Chinese Stories in English: A Study on Strategies for Cross-cultural Communication and Dissemination

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Abstract

This study aims to deeply explore effective English narrative strategies and focuses on analyzing their roles and significance in global cultural communication and dissemination. By breaking through the boundaries of language and culture and utilizing English, a global language, Chinese stories can be shared more precisely and vividly, which is crucial for enhancing the international influence of Chinese culture and promoting international understanding and cooperation. This paper fully recognizes the limitations of current Chinese stories in international communication and conducts a detailed analysis from two dimensions: translation methods and communication channels. In terms of specific strategies, this paper focuses on two key points: First, in English-Chinese translation strategies, it requires a combination of free translation, creative translation, and annotation explanations; second, in the strategy of external communication, it is necessary to enhance cultural confidence, diversify external communication, change the communication content from the perspective of the audience, and learn from excellent cases.

Keywords: Chinese Stories; Cross-Cultural Communication; Communication Strategies

1. Introduction

With the rapid development of information technology and globalization, communication and exchanges among countries have become increasingly close, and the collision and integration of different cultures have become more frequent. With the continuous improvement of China's influence on the world stage, our country attaches more importance to cultural exchanges and dissemination with foreign countries. Even the 20th National Congress of the Communist Party of China pointed out that it is necessary to accelerate the construction of the Chinese discourse and narrative system, tell Chinese stories well, spread Chinese voices well, strengthen the construction of international communication capabilities, and comprehensively enhance the effectiveness of international communication (Zhang Xiangxiang, 2023). In such a general environment, the demand for cross-cultural communication is increasingly urgent. As the most widely used language in international communication, English provides a language bridge for the dissemination of Chinese stories. However, due to differences between countries, telling Chinese stories faces many challenges in cross-cultural communication. On the one hand, the invisible barriers of language and culture have, to a certain extent, hindered the dissemination of Chinese stories. On the other hand, China itself still has deficiencies in the way of telling stories, content selection, and

communication channels, resulting in the insufficient influence of Chinese stories internationally. To enhance the influence of excellent Chinese culture and promote mutual exchanges and understanding among different cultures, we need to seize the opportunity of the increasing attention of the world to China, convey the Chinese voice powerfully, and show the real, three-dimensional and comprehensive China to the world. Therefore, in-depth research on cross-cultural dissemination of Chinese stories can better meet the needs of the international community to understand China and show China's unique charm.

2. Literature Review

2.1 Research on Cultural Differences between China and the West

Due to the disparities in living environments and ethnic backgrounds, the cognition and understanding of the same thing by the people of China and the West often vary, which may lead to misunderstandings when interpreting the cultural connotations of other countries. Given that language and writing serve as vessels for culture, and there are differences in language, thought, and culture among different regions and groups, linguist translator John Catford proposed that translation can be divided into linguistic untranslatability (i.e., in terms of language form, there is a lack of corresponding formal features of the source text in the target language) and cultural untranslatability (i.e., the contextual features related to the function of the source text do not exist in the target language culture) (Tan Zaixi, 2000). Additionally, Humboldt also pointed out: "Each language is unique and has its own unique intrinsic nature. Every word is also unique, and thus there is no completely equivalent expression in other languages (Douglas Robinson, 2006)." On the other hand, Benjamin believed that although literary translation can convey certain information and ideas, it also loses some important elements, such as the language itself (Zhang Yu, 2019).

Language and writing are not only one of the most important means for humans to convey information and communicate, but they can also truly reflect the ecology, customs, religion, society, and many other aspects of a country or nation. Different languages reflect the thinking patterns, expression methods, behavioral habits, and customs and cultures of different nations and countries. These cultural differences will inevitably produce many culture-loaded words that are unique to each nation and cannot find completely equivalent expressions in other languages. Culture-loaded words refer to things, phrases, and idioms that are unique to a certain culture. These words reflect the unique ways of activity gradually accumulated by a specific nation in the long historical process and are different from those of other nations. (Liao Qiyi, 2000) In translation practice, the translation of culture-loaded words has always been the most difficult part and a concentrated manifestation of untranslatability. For example, taking "龙" as an example, in China, the dragon is a mythical animal and a symbol of imperial power, with the supreme status. In the West, the dragon is a representative of evil and is regarded as the incarnation of Satan in Christianity (Yao Dong, 2014). Such cultural differences lead to difficulties in finding a completely equivalent word to express the culture-loaded words in the source language during the translation process, thus posing many challenges to translation work.

2.2 Research on the International Dissemination of Chinese Culture

"Telling Chinese Stories in English" is an emerging research field. There are relatively few domestic studies in this area, but it essentially still belongs to the category of "telling Chinese stories" and is an important part of the "going global" strategy of Chinese culture. It has profound significance for promoting Chinese culture to the world and is an extremely valuable topic.

The "going global" of Chinese culture is a multi-dimensional and complex systematic project. It not only shoulders the historical mission of inheriting and promoting national culture but is also closely related to the shaping of the country's cultural soft power and the enhancement of its international status. From the perspective of building the national image and telling Chinese stories well, Chu Shulong deeply analyzed the intrinsic connection between Chinese stories and the international image in "Chinese Stories and China's International Image", emphasizing that telling Chinese stories well and shaping a good international image are the core tasks of China's foreign publicity work (Qin Jingting, 2020).

Lin Keqin, from the historical dimension, sorted out the peak periods and causes of the international dissemination of Chinese culture during the Qin and Han, Tang and Song, Ming and Qing dynasties, etc., providing valuable historical references for the current going global of Chinese culture (Lin Keqin, 2018). He pointed out that in the face of the challenges of cultural deficit and cultural security, we need to actively seek dialogue and exchanges with countries around the world while adhering to our own cultural value system.

In addition, educational exchanges are also an important way for Chinese culture to go global. As a landmark project for the going global of Chinese culture, the Confucius Institute's successful experience is worthy of in-depth summary and promotion. Chen Jie's research shows that the Confucius Institute has played an important role in cultural exchanges and dialogues. He suggests that we maintain an open and inclusive attitude in the dissemination process and adjust and optimize the content and methods according to the needs of different audiences (Chen Jie, 2013).

To sum up, the international dissemination of Chinese culture is a complex and multi-dimensional issue that requires in-depth analysis and exploration from multiple perspectives. However, there are also some deficiencies in the current research, such as insufficient attention to the application of new media in cultural dissemination and a lack of research on the appropriateness of the use of the English language. Therefore, in the future cultural dissemination practice, we should pay more attention to the preferences and cultural differences of foreign audiences and precisely adjust and optimize the dissemination content to ensure the effectiveness and pertinence of cultural dissemination.

3. Cultural Differences between China and the West

Cultural differences, as the unique manifestations of various elements such as language usage, values, behavioral habits, religious beliefs, social structures, and historical accumulations among different countries, ethnic groups, and social groups, have their roots deeply embedded in the intertwined influences of multiple factors such as different geographical environments, historical evolution stages, religious belief systems, and social institutional frameworks, and gradually take shape over time. Translation plays an important role as a bridge and link in this process. Therefore, in the process of translation, translators must have a comprehensive understanding of the cultural differences between China and the West, so that they can deepen mutual understanding and trust and establish a harmonious diplomatic relationship while engaging in cross-cultural communication.

3.1 Differences in Color Connotations

Color words, as a part of the language expressions people use in daily life, play a crucial role in the process of transmitting and communicating information. In international communication, each country has its unique culture and has its own distinctions in understanding the meanings of colors. Therefore, when telling Chinese stories to the outside world, it is necessary to compare the connotations of colors in Western countries. This is conducive to accurately conveying Chinese culture in the process of external communication and avoiding misunderstandings that may affect the effectiveness of dissemination.

Red naturally reminds people of the color of flames. Since ancient times, red has been closely linked to flames and occupies a significant position in Chinese culture. For instance, in the classic literary masterpiece *Dream of the Red Chamber*, red is used as the title, highlighting its importance. In traditional customs, weddings are dominated by the color red, with elements such as red clothes and red double happiness characters creating a strong festive atmosphere (Yang Zhongqing, 2015). In modern times, red has been endowed with new meanings of revolution and progress, such as 红色政权 and 革命红军, further enriching the positive connotations of red in Chinese culture. In contrast, in Western culture, the word "red" is more associated with negative images such as bleeding, violence, and anger. For example, "red ruin" is often used to refer to a fire, and "see red" or "red with anger" vividly describes the emotional state of anger. At the same time, red also symbolizes danger, such as the red light in traffic signals, clearly instructing people not to pass to prevent traffic accidents.

Accordingly, it can be seen that there are significant differences in the meanings carried by 红色 and red in Chinese and Western cultures, so in the process of promoting Chinese culture, we should adopt a combination of translation strategies to avoid the cognitive barriers that may be brought about by purely direct translations, in order to promote the understanding and communication between different cultures.

Black, due to its association with elements such as night and darkness, generally carries negative and passive meanings in both Chinese and Western cultures. In Chinese culture, black is often used in derogatory expressions, such as “黑幕” and “抹黑”, and symbolizes evil, such as the term “黑心肠” which is used to describe sinister and vicious people. Similarly, in Western culture, black is also unpopular and is regarded as a symbol of sorrow, bad luck, and sin. In funeral occasions, people wear black clothing to express their mourning, and black thus creates a sad and melancholy atmosphere. Moreover, black also represents evil and crime, such as the term “black guard” which refers to villains and hooligans. At the same time, black also symbolizes disgrace and dishonor, such as the term “black sheep” which is used to refer to a family member who brings shame upon the family.

Thus, colors also have similarities and commonalities in Chinese and Western cultures, which are conducive to the dissemination and understanding of cultural connotations and also reflect the universal cognition of certain things among people. However, in the translation process, we still need to pay attention to the specific context and meaning, because even the same thing may have slightly different connotations in different cultural backgrounds.

3.2 Differences in Animal Symbolism

In the vast fields of Chinese and Western cultures, animals are closely related to human daily life, and their related vocabulary also contains rich symbolic meanings and cultural connotations. Each animal has its own unique characteristics, and due to differences in social and cultural backgrounds and historical contexts, their symbolic meanings often vary greatly.

In traditional Chinese culture, dogs are often regarded as negative words, symbolizing baseness, ugliness, and sycophancy. Idioms such as “狐朋狗友”, “狗急跳墙”, and “狼心狗肺” all reflect the negative image of dogs in the Chinese language (Xu Ping, 2018). Despite the increasing number of people keeping dogs as pets in modern society, this derogatory image of dogs is still deeply rooted. Although the number of people keeping pet dogs is increasing in modern society, this negative connotation of dogs is still deeply rooted.

In contrast, in English culture, the dog is seen as a loyal companion and friend of humans, and related vocabulary often carries a positive connotation. For example, expressions such as “a lucky dog” (i.e., a fortunate person) and “love me, love my dog” (i.e., love extends to those close to the one you love) all demonstrate the deep affection and high respect that the English have for dogs.

Although there are many differences in the emotional attitudes towards animals and the underlying cultures between the East and the West, it cannot be ignored that in many aspects, whether in the East or the West, the relationship between humans and animals is very close, and there are still similarities in the cultural connotations of animals in both cultures.

Given the unique living habits and physical characteristics of animals, people often make corresponding associations, which leads to the fact that the same animal often carries similar cultural connotations in Chinese and English contexts. For example, the word “狐狸” or “fox” is used in both languages to express the trait of cunning, as in the expression “as cunning as a fox” (i.e., 像狐狸一样狡猾), which is widely used in both Chinese and English contexts. Similarly, bees, due to their positive image of hard work in collecting honey, are endowed with the symbolic meanings of diligence and busyness in both languages, especially teachers, who are often vividly compared to hardworking bees (Xu Ping, 2018).

There are differences and commonalities in the cultural backgrounds, historical traditions, and aesthetic values of the East and the West, and the connotations of animal vocabulary in different cultures have unique meanings. Only

by deeply understanding and recognizing the differences in the expressions of different cultures can we have a more comprehensive understanding of different cultures and thus promote the effective conduct of cross-cultural communication.

3.3 Differences in the Connotations of Numbers

In the long course of human civilization, numbers have transcended their single function as counting symbols and are deeply rooted in rich cultural connotations. Due to the unique cultural backgrounds of China and the West, the meanings of numbers in the two cultures present significant differences. In Chinese culture, numbers often carry connotations of expectations and taboos, while in Western culture, numbers are often closely related to religious beliefs and legends.

In Chinese culture, the number “3” has rich cultural connotations. *The Origin of Chinese Characters* points out: “Three represents natural law, universal law and humane law. It is determined from these three elements.” This sentence reveals the profound understanding and emphasis that the ancients had for “three”. In the *Tao Te Ching*, the discussion that “three gives birth to all things” further endows “three” with the symbolism of auspiciousness, wisdom, and vitality. In ancient etiquette, the repeated appearance of “three”, such as the three bows during a wedding and the three kowtows during a sacrifice, all highlight its solemnity and seriousness. In addition, traditional auspicious patterns and sayings such as “三多九如”, “福祿寿三星”, and idioms such as “三阳开泰” all reflect the auspicious connotations of “three” in Chinese culture.

The number “6” is widely welcomed in Chinese culture and is regarded as a symbol of auspiciousness. From the *Six Classics* and *Six Arts* of the pre-Qin period to the folk saying “六六大顺”, and to the lunar dates of the sixth, sixteenth, and twenty-sixth being considered auspicious for weddings, all reflect the connotations of smoothness and success of “6” in Chinese culture. However, in Western culture, “666” in the *Bible* refers to Satan and the devil, so the number “6” is considered an unlucky number in Western culture, which is in stark contrast to the auspicious meaning in Chinese culture (Geng Liangliang, 2014).

Differences in numbers are one of the important manifestations of cultural differences between China and the West. Numbers are closely related to the lives of people in China and the West, so in the process of cultural exchange and dissemination, we should pay more attention to the understanding and respect of these cultural differences to promote mutual understanding and integration of cultures.

4. Deficiencies in the International Dissemination of Chinese Stories

4.1 Deficiencies in Translation Practice

Language is the carrier of culture, bearing profound national characteristics and unique connotations, which leads to the emergence of culturally specific vocabulary. This makes it difficult to find direct English equivalents in the translation process, thus forming the untranslatability of language in translation. This phenomenon further gives rise to a series of cultural dissemination problems in translation practice.

Take “龙” as an example. In current translation practice, it is often simply translated as “dragon”. However, this translation method fails to fully reflect the rich connotations of the “龙” in Chinese culture and only stays at the level of literal. In Chinese, the meaning of the “龙” is deeply influenced by context, and its meaning varies in different contexts, which is in sharp contrast to the single meaning of the dragon in Western culture. The “龙” in Chinese culture symbolizes auspiciousness, authority, and other multiple images, while the Western dragon often appears as an evil dragon. Therefore, translating “龙” as the transliteration “loong” is more accurate in conveying the essence of Chinese culture than “dragon”.

However, direct transliteration is not a perfect solution either. Some concepts in Chinese have no direct equivalent vocabularies in English culture. For example, “道”, as an important religious belief, is often translated as “road”

or “way” in English, but neither can accurately convey its deep meaning. In translation practice, scholars often use phonetic translation to deal with such words, such as the English translation of *Huainanzi*, which translates “道” as “dao”, “Dao”, “Tao” in the English translation of *Huainanzi*, for example, although this practice retains the original style, it brings the problems of missing meaning and unclear expression, as well as the lack of unity and easy to cause readers to understand the obstacles. For instance, in Zhai Jiangyue’s translation, “含德之所致” is translated as “Such a realm accounts for bearing De”, where “德” is directly transliterated as “de” without any annotations for explanation, which undoubtedly increases the difficulty for foreign readers to understand (Ding Lifu, Wei Yongyu, 2023).

In addition, adopting different phonetic translation measures without considering cultural differences can also lead to poor translation results. In the translation of trademarks for characteristic agricultural products, some enterprises use phonetic translation but fail to fully consider the cultural connotations carried by the trademarks, resulting in products that lack appeal and are difficult to understand. For example, “蜜柚” is translated as “watermelon”, and “沙田柚” is translated as “sharkroom”. Although these translations reflect the characteristics and uses of the products to a certain extent, they fail to let foreign consumers accurately understand their true meanings (Lu Lihong, 2024).

4.2 Deficiencies in Dissemination Channels

As China’s comprehensive national strength becomes increasingly stronger and in foreign exchanges, overseas countries and people have gained a certain understanding of Chinese culture. However, the overall understanding only remains superficial, and the deep meaning of Chinese culture is not well understood. It is prone to being influenced by their own cultures, thereby resulting in comprehension deviations. The problems in the dissemination channels of telling Chinese stories to the outside world mainly exist in three aspects: disseminators, media, and audiences.

4.2.1 Lack of Confidence in Chinese Culture among Disseminators

In the past, China’s implementation of a “closed-door policy” restricted exchanges with the outside world, resulting in its lag behind Western countries in various aspects such as science and technology and culture. Under this policy, the lack of communication with other countries led to a stagnation in national development and an increasing gap with Western countries. Western countries, benefiting from industrial progress, experienced rapid economic growth, which in turn promoted the development and innovation of cultural industries. In contrast, China, due to its isolation, failed to develop in various aspects and its culture lost vitality, leading to rigid thinking and a cultural development dilemma. Especially since the Opium War, the country has been continuously invaded by Western powers. Under this crisis, the gap between the strong national confidence of the high Tang Dynasty and the frustration of the backward situation has led to a certain degree of loss of confidence in the country and its culture.

With the founding of New China, especially since the launch of reform and opening up, China’s exchanges with the world have become more frequent, and a large amount of foreign culture has also entered China. In the past, the Chinese people were long oppressed and still had an inferiority complex about their own culture. In addition, Western countries had developed economies and long propagated the “Western-centric theory”, making people believe that Western culture was advanced while other cultures were backward. Moreover, foreign culture was a novelty to the Chinese people, arousing their curiosity and leading them to pay attention to foreign cultures. This resulted in groups such as “Korean fans” who were infatuated with other countries’ cultures and the allure of the “American Dream”, causing people to gradually lose interest in their own culture.

If the disseminators lack confidence, there will be certain obstacles to spreading Chinese culture abroad. Therefore, cultural confidence is a necessary prerequisite for spreading Chinese culture to the outside world. In the current context of globalization, where cultural exchanges between countries are becoming more frequent, if the

disseminators lack confidence, it will be difficult to effectively convey the core and spirit of the culture, and it will also be hard to make foreign people identify with and accept it.

4.2.2 Deficiencies of Media in Cultural Dissemination

Although China's influence has significantly increased compared to the past, in the process of spreading Chinese culture and telling Chinese stories abroad, it is still constrained by Western traditional media. In the current global cultural dissemination pattern, Western media, with its first-mover advantage, strong funding, advanced technology, and sophisticated dissemination system, still holds a leading position and has strong discourse power, which restricts the entry of other emerging media. In the past, China lagged behind Western countries in both economic and cultural construction and the emphasis on spreading culture abroad, resulting in an overall weak position in spreading Chinese culture abroad and affecting the effectiveness of cultural dissemination.

From the perspective of the coverage of Chinese media abroad, China's mainstream media, which comes from traditional Chinese media, has not widely entered the mainstream society of Western countries (Wang Kemian, 2020). The failure to widely enter the mainstream society of Western countries will lead to a reduction in the audience. Moreover, the prejudiced reporting of Western media on Chinese media will further hinder the expansion of Chinese media into overseas markets.

In addition to insufficient coverage, China also has a lack of diversity in the channels for spreading Chinese culture abroad. In the process of external dissemination, China mainly uses the official forms of government agencies for external publicity, such as Confucius Institutes and Xinhua News Agency, which have official background. Although this official form can make the released information more accurate and prevent the spread of some undesirable cultures in the process of spreading Chinese culture abroad, it is not the best way. Disseminating in an official form may lead foreign audiences to misunderstand it as a cultural invasion, lacking "affinity", and may even lead to an aversion, thereby reducing their attention to Chinese culture. Since China mainly uses official forms for external dissemination, it has to some extent weakened the emphasis on external cultural exchanges through the non-governmental channels.

4.2.3 Limitations of the Audience

The effectiveness of the international dissemination of Chinese culture is closely linked to the identification and acceptance of the target audience. The educational background, cultural needs, and other factors of the audience are key considerations in formulating strategies for the international promotion of Chinese culture. At present, when promoting Chinese culture abroad, it often fails to fully consider the actual needs of the audience, leading to inaccurate choices in content, channels, and forms, and sometimes even causing misunderstandings and negative public opinion.

The international audience of Chinese culture has a wide diversity and uniqueness. Their differences in education level, personality, religious beliefs, and other factors affect their selection and response to cultural content. This diversity means that the effectiveness of the international dissemination of Chinese culture will vary. Although we have attracted a large number of audiences, there are still challenges in effectively managing and meeting the needs of the audience. The quality and diversity of cultural content have not yet reached an ideal state. The effectiveness of the international dissemination of Chinese culture is mainly reflected in individual audiences, but there is currently a lack of precise and differentiated management of the audience, which has led to some misunderstandings and problems.

In addition, an in-depth understanding and analysis of the cultural and psychological needs of the audience is the key to successful cultural exchanges. However, the international communication of Chinese culture is often self-centered, tending towards one-way and collective advertising, ignoring the interests and actual needs of the audience. This communication method lacks interaction and dialogue, leaving a stereotypical and boring impression, affecting the effect of cultural exchanges, and making it difficult to meet the diverse needs of foreign audiences for Chinese culture (Li Jianxia, 2020).

Audience feedback is an important indicator for evaluating the effectiveness of cultural international dissemination and the basis for innovating content and forms. At present, the dissemination of Chinese culture neglects the importance of audience feedback. Due to the dispersed audience groups, we may fail to comprehensively collect and systematically analyze audience feedback. Moreover, the lack of smooth feedback channels leads to scattered and untimely feedback information. Therefore, it is crucial to establish a complete feedback mechanism. In the process of international dissemination of Chinese culture, we often fail to pay sufficient attention to audience feedback. Even in the few cases where analysis is carried out, there is a tendency towards subjectivity, which seriously affects the dissemination effect.

In general, the international dissemination of Chinese culture overly emphasizes the role of the disseminators while neglecting the subjective initiative of the audience. Aspects such as examining the quality of the audience, analyzing their psychological needs, and collecting and analyzing feedback information have not received enough attention.

5. Strategies for the International Dissemination of Chinese Stories

5.1 Chinese-English Translation Strategies

Translation practice, as a key way to promote language exchange and cultural dissemination, often encounters multiple challenges in actual implementation. Language and culture are complementary and influence each other, and language is the carrier of culture. At present, in the process of translating texts, a core issue urgently needs to be clarified, that is, the demarcation of translatability and untranslatability. The degree of clarification of this issue has an important impact on whether Chinese culture can be disseminated more deeply overseas.

Translatability, in simple terms, refers to the ability to accurately and completely convert the original text information into another language. For example, basic vocabulary and concepts such as “苹果 (apple)”, “水 (water)”, “快乐 (happy)” can find direct equivalents in most languages. Similarly, simple everyday dialogues such as “早上好! (Good morning!)” and “你叫什么名字? (What’s your name?)” have simple structures and clear meanings, making them easy to translate across languages. Most basic vocabulary and concepts, as well as simple everyday dialogues, can find direct equivalents in most languages.

However, it is worth noting that certain words or expressions require extra caution during translation. Take the Chinese word “爱人” as an example. If it is directly translated as “lover”, it may cause misunderstandings because “lover” often refers to a lover in English. A more appropriate translation should be “spouse” or “beloved”. Similarly, if the Chinese word “农民” is simply translated as “peasant”, it may be inaccurate because “peasant” has a derogatory connotation in English, referring to poorly educated and relatively poor country people. In contrast, the word “farmer” is more appropriate, specifically referring to people engaged in agricultural production. Therefore, this requires translators not only to be proficient in both languages but also to have a deep understanding of the two cultures to ensure the complete retention and accurate transmission of the meaning of the original text during the translation process.

In actual practice, we often encounter situations where the content can be translated literally, but its deeper meaning or cultural background is difficult to find an exact equivalent in the target language, which is what we call the problem of untranslatability.

Untranslatability does not mean that certain contents are completely impossible to translate. Instead, it indicates that in translation practice, we often have difficulty comprehensively and accurately preserving the deep meaning, emotional color, and unique style features of the original text, which may lead to comprehension deviations for the audience when reading. In response to this challenge, we can adopt the following strategies:

5.1.1 Free Translation

The essence of some poetry or idioms often lies in the phonetic beauty, rhythm, and rhetorical techniques of the language, which are difficult to find precise equivalents in cross-language translation. Moreover, cultural differences can also lead to the loss of the original cultural connotations during the translation process. For example, the ancient Chinese poem “大漠孤烟直，长河落日圆” depicts a vast and desolate scene that is difficult to fully replicate in English. Although the English translation can convey the literal meaning, it is hard to capture the unique aesthetic charm and artistic conception of the original poem. To convey the artistic conception of such poetry, a free translation strategy can be adopted, striving to reproduce the emotional tone and atmosphere of the original poem. At the same time, vivid descriptions and rhetorical devices can be used to enhance the expressiveness of the translation. For example, “大漠孤烟直，长河落日圆” can be translated as “In the vast expanse of the desert, a solitary column of smoke stands erect, while along the lengthy river, the setting sun appears perfectly round.” By using specific descriptions, a similar artistic conception can be created.

Therefore, by applying the strategy of combining free translation with literal translation, we can better convey the original cultural connotations of ancient poetry during the translation process, making it easier for the audience to understand. This will help to deeply spread Chinese culture and achieve the goal of Chinese culture going global.

5.1.2 Creative Translation

Chinese proverbs with puns, such as “外甥打灯笼——照旧（舅）”, are difficult to find direct equivalent expressions in English. When translating such puns and proverbs, it is often necessary to abandon the pun and only convey the literal meaning. For these types of puns and proverbs, creative translation can be attempted to find alternative expressions in English that have similar humorous effects or expressiveness; or explanations can be added after the translation to clarify their pun meanings. For example, “外甥打灯笼——照旧（舅）” can be translated as “When the nephew carries a lantern, it’s as if things remain unchanged. (Note: In Chinese, “照旧” and “舅” share the same pronunciation, creating a pun that is difficult to replicate in English.)” In this way, the pun can still be preserved, and the audience can better understand Chinese culture.

5.1.3 Plus Annotation

The Chinese word “风水” has a rich connotation involving multiple complex concepts such as environment and energy fields, and it is difficult to find a comprehensive equivalent in English. The English word “geomancy” can partially convey its meaning, but it is far from covering the entire connotation of “风水”. Similarly, the English word “hippie” is also difficult to find an exact equivalent in Chinese to accurately express its specific historical period’s counter-traditional, freedom-seeking cultural phenomenon and lifestyle. For such culturally specific vocabulary, it is recommended to add explanatory notes after the translation to elaborate on their cultural background and specific meanings. For example, “风水” can be translated as “geomancy (a traditional Chinese practice that involves analyzing the relationships between the natural environment, energy flows, and human well-being, with the aim of achieving harmony and prosperity).” Annotation can, to a certain extent, provide a more comprehensive explanation of some words and sentences in Chinese.

Furthermore, during the translation process, if direct transliteration fails to convey the deep meaning of Chinese vocabulary precisely and comprehensively, and is prone to causing misunderstandings among readers, we can adopt the strategy of combining transliteration with annotation. The annotation method, as a means for translators to add descriptive or explanatory text to supplement or further explain the meaning of the previous text, is particularly effective in solving the problem of semantic vacancy of the transliterated term “道” in *Huainanzi*. Specifically, by adding necessary content after the transliteration of “道”, it can fill the semantic gap and thereby help the target readers better accept and understand its connotation. Taking Fohi Li’s translation as an example, he generally transliterated “道” as “Tao” and, based on his own understanding, defined it as “natural law”. To clarify the connection between this “道” and “natural law”, he adopted the method of annotation, established the equivalent relationship between the two, and effectively filled the deficiency in the meaning of “Tao”. Therefore,

the strategy of combining transliteration with annotation can, to a certain extent, eliminate the comprehension obstacles of readers and reduce the difficulty of understanding for foreign readers.

In conclusion, the deficiencies in translatability and untranslatability in translation are not only reflected in the deficiencies at the language level but also lie in the difficulty of perfectly conveying cultural styles and other aspects. This requires translators to not only have a solid language foundation but also have a keen cultural sense and rich practical experience so that they can flexibly deal with various problems during the translation process and achieve the equivalent conversion between the original text and the translation as much as possible. Only in this way can the audience have a deeper understanding of Chinese culture.

5.2 Strategies for International Dissemination

5.2.1 Enhancing Cultural Confidence

Professor Zhang Weiwei once said: “Chinese people, you should be confident! (Zhang Weiwei, 2015)” If the culture of a nation desires to persist throughout history, it must have deep confidence in its culture and be able to continuously study and inherit its essence. Under the interweaving of the globalization wave and the market economy system, various ideologies and cultures interact and collide with each other, and the cornerstone of cultural confidence is deeply rooted in traditional Chinese culture. Therefore, whether traditional culture can adapt to the process of China’s modernization and meet the growing spiritual needs of the people is indeed the core of establishing cultural confidence.

To forge a firm sense of cultural community among the Chinese nation is not only the key to the enhancement of the country’s cultural soft power, but also the cornerstone for the enhancement of the cultural self-confidence of all members of the Chinese nation. This is not just an enhancement of individual cultural confidence, but a grand project that requires the participation of every child of the Chinese nation. To achieve this goal, it is necessary to deeply explore and strengthen the cultural identity of the Chinese nation, because this identity is like a bond that tightly connects the 56 ethnic groups, so that their hearts are tightly attached to each other, and together they can write a splendid cultural chapter of the Chinese nation.

The cultural identity of the Chinese nation stems from the profound accumulation of 5,000 years of civilization, which, like a long-flowing river, has brought together the wisdom and sweat of all ethnic groups. On this vast land, the 56 ethnic groups are like bright stars, each emitting a unique light, and their cultures are as colorful as kaleidoscopes, intermingling with each other to form a grand picture of the Chinese national culture. From the poems and songs of the Han nationality to the sound of the Mongolian minority group horse-head fiddle, from the snowy plateau of the Tibetans to the beautiful mountains and rivers of the Miao minority group, each culture is an indispensable part of the Chinese nation, and they respect, appreciate, learn from and learn from each other, which together promote the prosperity and development of the culture of the Chinese nation.

In today’s increasingly deepening globalization, in the face of the impact and challenges of foreign cultures, we need even more to adhere to the cultural roots of the Chinese nation and forge a strong sense of the Chinese national cultural community. This is not only confidence and pride in our own culture but also a contribution and respect for the cultural diversity of all mankind. We should enable every Chinese to deeply understand the unique charm and value of Chinese national culture through various means such as educational guidance, cultural inheritance, and literary and artistic creation, thereby consciously inheriting and promoting Chinese national culture.

Adhering to the position of Chinese culture is an important cornerstone for demonstrating cultural confidence. Only by having firm confidence in one’s own culture can one be certain of its correctness and superiority. The core of the cultural confidence held by literary and artistic workers lies in adhering to the people-centered creative orientation, which is the soul of cultural confidence.

In today’s increasingly deepening globalization, various cultural thoughts are interacting with each other, and adhering to the position of Chinese culture becomes even more important. It is not only the strong backbone that

supports the national spirit but also the key to demonstrating cultural confidence. Only by being full of confidence in our own culture can we adhere to the cultural foundation in the complex international environment and demonstrate the unique charm and profound value of Chinese culture.

Cultural confidence is deeply rooted in the in-depth understanding and high recognition of Chinese culture. It stems from the pride and admiration for the long history and splendid civilization of the Chinese nation. For those who undertake the mission of inheriting and innovating culture and tell Chinese stories, the importance of their cultural confidence is self-evident. The pens in their hands are not only powerful tools to depict the various states of the world but also sharp weapons to convey the essence of culture and shape the national spirit.

Adhering to the people-centered creative orientation is the core of cultural confidence. The people are not only the creators of history but also the founders of culture. Works that tell Chinese stories can only win the love and recognition of the people if they are deeply rooted among the people and truly reflect the people's living conditions, emotional world, and value pursuit. Therefore, content creators should always hold deep emotions towards the people, closely pay attention to the people's needs and expectations, and depict the people's life pictures with sincere emotions and vivid strokes to provide a continuous driving force for cultural confidence.

5.2.2 Diversification of International Dissemination

In today's increasingly deepening globalization, the dissemination of Chinese stories is no longer limited to traditional official channels but urgently requires a more diversified and multi-level communication strategy. This is not only an improvement of the country's cultural soft power but also an important way to enhance international communication and promote cultural mutual learning.

Firstly, the diversification of disseminators with both official and civilian participation is developing. At present, official media play an irreplaceable role in spreading China's voice. However, the single mode of communication can no longer meet the diversified needs in the context of globalization. Therefore, we need to expand the communication entities towards diversification and introduce more non-official forces. The national government can actively encourage and support a group of capable and enthusiastic video bloggers, social media opinion leaders, and overseas Chinese, allowing them to become a new force in telling Chinese stories.

These non-official narrators often use more intimate and people-oriented language and perspectives to truly reflect the social landscape of China and the daily lives of its people. For example, Chinese bloggers active on new media platforms such as YouTube and TikTok have successfully attracted a large number of overseas audiences by sharing their personal experiences and cultural encounters in China (Huang Lili, 2023). Their content not only broadens foreigners' understanding of China but also arouses the strong interest and desire to explore Chinese culture among more young people. With the increasing diversification of communication media and the strong support of technological development, individuals not only have a "microphone" to speak out but also significantly enhance their content creation capabilities. Thanks to emerging platforms such as short videos and social software, it has never been more convenient to post text, images, or video content. Against this backdrop, we should actively advocate and encourage ordinary people to participate in telling Chinese stories, allowing their personal experiences and deep feelings to become an important link between China and the rest of the world. Compared with the grand narratives of the official version, these civilian perspectives that come from life and are close to the people are often more likely to touch the hearts of foreign audiences and win their resonance and wide recognition.

At the same time, official dissemination institutions should also maintain their authority and accuracy, providing necessary guidance and support for non-official disseminators. By establishing and improving content review mechanisms, they can ensure that the content communicated complies with international dissemination norms while truly reflecting all aspects of Chinese society. This kind of parallel dissemination model between the official and the civilian can help form a multi-level, all-round network for spreading Chinese stories.

Secondly, the rise of new media platforms has brought new opportunities for cultural dissemination. With the widespread use of smartphones and the rapid development of Internet technology, new media platforms have

become an important battleground for cultural communication. Global new media platforms such as YouTube and TikTok, with their unique modes of communication and extensive user bases, have provided unprecedented opportunities for Chinese culture to reach the world.

These platforms not only break geographical barriers, allowing global users to access cultural content from China anytime and anywhere, but also use algorithmic recommendation mechanisms to accurately push relevant content to interested user groups. This mode targeted of communication greatly improves the efficiency and reach of cultural dissemination.

To fully leverage the strengths of new media platforms, we can adopt a series of strategies. First, encourage and support domestic cultural institutions and creators to open official accounts or channels on these platforms and regularly publish high-quality cultural content. Second, strengthen cooperation with new media platforms to jointly plan and promote influential cultural activities and projects. Finally, focus on building user interaction and feedback mechanisms. Through interactions such as comments, likes, and shares, enhance users' sense of identification with and participation in Chinese culture.

In addition, cultural and creative products have become new carriers for cultural dissemination. In recent years, cultural and creative products have played an important role in promoting Chinese culture to the world. Taking Bing Dwen Dwen and Shuey Rhon Rhon, the mascots of the Beijing Winter Olympics, as an example, these two lovely mascots not only won widespread praise in China, but also sparked a "Chinese style" craze internationally (Lu Sibao, 2022). Their success lies in the clever combination of traditional Chinese cultural elements with modern design concepts, creating cultural products that are both national in character and meet international aesthetic standards.

Drawing on this successful experience, we can further explore the profound heritage and unique charm of Chinese culture to design more cultural and creative products that are competitive in the market and influential in culture. These products can cover various fields such as artworks, souvenirs, and daily necessities, and be promoted and sold through a combination of online and offline methods. At the same time, we should also strengthen cooperation and exchanges with foreign companies and brands to jointly promote the international dissemination of Chinese culture.

In the process of promoting international exchanges, we need to adhere to a dual-track strategy: on the one hand, we rely on our own strength to move forward steadily; on the other hand, we actively gather the strength of friends who have a deep affection for China. With their unique thinking and perspectives, we can vividly present the extraordinary charm of "Chinese stories" to the world. President Xi once extended a sincere invitation to foreign students, encouraging them to travel to various parts of China to experience and understand the real China. At the same time, it is hoped that they can share their personal experiences and feelings with more people, contributing positively to promoting mutual understanding and connection among people of different countries.

In response to this, over the years, the cultural symbol of "kung fu" has won the favor of many foreign friends who love Chinese culture overseas. They have spontaneously become disseminators of the excellent traditional Chinese culture. Taking the action-adventure game "Sifu" carefully crafted by the French independent studio Sloclap as an example, the game takes the traditional Chinese martial art "Baimei Fist" as its soul and skillfully integrates game motion capture technology with the essence of Chinese martial arts, showcasing unique artistic charm (Hu Xinliang, 2023). Although there are still unique marks of foreign creators in some textual expressions and detail handling, the game's profound understanding and respect for Chinese culture, as well as its sincere attitude in the presentation process, have undoubtedly added extraordinary appeal to it. It has transcended the category of an ordinary game and become a bridge for cultural exchange between Chinese culture and the world, closely connecting the hearts of different civilizations.

In conclusion, to convey Chinese stories to people around the globe, we need to implement a diversified communication strategy. By leveraging a combination of multiple approaches, including the diversification of communication entities with both official and civilian participation, the rise of new media platforms and the new

opportunities for cultural dissemination, and cultural and creative products as new carriers for cultural communication, we can present Chinese stories to the world in a more vivid, comprehensive, and in-depth manner. This not only helps to enhance China's international image and cultural soft power, but also contributes more wisdom and strength to building a community with a shared future for mankind.

5.2.3 Changing the Content of Dissemination from the Audience's Perspective

Due to the differences between Chinese and Western cultures, it is necessary to tailor the content for different audiences in different countries and regions. Before telling Chinese stories to the world, it is important to avoid blindly narrating from a purely domestic perspective without targeting specific audiences. Instead, we should consider what the audience likes and dislikes and understand their psychological characteristics. Different groups have different areas of interest. By telling stories that cater to these interests, we can engage the audience more effectively, encouraging them to actively pay attention to, learn about, and spread Chinese culture further and wider. This approach also makes it easier for the audience to accept cultural differences, thereby achieving the goal of communication. Additionally, we can combine Chinese culture with the local cultures of the audience, creating a fusion that facilitates the dissemination of Chinese culture.

In the process of spreading Chinese culture, we need to start from the perspective of the audience and build an effective feedback and dissemination mechanism to gain a deep understanding of their views and needs. By carefully analyzing the audience's feedback, we can accurately identify the shortcomings in communication and thus optimize the content and strategies, significantly improving the efficiency of dissemination .

To strengthen interaction with the audience, we should actively engage in dialogue with overseas audiences. This not only allows us to understand their cultural preferences but also provides feedback on real communication experiences. Based on this feedback, we can adjust the way we spread culture to make it more in line with the audience's preferences. For example, when preparing cultural activities, we can invite local scholars and the public to participate in the planning and incorporate their suggestions to enrich the forms of cultural expression. At the same time, using Internet resources to integrate the successful experiences of similar activities can help avoid misunderstandings caused by cultural differences. In addition, cooperating with local cultural groups to hold cultural exchange activities or participating in relevant activities held by other countries are also effective ways to enhance interaction.

During the implementation of the activities, it is crucial to design rich interactive segments, which can arouse the audience's enthusiasm for participation and deepen their personal experience of Chinese culture. Taking the 2014 Smithsonian Folklife Festival as an example, the excellent displays by Chinese folk culture inheritors and traditional art practitioners attracted the active participation of a large number of American people and their children. In the interactive area, they personally experienced traditional cultural activities such as kite making, paper cutting, and embroidery, and the response was very enthusiastic (Jiang Xinpeng, 2015). After the event, timely collection and analysis of audience feedback is a key link to improve the communication effect. This includes on-site interviews with participants, sorting out local media reports, and public feedback on social media.

In the process of cultural dissemination, we should also focus on the unique charm of Chinese culture based on the needs of the audience. Taking the Xizang Culture Week as an example, the event successfully attracted widespread attention from the German public by showcasing rich content such as Tibetan ethnic characteristic songs and dances, and picture thangka exhibitions (Jiang Xinpeng, 2015). This is not only because Xizang culture itself has unique appeal, but also because the event met the curiosity and desire of foreign audiences to explore Xizang. At the same time, the event has also opened a new window for the international dissemination of Xizang culture, which helps to eliminate misunderstandings and prejudices.

In summary, when disseminating Chinese culture, we should always pay attention to the needs and feedback of the audience, continuously optimize dissemination strategies and content forms, and showcase the charm and depth of Chinese culture with a more open and inclusive attitude.

5.2.4 Learning from Excellent Models

In the process of China's external cultural communication, there is still much to learn from the experiences of other countries. Take Russia Today as an example. With the rapid progress of media technology and the sweeping wave of media convergence across the globe, Russia Today has successfully made its mark on the international stage by continuously optimizing its media convergence environment and employing diversified media communication strategies. This achievement not only highlights the profound changes in the international media landscape but also marks the shift of the global media competition focus towards new media. Russia's successful experience in the field of new international media undoubtedly provides important references for the future development of China's media.

In China, the construction of all-media has been fully carried out in the field of internal dissemination. However, in the practice of cross-cultural dissemination, we still face the challenges of scattered media resources and the lack of a unified dissemination system, which undoubtedly limits the concentration of our dissemination power and the maximization of dissemination effects. In order to enhance our country's international communication power, we must draw upon the experience of Russia, make full use of the unique advantages of new media, integrate scattered media resources, and build a more efficient and unified external dissemination media system. This not only requires us to innovate traditional dissemination models but also requires us to tell Chinese stories from a global perspective to allow the world to understand China more comprehensively. While drawing upon the experience of Russia, we also need to closely combine China's actual situation, maintain and carry forward our unique cultural characteristics, and more effectively build a cross-cultural dissemination system. Only in this way can we allow the world not only to hear China's voice but also to feel China's charm and wisdom.

6. Conclusion

In the macro context of globalization, the international dissemination of Chinese stories is facing a situation where challenges and opportunities coexist. To more effectively convey China's voice, we urgently need to deeply explore and fully utilize the unique charm of excellent traditional Chinese culture, while continuously innovating dissemination strategies to better meet the needs of audiences in different cultural contexts. This paper focuses on the optimization of English translation strategies and foreign dissemination strategies, aiming to overcome cultural barriers and enhance the international community's in-depth understanding and extensive recognition of Chinese culture. Looking to the future, we should continue to explore and improve dissemination channels, and maintain a more open and inclusive attitude, so that the world can listen to and deeply understand Chinese stories.

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Analysis of Factor Affecting the Selection of Communication Media as a Source of Health Information

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Abstract

Public health issues in this decade have encouraged pesantren in Indonesia to adapt to new habits, become more open, and accommodate various media sources for information dissemination. This study aimed to examine the relationship between the socio-cultural environment and the type of pesantren with the selection of media used as a source of public health information. A quantitative approach was used, involving samples from three pesantren in Central Java and Yogyakarta. Data collection methods included questionnaires, direct observation, and structured interviews. Data were analyzed using SPSS 21 with symmetrical measures and chi-square test to determine statistical significance. The results showed a significant relationship between the socio-cultural environment and type of pesantren with the media sources used to obtain public health information. These results highlight the importance of socio-cultural dynamics in shaping information seeking behavior in pesantren, especially in responding to public health challenges and improving health literacy within these institutions.

Keywords: Selection of Communication Media, Source of Information, Public Health

1. Introduction

Public health issues that have occurred in the last ten years attracted attention, increased anxiety and made the world community panic. The emergence of the human metapneumovirus (hMPV) disease outbreak in China and Malaysia has raised public concerns about a new pandemic. This reminds that global community of the impact of Covid-19 massive impact has affected almost all aspects of people's lives. The world is rendered helpless in the face of the alarming global threat. On the global scale, as of August 20th, 2020, Covid-19 had infected more than 22,427,054 people in 231 countries and killed 788,015 people (Worldometer.info, 2020). The high death rate has caused the Covid-19 outbreak to become one of the biggest health crises in the last 50 years (Hanifi, 2020). In Indonesia, on the same date, data showed that there were 147,211 positive cases of Covid-19 spread across 34 provinces and 424 districts (GTPPC, 2020), and 6,418 of them died (www.covid-19.go.id, 2020).

The uncontrolled transmission has forced people to adapt to new habits, including Indonesian Islamic boarding schools. *Pesantren* have many distinctive habits such as communal traditions, the desire to always be close to the *Kyai* (the head and teachers of the *Pesantren*), *Istighotsah*, *Khaul* (commemoration of the death of the *Kyai* of the *Pesantren*), joint Quran recitation, *Batsul Masail* (group discussion about certain sharia laws), *Sholawatan* assemblies (gathering to pray for and praise the Prophet), and the habit of interacting with each other. Due to the pandemic, all special activities involving mass gatherings had to be postponed or restricted. For the time being, *Pesantren* administrators have to limit or change the habits that have been practiced for decades as customs. Moreover, in several *Pesantren*, a fairly high transmission of Covid 19 has occurred and is categorized as new clusters (Nua, 2020). As of December 2020, according to data from the Nahdlatul Ulama Executive Board (PBNU) submitted by Ulun Nuha, the Head of the Rabithah Ma'ahid Islamiyah Coordination Unit of PBNU COVID-19 (RMI), there were around 112 Islamic boarding schools with more than 5,000 students and *Kyai* who are positive for Covid-19, and there were 234 *Kyai* and NU figures who died during the Covid-19 pandemic (Iskandar, 2020). This number continued to grow so that in July 2020, there were 584 *Kyai* who died (Al-Ghifari, 2021). The Ministry of Religion also reported that 723 *Kyai* died during the pandemic (Pangaribowo, 2021). This is in line with the statement of the chairman of the Indonesian Ulema Council in the field of economics which released that there were around 900 Ulema and religious leaders who died (Permana, 2021). Islamic boarding schools are considered as communities that are vulnerable to being a cluster of the spread of Covid-19, so *Pesantren* must really pay attention to health protocols (Mukhtar, 2020).

The habit of communal life patterns and traditions that prioritize face-to-face communication is a serious challenge for *pesantren* in adapting and following the health protocols. The pattern of interpersonal communication that has been deeply implemented in *Pesantren* is making it vulnerable to the spread of Covid-19. Moreover, according to some parties, *Pesantren* is considered less responsive to the development of the situation in the face of the Covid-19 pandemic. This causes *Pesantren* to be considered unprepared to anticipate and contribute to modern life (Madjid, 1997). This claim contradicts the fact that many *Pesantren* is dynamic and keep up with social changes, as stated by (Horikoshi, 1990), that "an institution can't survive for so long without adjusting to the changes that occur". It is undeniable that the ability of *Pesantren* in transmitting knowledge and values to their congregations has made it the oldest educational institution in Indonesia to continue to develop to date (Wahid, 2021). Horikoshi and Alissa Wahid's statements show that Islamic boarding schools have an attitude of openness to adapt to the demands of social change, including in the case of the Covid-19 pandemic that is taking place around the world.

Studies on media as a source of information have been widely carried out including (Amidu, K., Harrison, J. and Olphert, 2016; Bitso & Fourie, 2014; Bukhari, Hamid, Ravana, & Ijab, 2018; Dankasa, 2017; Hasan & Haron, 2019; Mead et al., 2012; Ramdhani, Prijana, & Rodiah, 2017; Saleh & Sadiq, 2012), (Anharrel, 2020), and (Gebru, Yared, & Gebremichael, 2017). Studies related to public health behavior include those carried out by (Muto, Yamamoto, Nagasu, Tanaka, & Wada, 2020) in Japan, (C. Liu & Liu, 2020), and (P. L. Liu, 2020) in China, (Ebrahim Ah et al., 2020) in Bahrain, (Moreno, Fuentes-Lara, & Navarro, 2020) in Spain (2020), (Pfeiffer, Li, Martez, & Gillespie, 2018) in San Bernardino (2018), (Gäbler, Lycett, & Hefti, 2017) in Austria, (Brewer, Robinson, Sumra, Tatsi, & Gire, 2015) in England (2014), and (Wiyane & Mansur, 2021) in Indonesia.

The studies mentioned above have not discussed much about the use of communication media as a source of information in the pandemic situation in religious communities. Based on the facts above, research exploring the use of communication media as a source of information in the context of the Covid-19 pandemic in Islamic boarding schools (*Pesantren*) is feasible. This study aims to provide an overview of the relationship between socio-cultural environments, types of *Pesantren*, and the communication media used as a source of information regarding the Covid-19 pandemic. This research was conducted in four *Pesantren* in three different areas, namely: rural area, mountainous area, and urban area. The selection of the four *Pesantren* in Central Java and the Special Region of Yogyakarta with different socio-cultural environments is expected to represent the selection of communication media as the information source on the public health

2. Theoretical and Literature Reviews

Referring to the dimensions of media analysis, studies on the use of communication media as a source of information can be traced to several micro-level theories, namely the relationship between media and audiences, especially those that emphasize individual and group effects as a result of interaction with the (Rahim, 2016). These theories include the Media Dependency Theory and the perspective of encounters with the Media, both proposed by Melvin DeFleur and Sandra Ball Rokeach (DeFleur & Rokeach, 2000). Media dependence theory assumes at least two things, namely: First that audiences depend on information coming from mass media to meet their information needs and achieve certain goals from the mass media consumption process, but the level of dependence is not the same for all media, and second, that audiences also depends on the social conditions in the environment where they live. Thus, there are three components, namely audiences, media systems, and social systems that are interrelated with one another, although their nature varies from one community to another (Bungin, 2014). These differences will affect the way audiences choose media. Thus, what creates dependence is not the source of mass media but social conditions (Sambas, 2015).

The perspective of an encounter between media and audiences assumes that several factors influence individual reactions to the media, namely: individual personal-psychological organization such as biological potential, attitudes, values, beliefs, and experiences; social groups to which the individual belongs; and interpersonal relationships in the process of receiving, managing, and conveying information. According to DeFleur and Rokeach, the perspective of audience encounter with the media can be explained based on several theoretical frameworks, namely: The Individual Difference Theory, The Social Category Theory, The Social Relationship Theory, and The Cultural Norms Theory.

Individual Difference Theory believes that media audiences will selectively pay attention to a communication message if the information conveyed by the media is by their needs, attitudes, beliefs, and values. Referring to the uses and gratification theory introduced by Palmgreen, these needs, attitudes, and values can be fulfilled, one of which is by consuming mass media media (S. W. Littlejohn & Foss, 2005) as a source of information. Because the concerns, interests, beliefs, and values held by each individual are not the same, their selection ability regarding mass media will also be different. The audience is assumed to actively use the media to meet their needs. This theory also assumes that attitudes and personal psychological organization of individuals will determine how individuals choose stimuli from the environment and how they give meaning to these stimuli. Each individual has different biological potentials, learning experiences, and environments that cause differences in their media consumption. The main assumption of the theory of individual differences is supported by (S. Littlejohn, Foss, & Oetzel, 2016) who find that the audience's choice and support for entertainment and information are determined by demographic and psychological factors. This cannot be separated from the assumption of the limited effect paradigm which states that although the same message is delivered to the audience through the same mass media, each member of the audience will receive and interpret media messages in a variety of different ways. Since media audiences are heterogeneous and have different information needs, socioeconomic and personal backgrounds are essential to consider.

In contrast to the theory of individual differences, social category theory focuses on social groups that exist in a society where reactions to certain stimuli are relatively similar. These social groups can be based on age, gender, education level, income level, residence, political preferences, and religious beliefs. Individuals belonging to a particular community will tend to choose the media and content of communication and give relatively the same response in almost the same way. The theory of social groups seems to be related and complementary to the theory of social relations which emphasizes the importance of the role of informal social interactions in influencing individual reactions to mass media (Rakhmat, 2011). That is why the media audience segmentation was created, to meet the interests and needs of the audience. Meanwhile, the theory of cultural norms emphasizes the effects of media which not only have a direct effect on individuals, but also affect the culture, collective knowledge of norms, and values of a society. The media present a set of images and evaluations that audiences can choose and make reference to their behavior. Therefore, the audiences will tend to avoid information that is not following their "image of reality," because it is considered to be harmful to themselves.

The theory of individual differences, theory of social groups, theory of social relations, and theory of cultural norms mentioned above are widely used as the basis of various studies on the use of communication media as a

source of information. Saleh and Sadiq (2012), conducted a study to understand why scholars in Borno Nigeria seek information, how they seek information, and what influences their information-seeking behavior. To achieve this, Saleh conducted a survey using a questionnaire with the main objective of investigating the effect of the denominational and sectarian affiliation on the information-seeking behavior of 284 people representing 973 Ulema in 27 states of Borno, Nigeria. The study identified the presence of various religious groups in Borno and highlighted their preferred sources of information and the various search strategies they use to search for information. The most important finding of this study shows that denominational and sectarian differences do not affect the way Ulema seek information to carry out their role, but their interpretation of Islam according to sectarian and doctrinal beliefs has more influence on their da'wah, counseling, administration, and leadership roles.

In contrast to Saleh's findings which emphasize internal factors as the cause of information seeking, Dankasa and colleagues conducted a study to know the influence of social and environmental factors on the choice of sources of information for Catholic clergy in Northern Nigeria (Dankasa, 2017). Through a combined research approach using in-depth interviews with 15 clergies and a survey using a questionnaire to 109 respondents, Dankasa shows that contextual factors such as culture, geographical environment, and status as clergy are related to information seeking. Broadly speaking, the findings of Dankasa's study show that cultural background, geographical environment, and social status as a clergy contribute to information-seeking behavior. Geographical factors, culture, and status as clergy have an effect on decisions about the choice of information sources used to meet information needs. This finding contributes to research on the influence of several contextual factors, especially religious status, on information-seeking behavior.

The results of the two studies above are complementary. This can be seen from Saleh's findings which emphasize more on internal factors as the variables that influence information seeking, while Dankasa's study finds that external factors such as geographic environment, culture, and social status contribute more to the selection of media to meet information needs. The results of Dankasa's research are in line with the theory of Encounter with the Media as introduced by DeFleur and Rokeach above.

The influence of the socio-cultural environment on information-seeking behavior was also found by Ramadhani and his colleagues in their study related to the context of information technology development (Ramdhani et al., 2017). Through the study entitled *The Relationship of Information Seeking Behavior with the Use of Islamic Da'wah Lines*, Ramadhani tried to identify the relationship between information-seeking behavior and environmental activities as a determinant of the use of social media with Da'wah characteristics through a survey by distributing online questionnaires to 250 respondents who were Syamil members of Padjadjaran University. The most important finding of this study shows that information-seeking behavior and environmental activities of the Syamil members have a significant relationship with the use of Islamic Da'wah line accounts. Meanwhile, the need for information only has little relationship with the use of the Islamic Da'wah Line account.

In the field of health behavior in the context of the Covid-19 pandemic, Muto and colleagues conducted a study entitled *Japanese citizens' behavioral changes and preparedness against COVID-19: An online survey during the early phase of the pandemic* (Muto et al., 2020). Through the study, they highlight several research findings that deserve attention. First, this study reports that around 85 percent of respondents have practiced physical distancing strategies as recommended by the government. Demographic factors seem to have a significant influence, in which the data shows that women and older respondents are relatively more obedient and disciplined than men and younger respondents. Second, the habit of washing hands has been carried out by 86% of respondents with 92% of whom are women and 87.9% being people over 40 years old. Third, there are about 20% of respondents who have not been disciplined and are reluctant to implement preventive measures as suggested by the government. The characteristics of this group are men under 30 years old, single, coming from low-income households, having a drinking or smoking habit, and having more extraversion scores. Based on these findings, Muto suggested that to prevent a wider spread of Covid-19 infection, education is essential, and the government needs to encourage people who have not been disciplined in various ways to change their behavior under government recommendations.

In China, Liu and Liu's study entitled *Media Exposure and Anxiety during Covid-19: The Mediation Effect of*

Media Vicarious Traumatization explores the relationship between media exposure and anxiety during the Covid-19 pandemic, and highlights the mechanisms underlying the impact of media mediation on increased trauma due to social isolation during the COVID-19 pandemic (C. Liu & Liu, 2020). The results showed that four types of media (official media, commercial media, social media, and international media) caused different levels of trauma to the audience. The direct and high impact of mediation occurs on audiences that are exposed to commercial media and international media, while the effects that occur due to exposure to official media and social media are relatively indirect. The study also found that audiences living in cities, with relatively high levels of pandemic and vulnerability, tended to be more traumatized by information from commercial media than those living in the city of Hubei. The rapid and innovative advances in digital technology also provide opportunities for health education to improve prevention against the possibility of being infected with Covid-19. Liu's study shows that consumption of digital media (social media, social networks, online news media, and digital streaming services) is associated with the practice of Covid-19 infection prevention such as washing hands with soap, wearing masks in public spaces, and avoiding crowds.

Not only in Asia but studies on information-seeking behavior in the context of a pandemic have also been carried out in the Middle East. Ebrahim, Saif, Buheji, Al Basri, Al-Hasani, and Jahrani conducted a study entitled COVID-19 Information Seeking Behavior and Anxiety Symptoms among Parents in Bahrain (Ebrahim Ah et al., 2020). The purpose of the study was to determine the relationship between information-seeking behavior and symptoms of anxiety during times of uncertainty as a result of the COVID-19 pandemic. The study's main findings showed that during the COVID-19 outbreak, about 18% of older people had moderate to severe symptoms of anxiety. The main purpose of seeking information about COVID-19 is to find out how to apply the correct self-quarantine procedure in case a family member is infected. The most widely used sources of information or media on COVID-19 information are social media accounts owned by health organizations. This study also shows that exposure to information about COVID-19 is significantly associated with anxiety levels. Even so, 75% of the respondents said they were satisfied with the existing media as a source of information about COVID-19. It is for this reason that the researchers suggest that during the epidemic, educational activities to strengthen measures that encourage proper information-seeking behavior and help manage anxiety levels in the elderly should be a priority.

Studies on information-seeking behavior and the media used as a source of public information related to the Covid-19 pandemic were also carried out in Spain by Moreno, Fuentes-Lara, and Navarro (Moreno et al., 2020). The purpose of their study was to find out the way media types and information sources influence people's information-seeking behavior, and how the citizens perceive the government's crisis response strategy during the pandemic. An important finding of the study shows that respondents use several media and platforms as sources of information regarding the Covid-19 pandemic, namely: television (86.2%), WhatsApp (77.6%), online newspapers (75%), and radio (42.6%). Three of the four most widely used information channels are mainstream news media, while WhatsApp occupies the second position as a source of information related to the Covid-19 pandemic. Those who rely more on mainstream news media for Covid-19 information, in general, have a positive perception of the government's communication strategy, while critical respondents have a perception that the government only has little reliable information.

The role of religion and religiosity in public health behavior has also come to the academicians' attention. Pfeifer and colleagues, for example, through their study entitled *The Role of Religious Behavior in Health Self-Management: A Community-Based Participatory Research Study*, revealed how religiosity affects health behavior among residents in San Bernardino, one of the areas with the worst health rates in the state of California, United States of America (Pfeiffer et al., 2018). Referring to the Integrated Health Behavior Change Theory, the community-based participatory research using mixed research methods aimed to find out how the skills and abilities required to become meta-cognitively active individuals in religion and how religious behavior affects citizens' health behavior. The results showed that there was a positive and significant relationship between religious behavior and healthy eating behavior. However, the relationships were identified within the religious activities where the respondents were involved, either individually or in groups.

Similar findings can also be seen in research on the relationship between religious orientation and health behavior (Gäbler et al., 2017). In their study entitled *Association between Health Behaviors and Religion among Austrian*

High School Pupils – A Cross-Sectional Survey, Gabler included religious orientation as an independent variable and health behavior as the dependent variable to examine the relationship between religious orientation and health behavior in adolescents in Austria. The important findings from this study indicate that religious orientation has a positive and significant influence on food choices and healthy eating patterns. On the other hand, religious orientation also has a negative relationship with risky behaviors in the health factor such as smoking and drinking alcohol.

Brewer specifically highlights how religious social support and religious coping influence health behavior (Brewer et al., 2015). The research is based on the idea that the specific aspects of religion that are capable of influencing public health behavior are not yet fully understood. For this reason, Brewster and colleagues conducted a study that focused on the impact of religious social support and religious coping on health behavior, health status, and attitudes toward health by controlling the age and non-religious social support. The most important findings of his study showed that religious social support and religious coping had a positive impact on respondents' reported health status, depression, health prospects, and resistance to vulnerability. However, negative religious coping is predicted to increase alcohol consumption.

Based on the literature review and theories described above, the conceptual framework of this study can be described as follows:

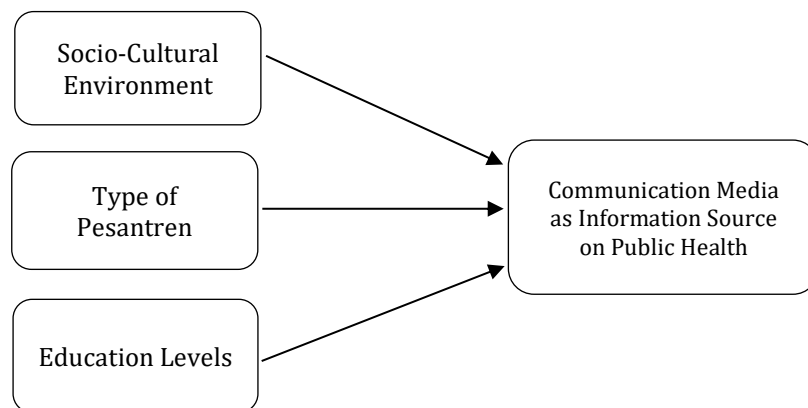


Figure 1: Conceptual Framework

Figure 1 shows the conceptual framework of this study, with the socio-cultural environment, types of pesantren, and education levels as the independent variables, and communication media as a source of information on the public health as the dependent variable.

3. Research Method

This study is descriptive-analytic with quantitative methods and was carried out using surveys. The research locations in the three pesantren were determined using the purposive area sampling technique, while the participants were selected using a purposive maximum variation.

This study involved 100 participants from the 3 types of pesantren in Central Java and the Special Region of Yogyakarta. This was done to represent the different socio-cultural environments and types of the pesantren. The diversity of participants was reflected in the various positions and roles of the respondents that included: caregivers, managers, the Covid-19 task force of the pesantren, and student representatives. Based on this reference, the four pesantren selected were the Al-Qur'an Study Institute (LSQ) Ar-Rohmah in Yogyakarta, Pesantren Ma'ahidul Irfan and Al-Asnawi in Magelang, and Pesantren Al-Iman Bulus in Purworejo, Central Java.

The pesantren were selected by considering several aspects. First, geographical location, pesantren in urban areas were represented by LSQ Ar Rohmah Yogyakarta, pesantren in the mountains were represented by Pesantren

Maha'idul Irfan and Al Asnawi in Magelang, and pesantren in rural areas were represented by pesantren Al-Iman Bulus Purworejo. Second, the types of pesantren based on the curriculum: purely teaching traditional books (*salaf*), modern books (*Khalaf*), or specific subjects. Pesantren Al Asnawi and Mahaidul Irfan are the representations of traditional pesantren (*salaf*) which are dominant in teaching a pure curriculum of *salaf* books. Pesantren Al-Iman Bulus combines and integrates classical book teaching and modern curriculum through the management of Diniyah education (elementary education), Tsanawiyah (junior high education), Aliyah (senior high education), and Mahad Aly (higher education). LSQ ar-Rohmah focuses its studies on the Qur'an and modern books. Third, all of these pesantren generally organize offline/face-to-face learning models, so they are considered areas/communities that are vulnerable to being affected by the spread of Covid-19 infection. Fourth, all of these pesantren have been affected by the Covid-19 pandemic.

The qualitative data were obtained through observation, interviews, focus group discussions, and documentation. Observations were performed to observe the pesantren's condition in adapting to the Covid-19 pandemic. It was done by visiting the pesantren to see the daily lives of the residents, posters related to the Covid-19 health protocol, the availability of health facilities such as hand sanitizers and handwashing facilities, interaction processes, and communication between pesantren residents, and communication media available in pesantren. Unstructured interviews and focused group discussions were conducted with research informants, namely pesantren caregivers, teams/task units for handling and controlling the Covid-19 pandemic, and representatives of students. Interviews were conducted to obtain information about pesantren policies related to socio-religious activities and the use of communication media to obtain information related to the Covid-19 pandemic.

To obtain data on the use of media as a source of information on the Covid-19 pandemic, a quantitative approach was carried out through a survey with some respondents (Morrison, 2012) and using a questionnaire as the main instrument (West & Turner, 2007). The data analysis was carried out using the symmetric measures technique and chi-square test with the help of SPSS program version 25 with the following formula:

$$\chi^2_p = \sum \frac{(f_{ij} - E_{ij})^2}{E_{ij}}$$

with degrees of freedom: (R-1) (C-1)

4. Finding and Discussion

4.1 Types of Islamic Boarding Schools and Socio-Cultural Environment

As described above, this research was conducted at *pesantren* in three areas in the Special Region of Yogyakarta and Central Java that represent urban, mountainous, and rural areas. Broadly speaking, *pesantren* institutions at present can be grouped into two major groups, namely *pesantren salaf* (traditional) and *pesantren Khalaf* (modern).

Pesantren salaf refers to Islamic educational institutions with the teaching of classical Islamic books (*turret*) as the core of the educational curriculum. The form of the madrasa is used only to facilitate the *sorogan* system used in the old form of recitation institutions, without introducing the teaching of general knowledge (Wahjoetomo, 1997). *Pesantren salaf* as a center for studying the education of the Islamic generation is still considered inadequate in terms of facilities and infrastructure (Yuli, Haningsih, & Adikrishna, 2011). On the other hand, *pesantren Khalaf* (modern) is characterized, among others, by the adaptation of the general knowledge in the pesantren's curriculum, although in practice, some pesantren *Khalaf* still maintains the *salaf* system. In addition to these two types, recently, there are also been types of *pesantren* that focus more on studies in certain fields or segments such as *pesantren* for college students, entrepreneurial *pesantren*, or *pesantren* Al Qur'an.

This study found that pesantren Al-Asnawi and Maha'idul Irfan, both located at the foot of Mount Sumbing, Bandongan district, Magelang regency, Central Java, are *salaf* type pesantren. Pesantren Al-Asnawi I which was pioneered in 1934 AD by KHR. Asnawi adopts a blended education system, which combines boarding education with intensive, open, and moderate Arabic teaching without eliminating the Islamic characteristics. Discipline and simplicity are applied in real life in the *pesantren* and community environment. The management of education and

teaching, as well as the daily activities of students, are carried out by *Gus*, the sons of the *pesantren* owner and caretakers, assisted by *ustadz* with educational backgrounds from various *pesantren Salafiyah*. Most of them live in the *pesantren* and fully supervise and guide students in the process of teaching, learning, and caring activities for the students. Currently, this *pesantren* has 600 students and makes classical books the main reference in its learning curriculum. These books include *Tawhid*, *Tajweed*, *Arabic*, *Nahfu Sharaf*, *Fiqh*, *Mushthalahil Hadith*, morality, and Al-Qur'an-Hadith.

Pesantren Ma'ahidul 'Irfan which is located not so far from *pesantren Al-Asnawi* also maintains its characteristics as a *pesantren Salaf*. This *pesantren* was founded by KH. Abdul Karim and KH. Sholih in 1885 AD and is one of the oldest *pesantren* in Magelang district. In addition to managing social-educational institutions, this *pesantren* also manages the publication of religious books/books, brochures, and magazines. The main classical books that are used as its references include: *Tafsir Jalalain*, *At Targhib Wat Tarhib*, *Adzkar An Nawawi*, *Hujjah Ahlussunnah Wal Jama'ah*, *Tafsir Al Ibriz*, *the Book of Al Munjiyyat*, *Risalatul Qudsiyyah*, *At Tarbiyyah*, *Nihayatuz Zain*, *the Book of Al Barzanjy*, and *the Book of Mujamma*.

Both *pesantren* are surrounded by almost the same socio-cultural environment. The feel of the mountains, cool, peaceful, and natural is dominant in that it surrounds the atmosphere of the *pesantren*. Interpersonal communication is still very visible and almost everyone knows each other, especially the *Kyai*, caregivers, and *pesantren* staff. Religious activities such as congregational prayers, reciting the Qur'an, and *istighosah* are still being carried out, although not as frequent as before the Covid-19 pandemic. Visits from outsiders and families of the students are also still ongoing, although with stricter health protocol procedures.

The modern type *pesantren* in this study is *pesantren Al Iman Bulus Gebang*, Purworejo. This oldest *pesantren* in Purworejo regency, which was originally named Al Islamiyah, was founded during the Diponegoro war, precisely in 1828 AD / 1243 H, by *Kyai Ahmad Ngalim* on a waqf land complex covering an area of 12,506 m². Today, the *pesantren* which is surrounded by a typical Javanese rural atmosphere has a population of 3,133 people consisting of 2,555 general students and 578 post-*Aliyah* students from Purworejo, Kebumen, Wonosobo, Magelang, Semarang, Banyumas, West Java, and outside Java. The daily activities of this *pesantren* are integrated with the dynamics of the surrounding community. It also adopts an integrated curriculum system through the educational levels of: *Roudhoutul Athfal*, *Madrasah Ibtidaiyah*, *Madrasah Tsanawiyah*, *Madrasah Aliyah*, *Ma'had Aly*, and LKK Al-Iman. This *pesantren* also works together with relevant ministries and institutions to teach other skills such as carpentry, carving, fisheries, agriculture, sewing, and automotive. In the economic and business fields, the *pesantren* manages several businesses such as stalls, cooperatives, shops, laundry, screen-printing, and so on.

As a *pesantren* that is a part of *Rabithah Mahad Islami* under the Nahdlatul Ulama organization, despite of its implementation of a modern management system, *pesantren Al-Iman* still maintains classical books as the main reference in its learning activities. These books include branches of knowledge of *Nahwu*, *Shorof*, *Fiqh*, *Usul Fiqh*, *Ulumul Qur'an*, *Tafsir*, *Balaghah*, *Tawhid*, *Akhlaq*, *Tassawuf*, History, Hadith, and Tajweed. In the field of Nahwu, it includes the books of *Jurumiyah*, *Imrity*, *Mutamimah*, *Alfiyah*, and *Kawakibud Duriyah*. For Shorof, it includes the Book of *Amsilah Tasrifiyah*, *Kailani 'Izzi*, *Maqsud*, and *Hillul Ma'qud*. Fiqh books include *Fiqh Wadhih*, *Fathul Qorib*, *Tausyekh*, *I'nanat Tholibin*, *Tuhfatul Muhtaj*, and *Bajuri*. While Usul Fiqh's books include *Mabadi 'Awaliyah*, *As Sulam*, and *Abdul Wahab Khalaf*. While the *Ulumul Qur'an* books include *Zubdatul Itqon*, *Manahilul 'Irfan*, and *Mabahis fi Ulumul Qur'an*. In the field of Tafsir, the reference books include: *Tafsir Jalalain*, *Tafsir Ahkam*, *Tafsir Showi*, *Tafsir Jamal*, and *Sofwatut Tafasir*. In the field of Blaghah, the books include *Balaghatul Wadhihah*, *Jawahirul Balaghah*, and *Jauharul Maknun*. And other field references include: *'Aqoid Diniyah*, *Husnul Hamidiyah*, *Qomi'ut Tughyan*, *Tijan Durori*, *Akhlaq lil Banin/Banat*, *Washoya*, *Ta'lim Muta'alim*, *Adabul 'Alim wal Muta'alim*, *Mau'idhotul Mukminin*, *Kifayatul Atqiya* ', *Syarhul Hikam*, *Ihya' Ulumudin*, *Khulasoh Nurul Yaqin*, *Nurul Yaqin*, *Ahlul Musamaroh*, *Arba'in Nawawi*, *Bulughul Marom*, *Jawahirul Bukhori*, and the Book of *Tajridus Sorih*.

The Ar-Rohmah LSQ (Institute for Qur'an Study), which was founded and nurtured by Prof. Dr. KH. Abdul Mustaqim is a special *pesantren* located in urban areas. This *pesantren* only consisted of a two-room bamboo hut at the beginning. It was initially built to accommodate two students who were victims of the earthquake in Bantul

and wanted to study religion. However, it then attracted many students to join the study, both as “*ngalong*” students, who come to study at night and return to their homes and as “*mukim*” students, who stay at the pesantren. The pesantren’s reputation then grew well and it was entrusted with the Outstanding Santri Scholarship Program in 2012. This increased the number of students significantly. Currently, the pesantren with the name quoted from Quran Surah Al-Anbiya verse 107 has accommodated around 300 students from various universities such as UIN, UGM, UNY, STIQ, and UMY. By specializing in the Qur'an studies, the *pesantren* hopes to become a *candradimuka* crater (the idiomatic term for transformation center) for its students through the study of the Qur'an, either through *qira'atan* (reciting), *fahman* (understanding), *tahfizhan* (memorization) as well as *'amalan* (implementation) the values of the teachings of the Qur'an that are *rahmatan Lil 'Alamin* (a blessing for the world) in everyday life.

To support the achievement of their visions, the management board of LSQ Ar-Rohmah organizes Qur'an studies, in the fields of *tartil* (recital), *tahsin* (tajweed), *tahfidz* (memorization), and *tafsir* (interpretation); to develop Islamic studies through the reading and studies of books, *turret/modern-contemporary*; conducting research, translation, and publishing of Islamic books; performing community service (*khidmah ijtima'iyah*); improving Arabic and English language skills, and initiating cooperation with various other institutions in the context of developing the pesantren. The classic books that are used as the main reference to enrich the study of the Qur'an include: *Tahziab/Fiqh, Rawai' al-Bayan, Mukhtarul Ahadit; Adabul 'Alim wa al-Muta'allim; Al-Madkhal li Dirasah al-Sunnah al-Nabawiyyah; Fiqh Sirah al-Nabawiyyah; Al-Halal wa al-Haram/Ushul Fiqh; Nasa'ih al-'Ibad; Tafsir Marah Labid; Hasyiyah 'ala Mukhtasar li al-Bukhari; and Interpreting of The Qur'an*

4.2 Participant Characteristics

Based on their education level, 4 people (4%) of the participants had elementary education backgrounds; 60 people (60%) have secondary education, and 36 people (36%) have higher education. When viewed from the socio-cultural environment, all participants from urban *pesantren* had higher education (7 people or 23.3% postgraduate students and 23 people or 66.7% undergraduate students) from several universities in Yogyakarta. In *pesantren* with the mountainous socio-cultural environment, 4 people or 16% had elementary education, 33 people or 72% had secondary education, and 3 people or 12% had a higher education background. While in the rural areas, 20 people or 66.7% had secondary education, and 10 people or 33.3% had higher education. Thus, based on the levels of education, it can be concluded that participants with a secondary education level dominate *pesantren* in mountainous and rural areas, while *pesantren* in the urban socio-cultural environment are dominated by those with a higher educational background.

Official government websites are the most accessed media as the source of information about the Covid-19 pandemic with 45 participants (45%), followed by social media with 30 participants (30%), television with 19 participants (19%), and newspapers accessed with 6 participants (6%). In detail, the types of media used by participants in obtaining information on the Covid-19 pandemic are presented in table 1 below:

Table 1: Covid-19 Information Communication Media

Communicataion Media	Rural		Mountain		Urban		Total
	Frequency	%	Frequency	%	Frequency	%	
TV	6	20	13	32.5	0	0	19
Health Websites	5	16.6	0	0	1	3.3	6
Government Website	9	30	16	40	20	66.6	45
Social Media	10	33.3	11	27.5	9	30	30

Source: Data Processed (2025)

This finding is in line with the conclusion of Ebrahim et al.'s research entitled "*Covid-19 Information-Seeking Behavior and Anxiety Symptoms among Parents*". They found the fact that the most widely accessed communication media as a source of information about Covid-19 were the internet and social media accounts owned by government health organizations. Respondents also have a high level of satisfaction and trust in the media as a reliable source of information related to information about the Covid-19 pandemic (Ebrahim Ah et al., 2020).

Judging from the socio-cultural environment factors and the use of communication media, the internet, and the official government website received the most attention from participants in urban *pesantren*, up to 66.6%, followed by 40% of *pesantren* in the mountains, and 30% of rural *pesantren*. In contrast, social media occupies the top position for residents of rural *pesantren* by 33.3%, followed by *pesantren* residents in urban areas by 30%, and *pesantren* in mountain areas by 27.5%. Television still has an appeal as a source of information for *pesantren* residents in the mountains and villages, but not for those in urban areas. This can be seen from the finding that out of 40 participants in the mountains, 32.5% of them use television as a second source of information after official government websites, while for residents of rural *pesantren*, television is accessed by 20% of participants. Meanwhile, TV is not selected at all by those who live in an urban *pesantren*. The findings on the use of several media and platforms as the source of pandemic information are also in line with the findings of Moreno et al. study which found that people rely more on mainstream communication media as the source of information about the Covid-19 pandemic. Three of the four most widely used communication channels include television, online newspapers, and radio as the main sources of information, while the WhatsApp platform is one of the social media that contributes to the fulfillment of information about the Covid-19 pandemic.

4.3 Socio-Cultural Environment, Types of Pesantren, Communication Media as Sources of Information on the Covid-19 Pandemic

The relationship between the socio-cultural environment, types of *pesantren*, and levels of education with communication media selection as a source of information on the Covid-19 pandemic among *pesantren* residents can be seen in table 2. The figures on the results of the chi-square test with a 95% confidence level and a critical value of 0.05 become the main reference to state whether or not there is a relationship between the existing variables. If the value of chi-square hit > chi-square tab then the null hypothesis is accepted, otherwise if the chi-square value < chi table then the null hypothesis is rejected.

Table 2: Summary of Chi-Square, Symmetric Measures, and Directional Measures

Socio-Cultural Environment Types of Pesantren Levels of Education	Communication Media as Source of Information on Covid-19					
	Chi-Square Test		Symmetric Measures (Phi, Cramer's V, CC)		Directional Measures (Lambda)	
	Value	Asymp. Sig (2 Sided)	Value	Approx. sig	Value	Approx. Sig
Socio-Cultural Environment	26.896	.000	.519 .367 .460	.000 .000 .000	.112	.201
Types of Pesantren	26.896	.000	.519 .460 .460	.000 .000 .000	.112	.091
Levels of Education	11.896	.064	.345 .244 .326	.064 .064 .064	.031	.079

Source: Data Processed (2025)

Table 2 shows that the calculated chi-square values between the socio-cultural environment, types of pesantren, and levels of education with the use of communication media types as a source of information on the Covid-19 pandemic are 26,896, 26,896, and 11,896. The values of the chi-square table with df 6 (4-1) x (3-1) at the 95% confidence level are 12,592 and 16,812 at the 99% confidence level with a significance level of .000 for the socio-cultural environment and the types of pesantren and .064 for the levels of education.

These calculations show that the socio-cultural environment and the types of *pesantren* have a positive relationship with the use of communication media as a source of information on the Covid-19 pandemic, because $chi_{hit} 26,896 > 16,812_{chitab} 8; .001$ with a significance level of $0.00 < 0.05$. Meanwhile, the levels of education have no relationship with the use of communication media as a source of information because $chi_{hit} 11,896 < 16,812_{chitab}$, the significance level is also above 0.50, which is 0.0640. Thus, it can be concluded that the use of communication media as a source of information on the Covid-19 pandemic is influenced by the background of the socio-cultural environment and the types of *pesantren*, while the levels of education have no influence. This indicates that the

use of media types as a source of information on the Covid-19 pandemic tends to be influenced by the socio-cultural background where the *pesantren* is located (whether rural, mountainous, or urban) and the type of *pesantren* (whether traditional/*salaf*, modern/*Khalaf* or special).

The extent of the relationship between the socio-cultural environment and the types of *pesantren* with the use of communication media as a source of information on the Covid-19 pandemic can be seen based on the values and levels of significance in the symmetric measures test. In this regard, there are 3 quantities to calculate the correlation, namely $\Phi = 0.519$, Cramer's $V = 0.367$, and Coefficient of Contingency 0.460 . From the magnitude of Φ , it can be drawn that the socio-cultural background and types of *pesantren* have a fairly close relationship with the use of communication media as a source of information on the Covid-19 pandemic. This can be seen from the significance value of 0.000 which is smaller than 0.05 . However, the Φ value is 0.519 , while for Cramer's V and the Coefficient of Contingency, the same magnitude is obtained, namely 0.460 . Meanwhile, the relationship between education levels and the types of communication media used as a source of information on the Covid-19 pandemic is irrelevant because it is not significant.

These results are following the findings of Dankasa and colleagues' study that concludes religious contextual factors such as social, geographical, and cultural environments have a relationship with decisions about the choice of information sources used to meet the information needs (Dankasa, 2017). This finding is also in line with the results of Ramadhani and his colleagues' study which found that environmental activities in a community have a relationship with the use of social media that contains Islamic da'wah content among Syamil members of Padjadjaran University (Ramdhani et al., 2017). The need for information only has a low relationship with media selection. These results reflect that the use of media as a source of information has a relationship with the socio-cultural backgrounds to which the audience belongs. This reinforces the social class perspective developed by DeFleur and Ball-Rokeach that audience reactions to information sources are influenced by the environment in which they live and interact with (DeFleur & Rokeach, 2000).

5. Conclusion

Based on the discussion in the previous sections, it can be concluded that the socio-cultural background and types of *pesantren* have a positive relationship with the types of communication media used as a source of information on the Covid-19 pandemic. This conclusion reinforces the main assumption of the social class perspective that individual reactions to media and its content are influenced by group membership. Therefore, the findings of this study can be used as a reference related to the selection of media as a source of information for the benefit of socialization and education programs that engage the interests of the wider community in the field of public health, especially among *pesantren*, related to the efforts to improve healthy living behavior.

There are several limitations in this study, among others is the sampled *pesantren* are only in Central Java and Yogyakarta and the number is still fairly small compared to the number of *pesantren* in Indonesia. Therefore, it is recommended that further research be carried out by involving more *pesantren* from various regions in Indonesia so that a more comprehensive picture of the use of media as a source of information is needed for the development of the *pesantren* community can be obtained.

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Does A Spatial Influence on Fertility Rates of Ethnic Groups in Indonesia? A Spatial Analysis Using National Data

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Abstract

Fertility rates in Indonesia have continued to decline over the past 50 years, but disparities in each region still occur. Since regional autonomy was implemented, policies have not been centralized, resulting in population control policies varying in each region. The purpose of this study is to analyze the influence of regions on fertility rates in ethnic groups in Indonesia. This study uses long-form data from the 2020 Population Census (PC) which was conducted in 2022 with a level of representation in districts/cities. Statistical analysis using the Moran Index and LISA Statistical Test using Geoda Software to determine the influence of regions on fertility measures based on ethnic groups. The results of the spatial analysis show that there is a regional or spatial influence on fertility based on ethnic groups in Indonesia. The evidence of the fertility measure is based on the largest ethnic group in Indonesia spatially, the influence of regions and culture in a region can be used as a consideration in determining policies and programs in providing interventions and planning in the future to control fertility rates in Indonesia.

Keywords: Ethnic Groups, Spatial, Fertility, Culture

1. Introduction

The total fertility rate (TFR) for the past 50 years from 1971 to 2017 has continued to decline. This decline proves the success of the family planning program in suppressing the rate of population growth in Indonesia. This can be proven from the results of the 1971 Population Census (SP) which showed a TFR of 5.61 and the TFR figure continued to show a decline in the 1980 SP of 4.68 and the 1990 SP of 3.33. Furthermore, the Indonesian

government through the Central Statistics Agency (BPS) surveyed to measure the TFR every 5 (five) years. The 1991 Indonesian Demographic and Health Survey (DHS) found that the TFR figure had decreased again to 3.02. In the 1994 DHS, the TFR figure also decreased again to 2.85 and continued to decrease in the 1997 SDKI to 2.78. Based on the TFR figures from the 1994 DHS to the 1997 DHS results, the decline in the TFR figure began to show a downward trend. The TFR rate that declined in the 1994-1997 DHS fell again to 2.6 in the 2002 DHS. However, the decline in the TFR rate from the 2002 DHS to the 2012 DHS stagnated for 10 years and based on the 2017 DHS, the TFR rate fell again to 2.4 per woman of childbearing age (BPS, 1987.; BKKBN et al., 1992; BKKBN et al., 1995; BPS et al., 1998; BPS et al., 2003; BPS et al., 2008; BPS et al., 2012; BPS et al., 2018).

The government's success in controlling the population in Indonesia is faced with challenges in implementing the family planning program. Since regional autonomy was implemented, each district and city has been given direct authority to regulate policies at the regional level which have previously been vertically centralized. This has caused the policy authority which is an indicator of National Development performance to not be fully implemented optimally in each region, one of which is the family planning program as an effort to control the population and maintain reproductive health (BKKBN, Bappenas, Kemenkes, UNFPA, Kedutaan Canada, 2021).

The challenges faced after the decentralization include causing significant variations in the implementation of family planning programs throughout Indonesia. The Central BKKBN as a government institution tasked with controlling the population through various programs, one of which is the family planning program, continues to set policies to control the birth rate, but the implementation of these policies can be adjusted by district and regional authorities. The family planning institution at the district/city level which is combined with other institutions also influences the implementation of the family planning program in the community. The quantity and quality of contraceptive services vary depending on the commitment of the regional head to family planning, (United Nation Population Fund Indonesia, 2012). The impact of the implementation of regional autonomy has made policies vary in each region. This causes geographical or spatial factors to possibly influence birth rates based on ethnicity in a region (Ekoriano et al., 2025). The results of a study conducted in Taiwan tested the possibility of a relationship between regions on the variables of education level and decreasing mortality rates (Li, 1973). Other studies have also concluded that geographical aspects are something that can cause variations in birth rates (Goldstein dan Klüsener, 2014; Mansour et al., 2021). The spatial or geographical influence that occurs between regions is also due to the association between regional transformation and degree of access, which means that high levels of transformation will cluster in areas that also have high degrees of accessibility (Giyarsih, 2010). Therefore, this study aims to analyze the influence of regions on fertility rates in ethnic groups in Indonesia.

2. Method

2.1 Source of Data

This study uses secondary data sources from the 2020 Population Census (PC) Long Form, the data collection of which was carried out in 2022 by BPS with a total sample of 4,294,896 households with an estimated level in 514 districts/cities (BPS, 2023). The estimated sampling error is around 2.2 percent for the TFR estimate at the district/city level with a sampling stage using multistage techniques and a sample fraction of 5 percent (n/N), https://sensus.bps.go.id/metadata_kegiatan/index/sp2022/desain%20penarikan%20sampel (accessed May 25, 2023).

2.2 Data Analysis

In this study, birth history data was not available. An indirect method was used to calculate the total fertility rate (TFR). Calculation of TFR using an indirect method consists of several calculation methods, including the Rele method, the Palmore method, the Gunasekaran-Palmore method, and the own children method (BPS, 2012). The TFR calculation in this study used one of the indirect methods, namely the Rele Method. The Rele method uses the ratio of children and women/child women ratio (CWR) and estimated mortality so that the birth rate can be known in one, two to 5 years before the census. The Rele method is used to estimate the GRR obtained from the Child Women Ratio (CWR) value and life expectancy. The data needed is quite simple, such as the number of children aged 0-4 and 5-9 years; the number of women aged 15-44, 15-49, 20-49, 20-54; total life expectancy; sex

ratio at birth. The results obtained Gross Reproduction Rate (GRR) and TFR (United state census bureau, UNFPA, 2019; Gunawan et al., 2017).

BPS has published TFR figures at the national level to the district/city level using the own children method, so in this study the TFR figures are calculated based on the 15 largest ethnic groups at the district and city levels. As for calculating TFR. The calculation of TFR using the indirect method (rele method) is based on the following justifications, (1) the sample of women based on 15 ethnic groups in each ethnic group at each birth age group is not sufficient for the minimum sample at the district/city aggregation level, (2). The number of samples in each age group in each ethnic group is insufficient. Researchers only focus on the total birth rate (TFR), so the birth rate per age group (ASFR) is not needed, the relay method is a method with the closest birth rate calculation results to the biological child method compared to other indirect methods BPS DIY, <https://dinp3ap2kb.slemankab.go.id/wp-content/uploads/2020/07/Paparan-TFR-Kab-Kota2020-2.pptx> (accessed February 29, 2024). To facilitate and reduce human error, the TFR calculation uses the FERT mini software developed by the East-West Population Center in 1992. This software has been implemented so far by BPS in calculating indirect methods, one of which is the relay method (Salim et al., 2018). Geographical or spatial data plays an important role in life, from the simplest to the most complex. The simplest thing is a residential address that contains spatial information such as a postal code. Information on a location that includes the coordinates of the depth location is an example of the use of spatial data. Spatial data can be interpreted as everything related to the earth's space marked by geographic attributes such as location coordinates and other points so the Geographical Information System (GIS) has an important role in spatial studies (Liloyd, 2010).

This study aims to present and explore spatial data using the Geoda application. Geoda is software that was first introduced by Luc Anselin in 2002. Geoda software was developed to facilitate simple spatial data analysis to data analysis exploration, presenting both global and local autocorrelation visually spatially and ending in spatial regression (Anselin et al., 2006).

Spatial analysis in this study using Geoda software emphasizes the ability to visualize maps, namely maps with outlier categories, map smoothing, cortogram maps, and animated maps. Data exploration is presented in the form of statistical graphs, parallel coordinate plots, and conditional plots. Geoda's capabilities are also able to calculate spatial autocorrelation univariately and bivariately. Geoda facility can create a spatial weight matrix, according to contiguity, distance, and K-nearest neighbor criteria (Anselin, 2003).

The most important part of determining spatial autocorrelation is determining the most relevant neighbors of an area or region to be studied and where these neighbors are expected to influence the observation value of their neighboring areas. Measurement techniques to determine these neighbors are contiguity, distance, K-nearest neighbors, and Customized contiguity (Insee- Eurostat, 2018). Some characteristics of spatial autocorrelation are if there is a systematic pattern in the spatial distribution of a variable, it can be said to be spatially autocorrelated, if adjacent or neighboring areas are the same, this is called positive spatial autocorrelation, but if adjacent or neighboring areas are not the same, it is said to be negative spatial autocorrelation and random patterns indicate no spatial autocorrelation.

Moran's index value ranges between -1 and 1. Identify patterns using the Moran's I index value criteria,

- a. If the value of $I > E(I)$ then it has a clustered pattern,
- b. If $I < E(I)$ then it has a spread pattern,
- c. If $I = E(I)$ then it has an uneven spread pattern

The higher the local Moran value, the adjacent areas have almost the same value or form a clustered distribution.

3. Results

Fertility rate (TFR) varies across the 15 largest ethnic groups in Indonesia. The TFR of the Javanese, Madurese, Balinese, Dayak, and Chinese ethnic groups has been below the national TFR value, which is 2.18 per WUS aged 15-49 years, but the TFR values of other ethnic groups are still above the national TFR value. The Sasak ethnic

group has the highest TFR value of 2.53, then the Acehnese ethnic group, at 2.43, and the Banten ethnic group at 2.39. The TFR value of the Chinese ethnic group is the lowest, at 1.49. Then the Madurese ethnic group, at 1.92, and the Balinese ethnic group, at 1.93 It is very important that culture can be used to provide information about differences in fertility and to consider program policies in population control. It is very important, cultural aspects are also used to inform people about differences in fertility.

In addition, cultural aspects can be used as part of government policies to control population growth and provide information to the public about the importance of reproductive health. The fertility of the Batak ethnic group (2.37), Minangkabau (2.29), Bugis (2.28), Banjar (2.24), Betawi (2.23) and Sunda (2.20) also requires control. The size of fertility in a particular culture shows how social construction is built into a civilization in viewing fertility in a particular culture in a region. To also find out the influence of culture in each region on fertility in 15 ethnic groups, a spatial analysis of fertility based on ethnicity in Indonesia is carried out, namely the Sasak ethnic group, Acehnese ethnic group, Banten ethnic group, Malay ethnic group, Batak ethnic group, and Minangkabau ethnic group. This section will then present and test how the fertility value based on ethnicity is globally through the global Moran's Index value and P-value so that it can be seen that each region influences the adjacent or bordering areas through the Moran's Index spatial test (Moran's I) and Local indicator of spatial autocorrelation (LISA) using Geoda software.

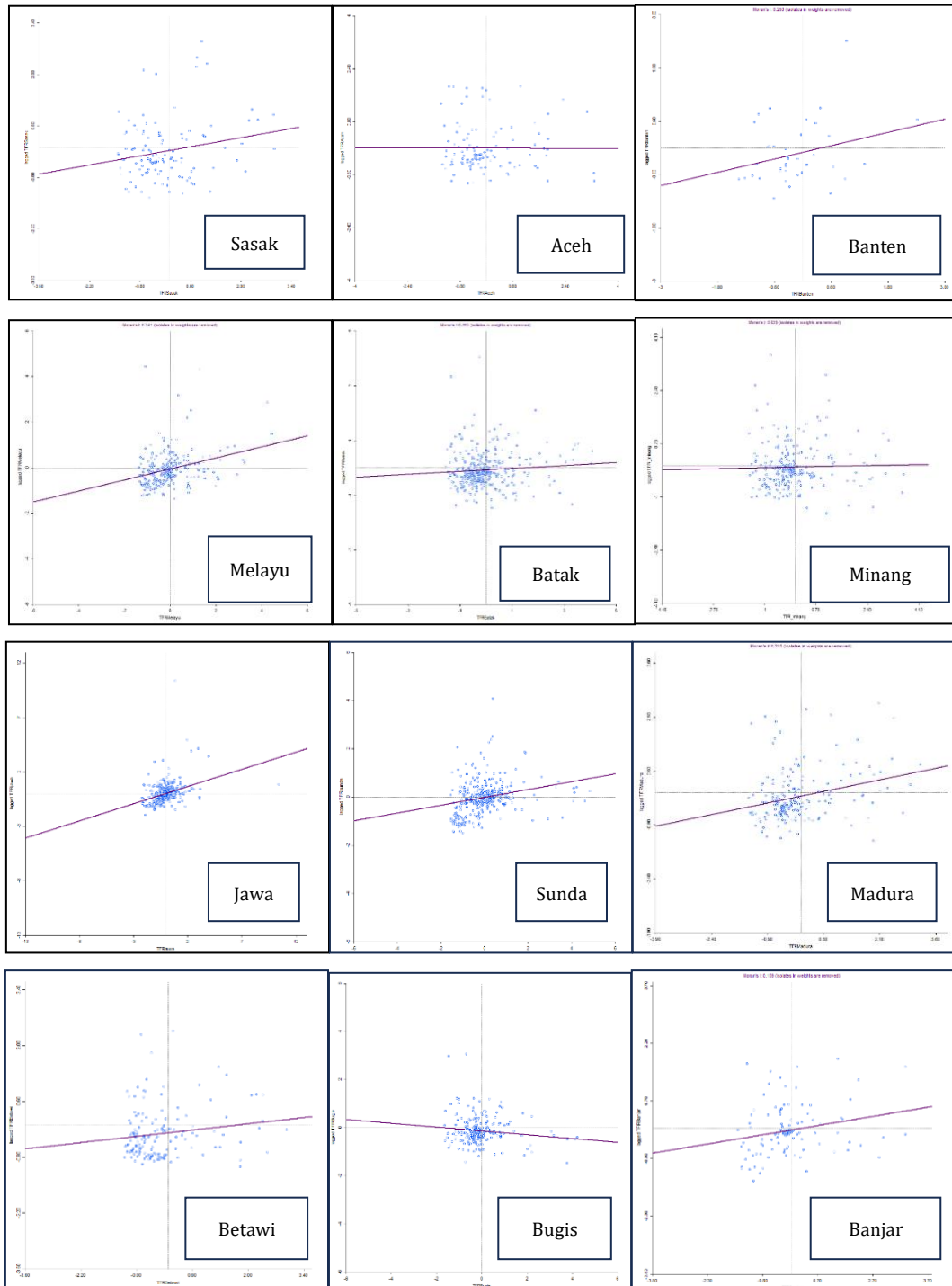
Table 1: Global Moran Index Value, E(I), Standard Deviation, and P-Value of Ethnic Fertility in Districts/Cities in Indonesia 2022

No.	Variable	Global Index	Moral E[I]	Standard Deviation	P-Value
1.	Ethnic Sasak	0.1765	-0.0086	0.0965	0.042
2.	Ethnic Aceh	-0.0050	-0.0101	0.0857	0.466
3.	Ethnic Banten	0.2500	-0.0263	0.1500	0.037
4.	Ethnic Malay	0.2409	-0.0038	0.0530	0.001
5.	Ethnic Batak	0.0533	-0.0030	0.0460	0.126
6.	Ethnic Minangkabau	0.0196	-0.0041	0.0569	0.350
7.	Ethnic Javanese	0.3165	-0.0022	0.0362	0.001
8.	Ethnic Sundanese	0.1349	-0.0022	0.0363	0.001
9.	Ethnic Madurese	0.2148	-0.0053	0.0676	0.001
10.	Ethnic Betawi	0.1123	-0.0068	0.0807	0.080
11.	Ethnic Bugis	-0.0786	-0.0039	0.0531	0.065
12.	Ethnic Banjar	0.1588	-0.0088	0.0772	0.014
13.	Ethnic Balinese	0.2276	-0.0061	0.0757	0.002
14.	Ethnic Dayak	0.2150	-0.0067	0.0596	0.001
15.	Ethnic Chinese	0.1535	-0.0048	0.0651	0.018

Source: Geoda, data processed, 2024

Based on Table 1, the results of the univariate test with a global significance value (<0.05) are obtained, namely the Sasak ethnic group (0.042), Banten ethnic group (0.037), Malay ethnic group (0.001), Javanese ethnic group (0.001), Sundanese ethnic group (0.001), Madurese ethnic group (0.001), Banjar ethnic group (0.014), Balinese ethnic group (0.002), Dayak ethnic group (0.001) and Chinese ethnic group (0.018) which means that there is spatial autocorrelation between the fertility of the Sasak ethnic group, Banten ethnic group, Malay ethnic group, Javanese ethnic group, Sundanese ethnic group, Madurese ethnic group, Banjar ethnic group, Balinese ethnic group, Dayak ethnic group and Chinese ethnic group with the fertility of the Sasak ethnic group, Banten ethnic group and Malay ethnic group, Javanese ethnic group, Sundanese ethnic group, Madurese ethnic group, Banjar ethnic group, Balinese ethnic group, Dayak ethnic group and Chinese ethnic group in Indonesia. Table 1 also informs that the fertility of the Sasak, Acehnese, Malay, Javanese, Sundanese, Madurese, Banjarese, Balinese, Dayak, and Chinese ethnic groups shows positive spatial autocorrelation because they have a Moran Index $I > E(I)$ meaning that the pattern of the relationship between the fertility of each ethnic group between districts/cities is clustered. Meanwhile, the Acehnese, Bataknese, Minangkabau, Betawi, and Bugis ethnic groups have a significant

P-value (>0.05) which means that there is no spatial autocorrelation between fertility in each of these ethnic groups. The results of the autocorrelation test presented in Figure 1 globally on 15 ethnic groups using GeoDa software obtained Moran's I values in the 15 ethnic groups showing values $> E(I)$, which means that there is positive spatial autocorrelation in the six variables between sub-districts. The Moran's I value for the six ethnic groups is greater than $E(I)$, so it can be concluded that it shows the pattern of fertility distribution in each ethnic group is clustered and has similar characteristics in adjacent districts/cities. Moran's scatterplot and I value can be seen in Figure 1.



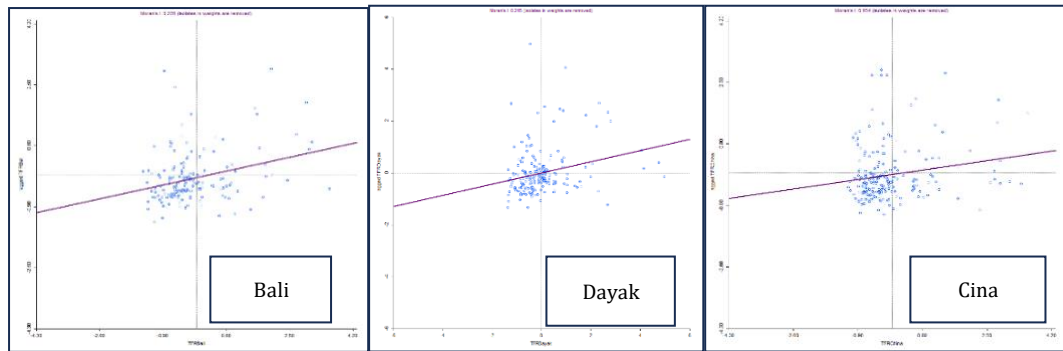


Figure 1: Moran's I Scatterplot of Variables

Source: data processed, 2024

The LISA statistical test in this study is only presented for the three highest ethnic groups as follows below such as Sasak ethnic groups, Aceh ethnic groups and Banten ethnic groups. Through Map 1, a LISA statistical test was obtained which informed that fertility in the Sasak ethnic group was the highest TFR nationally and spatial analysis showed through (a moran scatter plot) which was categorized into four categories as follows:

- Quadrant I (High-High), has positive autocorrelation because the observed value of fertility in the area is high and is surrounded by surrounding areas that are also high. This area is also called a hotspot area. The areas or regencies/cities included in this category are 5 areas, namely South Solok, Bandung City, Bandung Regency, and West Sumba Regency.
- Quadrant II (Low-High), This quadrant has negative autocorrelation, because the observed value of the area is low and is surrounded by surrounding areas that have high values. The areas included in this category are two areas, namely Purwakarta and Palopo.
- Quadrant III (Low-Low), has positive autocorrelation, this is because the observation value of the region is low and is surrounded by 4 low surrounding areas, namely Kampar, Bintan, Tanjung Pinang, and Tapin.
- Quadrant IV (High-Low), has negative autocorrelation. This is because the observation value of the region is high and is surrounded by low areas. There are three locations in this category, namely Langkat, North Jakarta, and Banjarmasin.

The results of the LISA statistical test in grouping regions into four quadrants with fertility based on ethnicity still require caution in concluding the spatial analysis in this study, because the adequacy of the minimum sample in each region in the calculation of fertility does not all meet the minimum limit (30 samples).

The following table 2 in the Sasak ethnic group below presents regions with categories of regions included in the high-high, low-low, low-high, and high-low categories. The LISA test presents Moran's I value and p-value in each region included in the category.

Table 2: List of Regions based on Quadrants I (1), II (3), III (2) and IV (4)

Sasak Ethnic Group

ID	Provinces	District	TFR_Sasak	Sasak_i	Sasak_cl	Sasak_sig
1310	WEST SUMATERA	SOLOK SELATAN	5.07	1.915662	1	0.011
1473	RIAU	D U M A I	5.69	2.419986	1	0.022
3204	WEST JAVA	BANDUNG	8.32	1.676775	1	0.044
3273	WEST JAVA	BANDUNG CITY	5.02	1.676775	1	0.014
5301	EAST NUSA TENGGARA	SUMBA BARAT	5.38	2.655968	1	0.012
1406	RIAU	KAMPAR	2.11	0.719621	2	0.011
2102	RIAU ISLAND	BINTAN	0.62	1.328013	2	0.037
2172	RIAU ISLAND	TANJUNG PINANG	0.81	1.328013	2	0.022
6305	SOUTH KALIMANTAN	TAPIN	1.61	0.897312	2	0.031
3214	WEST JAVA	PURWAKARTA	2.52	-0.71405	3	0.026

7373	SOUTH SULAWESI	PALOPO	1.73	-1.49155	3	0.026
1213	NORT SUMATERA	LANGKAT	4.17	-0.46116	4	0.018
3175	DKI JAKARTA	JAKARTA UTARA	5.89	-1.34916	4	0.035
6371	SOUTH KALIMANTAN	BANJARMASIN	3.33	-0.00751	4	0.028

Source: Geoda, data processed

Based on Map 2, informs the fertility of the Acehnese ethnic group using spatial analysis showing through (a moran scatter plot) which is categorized into four categories as follows:

- a. Quadrant I (High-High), has a positive autocorrelation because the observed value of fertility in the region is high and is surrounded by surrounding areas that are also high. This area is also called a hotspot area. The regions or districts/cities included in this category are two regions, namely West Lampung and Purworejo.
- b. Quadrant II (Low-High), This quadrant has a negative autocorrelation, because the observed value of the region is low and is surrounded by surrounding areas that have high values. The regions included in this category are six regions, namely Bangka, Cilegon, Serang, Bengkulu, Balikpapan and Samarinda.
- c. Quadrant III (Low-Low), has a positive autocorrelation, this is because the observed value of the region is low and is surrounded by surrounding areas that are also low, one region, namely Ogan Ilir.
- b. Quadrant IV (High-Low), has negative autocorrelation. This is because the observation value of the region is high and surrounded by low areas. There is not a single region in this category. The following is a list of regions based on the fertility of the Acehnese ethnic group in each cluster of the LISA statistical test results.

Table 3: List of Regions based on Quadrants I (1), II (3), III (2) and IV(4)

Aceh Ethnic Groups

ID	PROVINCE	DISTRICT	TFR_Aceh	Aceh_i	Aceh_ci	Aceh_sig
1801	LAMPUNG	LAMPUNG BARAT	5.14	1.943	1	0.014
3306	CENTRAL JAVA	PURWOREJO	7.82	3.441	1	0.047
1610	SUMATERA SELATAN	OGAN ILIR	1.82	0.598	2	0.039
1901	BANGKA BELITUNG ISLAND	BANGKA	1.76	-0.923	3	0.046
3672	BANTEN	CILEGON	2.74	-0.222	3	0.036
3673	BANTEN	SERANG	1.76	-1.084	3	0.035
6102	WEST KALIMANTAN	BENGKAYANG	2.96	-0.028	3	0.029
6471	EAST KALIMANTAN	BALIKPAPAN	0.91	-1.87	3	0.024
6472	EAST KALIMANTAN	SAMARINDA	0.62	-2.13	3	0.028

Source: Geoda, data processed

Furthermore, Map 3 informs the fertility of the Banten ethnic group using spatial analysis showing through (moran scatter plot) which is categorized into four categories as follows:

- a. Quadrant I (High-High), has a positive autocorrelation because the observed value of fertility in the region is high and is surrounded by surrounding areas that are also high. This area is also called a hotspot area. The regions or regencies/cities included in this category are four regions, namely Aceh Tamiang, Asahan, Serdang Bedagai, and Batu Bara.
- b. Quadrant II (Low-High), This quadrant has a negative autocorrelation, because the observed value of the region is low and is surrounded by surrounding areas that have high values. The regions included in this category are two regions, namely Palembang City and Bandung Regency.
- c. Quadrant III (Low-Low), has a positive autocorrelation, this is because the observed value of the region is low and is surrounded by surrounding areas that are also low, one region, namely Depok.
- d. Quadrant IV (High-Low), has a negative autocorrelation. This is because the observation value of the area is high and surrounded by low areas. There is one area, namely Bandung City. The following table presents a list of 4 areas based on the fertility of the Banten ethnic group in each cluster of the LISA statistical test results.

Table 4: List of Regions based on Quadrants I (1), II (3), III (2) and IV (4)

Banten Ethnic Groups

ID	PROVINCES	DISTRICT	TFR_Banten	banten_i	banten_cl	banten_sig
1114	ACEH	ACEH TAMIANG	3.16	0.052	1	0.036
1208	NORT SUMATERA	ASAHAN	4.84	2.225	1	0.012
1218	NORT SUMATERA	SERDANG	3.74	0.335	1	0.039
1219	NORT SUMATERA	BEDAGAI	3.74	0.335	1	0.039
1219	NORT SUMATERA	BATU BARA	7.84	1.56	1	0.046
3276	WEST JAVA	DEPOK	1.79	0.685	2	0.023
1671	SOUTH SUMATERA	PALEMBANG	1.62	-0.617	3	0.024
3204	WEST JAVA	BANDUNG	0.97	-0.599	3	0.031
3273	WEST JAVA	BANDUNG CITY	4.18	-0.599	4	0.033

Source: Geoda, data processed

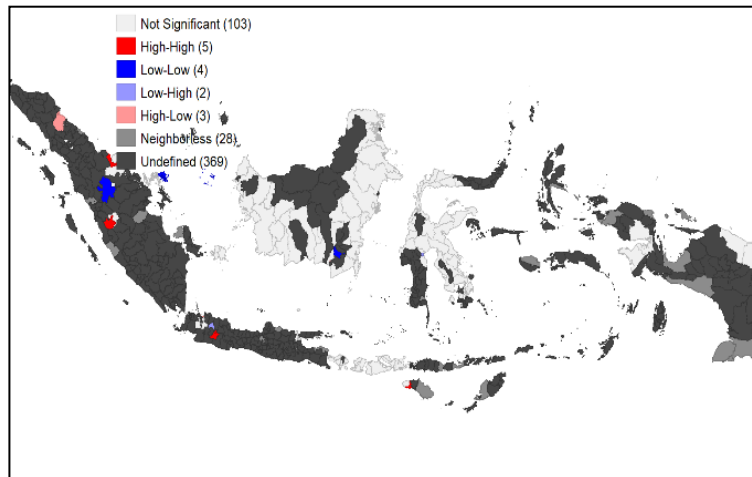


Figure 2: Fertility cluster Map of Sasak Ethnic Group

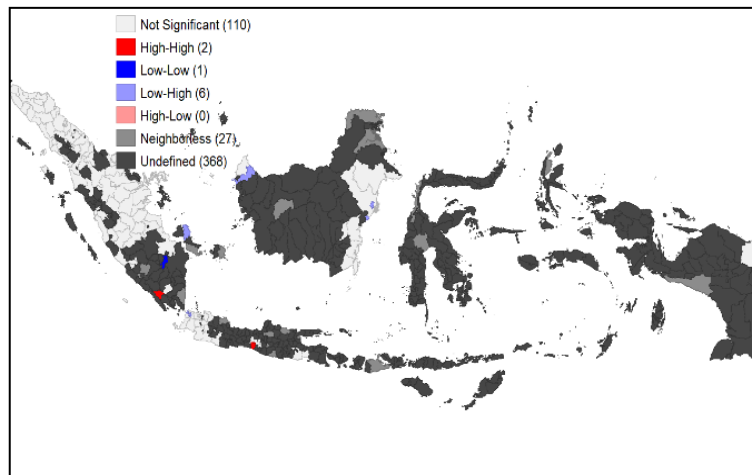


Figure 3: Fertility Cluster Map of Aceh Ethnic Group

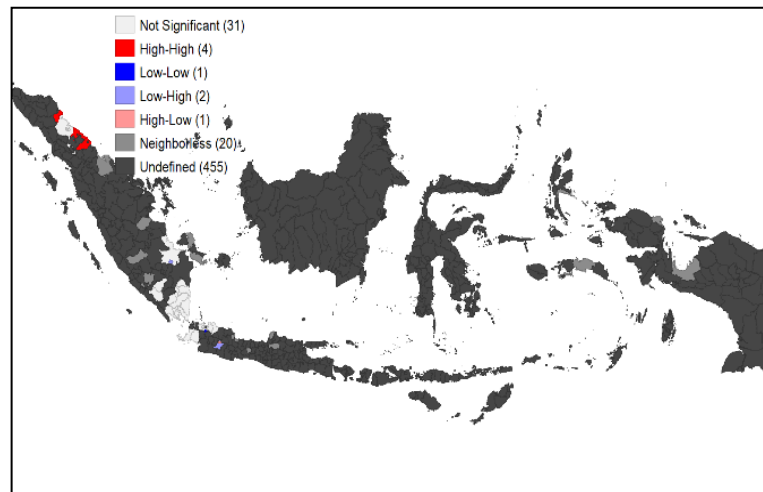


Figure 4: Fertility Cluster Map of Banten Ethnic Group

4. Discussion

The results of the spatial analysis described above show the influence of regional or spatial factors on fertility based on ethnic groups in Indonesia. Several studies in the world also confirm this, such as in South Korea and 21 European countries, Jung et al. (2019); Campisi et al. (2020) explain the relationship between socio-demographic, economic, cultural, and spatial factors on births (TFR). Regional influences occur due to similarities in policies, reproductive health programs and cultural similarities in a region which can influence fertility measures in other regions. With the proof of fertility based on the 15 largest ethnic groups in Indonesia through spatial testing, the regional and local cultural factors in a region can be used as considerations for determining policies and programs, in providing interventions and planning in the future in controlling fertility in Indonesia. The influence of fertility measures on each ethnic group spatially or regionally is certainly directly related to the community in the region. The influence of fertility based on a particular ethnicity spatially occurs, and attitudes and behaviors increase along with the increasing spread of these attitudes and behaviors from one part of a community to another (diffusion process). Jhon B. Casterline (2001) explains that birth is a consequence of attitudes and behaviors that were initially very rare or not involved in a particular society, in other words, social interaction between individuals in a community occurs because they see and observe each other's fertility behavior. This will change their social environment, which in turn affects their decision-making about fertility.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Institutional Review Board Statement: Our research uses secondary data which has been approved for use by the Directorate of Statistical Dissemination of the Statistics Indonesia number 24/LADU/0000/07/23 and 49/LADU/0000/11/23; Data and Information Center of the National Research and Innovation Agency with number 22/STD/VII/2023 dated July 25, 2023 and number 42/STD/XI/2023 dated November 27, 2023.

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Appendix A

Name of Ethnic Groups (Large)	List of Ethnic, Sub Ethnic, and Sub-sub Ethnic
Aceh	Aceh/Achin/Akhir/Asji/A-Tse/Ureung Aceh/Lambai/Lamuri
Batak	Batak/Batak Tapanuli/Batak Angkola/Karo/Mandailing/Dairi/Batak Pakpak Dairi/Pakpak/Batak Simalungun/Batak Toba
Malay	Melayu/Melayu Asahan/Asahan/Melayu Langkat/Langkat/Melayu Deli/Melayu Riau/Melayu Banyu Asin/Melayu Lahat/Kikim/Lematang/Lintang/Pasemah/Gumai/Kisam/Serawai/Semendo/Melayu Semendo/Semidang/Melayu Pontianak/Melayu Sambas/Jambi/Bengkulu
Minangkabau	Minangkabau
Banten	Banten
Betawi	Betawi
Javanese	Jawa/Samin/Tengger/Nagaring/Nagarigung
Madurese	Madura
Sundanese	Sunda/Naga
Balinese	Bali/Bali Hindu/Bali Majapahit/Bali Aga/Baliaga/Trunyan
Sasak	Samoro/Sasak/Bayan
Banjar	Banjar/Banjar Kuala/Batang Banyu/Pahuluan
Dayak	Dayak/Tudung/Tingalan/Tidung/Abai/Dayak Abai/Abal/Ahe/Badeng/Baka/Bakung Metulang/Balangan/Banjau/Bantai/Dayak Bantian/Dayak Bara Dia/Berangas/Barangas/Bawo/Beketan/Beraki/Merau/Berau/Murut/Bulungan/Bungan/Busang/Dayak Sempadian/Dayak Sekakai/Dayak Pelanjau/Dayak Menggaling/Dayak Membulu/Dayak Kendawangan/Dayak Belaban/Dayak Batu Payung/Dayak Air Upas/Dayak Air Durian/Dayak Senangkatn/Dayak Senangkan/Dayak Senangan/Dayak Sekapat/Dayak Sekalau/Dayak Sebaru/Dayak Merakai/Dayak Mandau/Dayak Kumpang/Dayak Ketungau-sesae/Dayak Embarak/Dayak Demam/Dayak Begelang/Dayak Banjur/Dayak Air Tabun/Dayak Ketungau Senangan/Dayak Ketungau Sekapat/Dayak Ketungau Sekalau/Dayak Ketungau Sebaru/Dayak Ketungau Merakai/Dayak Ketungau Mandau/Dayak Ketungau Kumpang/Dayak Ketungau Embarak/Dayak Ketungau Demam/Dayak Ketungau Begelang/Dayak Ketungau Banjur/Dayak Ketungau Air Tabun/Dayak Ketungau/Dayak Lau/Dayak Alau/Dayak Angan/Dayak Sakanis/Dayak Moro Batukng/Dayak Banyuke-Songga Batukng/Dayak Banyuke-Satona/Dayak Banyuke-Satolo/Dayak Banyuke-Sakanis/Dayak Banyuke-Moro Batukng/Dayak Banyuke- Banokng/Dayak Banyuke-Angkabang/Dayak Banyuke/Dayak Banokng/Dayak Angkabang/Palin/Dayak Apalin/Apalin/Dayak Apoyan/Dayak Babak/Dayak Badat/Dayak Bahau/Bahau/Dayak Lumar/Dayak Lape/Dayak Bakati' Tari/Dayak Bakati' Subah/Dayak Bakati' Sebiha/Dayak Bakati' Sara/Dayak Bakati' Riok/Dayak Bakati' Rara/Dayak Bakati' Payutn/Dayak Bakati' Palayo/Dayak Bakati' Lumar/Dayak Bakati' Lape/Dayak Bakati' Kuma/Dayak Bakati' Kanayatn Satango/Dayak Bakati' Dayak Balantiatn/Dayak Neban/Dayak Iban/Dayak Hivan/Dayak Daya/Dayak Balau/Dayak Bangau/Dayak Banyadu/Dayak Simpakng/Dayak Semanakng/Dayak Sajan/Dayak Kualatn/Dayak Banyur/Dayak Barai/Dayak Bassap/Basap/Dayak Batu Entawa/Dayak Sepauhan/Dayak Pesaguan Kanan/Dayak Pesaguan Hulu/Dayak Pesaguan/Dayak Marau/Dayak Kengkubang/Dayak Kekura/Dayak Batu Tajam/Dayak Bauk/Dayak Baya/Mangkatip/Dayak Taboyan/Dayak Bawo/Dayak Beginci/Dayak Begeleng/Dayak Beah/Dayak Benane/Dayak Behe/Dayak Tembiruhan/Dayak Tanjung/Dayak Sumanjawat/Dayak Riam/Dayak Pringkunyt/Dayak Perigi/Dayak Penyarang/Dayak Jalai/Dayak Benatu/Dayak Benawas/Dayak Bentian/Karau/Dayak Leok ara/Dayak Lemper/Bentian/Ayus/Dayak Benuaq/Benuak/Dayak BI Somu/Dayak Bidayuh/Dayak Biatah/Dayak Bihak/Dayak Brusu/Berusu/Dayak Bubung/Dayak Bugau/Dayak Ukit/Dayak Bukut/Dayak Bukit/Dayak Buket/Dayak Bukat/Ukit/Bukut/Buket/Bukat/Dayak Bukit Talaga/Dayak Buratmato/Dayak Butok/Dayak Cempedak/Dayak Kayan/Dayak Da'/Dayak Kayanath/Dayak Dait/Dayak Dalam/Dayak Kayu Bunga/Dayak Kaluas/Dayak Dalang/Dayak Darai/Dayak Darat/Dayak Daro'/Dayak Darok/Dayak Dayah Sa'ban/Dayak Desa/Dayak Dsa/Dusun/Dayak Dusun/Dayak Dosan/Dusun Deyah/Dayak Dosatn/Dayak Ella/Dayak Taman Ba/Dayak Mbaloh/Dayak Maloh/Dayak Embaloh/Dayak Umaloh/Dayak Empayuh/Dayak Ensilat/Dayak En Silat/Dayak Engkarong/Dayak Engkode/Dayak Ensanang/Dayak Entebang/Dayak Entabang/Dayak Entuka/Dayak Entungau/Dayak Galik/Dayak Gali/Dayak Gerai/Dayak Gerunggang/Dayak Golik/Dayak Goneh/Dayak Gun/Dayak Hibun/Dayak Hovogan/Dayak Inggar Silat/Dayak Jagoi/Dayak Jangkang Kopa/Dayak Jangkang Jungur Tanjung/Dayak Jangkang Engkarong/Dayak Jangkang Benua/Dayak Jangkang/Dayak Jawan/Dayak Jawatn/Dayak Jelai/Dayak Joka'/Dayak Kalis/Dayak Kanayan Satango/Dayak Kanayan/Kencing/Dayak Kanayatn-Soari/Dayak Kanayatn-Sawak- Bademea/Dayak Kanayatn-Sapari/Dayak Kanayatn-Samaroa/Dayak Kanayatn-Padakng/Dayak Kanayatn-Mampawah- Samaya/Dayak Kanayatn-Mampawah-Saba'i/Dayak Kanayatn-Mampawah-Pinyuh Gresik/Dayak Kanayatn- Mampawah-Pak Utan/Dayak Kanayatn-Mampawah-Pak Nungkat/Dayak Kanayatn-Mampawah-Oha/Dayak Kanayatn- Mampawah-Moton Buliat/Dayak Kanayatn-Mampawah-Lumut/Dayak Kanayatn-Mampawah-Kaca/Dayak Kanayatn- Mampawah-Buah Muda/Dayak Kanayatn-Mampawah_Batukng/Dayak Kanayatn-Mampawah -Sua' Barangan/Dayak Kanayatn-Mampawah -Saputukng/Dayak Kanayatn-Mampawah Ngabakang-Bonsoratn/Dayak Kanayatn-Mampawah- Banana'-Badamea Sangkikng/Dayak Kanayatn-Mampawah/Dayak Kanayatn-Bukit-Tarap /Dayak Kanayatn-Bukit- Sidik/Dayak Kanayatn-Bukit-Samih/Dayak Kanayatn-Bukit-Sairi/Dayak Kanayatn-Birmana'-Mampawah-Ipuh/Dayak Kanayatn-Banana'-Mampawal -Salutukng/Dayak Kanayatn-Banana' -Mampawah-Sabawis/Dayak Kanayatn-Banana'- Mampawah-Pulo Padakng Sairi/Dayak Kanayatn-Banana' -Mampawah-Barabas/Dayak Kanayatn-Ambawang- Mampawah/Dayak Kanayatn Capala/Dayak Kanayatn/Dayak Kanaya/Dayak Kancikng/Dayak Kantuk/Dayak Kantu'/Dayak Kayaan/Dayak Kayong/Dayak Kayung/Dayak Kebahan/Dayak Tayap/Dayak Sum/Dayak Pangkalan Suka/Dayak Kebuai/Dayak Kede/Dayak Kelabit/Dayak Kelata/Dayak Keluas/Dayak Keneles/Dayak Keninjal/Dayak

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Bugis	Bugis/Ugi/Pagatan/Bugis Pagatan/Orang Kajang/Ammatowa/Amatoa/Tolotang
Chinese	Tionghoa/Cina/Cina RRC/RRT/Cina Taiwan
Others	Bangka, Belitung, Gayo, Kerinci, Lampung, Nias, Palembang, Rejang, Osing/Using, Buton, Gorontalo, Kaili, Mamasa, Mandar, Makassar, Minahasa, Mongondow, Sangir, Tolaki, Toraja, Ambon, Galela, Seram, Ternate, Tobelo, Papua

Source: Central Statistics, 2023

Rational Actions of Women Farmers in Subak Bengkel-Bali: Integrating Agriculture and Tourism

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Abstract

Subak encompasses not only cultivated land and its irrigation system but also the intertwined social and religious activities, particularly involving women farmers. These resilient Balinese women support their families while preserving agricultural heritage and engaging in tourism post-Covid-19. Their cultural roles in daily life have evolved alongside significant changes, such as the conversion of agricultural land to tourism facilities. In this village, women farmers have pursued equitable wage practices in tourism, positively affecting their children and enhancing tourism's value. This study aims to analyse the rational actions of Subak Bengkel-Bali women farmers in creating added value through agriculture and tourism. Employing a qualitative approach with explanatory descriptive research, interviews were conducted using the snowball principle, alongside observation and documentation. Data underwent reduction, verification, and condensation to yield recommendations. Results indicate that women farmers not only farm but also work in tourism-related sectors like restaurants and villas. Keywords: rational actions, women farmers, subak, bengkel-bali, agriculture, tourism

Keywords: Rational Actions, Women Farmers, Subak, Bengkel-Bali, Agriculture, Tourism

1. Introduction

1.1 Subak and its Challenges

Subak is a community organization (known as *sekhe Subak*) or institution that manages irrigation water and rice cultivation mechanisms within rice field landscapes. The water source is linked to temples and operates autonomously based on the philosophy of *Tri Hita Karana* (THK). The meaning of THK encompasses three ways to promote the happiness of beings, God, and the environment. The first component, *parahyangan*, refers to creating harmony between humans and God; the second, *pawongan*, signifies harmony among humans; and the third, *pelemahan*, represents harmony between humans and the natural environment, all harmonized through rituals (Sriartha et al., 2017). This illustrates a bond that encapsulates the philosophy of human life.

For the Balinese community, rice fields are regarded as sacred spaces, termed *Taman Sari* (sacred gardens), where deities and other holy beings interact. This reverence is understandable, as rice is a primary energy source for daily activities. Consequently, numerous myths exist surrounding rice fields and rice cultivation as a staple food (*manik galih*), revered as Dewi Sri Goddess (Wardi et al., 2014). Furthermore, Tabanan has been designated as Bali's 'rice barn'. Discussing Subak involves not only its agricultural fields and irrigation systems but also the deep social and religious life intertwined with it (Lestari & Ginting, 2021). The religious life associated with subak is evident from planting to harvesting, accompanied by various ritual ceremonies. These ceremonies often involve women, especially in preparing offerings for temples or ritual sites within Subak. Balinese women are renowned for their resilience in supporting family economies while preserving agricultural heritage. To this day, women's roles in agricultural culture remain significant (Subekti, 2021). There are terms like *sekhe nandur*, *sekhe mejukut*, *sekhe manyi*, and *sekhe napinin*, where the majority of members are women. Linguistically, *napinin* refers to the process of cleaning rice husks (Pemerintah Desa Bengkel, 2022). This indicates that women farmers are involved from planting to harvesting, including those around Subak Bengkel, Tabanan, Bali.

Most farmers are reluctant to sell their agricultural land, viewing it as ancestral heritage that should be preserved and passed down. The Subak customary institutions play a significant role socially, culturally, and economically. This is evidenced by the positive correlation between these roles and farmers' perceptions of maintaining Subak as a form of local wisdom in Bali's agricultural sector. (Prastyadewi et al., 2020). But in reality young people and women are starting to change their jobs from agriculture to tourism. Apart from that, several Subak areas are starting to change function to become tourist areas. As well as several Subak in Bali are international cultural heritages, including Subak Bengkel.

Bengkel Village, located in the Kediri District of Tabanan, has 80% of its population engaged in farming. This village possesses the largest subak area in Kediri with stunning natural potential, and its agrarian and cultural activities remain well-preserved. It is situated not far from tourist destinations such as Tanah Lot (Kemenpar, 2022). Subak Bengkel consists of 18 Subak temples, covering an area of approximately 375 hectares with around 900 members (*kerama subak*). Since 1991, there has been the conversion of Subak land for tourism facilities (hotels), estimated at 90 hectares. Before the construction of the hotel (in 2013), local farmers (former landowners) were permitted to cultivate the land as rice fields and for grazing cattle (Wardi et al., 2014). Research in the nearby Pangkung Tibah village, also in the same district, indicates a "threat of land conversion," where investors have employed various tactics, including involving local authorities to compel residents to surrender their land. Not all land owned by residents can be acquired by investors. Currently, some land owned by locals remains unacquired by investors, resulting in land that is isolated due to unclear access. Indigenous communities also express discomfort with the development of tourism accommodations along the coast (Purba et al., 2020).

Recent data from a preliminary survey conducted from June 8 to 10, 2023, in Subak Bengkel shows that approximately 40 hectares of land have undergone conversion. Despite discrepancies in data, UNESCO recognizes Subak as a world cultural heritage that must be preserved (Yujana et al., 2022). The cultural landscape of Subak in Bali was designated as a world cultural heritage in June 2012. In May 2024, Subak Bengkel will become an eco-hydrology model. This highlights the value of Subak Bengkel as a world cultural heritage that needs conservation, amid the ongoing phenomenon of land conversion and the youth, including women, shifting to non-agricultural jobs.

As time progresses and changes occur regarding land conversion from agricultural areas near Subak into tourism facilities, women are increasingly transitioning to or supplementing their income with non-agricultural jobs. The phenomenon of job transition among women in Subak Bengkel presents a compelling area for study. It is understandable the fact that women farmers in the area of study need to do income generating activities (*das sein*) and at the same time they have multiple burden as housewives and normative community members (*das sollen*) This research aims to analyse the rational actions of women farmers in Bengkel village concerning with integrating agriculture tourism.

1.2 Literature Review

Research on Balinese women in the agricultural sector has been extensive, including studies that illustrate the high involvement of women farmers in the activities of Subak Begawan Kelod - Tabanan, reaching a significant 83.33%. This involvement is attributed to the primary occupation of the village community as farmers, coupled with a lack of job opportunities outside agriculture, leading them to work as laborers on others' farms (Sukanteri & Lestari, 2017). Another study examining gender roles in the management of Subak in Bali, particularly in Subak Taman Bali, indicates that both men and women participate in subak management. However, the nurturing theory still prevails, highlighting existing role differences between male and female farmers, resulting in varied participation and responsibilities.

Women's participation remains limited, and they do not enjoy equal rights with male farmers due to the Purusa-Pradana concept, which prioritizes men as landowners. Relating to the six functions of Subak, women are more dominant in conducting ritual activities (Damayanthi et al., 2020). In contrast, in Songan-Bali village, women farmers contribute significantly to improving agricultural quality. They are efficient workers, often producing neater results than men. Women are also capable of creating opportunities in agriculture, such as experimenting with new crops to diversify agricultural outputs (Yani & Indrayani, 2021).

In a study on the changing role of women in the agricultural sector in Tandawang village, the increasing role of women in the agricultural sector is due to economic factors. However, their roles are subordinated because of patriarchal culture and religious dogma. The majority of women do all roles in agriculture but have less access to resources and decisions making. Many landlords use women as farm laborers because they can be paid in lower wages than male laborers. On the other hand, women have a double burdens because they have to work in the domestic sector too (Amalia et al., 2022).

Nevertheless, the role of women is considered positive in the image of Balinese culture because it is carried out according to customs and the assumption that working is an obligation to carry out *dharma* according to Hindu teachings. It is undeniable that the main factors for women working in the agricultural sector are economic factors and educational factors. On average, women with elementary or junior high school education look at the agricultural sector as easier to achieve for these graduates (Widiastri et al., 2024).

Other research in the tourist village of Pujon Kidul indicates that women and housewife farmers engage in activities beyond farming, such as selling processed food and beverages (Soedarwo et al., 2022). This phenomenon is commonly observed in nearly all agrarian village communities in Indonesia, including Subak Guama in Tabanan, Bali. Research on the accessibility of economic capital for female farmers in Subak Guama, Tabanan, Bali, highlights their involvement in trade, which aligns with their roles as housewives, where they typically engage in domestic tasks and sell vegetables, side dishes, and snacks (Astiti & Sarjana, 2020). In Subak-Guama, women farmers generally have less access to resources than men, so the women formed the KWT Suka Makmur forum. The forum is a means of communication and empowerment for women farmers through education and entrepreneurship training to improve the family economy (Astiti, 2017). The increase in both physical and non-physical activities in agriculture underscores the significant presence of women in farming, leading to the phenomenon known as "Feminization of Agriculture." Feminization of agriculture refers to the movement aimed at increasing the number of women and enhancing their roles in agriculture (Maulana et al., 2022).

Feminization is also linked to globalization and advancements in communication and transportation, which encourage people to migrate temporarily or permanently abroad or return to their hometowns in search of better livelihoods. One consequence of this migration is the increasing feminization of agricultural labor, with more women participating. Additionally, the regeneration of the workforce has led to a predominance of women in agriculture, as the younger generation is less interested in farming. Young graduates from vocational schools and tourism diploma programs in Bengkel-Bali are opting to work abroad on cruise ships or directly engaging in jobs at villas, restaurants, or glamping sites on nearby beaches. Choosing to work in the non-agricultural sector is an example of instrumental rationality.

Instrumental rationality (*zweckrationalität*), as proposed by Max Weber, is understood as an action taken with rational considerations to achieve a goal, even using alternative means such as market systems. Weber further

explains that economic actions within market systems are characterized as instrumental rationality (Goodman and Ritzer, 2018). Actors will consciously choose actions based on a “cost-benefit” analysis aimed at achieving their objectives.

Women farmers in Bengkel village also act as instrumental rational agents, contributing to the economic sustainability of their families. Economic actions, such as seeking a livelihood, consider all aspects of the actors and resources, as highlighted by Coleman and Homans (in Favell, 2005), which are key terms in this research on female farmers. Rational choice theory emphasizes two elements: the actor and the resources. Here, the actors are women farmers who have specific goals to maintain family economic resilience, especially during the pandemic or when agricultural land is increasingly threatened by expanding tourist destinations. It is reasonable for a woman farmer to choose to contribute to her family's welfare.

Homans (in Hidir, 2024) discussed the profit and loss rewards in the realm of exchange, highlighting the exploitation of women's labor on a micro level. Thus, the core of this theory also lies in resources. This theory places emphasis on the actor, defined as an individual taking action regarding the resources they possess. These actions are expected to lead to social change. When women farmers choose to work under any conditions, their survival strategies are rational choices, reflective of actions taken by individuals.

The rational actions of the actors and their resources are questioned by Zeitlin (in Harris, 2024) critiquing Homans on whether these can lead to changes in the actors' lives, particularly in challenging seasons. Actors indeed play a central role in taking action. Each choice made by women farmers to contribute economically to their family needs is considered rational, with the resources including rice fields, vegetable plots, and other workplaces. This implies that women farmers, in addition to working in Subak for rice or vegetable crops, are increasingly aware of their equality with men and aspire to combat their oppression by actively participating as earners while fulfilling household responsibilities.

Balinese women are entering the economic sphere with the aim of improving welfare and alleviating the economic burden on heads of households (Indrayani & Musmini, 2020). The economic independence of Balinese women is reflected in their involvement in agriculture as well as in social and religious activities while seeking added value in the tourism sector.

From the above description, several studies on Subak agricultural actors in Bali illustrate the intertwined social, economic, and religious lives of both male and female farmers and their children. However, there has yet to be an analysis of the activities of female farmers as actors in the tourism sector. The novelty of this research leverages rational action theory, focusing on the rational choices of women farmers, particularly the added value of their work in both agricultural and non-agricultural (tourism) sectors, as their children increasingly choose careers in various fields.

2. Method

This research employs a qualitative approach with a descriptive-explanatory research type. The study is located in Subak Bengkel, Bali, chosen for its status as a UNESCO site and its commitment to preserving nature and culture through upstream-to-downstream agricultural practices. The subject selection technique is based on snowball sampling. In the snowballing principle, subject limitation ends when new data is not obtained or is saturated. This method begins with selecting one subject, guided by key informants, to become the first subject, and then rolling to the second subject and so forth to expand data sources. This technique involves choosing women farmers designated by the village head (Perbekel) and then identifying other women farmers based on the first subject's recommendations and so on. These women farmers not only work in rice agriculture but also cultivate other crops (such as mustard greens, shallots, ornamental flowers, and seasonal plants like sweet potatoes, potatoes, carrots, peanuts, red beans, and corn) or engage in tourism activities.

Here our interview activities with some subjects, first subject is KA. She was born on 9 November 1985, village: Bengkel Gede. She planted green vegetables, because the rice had not started to be harvested. The vegetables

planted were mustard greens planted in 3 rice fields and then sold to collectors and sometimes also sold to Blitar meatball customers. also watered the green mustard plants. If job opportunities are closed, Mrs. KA is not allergic to returning to work in the agricultural sector. Since 2021 - 2023, she currently worked at the Sari Darma shop, near the house near the T-junction as a cashier. And then, she was a Freelance worker at the Fiona villa housekeeping in Legian, working on Tuesdays and Fridays. There are many guests from the Netherlands and Australia.

Second subject is NWS. She was born in Bengkel Gede, on 8 Februari 1990. NWS helps work (mature fields, not rice) planting onions, experienced as an onion farmer for 4 months, the results from NWS's garden are sold (transactions) with the stall owner. also had time to: sell canang for 2 months, applied for a job 2 times but did not pass, open a stall since February 2023, and in 2020 had time to sell ice next to his father selling meatballs.

Previously, NWS's father was a construction worker (2009), after that he was fully farming in the fields, the results per 100 days were 5 tons and that was divided into two for the workers and the landowner. After the change function of Subak, NWS work as selling food and drinks near BTN Puri Damai housing near the carver. As a mother, NWS has enjoyed her present time, she is active in many activities such as garbage cadres, PKK, temple odalan, likes to help in Banjar (socialization of antibiotic use). TPS cadres, 3R (reduce, reuse, recycle) are also active in PMI. Always active in hamlet and village activities.

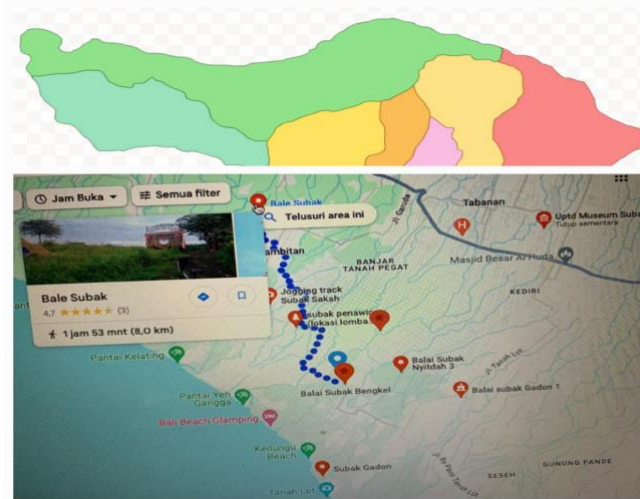
Data collection techniques in this research include: first, interview related to work while living in the village and why they moved to tourism and also with village officials to gather general data related to both rice and secondary crop activities. Additionally, open-ended interviews are conducted to obtain data on the daily activities of farming communities. Second, collected data through observation. The things observed were the location of the Subak-Bengkel and the daily work of female farmers through researcher involvement for one month. Third, documentation, the things documented are the location of the Subak-Bengkel and interview activities, and also data from the Central Statistics Agency of Bali Province. There are several several stages of data analysis: first, data reduction, followed by data display, data condensation, and verification or conclusion drawing. The data reduction stage involves simplifying, abstracting, and transforming the "raw" data gathered from field notes. Data reduction occurs continuously throughout the research, even starting before the researcher determines the conceptual framework, research issues, and chosen data collection approach. This process continues post-field research. The data display stage presents a structured collection of information that allows for conclusions to be drawn, formatted as explanatory narrative text. Initially, the information appears as scattered text, which is organized from less coherent to more coherent after the researcher simplifies complex information into a comprehensible narrative structure. The verification stage or conclusion drawing is part of a holistic activity. The conclusions are verified throughout the research, making the principles of this data analysis stage circular. To reduce data bias, triangulation of data sources was carried out on a subject's daughter who has high mobility regarding with her work abroad, her name is A.

3. Results

Bengkel Village is a strategically located area for introducing rural tourism and various Subak activities, along with other cultural attractions that have persisted (Prihantari et al., 2023). According to village data from 2020, the population of Bengkel Village in Kediri District, Tabanan Regency, was 2,314 people, with 759 households. The majority of the residents are Hindu, with only 0.82% adhering to religions other than Hinduism. As is common in Bali, each hamlet in Bengkel Village has its own Banjar Adat, with each banjar having its own village temple (pura pengulun desa) and cemetery (setra).

There are four Banjar Adat in Bengkel Village: (1) Banjar Adat Buduk, (2) Banjar Adat Bengkel Gede, (3) Banjar Adat Bengkel Kawan, and (4) Banjar Adat Telengis (Soedarwo et al., 2024). Each of these Banjar Adat has its own kelian adat, chosen through deliberation among the community members. Interestingly, all four Banjar Adat belong to one customary area, the Pekraman Bedha Customary Village, which encompasses several Banjar Adat spread across various administrative village areas (Sumaryani et al., 2023).

As mentioned earlier, in addition to the Indigenous community, there is also a Village Community Institution (LKD) in Bengkel Village in the form of Subak, specifically Subak Bengkel. The area of Subak Bengkel falls within three administrative village regions: Pejaten, Bengkel, and Pangkung Tibah. It is named Subak Bengkel because the largest area of Subak is located in Bengkel Village. The community of Subak primarily consists of farmers. For a visual representation of the location, please refer to the following map:



Picture 1 : Google map compilation (Nazrina Zuryani : 2024)



Picture 2 : Subak Bengkel and Balai Subak (Primary Documentation)

Subak Bengkel was chosen as one of the UNESCO sites, where Subak Bengkel is a subak that still maintains the sustainability of nature and culture through agriculture from upstream to downstream. The rice fields irrigated by Subak Bengkel cover an area of 335 hectares, yielding a dry grain harvest of approximately 7.5 tons. The total cultivated area is 375 hectares, but about 40 hectares have been sold and converted for other uses (interview with the village head of Bengkel on May 10, 2023). Tabanan is designated as Bali's 'rice barn,' so it is hoped that the rice fields will not be converted for other purposes. The planting pattern in the Subak area in Bali is called Kertamasa and Gadon. Kertamasa is a simultaneous planting pattern for all Subak areas, involving long-duration rice varieties planted during the rainy season. Gadon refers to a planting pattern for short-duration rice varieties during the dry season. The crop rotation in these rice fields follows a pattern of rice-palayam (secondary crops) and then rice again.

According to informant in a data survey, the income of Subak generally comes from Subak-related businesses, member contributions, penalties for violations, fines as 'uang pengampel' or 'pengohot' related to adat awig-awig or written regulation of each village, government assistance, or aid from other parties. This income is typically used for religious ritual ceremonies and the maintenance of Subak infrastructure.

Ritual ceremonies are deeply ingrained in the community's life, including daily activities related to the Subak system. Based on interviews with the head of Tempek Umujero, Mr. WWS, several types of religious ritual ceremonies are commonly held by members of Subak Bengkel. First, the Mapag Toya ritual, which is conducted when the water is first channelled from the source. Second, Ngaturang Pেকেlem or Mepelabuh is a ritual ceremony conducted by a combination of Subak at the water source (lake or sea), while Pengerit is held by a single Subak led by the pekaseh (Subak leader) to select an auspicious day. The meaning of this ritual is to pray for safety so that crops are protected from pests and diseases.

The holy water obtained from these rituals is distributed to each plot of land belonging to Subak members. Third, the Nunas Pekuluh ritual is conducted to request holy water from the temples surrounding the Subak, as it is believed to be connected to soil fertility. The significance of this ritual is to maintain the sanctity of the rice fields and protect them from pests by sprinkling holy water on each farmer's field. Fourth, the Nangluk Mrana ritual is held by Subak members at the beach to prevent plant pest infestations. Fifth, the Neduh Alit ritual is performed at the temple (twice a year) to ensure smooth planting and harvesting of rice without pest attacks. Sixth, the Ngusaba Pari Wayah ritual is conducted when the rice turns yellow and is ready for harvest, as an expression of gratitude to God for granting the success of the rice crops to the farmers. Seventh, the Ngusaba Nini ritual is performed to thank Dewi Sri, the goddess of fertility, for her blessings and to request safety (Ardhana, 2017).

All these ritual ceremonies related to Subak and the planting and harvesting of rice form an inseparable part of the life of Balinese farmers. Therefore, they become a strength and foundational capital in maintaining cultivated land as a center for rice production and as a national and world cultural heritage.

4. Discussion

One of the female farmer research subjects is referred to as KA. Before getting married, she worked in the tourism sector for about 20 years. She married in 2007 and has two daughters: the first, AGGN, is in 12th grade, and the second, AMK, is in 8th grade. The absence of a son (who traditionally continues the father's lineage) allows KA to prepare her daughters for opportunities abroad. An invitation from her friend's husband from Germany has been postponed for a year because AGGN did not have an ID card last year. According to KA, when AGGN is ready to marry, she will look for a partner. If AGGN does not find a match, it will be passed on to her younger sister. For KA, if AGGN finds a suitable life in Germany, it is possible that AGGN will seek schooling with the help of her German sponsor. KA encourages AGGN to explore tourism in the village and urges her to learn foreign languages, which are essential. Currently, AGGN is learning German through YouTube, in addition to studying English.

KA's history of learning foreign languages began when she worked in tourism long before the Covid-19 pandemic. She once worked at the Legian Hotel on Jalan Melasti and as a waitress at a Russian-owned villa in 2021. When the pandemic hit, she was laid off for a year without severance pay, despite having worked there for 8 years (since 2012). During this time, KA's husband continued to work as a security guard at the airport, albeit with a salary cut. In 2022, when her husband fell ill, someone else worked on their rice fields. At that time, KA also planted green vegetables since the rice had not yet been harvested. She planted mustard greens across three rice plots, which she sold to collectors and occasionally to a regular customer who sells bakso (meatballs) from Blitar. Her income from agriculture was around IDR 800.000. KA also planted durian and clove trees. This research subject has truly returned to farming, engaging in activities like sowing mustard seeds, watering, and harvesting, reflecting the traditional "tumpeng gilir" farming practices common among farmers in Bengkel Village.

Since 2021-2023, KA has worked at Sari Darma store near her home as a cashier. She continues to grow mustard greens because the marketing is good, with a regular customer from the meatball trade buying from her. Additionally, she works freelance in housekeeping at a villa in Legian, focusing on Tuesdays and Fridays, serving international tourists, including guests from the Netherlands and Australia whom she has known for a long time. In 2024, KA will work as an admin for a high-end laundry service in Canggu while still taking on villa jobs twice a week. She truly wishes to return to working in a restaurant, as she enjoys that work because the income from tourism sector is more than farming. From this description, it can be analyzed that she rationalizes her actions by

working as both a farmer and outside agriculture, consciously considering the economic benefits she can gain, especially after the pandemic caused economic stagnation in every sector, particularly tourism.

Another research subject is NWS, who describes her experience working at Tanah Lot (a golf sport location) and successfully passed the selection from hundreds of applicants through training, despite not having a tourism background. During the first three months of training, mental resilience was heavily emphasized. Of the hundreds of applicants, only 30 passed. After working for three years on the golf course, she moved to a hotel due to the long commute, then transitioned to a mini-market as a cashier, where she was laid off in 2022. Subsequently, she returned to the village to cultivate her family land of 60 are. She helped cultivate (non-rice fields) by planting shallots, gaining experience in onion farming for four months, selling the produce through transactions with a local vendor. In 2023, NWS opened a small shop, while her husband works full-time as a farmer, producing 5 tons of rice every 100 days from their fields.

The next research subject is a member of the Women Farmers group, referred to as NLPS, who not only farms but also makes ritual supplies associated with Subak activities, including crafting canang from young coconut leaves in a square shape. In addition to helping her husband in the rice fields, she creates various canang that are sold at ritual events. The profits from making canang are not particularly significant; however, NLPS feels that crafting canang is an integral part of their life, closely tied to their ritual and spiritual practices. She is the mother of a daughter who is pursuing a Diploma 1 education, and through snowball sampling, she brings a new understanding of the daughters of Subak farmers in Bengkel Village. Her eldest daughter, NPWS, has been working at the Glamping site in Tampih beach for three years.

The 24-year-old NPWS intends to maintain her job in the tourism sector, thanks to her knowledge and education in vocational studies focusing on culinary arts. For NPWS, even though marriage means she will join her husband's family, she still wants to work and build a career in the tourism sector. Similarly, another young woman, WCS, living on Jalan Raya Subak Bengkel, has completed her Diploma II in hospitality and has been working at a well-known restaurant in Sanur while awaiting graduation. WCS's mother is also a canang seller, and her father, besides having cultivated land, has a motorcycle repair shop on the main road of the village. Another subject is the second daughter, KR, who is pursuing a diploma in culinary arts. She works in restaurant service on Berawa beach while aiming to sustain her career in tourism. The fourth young woman, NPP, also holds a Diploma II in tourism and enjoys her current job. NPP's mother is a skilled chef at a villa on Kedungu beach.

The results from several interviews indicate that, within the Subak system in Bali, women's roles are highly significant, particularly in carrying out religious rituals and managing Subak organizations. Women actively participate in rituals associated with agriculture and have authority in certain decision-making processes. This aligns with (Martiningsih, 2011) assertion that in Subak Wongaya Betan, female members organize processing of organic red rice tea and coffee, as well as engage in product marketing and maintain buyer relationships. Women's involvement in Subak management remains applicable in other locations, although still limited. (Astiti & Suamba, 2023) describe that women's engagement in managing Subak organizations is normatively taught from childhood. This indicates that although women possess abilities that are not yet on par with men in managing Subak, they are often not fully involved in agricultural activities or agricultural extension services. Balinese women from farming families play a crucial role in the Subak system, both in ritual aspects and organizational management. This aligns with research conducted by (Sudarta et al., 1987). However, challenges remain in ensuring their full and equal participation in all aspects of Subak management. This is also reflected in the roles of Subak Bengkel women farmers in encouraging their daughters to pursue higher education and careers beyond just the context of Subak agriculture.

In Bengkel Village, there are approximately 23 boys working on cruise ships. Only one girl, Geg C, works on a cruise ship because her father passed away five years ago and her mother remarried two years later. Geg C decided to work on the cruise ship for one year and has now committed to working there until 2025. Another research subject, MH, works in America, with both parents being farmers with extensive cultivated land. MH's parents have received economic benefits in the form of monthly remittances from their son, ranging from \$600 to \$1500 for the past seven months. This money has been used to construct rental rooms behind their old house. If MH continues

his job at the hotel in America, his parents have prepared a plot of land near the beach for him to build tourism facilities.

Made WN is a male research subject who has been working on a cruise ship for nearly five years and is currently 27 years old. While waiting for his ship to depart again, Made WN has purchased land for a house and plans to build an *angkringan* (a type of street food stall) in front of his house. He has a three-year-old daughter, and his wife works as a cashier in a store. Their plan is to continue working separately for now to save capital for their business, and once they reach 40, they will start a joint venture. Made WN's mother works as an agricultural laborer because their land is very limited. However, Made WN's sister is a hardworking woman who often asks their mother to prepare ceremonial supplies and snacks for the villa where she works. Made WN's sister's house is not far from their parents' home, allowing their parents to assist with her business activities and care for Made WN's young daughter while he and his wife work.

The research subjects made the decision to change jobs based on their own rational considerations, which aligns with Coleman's theoretical framework where individuals are actors who engage in actions. These actions are expected to bring about social change. When subjects choose to add or change jobs in the non-agricultural sector related to tourism, this is seen as a rationally chosen action. Rational choice theory emphasizes that the actor is a key component in taking action. Here, the actor can be understood as individuals making choices to achieve their interests and maximize their benefits, allowing social change to occur naturally.

This is done by actors making choices that they believe will yield results to achieve their interests. Similarly, young research subjects take actions to work in non-agricultural fields to increase their income and enrich their personal experiences. The core of rational choice theory consists of two elements: the actor and resources. The actors are the subjects as farmers and their spouses and children, while the resources include agricultural land such as rice fields and the availability of tourism facilities, especially Subak. However, other resources that the subjects utilize strategically are efforts to gain additional income and work experience in non-agricultural sectors, which informs their rational decisions.

Women farmers who possess foreign language skills for direct or indirect communication certainly influence others outside of themselves. This external influence can take the form of actions from others or rewards obtained from changing jobs. This aligns with the success proposition outlined by Homans in social exchange theory, which results in rational actions among female farmers in Bengkel Village, Bali. The women around Subak shift jobs because, firstly, their actions can bring rewards, which Homans refers to as the success proposition. Secondly, the shorter the time interval between the behaviour of taking on a new job and receiving rewards, the greater the likelihood that the subjects will repeat that job. Intermittent rewards are more likely to reinforce behaviour than consistent rewards. For instance, in new jobs at restaurants or hotels, there are bonuses or rewards that come intermittently, unlike working in rice fields. The next proposition is the stimulus proposition, which indicates that jobs that yield many rewards will encourage further engagement.

As Homans stated, "A fisherman who casts his line into a murky pond and successfully catches a fish will want to fish in that murky pond again" (Homans, 1974: 23). Thirdly, through the concept of the value proposition, it can be analysed that the research subjects repeat their actions in non-agricultural jobs because they assess the outcomes as more valuable than those obtained from agricultural work. Fourthly, the rationality proposition suggests that when choosing among various alternative actions, subjects will select the one they perceive at that moment as having value in terms of results and maximizing utility. The most desired reward is one that is highly valued and likely to be achieved, while the least desired reward is one that is of little value and unlikely to be obtained. Homans also argued that large-scale structures can be understood if we comprehensively understand basic social behaviour. According to Homans, the exchange process is identical at the societal level, where there are more complex fundamental combinations. These four propositions from Homans are very relevant for understanding the behaviour of subjects in changing jobs. Therefore, it is in line with the actor and resources that Coleman discussed before.

This indicates that female farmers are capable of producing added value in both agriculture and tourism. Female farmers also bear the responsibility of managing their households to ensure their families are safe, peaceful, and prosperous. They are highly involved in pursuing the welfare of their families, managing household tasks, participating in work, and educating their children. Women exhibit high levels of creativity in creating business opportunities. Indirectly, female farmers in Bengkel Village apply values from feminist teachings, as they are given opportunities to work and achieve economic independence.

In the context of Subak management, according to Indrayani & Musmini (2020), policies are needed to ensure that women retain rights and access to agricultural land, especially given the ongoing phenomenon of land conversion. Policies aimed at strengthening family economies based on Subak are also necessary, such as developing processed products from harvests that can be marketed as tourism products. This is expected to enhance culture and add economic value to Subak products.

5. Conclusion

Women in Bengkel Village are accustomed to working in agricultural fields, largely due to familial factors, as their parents have lived as farmers but most importantly their husbands are farmers. Generationally, the farming community in Bengkel has pursued this livelihood and relies on agricultural land for their sustenance. From a young age, children become familiar with the crops cultivated on family-owned land or fields. They are taught how to manage agricultural resources early on.

In addition to familial influences, education also plays a role in women's participation in farming. Female farmers in Bengkel typically attain education only up to elementary school, unlike the younger generation, which fully participates in the mandatory 12 years of education.

Generation X women (born between 1965 and 1980) have limited qualifications and most of them cannot finish 12 years of education as previously it was mandatory only 9 years of schooling. Unless they got the certificates (like home schooling package learning of B and C), it can be used to obtain jobs outside of farming in certain sectors. However, over time, some areas around them have developed into tourist destinations. This presents promising opportunities for female farmers to work in tourism. Unfortunately, the Covid-19 pandemic, which significantly impacted the world, forced these women to return to their villages and resume their agricultural activities as farmers.

It is important to note that this reality has resulted in positive outcomes, with improved agricultural product quality attributed to the diligent and skilled efforts of female farmers. The research subjects and women farmers in Bengkel Village work hard and willingly contribute, driven by a strong sense of responsibility towards their families and the sustainability of their agricultural practices. This demonstrates that the skills they possess are effectively utilized to sustain their livelihoods, allowing them to easily switch jobs between agriculture and non-agriculture, especially during the COVID pandemic. The act of changing jobs reflects instrumental rationality based on Weber's concepts as well as rational choice theory from Coleman.

Although, this research has not yet incorporated psychological factors that drive the motivation behind the job transitions of female Subak members. Nonetheless, a rational decision is not entirely absolute in its rationality. When choosing or switching jobs, there are certainly other aspects or factors involved, not solely economic considerations. Therefore, it would be beneficial for future research to examine these issues from a psychological perspective to provide a more comprehensive analysis of similar realities. Otherwise, an empowerment program is needed for women in agricultural areas so that they continue to work in the agricultural sector and maintain Subak as a cultural heritage because it has been declared an international cultural heritage site by UNESCO.

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Zuryani; Writing – Original Draft Preparation, Vina Salviana Darvina Soedarwo and Nazrina Zuryani; Writing – Review & Editing; Vina Salviana Darvina Soedarwo and Nazrina Zuryani; Visualization, Vina Salviana Darvina Soedarwo.

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Body Worn Cameras: Helping the Ghana Police Service Tell Their Version of The Story

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Abstract

This research explores the value of body-worn cameras (BWCs) in reporting the facts objectively and refuting allegations made against the police. This closes a gap in the currently available literature, which mostly highlights accountability and transparency. The study investigates how BWCs can contribute to clearing law enforcement officers of false charges and providing more balanced accounts in tense interactions, particularly on social media platforms. By assessing the extent to which BWCs influence the resolution of complaints against officers and identifying challenges related to their implementation and use in storytelling, the study recognises that while BWCs offer valuable visual and audio documentation, they are not an absolute solution to all evidentiary concerns. It makes use of information from the Ghana Police Service's Ashanti Regional Command as well as relevant secondary sources to investigate the study on ground. BWCs improve accountability and openness, especially by refuting false narratives on social media. It makes use of information from the Ghana Police Service's Ashanti Regional Command to demonstrate the advantages and difficulties of BWC in telling the story. BWCs improve police operations by boosting accountability and openness, especially by refuting false allegations made in social media narratives. To maximize the success of BWCs, the results highlight the significance of strong policies, ongoing training, and infrastructure investment. Overall, the study shows that although BWCs have great potential to modernize law enforcement and enhance public trust, privacy concerns and other implementation issues must be addressed for their successful adoption.

Keywords: Police, Policing, Ghana Police Service, Tech-enhanced Policing, Body Worn Cameras (BWCs)

1. Introduction

The occupation of law enforcement is continuously evolving to meet the demands of modern society. Police officers all over the world frequently encounter dangerous situations that far exceed those faced by the general public. According to the U.S. Bureau of Justice Statistics, in 2016, there were roughly 468,000 sworn, full time police officers in the United States with 3% serving a population of 1000 or more (Hyland and Davis 2019). To

address these challenges and public demands, police departments globally have adopted the use of modern technology including body-worn cameras (BWCs).

However, over the years, a series of high-profile incidents involving law enforcement and the subsequent public outcry have intensified calls for greater transparency and accountability within policing. Recent high-profile police officer-involved shootings in Baltimore, Charlotte, Chicago, Ferguson, and other cities have highlighted tensions between law enforcement and segments of the communities they serve (Buchanana et al. 2015). In response, placing BWCs on police officers has been suggested as a powerful tool to address the police legitimacy crisis in many countries including Nigeria. (Stanley 2015).

Advocates of BWCs argue that these devices offer numerous benefits. They are believed to increase transparency and enhance citizen perceptions of police legitimacy, improve behaviours during police and citizen encounters and provide valuable evidence for resolving complaints against police or prosecuting offenders (Stanley 2015). Additionally, BWCs can offer improved opportunities for police training by providing real-life examples of officer conduct (Chapman 2018).

However, the implementation of BWCs has raised questions about their impact on police behaviour and effectiveness and some studies have shown mixed results regarding how BWCs influence police conduct. Guab et al. (2019) reported that officers felt their discretion was limited and that they engaged less with citizens when wearing BWCs, possibly to avoid potential disciplinary actions that could later be used against them. Headley et al. (2017) found that while BWCs might affect officers' behaviours, they do not seem to interfere with their overall work ethics.

Tanner and Meye (2015) noted that in-car digital devices have allowed officers to view crimes in real time which has brought significant changes to policing practices, such as improved situational awareness, faster response times, and enhanced evidence collection. The contradictory and inconsistent accounts of deadly shootings such as those involving Micheal Brown and Tamir Rice have heightened public curiosity and demands for BWCs as tools to provide clear and objective accounts of police encounters (Symkła et al. 2016).

This introduced the Ferguson Effect as described by Wolfe and Nix (2016) which hypothesizes that the increased scrutiny and unfavourable public opinions following events in Ferguson, MO had led to depolicing, where officers are less willing to perform their duties for fear of accusation of excessive force or racial profiling. This illustrates the precarious state of police community relations (Wood & Groff 2019).

This study, therefore, aims to examine the role of BWCs in providing an objective account of countering claims of police brutality or impunity. By focusing on how BWCs help exonerate officers from false accusations and providing a balanced narrative in contentious encounters, this research seeks to fill a gap in current literature that predominantly emphasises accountability and transparency.

2. Problem Statement

Police use of force continues to be a major source of international concern, inviting interest from academics and practitioners alike. Whether justified or unnecessary/excessive, the exercise of power by the police can potentially tarnish their relationship with the community.

Police misconduct, real or perceived, can translate into complaints against the police which carry large economic and social costs. The authors attempt to answer this question: do body-worn cameras reduce the prevalence of use-of-force and/or citizens' complaints against the police? However, while much of the existing literature focuses on how BWCs serve as a tool for oversight and evidence collection, there is a significant gap in exploring how these devices can help law enforcement officers defend themselves against accusations of misconduct and brutality. This article, therefore, aims to fill this gap by examining the role of BWCs in providing a recorded account from the police perspective, offering evidence that may help clarify contested encounters and counterclaims of misconduct or impunity.

3. Objectives

The primary aim of this study is to explore how BWCs can support law enforcement officers in defending against accusations of misconduct. The specific objectives are:

- To evaluate the impact of BWCs on the resolution of complaints against law enforcement officers; and,
- To identify and examine the challenges of using BWCs in the field.

4. Theoretical Review

The theoretical foundation for the use of BWCs in policing is rooted in deterrence theory which posits that the certainty of being caught and punished for wrongdoing reduces the likelihood of such behaviours (Ariel et al. 2016). BWCs act as a credible threat that deters negative behaviours against police or citizens by increasing the perceived certainty of detection and punishment (Ariel et al. 2014). This is particularly relevant in policing where the presence of BWCs can discourage both officers and citizens from engaging in misconduct with impunity.

Deterrence theory traces its origins to the works of eighteenth-century philosophers, particularly Cesare Beccaria (1764) and Jeremy Bentham (1781), who sought to explain the motivations behind criminal behaviour and the role of punishment in preventing crime. Beccaria's seminal work, *On Crimes and Punishments* (1764), argued that human beings are fundamentally self-interested and, in the absence of legal constraints, may act in ways that disrupt social harmony. He posited that individuals are driven by a rational calculation of pleasure and pain, meaning that without the certainty of punishment, people would be inclined to engage in criminal acts (Beccaria, 1764; Bagaric & Alexander, 2014). To mitigate this, Beccaria emphasised the necessity of clear, proportionate, and consistently enforced legal rules, contending that laws serve as a social contract that maintains order and discourages transgressions (Beccaria, 1764; Ristroph, 2010). Bentham (1781) later expanded on these ideas, reinforcing the principle that the severity, certainty, and swiftness of punishment determine its deterrent effect (Bentham, 1781; Paternoster, 2010). Their contributions laid the foundation for modern deterrence theory, which continues to influence criminal justice policies today. Laws were therefore necessary, and the only goal of punishment for breaking the law should be to deter others from committing the same offence (Johnson 2019).

Furthermore, Beccaria contended that the severity of the punishment should match the seriousness of the crime committed because, in the event that two crimes are penalized equally, nothing will deter people from committing the more serious crime when doing so offers a greater benefit. In addition, he emphasized that the timing of punishment should be such that it occurs as soon as possible after the crime is committed and that the certainty of punishment works more to deter crime than its severity (Johnson 2019).

Some academics contend that deterrence is the best paradigm for analyzing BWCs since using BWCs increases the possibility of facing consequences, which, in turn, indicates that less force will be necessary for an officer to affect compliance. It also means that the existence of body-worn cameras offers some neutral evidence of what actually occurred in the event that a civilian or police officer allegedly behaves inappropriately. It follows logically that with the high probability of being arrested and found guilty based on audio/video evidence, it is equally assumed that suspects and officers, who are aware of the BWC, will not purposefully break the law or, in the case of the officers, their departmental policies.

It follows that it is reasonable to presume that both parties to the interaction are aware of the consequences of disobedience as well as the fact that they are being observed. The expectation is that BWCs will provide a neutral audio-visual record of events, allowing law enforcement agencies, courts, and communities to review interactions more accurately. It is anticipated that with the availability of such evidence, legal and disciplinary outcomes—such as supervisory sanctions or criminal penalties—will be based on clearer, verifiable accounts of incidents. Given that BWCs enhance the certainty of recorded evidence, they are expected to contribute to more transparent and accountable decision-making in law enforcement and judicial processes and help discourage wrongdoing on the part of both people and police. This is predicated on the idea that punishment is not as effective as the certainty of getting caught (Williams 2019; Stinson 2020; Choi et al. 2022).

5. Literature review

The general population is aware police are legally permitted to use force. The rightful use of force to defend officers and residents from potentially harmful individuals inside their community forms the basis of the police role in contemporary democracies (Bittner 1970). Nonetheless, police officers should not use more force than is required to apprehend individuals, keep incidents under control, and shield themselves and the public from harm. (Green et al. 2019). However, when force is applied excessively or without cause, it becomes problematic.

Reiss (1971) defined police brutality as any action that diminishes the status of the citizens; this includes limiting their freedom, harassing them, and using unwarranted and unwelcome force. Despite the broad nature of this term, it is important to understand Reiss considers brutality to require the use of physical force. When a police officer applies more force than necessary to manage a situation, it may be classified as excessive force, which can result from a misjudgment of the threat level, inadequate training, or procedural errors. However, when force is used with the intent to punish or inflict harm beyond securing compliance, it constitutes police brutality, which is a violation of civil rights. This excessive force can cause unnecessary injuries, trauma, or even death. It refers to the deliberate use of force by a police officer in situations involving individuals from marginalised or vulnerable groups, such as racial or sexual minorities. However, the appropriateness of the force used must be assessed within the context of the specific encounter, as not all applications of force in such situations constitute misconduct (Notes 2022; US Legal 2022). However, Alang et al. (2017) define police brutality as a range of behaviours going beyond the use of physical force to entail verbal abuse, psychological intimidation, and acts of emotional and sexual violence.

The adoption of body-worn cameras in policing has been driven by high-profile incidents involving law enforcement and the subsequent public demand for greater transparency and accountability. The deaths of Micheal Brown, Tamir Rice and other unarmed individuals at the hands of police officers have sparked widespread calls for reform and the implementation of BWCs to provide clear and objective recording of police citizen encounter (Symkla et al. 2016). These incidents highlighted the need for transparency in policing practices and led to a significant increase in the adoption of BWCs in police agencies globally.

Following the rise in adoption, the number of publications on BWCs increased noticeably; White (2019) noted that from 2012 to 2018, the number of empirical studies discussing various issues related to BWCs increased from five (White 2014) to seventy (Lum et al. 2019). By late December 2019, there were 119 studies examining the outcomes of BWC adoption including BWC trial evaluation or pilot testing police agencies (Guab and White 2020). These studies have explored various aspects of BWC use including their effect on police reactive and proactive behaviours, citizen attitudes, compliance and satisfaction of police as well as the impact on criminal investigation and police organisation (Cubit et al., 2016; Lum et al. 2019; Malm 2019; Maskaly et al. 2017). Moreover, Karch (2006) contend the motivation to innovate increases when problematic social conditions are identified. This is supported by several scholars' argument that high profile deadly force incidents involving police brutality and its activities have influenced national level politics and consequently the adoption of BWCs by police agencies (Braga et al. 2018; Lum et al. 2019). This environmental factor contributed to the widespread adoption of BWCs as a measure to address public concerns about police brutality and improve accountability.

Despite the positive impact of BWCs on transparency and accountability, research findings regarding their benefits remain mixed. A recent study by Nix et al (2020) found the average rate of officer-involved shootings was not a significant predictor of BWC adoption and use. Similarly, Kyle and White (2019) found no significant difference in the level of support for BWC adoption between officers with or without prior civilian complaints against the police. This also shows that motivational effects of external factors on BWC adoption remain unclear.

Research also indicates that police attitudes towards BWCs are not static and can change over time. Although some officers initially resist BWC adoption due to concerns about disciplinary actions (Keon and Willis 2020; Newel and Greidanus 2018), Studies have shown that officers who use BWCs are likely to receive fewer civilian complaints, as the presence of recorded footage can deter misconduct allegations and provide objective evidence in disputed encounters (Areil et al. 2015; Braga et al. 2018; White et al. 2018). Furthermore, BWC footage can

decrease civilian complaints for misconduct, excessive use of force and rudeness/discourtesy at the agency level (Keon et al. 2019). However, despite these benefits, concerns about the potential misuse of BWC footage for disciplinary purposes remain a significant barrier to widespread acceptance among officers.

6. Methodology

The social constructivist paradigm places importance on employing a qualitative methodology, as it focuses on the socially constructed nature of reality and the necessity of gaining a thorough comprehension of individuals' experiences (Saunders et al. 2009). Individuals are influenced by their interactions with the environment in which they're located and this tends to produce a subjectivist view of their surroundings and the people located therein. In light of the research objectives, this study adopts the social constructivist paradigm, which aligns with qualitative research. Consequently, a qualitative research approach is employed, utilising both primary and secondary data. The study analyses existing case studies, academic literature, and statistical data on the use of BWCs, alongside responses from a focus group discussion with the Ashanti Regional Command. Secondary sources include peer-reviewed journals, providing additional context and scholarly insights. This analysis focuses on identifying patterns and themes related to the exonerations of officers through BWC footage and the subsequent impact on public perceptions and media accounts.

7. Discussion

7.1. Evaluating the impact of BWCs on the resolution of complaints against law enforcement officers in telling the story

Body worn cameras (BWCs) have been implemented widely in law enforcement agencies with the expectation that they will enhance transparency, accountability and trust between police and the public. One significant area of interest is the impact of BWCs on the resolution of complaints against officers, particularly in shaping the narrative of events. Studies indicate that BWCs can significantly influence the outcomes of such complaints by providing verifiable audio-visual evidence. The implementation of a BWC programme can be perceived as an effort by law enforcement agencies to demonstrate accountability and transparency, which may, in turn, enhance officers' confidence in the fairness of complaint investigations by reducing reliance on conflicting eyewitness accounts. Following the implementation of BWCs, complaints from the public against officers declined in a number of studies (Katz et al. 2015; Ariel et al. 2014; Mesa Police Department 2013).

The way law enforcement organizations handle complaints against their personnel has changed dramatically with the introduction of body-worn cameras, or BWCs. The Ghana Police Service's Ashanti Region has adopted advanced technologies, such as body-worn cameras (BWCs), which have resulted in a notable move toward modernized policing efforts aiming to improve public trust and operational efficiency. As a result, the community's confidence in the police has increased due to the obvious presence of BWCs and the awareness that encounters are being digitally both audio and visually recorded. Officers participating in the focus group discussion came to the conclusion that the Ashanti region's public is reassured by the police's commitment to fairness and accountability by the transparency these cameras provide.

Furthermore, in order to enhance police capabilities, the Ashanti Regional Command has implemented various technologies including BWCs. These cameras have played a crucial role in documenting police interactions with the public, serving as an essential tool for evidence collection, officer accountability, and the accurate reporting of events. It was discovered during targeted group conversations with police command personnel that these devices are worn by police when on patrol and during public engagements, recording every action/interaction which occurs. Nonetheless, this recording fulfills a number of functions, including offering proof in complaint investigations, holding officers responsible for their actions, and assisting with post-event investigations to enhance enforcement tactics.

Corroborating officer responses from the Ashanti region police command, BWC footage could be useful in prosecuting criminal cases or assessing civilian complaints against officers (Goodall 2007). The presence of BWCs, for example, was found to significantly reduce the number of complaints made against officers (Ariel et

al. 2016). This finding suggests that both officers and citizens may change their behaviour if they are aware that the events in which they are involved are being recorded. This phenomenon, which is sometimes called the "Citizen Effects," suggests that BWCs have the potential to discourage wrongdoing as well as baseless allegations (Ariel et al. 2016).

Another aspect identified in the focus group discussion was the impact it had on complaint resolution. Here, the deployment of BWCs had a profound impact on resolving complaints against law enforcement officers. The ability of BWC to provide objective, real-time footage of police encounters has been instrumental in resolving disputes. For instance, officer interviews revealed BWCs recordings were crucial in swiftly addressing complaints by providing clear and unbiased evidence that either support or refute the allegations made. This capability significantly reduces time and resources spent on investigating complaints as the video evidence often speaks for itself.

Those comments make it clear that BWCs offer impartial proof that is useful in settling conflicts. Jennings et al. (2015) stated that BWC video evidence can support officers' accounts of events, shielding them from unfounded allegations. According to some of the responses gathered, the introduction of BWCs was linked to a notable decrease in the number of complaints that needed in-depth investigations because the recording frequently offered convincing proof of what did and did not occur during a particular event.

Another key aspect highlighted in the focus group discussion was the impact of the use body worn cameras on social media platforms. According to the Ashanti Regional Command through a focus group discussion (FGD), "Social media platforms serve as a powerful tool for police departments to engage with the community, provide real-time updates and promote transparency. They enable law enforcement agencies to disseminate important information quickly such as updates on emergencies, traffic conditions and crime alerts which may help the public take necessary precautions and assist law enforcement efforts."

As a result, social media is essential for improving police transparency and community involvement. Community members are more inclined to cooperate with a police service they perceive as honest and responsible. Transparency and accountability in policing are essential for building public trust, which, in turn, enhances community cooperation (Vora et al., 2024). Even with these advantages, there are still a lot of challenges, especially with regard to the dissemination of false information.

False and misleading narratives can quickly gain traction on social media potentially damaging the reputation of the police officers and undermining public trust. In contentious encounters, social media can amplify one-sided accounts often lacking context or evidence necessary to provide full and accurate pictures of event; this is where BWC video can prove to be invaluable. It provides an objective, unedited account of police interactions, which can be critical in countering false narratives that may emerge on social media. By offering clear, factual evidence, BWCs help ensure that the true nature of police encounters is accurate and represented. The focus group revealed, in the Ashanti Region, BWCs have been instrumental in resolving complaints against officers by providing indisputable evidence that either corroborates or refutes accusations of misconduct. This capability not only helps to exonerate officers from false accusations but also reinforces the integrity and professionalism of the police force.

Body-worn cameras (BWCs) worn by police are sometimes perceived as a reaction to bystanders recording cops. According to retired Idaho Police Chief Scott Haug, there is "an important opportunity for the officers' side" to be captured by BWCs as more citizen videos of their contacts are released (Bock 2016; Smith 2019). Many police agencies' policies require officers to record all official acts in which they become involved and interactions with the individuals they encounter; this is not the case with the public.

BWCs can be used to document interactions between police officers and individuals they encounter during their duties, providing an objective record of events. This serves multiple purposes, including enhancing accountability, verifying officer conduct, and preserving evidence for investigative or judicial review. While behavioural changes have been associated with this new type of monitoring (Lum et al. 2019), officers' coping mechanisms with

continuous surveillance have received less attention. Officers are largely in favour of BWC adoption (Jennings et al. 2014), while there has been some reported pushback (Young and Ready 2015) and increased officer burnout (Adams and Mastracci 2019). Police usage of body cameras (BWCs) also affects civilians who could find it awkward to be videotaped in private or delicate circumstances (Saulnier et al. 2022). As White et al. (2019) highlights, the impact of BWCs can be influenced by factors such as police governing their use, the quality of the footage and the willingness of departments to use the footage transparently even on social media platforms. Some departments may face challenges in maintaining consistent use of BWCs, leading to gaps in the evidence available for complaint resolutions.

7.2. Identifying and examining the challenges of using BWCs to ensure accountability and transparency.

The integration of body worn camera in law enforcement is seen as a promising measure to curb police brutality and impunity enhancing police narrative by providing an objective record of interactions. However, the Ashanti Regional command of the Ghana Police Service through a focus group discussion also identify several challenges and future direction necessary to optimise the use of BWCs.

A primary challenge identified is the balance between effective policing and respecting privacy and civil liberty. Surveillance tools like BWCs raise concerns about privacy and security hence must be used responsibly to avoid infringing on individual rights. Empirical research has polled different sections of the public to find out about their worries about BWCs and privacy. Research on how crime victims view BWCs has shown that they have reservations about having their interactions with police recorded and having video footage managed (Saulnier et al. 2022). "Victims" perceptions of and experiences with BWCs should not be assumed to mirror those of the general public," as Saulnier and colleagues (2022, 305) point out. Victims who are recorded may risk experiencing re-victimisation, not only through their interactions with the criminal court system but also during their initial encounters with law enforcement. The presence of BWCs can be particularly sensitive in cases involving trauma, as victims may feel exposed or reluctant to report incidents if they believe their statements and demeanour will be permanently recorded. Consequently, the potential psychological impact on victims should be carefully considered when evaluating modifications to police procedures and BWC policies.

According to departmental policies and professional best practices, data collected or recorded by BWCs—particularly sensitive interactions—is secured against unauthorised access and breaches. The management of BWC footage is subject to strict guidelines that regulate its storage, access, and dissemination, ensuring compliance with legal and ethical standards. Ensuring the privacy of officers and the security of operational details is an important aspect of maintaining the integrity of police operations. However, this must be balanced with the need for transparency and public accountability, particularly in cases where BWC footage is used for oversight, evidence collection, or judicial proceedings. The proliferation of BWCs in police forces has sparked numerous discussions about privacy protection. Although BWC proponents contend that these devices will increase police accountability, the recording of officers' actions was soon found to pose a privacy risk to the public. While people typically have lower expectations for privacy in public places, this "...doesn't mean, however, that they should expect that every encounter with the police will be part of a permanent video record, accessible to anyone who wishes to obtain it through an open records law," Blitz (2015, 2). To promote strong community-police relations, it is equally necessary to consider the opinions of individuals who are being recorded by police personnel. Prior research has demonstrated that privacy issues continue to be prevalent across several demographic groups (Saulnier et al. 2022; Taylor and Lee 2019).

While BWCs have shown promise in addressing conduct allegations, their role in how police document their activities and actions is more complex and fraught with challenges. One major challenge is the selective activation of BWCs. As highlighted by Lum et al. (2020) officers may have discretion over when to activate their cameras, which can result in critical incidents going unrecorded. This selective activation undermines the potential of BWCs to provide a comprehensive account of police interactions. Another significant challenge is the interpretation and use of BWC footage. According to Harris (2020), footage can be subject to varying interpretations potentially influenced by biases. For example, the angle of the camera and the context in which a recording is made can significantly influence how footage is perceived by different stakeholders, including juries, the media, and the

public. This phenomenon, known as Video Camera Perspective Bias (VCPB), suggests that recordings may not always provide an entirely neutral or comprehensive account of an event. For instance, footage captured from an officer's body camera may emphasise the officer's perspective, potentially obscuring critical contextual details, while bystander recordings may present only a partial view of the interaction. This subjectivity can lead to disputes over the interpretation of footage, raising concerns about its role in ensuring accountability and the potential for misrepresentation in legal and disciplinary proceedings. Acknowledging these limitations is crucial when assessing the evidentiary value of BWC footage and its implications for transparency and justice.

Additionally, there are concerns about the storage, management and accessibility of BWC data. Storing vast amount of video data is expensive and technically challenging and ensuring secure yet accessible storage is critical. McClure et al. (2017) emphasise that inconsistent data management practices can lead to loss of crucial footage or restricted access for oversight bodies, thereby limiting the effectiveness of BWCs in holding officers accountable. Hence, the Ashanti Regional Command highlighted the need for ongoing investment in infrastructure to support the continuous operations and upgrading to BWCs. Ensuring that all data is collected is securely stored and accessible only to authorised personnel was vital in maintaining integrity of the footage.

Also, there is the issue of police culture, and resistance to BWCs. As shown by Gaub et al. (2016) some officers may view BWCs as tools of surveillance rather than instruments of accountability, leading to resistance or reluctance in their proper use. This cultural resistance can diminish the potential impact of BWCs in promoting transparency and curbing impunity. While BWCs hold significant promise, their successful implementation requires addressing some of these challenges. As technology evolves so must strategies for its integration ensuring that BWCs serve as an effective tool for justice and community partnership.

8. Recommendations

Some recommendations were presented by officers, which are addressed below. First, it was recommended that robust policies be established to ensure the proper and legally compliant use of BWCs. These policies should align with professional best practices and relevant national and international legal frameworks, governing aspects such as activation protocols, data storage, access control, retention periods, and permissible use in legal and disciplinary proceedings. By ensuring that BWCs are deployed transparently and ethically, such policies can help balance law enforcement objectives with privacy considerations and public accountability. While BWCs have demonstrated considerable benefits in resolving complaints and building trust, their effectiveness is contingent on consistent use and proper data management. Challenges such as selective activation of cameras, inconsistent policies and data storage issues can still undermine the potential benefits of BWCs in helping law enforcement agencies documenting their activities and actions. Therefore, there must be continuous investment in training officers on the appropriate deployment, operation, and management of BWCs, following established best practices and legal frameworks. Training should cover essential aspects such as when and how to activate BWCs, ethical considerations in recording interactions, data protection protocols, and compliance with national laws and institutional policies. Additionally, ensuring robust data management practices—such as secure storage, controlled access, and retention policies in accordance with regulatory requirements—is essential to fully realise the advantages of this technology. Agencies can obtain guidance on proper BWC usage from international policing standards, such as those outlined by the International Association of Chiefs of Police (IACP), the United Nations Office on Drugs and Crime (UNODC), and country-specific law enforcement regulations. Furthermore, there has to be more investment in infrastructure, thus, ensuring that the necessary technological support systems are in place to mitigate issues related to power supply and connectivity because regular maintenance and updates will keep the technology current and secured. More importantly, to address privacy and security concerns, comprehensive regulations must be implemented in line with international best practices, data protection laws, and law enforcement accountability frameworks. These regulations should clearly define the scope of BWC use, including activation protocols, data retention policies, access controls, and permissible usage in legal and investigative contexts. Establishing such regulatory frameworks ensures that BWC footage is handled securely, minimising risks related to unauthorised access, misuse, or breaches of privacy rights. Additionally, public awareness initiatives can enhance understanding and trust in the technology by clarifying how BWC recordings are used and protected.

9. Conclusion

The study aimed to examine the role of Body Worn Cameras (BWCs) in providing an objective account to counter claims of police brutality or impunity. By focusing on how BWCs exonerate officers from false accusations and provide a balanced narrative in contentious encounters, this research sought to fill a gap in current literature that predominantly emphasizes accountability. The findings from the Ashanti Regional Command of the Ghana Police Service highlighted the significant impact of BWCs on the resolution of complaints against law enforcement officers providing clear, unbiased evidence that helps in swiftly addressing complaints and building public trust through transparency. However, several challenges including privacy concerns, technology misuse, infrastructure needs and footage interpretation concerns must be addressed to optimise the use of BWCs. Therefore, by addressing these challenges through robust policies, continuous training and investment infrastructure, BWCs can effectively enhance accountability and transparency in law enforcement with ethical considerations and practical constraints.

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Adapting Approaches for Radio in the Digital Era: Does Radio Still Serve as a Communication Platform for the Community?

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Abstract

The evolving role of digital media has transformed traditional media consumption in Cambodia. To understand the role of radio in the digital era, this study utilises qualitative data to understand the radio consumption behaviour in the era of digital media. This study's sample comprised 19 in-depth semi-structured interviews. The findings highlight that radio consumption among the younger generation is lower. However, older individuals and those in remote areas, such as indigenous communities with limited internet access, radio remains a source of their information. The generational divide in media consumption highlights the need for radio stations to adopt innovative strategies by reintegrating their broadcasting through digital media platforms to engage audiences across different demographics. The study discovered that to improve adaptation approaches for radio in the digital era, radio stations should also produce more engaging and multimedia content, including short videos, podcasts, and interactive live discussions. Most respondents expressed that radio remains relevant for the rural communities with limited internet access. The radio broadcasters are recommended by the indigenous communities to develop targeted radio campaigns focused on early marriage prevention, alcohol and drug abuse awareness, gender-based violence intervention, and legal awareness.

Keywords: Traditional Radio, Digital Media, Communications, Radio Audience, Remote Community

1. Introduction

In the digital era, radio consumption in Cambodia faces growing challenges as more people turn to digital media for information and entertainment. As of 2022, 57% of Cambodians had internet access (World Bank, 2022). Similarly, 56.7% of the population uses the internet, leaving approximately 7.37 million people offline (Data Reportal, 2024). Traditional print media has even more limited reach, with only 8% of Cambodians obtaining information from newspapers and just 3% from magazines. This is partly due to low literacy rates, especially in rural areas, and the lack of a strong reading culture (BBC Media Action, 2012). In Cambodia, the number of radio stations in Phnom Penh stayed unchanged, with 83 FM stations and one AM station, while an additional 137 radio stations operate across the provinces (Orm, 2022; Sam, 2022).

With the rise of the Internet, in Cambodia, radio has declined in popularity and is now the third-largest media sector after TV and online platforms, reaching 35% of the audience (Cambodian Centre for Independent Media,

2017). In the digital era, radio transformation is a step to maintain and to continue fulfilling its roles in providing information, education, entertainment, and persuasion (Ismandianto et al., 2022). Approximately 6% of Cambodia's population uses radio, whereas 87% are social media users. Social media usage is more prevalent among individuals from urban areas and those with higher socio-economic status, while it is lower among the non-working population (BBC Media Action, 2021). Cambodia's literacy rate stands at 62.8%, which is considered low, due to political and social challenges, especially in rural areas, where approximately 80% of the population are farmers (Puy, 2007). Thus, radio remains essential for delivering information and education to local communities, particularly in rural areas with limited internet access (BBC Media Action, 2021). There is, however, a gap in the literature as to the popularity of radio and individuals' radio consumption preferences in the digital era, particularly among those living in rural areas, which has yet to be thoroughly examined.

To fill in this research gap, this study aims to explore radio consumption behaviour in the digital media era and identify traditional radio consumption preferences in Phnom Penh, Kampong Cham, Kampong Thom, Battambang, Siem Reap, and Ratanakiri provinces. This study aims to determine whether radio continues to serve as a key source of communication for rural communities. This research makes a valuable contribution to the field of media and communication by benefiting radio broadcasters, radio program producers, and academics. It provides insights into evolving radio preferences and highlights the necessary changes for radio broadcasting to remain sustainable in the media market.

2. Literature Review

This chapter focuses on key aspects of the literature relevant to the study, including the radio landscape in Cambodia, and adapting strategies for radio in the digital era in the context of disruptive innovation theory.

2.1 Radio Landscape in Cambodia

In Cambodia, 87% of people aged 15 to 30 use social media as their primary form of media, while TV and radio usage is decreasing to 34% and 6% respectively. Television and radio are still significant for more vulnerable groups in rural locations and those with lower socio-economic status. Although most young Cambodians now access the internet through websites, social media, or messaging apps and use smartphones, there are still differences among demographic groups, in which men live in urban areas and those from higher socio-economic backgrounds tend to have higher usage rates (BBC Media Action, 2021).

In Cambodia, the first state-owned radio station was established in 1947, and the radio station was known as RNK (Radio Diffusion Nationale Khmère). Its primary goal of establishing the radio station was to broadcast significant events both domestically and internationally. Additionally, it aimed to provide education on various topics, including customs, traditions, science, health, agriculture, road safety, and household knowledge. The station also offered entertainment through traditional and modern songs, opera, drama, and music, among other programs (Puy, 2007).

Radio has declined in popularity with the rise of the Internet, now ranking as the third-largest media sector after television and online platforms, reaching 35% of the audience (Cambodian Center for Independent Media, 2017). According to the Cambodia Socio-Economic Survey 2021, the share of households owning a radio in Cambodia significantly declined from 16% in 2019/2020 to 12% in 2021. In Phnom Penh, household radio ownership also dropped sharply from 17% to 9% in the same period (National Institute of Statistics, Ministry of Planning, 2022). The study by Glean (2025) highlighted the decline in traditional radio listenership, particularly among younger audiences. However, digital platforms, especially social media, demonstrated strong engagement, especially among individuals under 34. This research sheds light on the shifting media consumption trends in Cambodia.

With 175 registered radio stations, the market is highly fragmented, and competition for licenses is intense. However, no data is available on the number of active stations or their transmission coverage (Cambodian Center for Independent Media, 2017). Currently, ABC Radio is considered the most popular station, with nearly one in four Cambodians tuning in. Meanwhile, the most widely followed radio programs are Radio Free Asia (RFA) and

Voice of America (VOA), which are broadcast nationwide on 15 different radio stations (Cambodian Center for Independent Media, 2017).

2.2 Adapting Strategies for Radio in the Digital Era in the Context of Disruptive Innovation Theory

In the competitive effects of the innovative market changes, Christensen (1997) presents the disruptive innovation theory by focusing on two aspects of disruptive innovations, including business-model innovations and radical (new-to-the-world) product innovation. In this theory, Christensen and Raynor (2006) assert that to be considered an innovation, a new business model must expand the current economic value, either by bringing in new customers or by increasing the consumption of existing products. Business-model innovation does not create new products or services; instead, it transforms the way existing products or services are perceived and delivered to customers (Christensen & Raynor, 2006). For instance, companies such as Amazon, Schwab, Dell, Swatch, and Southwest are seen as innovators in business models because they launched new approaches in their industries that drew in new customers, thereby expanding their markets.

Therefore, with the emergence of digital media, radio broadcasting underwent a dramatic transformation to seek its popularity among its audience and to meet audience expectations. Ajisafe and Dada (2023) state that radio broadcasters have demonstrated resilience and adaptability by embracing digital platforms, utilising data analytics for personalised content, and fostering interactive engagement. In addition, they also try to explore the innovative ways of technology, such as hybrid broadcasting, immersive audio, and integration with smart devices, to present new opportunities for service expansion and audience growth. Moreover, the radio broadcasters utilise some strategy to incorporate visual elements, interactive features, and user-generated content to enrich the listening experience and to strengthen community connections. Liang (2025) suggests that traditional radio stations must urgently adopt innovative strategies for content creation and distribution, develop influential programs and introduce new formats as effective ways to drive transformation and growth. Additionally, to stay relevant, radio stations need comprehensive reforms and innovations, not only by diversifying content but also by expanding program formats and enhancing transmission platforms. These improvements will boost audience engagement and create a more interactive experience. Additionally, radio stations must stay aligned with evolving audience preferences, closely monitor industry trends, and adapt their communication strategies accordingly. Keeping pace with these changes is essential to maintaining a competitive edge and ensuring long-term sustainability in an increasingly challenging market.

3. Research Methodology

This research study aims to analyse the attitudes and behaviours of the radio audience by utilising a qualitative methods approach in data collection and analysis to gain a comprehensive understanding of the audience regarding radio consumption in the digital media era.

3.1 Research Approach

Qualitative data were collected through convenience sampling, which is a technique used to collect respondents from sources that are easily accessible, such as those nearby or available (Turner, 2020). The data collection was conducted in one city and five targeted provinces, including Phnom Penh city, Kampong Cham, Kampong Thom, Battambang, Siem Reap and Ratanakiri provinces, for semi-structured interviews, aiming to explore prospective audience preferences, interests in radio programs, and general listening habits.

3.2 Research Instrument

Semi-structured interviews allowed the researcher to conduct discussions with one participant at a time using a set of open-ended questions. This approach enables a more in-depth exploration of relevant issues and policies while maintaining a clear focus on the research topic, ultimately providing valuable contextual insights. Each interview took approximately 30 minutes to answer 18 questions, focusing on the respondents' media consumption habits, favourite radio programs and content, and radio consumption for behaviour changes.

3.3. Piloting Interview Question Guide

To analyse the validity of the interview question guide, the researcher conducted interview pilots with four people before proceeding with the data collection.

4. Research Results

The sample for this study comprises 19 respondents, representing diverse regions including Phnom Penh, Kampong Cham, Kampong Thom, Battambang, Siem Reap and Ratanakiri province. The participants' ages range from 19 to 71, with 4 males and 15 females. Of these, 4 respondents are regular radio listeners, while 15 are non-radio listeners (see Table 1).

Table 1: Interview demographic characteristics ($n=19$)

Gender:		Respondent Type:	
Male	4	Radio audience	4
Female	15	Non-radio audience	15
Age range: 19 – 71			
Age and gender:		Current Residency:	Respondent Type:
Pisey (26, Female)		Phnom Penh	Radio audience
Kanha (21, Female)		Phnom Penh	Non-radio audience
Bopha (19, Female)		Phnom Penh	Non-radio audience
Nalina (21, Female)		Phnom Penh	Non-radio audience
Voleak (67, Female)		Kampong Cham	Radio audience
Kesor (63, Female)		Kampong Cham	Radio audience
Bopreak (47, Female)		Kampong Cham	Non-radio audience
Melia (40, Female)		Kampong Thom	Non-radio audience
Pich (21, Female)		Kampong Thom	Non-radio audience
Tola (61, Male)		Kampong Thom	Non-radio audience
Seyma (21, Female)		Battambang	Non-radio audience
Meta (21, Female)		Battambang	Non-radio audience
Reaksmey (62, Male)		Battambang	Radio audience
Borin (51, Male)		Siem Reap	Non-radio audience
Sopheak (52, Male)		Siem Reap	Non-radio audience
Molika (71, Female)		Siem Reap	Non-radio audience
Kosamak (24, Female)		Ratanakiri	Non-radio audience
Serey (24, Female)		Ratanakiri	Non-radio audience
Chakrya (25, Female)		Ratanakiri	Non-radio audience

4.1 Radio vs. Digital Media Consumption in Cambodia

As has been seen, this study has revealed that the highest proportion of interview respondents is consuming social media platforms such as Facebook, TikTok, and YouTube for receiving daily information and entertainment purposes due to the convenience and accessibility these platforms offer for consuming information. Bopha and Nalina described:

“I don't listen to radio programs. Generally, I get my information from Facebook and YouTube because they are more convenient.” (Bopha, 19, Female, Phnom Penh)

“Basically, I don't listen to the radio, but I follow online news on social media because it is widely accessible and saves me time searching for it. To survive in the digital era, I think radio stations should expand their broadcasting on YouTube and shorten the clips by selecting only the most interesting parts

to post on Facebook. If listeners are interested, they can find the full details on YouTube.” (Nalina, 21, Female, Phnom Penh)

Interview respondents expressed those social media platforms, particularly Facebook, serve as the primary source of information, suggesting a shift in media consumption behaviour, where digital platforms are favoured over traditional radio for information access. Bopreak and Seyma mentioned:

“I listen to various radio programs, but not regularly. I tune in occasionally since I don’t enjoy listening all the time. Most often, I listen to health-related programs when I have free time. In general, I get information from Facebook.” (Bopreak, 47, Female, Kampong Cham)

“Generally, I receive news through Facebook because it allows us to get information quickly.” (Seyma, 21, Female, Kampong Thom)

In this study, interview respondents highlight that the majority of them change their media consumption habits from regular radio listening to digital media. The convenience of accessing content and a variety of information on social media appears to be a key factor in the interview respondents’ preference. Pisey explained:

“After moving to Phnom Penh, I haven’t listened to it as much. When I’m at home in the provinces, I enjoy listening to them for entertainment after studying. I enjoy listening to radio programs on social media because they are easy to find, and I can listen to them at my convenience instead of tuning in to live broadcasts when I’m busy.” (Pisey, 26, Female, Phnom Penh)

These results illustrate that interviewees are engaging with digital media more than traditional radio. It is suggested that the radio should greatly focus on integrating its broadcasting programs on social media platforms, particularly Facebook. By sharing radio content or highlights on social media, the radio station can make its programs more accessible and appealing to younger audiences who prefer quick and easily accessible news.

4.2 Reasons for the Decline in Radio Audiences

In exploring the reasons for the decline in radio audiences, interview data indicates that the rise of social media, with its multimedia elements such as images and short videos with informative and entertaining content, attracts more listeners to focus more on social media rather than radio in some areas. However, in remote communities with limited internet access, radio remains an important medium for receiving information and entertainment. Meta and Nalina stated:

“I think in the community, people no longer listen to radio programs because information is more widely available now, and people can access news on social media with both images and audio. However, for remote communities, I believe radio still plays an important role in receiving information and listening to music for entertainment, as it serves as a communication platform for them to stay informed about what’s happening outside their community.” (Meta, 21, Female, Battambang)

“To survive in the digital era, I believe radio should improve its content to capture the attention of youth. This could include a wide range of topics, such as educational programs focusing on study tips, scholarships, skill development, and business incubation. Moreover, radio should expand its broadcasting to trending platforms that youth are using, so that its programs can reach the target audience.” (Nalina, 21, Female, Phnom Penh)

Additionally, interview respondents highlight a lack of interest in the radio program and a preference for Facebook as the primary source of information. The interviewees also note a shift in how even elderly individuals of the community consume media, with many now opting for television on their phones rather than traditional radio, indicating changing media consumption habits. Kanha, Molika and Sopheak elaborated:

“I don’t listen to that radio program because I’m not interested in it. Generally, I get information from Facebook. In the past, elderly people in the community used to listen to the radio, but now they also watch television on their phones.” (Kanha, 21, Female, Phnom Penh)

“I have never listened to radio programs, but I usually watch TV. I usually get information from TV and Facebook. Although radio is important, most people don’t listen to it much. Instead, they prefer Facebook and TV because they find them more entertaining. Only the elderly tend to listen to the radio, as they are interested in political news and topics related to religion.” (Molika, 71, Female, Siem Reap)

“I have never listened to local radio. I usually follow national and international news from VOA, because I think that local radio and television are biased. When villagers underwent any difficulty, their voices were rarely heard or broadcast on local radio and television.” (Sopheak, 52, Male, Siem Reap)

These findings suggest that the decline in radio audiences is largely driven by the rise of social media, which offers engaging multimedia content, making it a preferred source of information. Interview respondents expressed a preference for Facebook and TV over radio, mentioning a lack of interest in radio programs. While radio remains relevant in remote areas, younger audiences increasingly rely on digital platforms. Additionally, concerns about bias in local radio and television have led some listeners to seek news from international sources. These findings highlight shifting media consumption habits and the growing dominance of digital platforms over traditional radio.

4.3 Reasons for Listening to a Radio Program

The study explored the reasons why individuals continue to listen to the radio program. Interview respondents reveal that she is particularly interested in programs about women’s rights, women’s decision-making, children’s rights, and gender equality. In her community, women experience issues related to gender stereotypes. Pisey explained:

“I listen to Women’s Radio programs because I enjoy programs about women’s and children’s rights, especially those focusing on vulnerable women, women’s decision-making, marriage planning, and women’s rights against discrimination. In the community where I grew up, I noticed that most people still don’t fully understand the importance of valuing women. This became even more apparent when I moved to Phnom Penh for my studies—my neighbours didn’t encourage me and even told my parents that it wasn’t appropriate for their daughter to attend school away from home.” (Pisey, 26, Female, Phnom Penh)

Additionally, interview respondents expressed that the radio program broadens their understanding of human rights, social issues, women’s rights, democracy, health and violence prevention, which is why they tune in. Interviewees find the radio program to be an informative tool that enables listeners to apply the knowledge gained to improve their own lives. Voleak shared her thoughts:

“Radio plays an important role in the community by informing us about issues, laws, customs, and health. Moreover, we can apply this knowledge to our daily lives. When I listen to the radio, I take the useful points and share them with my children and grandchildren. For example, when I hear about dangers in certain areas, I always tell my children and grandchildren not to go out at night or ride motorbikes too fast because of the risks. Additionally, when I learn about harmful situations, I use that information to warn them, like advising them to be cautious because several gangsters were arrested.” (Voleak, 67, Female, Kampong Cham)

The study identifies key reasons why individuals continue to listen to the radio program. Interview data highlight that listeners are especially interested in topics related to women’s rights, children’s rights, and gender equality. Respondents also mentioned that radio increases their awareness of human rights, democracy, health, and violence prevention. The radio is viewed as an informative tool that listeners apply in daily life to improve themselves and

educate their families. Interviewees value the program for sharing critical issues, laws, and advice that benefit their communities.

4.4 Significance of Radio Program in the Community

The study also investigated the radio audience's perspective on the significance of the program for their communities. Interviewees mentioned that the radio plays an important role in advocating for democracy, the constitution, law enforcement, and social security, as well as educating people on social issues such as gender equity, women's empowerment, violence prevention, and online or phone fraud. Kanha, Bopreak and Nalina shared the following insights:

“Radio is important to the community because it promotes our country's democracy, constitution, law enforcement, and social security measures. For remote communities, I believe radio is important because it does not require the internet. This means that, regardless of the area, people can still listen to it.” (Kanha, 22, Female, Phnom Penh)

“I believe that the Women's Radio program is important to solve issues such as gender equality, empowering women's rights, and preventing violence in communities because some women lack awareness. They often fall victim to deceit, for example, being tricked into sending money with promises of receiving something in return.” (Bopreak, 47, Female, Kampong Cham)

“I think radio programs are significant based on their content. For instance, while travelling without internet access, the radio can entertain and be useful for listeners. Additionally, I think radio is vital for those who are living in rural areas without internet access.” (Nalina, 21, Female, Phnom Penh)

Similarly, interviewees highlight the value of radio in rural communities where access to social media may be limited. Bopha stated that radio plays a vital role in keeping people informed in areas where digital platforms might not be as accessible. Additionally, Nalina suggests the radio improve its content. Bopha explained:

“I believe radio is important for remote communities because it provides information to people in rural areas when they are unable to access news through social media platforms. Therefore, I think radio is truly essential for them to stay informed.” (Bopha, 19, Female, Phnom Penh)

To understand the significance of radio in indigenous communities, testimonies were collected from residents. Kosamak, a Krueng Indigenous woman, emphasised the importance of radio as a primary source of information for education and problem-solving. Kosamak explained:

“If a radio antenna were installed in Ratanakiri, it would be beneficial. Many elderly individuals are not proficient in using smartphones or lack internet access. They rely on the radio for updated information.” (Kosamak, 24, Female, Ratanakiri)

Serey, another Krueng Indigenous woman, shared how her father regularly tunes in to the radio in the morning and evening to follow social news and gain practical knowledge. Having witnessed the positive impact of radio on her community, Serey advocated for the establishment of a radio antenna in Ratanakiri, believing it would be highly beneficial in educating and addressing local challenges. Serey noted:

“After listening to agricultural programs, my father has been able to apply new farming techniques learned from the broadcasts.” (Serey, 24, Female, Ratanakiri)

The study highlights the significant role of the radio program in communities, especially in advocating for democracy, law enforcement, and social security, and educating people on social issues. Radio is also important in promoting gender equality, women's empowerment, violence prevention, and raising awareness about online

or phone fraud. Many participants emphasise radio's importance in remote communities where internet access is limited because radio can help people stay informed without requiring the internet.

4.5 The Investigation of Current Challenges in Communities

Regarding the investigation of current challenges in the communities, interview data revealed that women face a wide range of challenges, including gender stereotypes, social norms, limited decision-making power, domestic violence, barriers to education, gender inequality, mental health and financial literacy. These issues highlight the need for a comprehensive approach to empower women's education, eliminate early marriage, and promote women's empowerment and mental health awareness. Pisey and Nalina shared the following insights:

"Currently, when I visit my village, women in my community often say that I'm getting older and should start thinking about having a family. I believe their mindset is still limited. They don't encourage their children to focus on their studies. Most of the time, when children reach adulthood, they are allowed to marry and start families. Violence issues have been addressed, but it remains serious. Women's Radio educates women to be brave enough to stand up and escape violence. If they understand these messages, it would be beneficial, as the issue of violence also affects their children." (Pisey, 26, Female, Phnom Penh)

"One of the challenges I think radio should focus on to capture the youth's attention is mental health-related issues. In the past, individuals didn't notice or realise that it was a pressing issue, but now people are gradually understanding its impacts. In addition, financial literacy is important for youth to learn how to save money, as many young people lack these skills and understanding." (Nalina, 21, Female, Phnom Penh)

Interview respondents identified domestic violence as a critical issue within the communities, emphasising the need for comprehensive measures to address this problem. Molika and Kanha provided further insights, highlighting the complex nature of the problem and the importance of addressing these root causes to mitigate the prevalence of domestic violence.

"In Siem Reap province, women faced challenges such as domestic violence, which is often linked to arguments and a lack of knowledge. I think radio can help by providing useful information that addresses these issues." (Molika, 71, Female, Siem Reap)

"Women in my community, especially in households where women have no work and depend on their husbands, often face difficult living conditions. I have also witnessed domestic violence, such as husbands abusing their wives." (Kanha, 21, Female, Phnom Penh)

The research findings from the investigation into current community challenges indicate that women face a range of significant issues, including gender stereotypes, restrictive social norms, limited decision-making power, domestic violence, educational barriers, and pervasive gender inequality. Interview participants underscored the necessity for comprehensive interventions to empower women, particularly through education, the elimination of early marriage, and the prevention of domestic violence. Domestic violence was identified as a critical concern, with respondents highlighting the role of limited awareness and communication barriers in its persistence.

4.6 Media Consumption and Social Issues Addressed by Radio

Chakrya, a Krueng Indigenous woman, highlighted the generational differences in media consumption:

"Most older people in the community listen to the radio, while the younger generation primarily uses mobile phones and digital media. Although internet access is available in the village, it is unavailable in farming fields, making radio the only accessible medium for older individuals in those areas." (Chakrya, 25, Female, Ratanakiri)

Beyond delivering news and educational content, radio serves as a key platform for addressing pressing challenges faced by indigenous communities. According to Serey, radio programs in Ratanakiri should focus on issues such as early marriage, financial struggles, land disputes, Indigenous rights violations, drug use, crime, LGBTQ+ discrimination, and mental health awareness. Kosamak further elaborated on the challenges faced by Indigenous women:

“Rights violations and sexual violence remain significant issues, especially for women living far from schools. A tragic case in my community occurred in 2017 when my friend was raped and killed. Violence persists today, as I have seen through my work with women’s associations. Reports indicate that in Ratanakiri, violence affects children, women, and the elderly, particularly during economic downturns when financial stress leads to domestic conflicts.” (Kosamak, 24, Female, Ratanakiri)

In Ratanakiri, radio remains a powerful tool for education, awareness, and social change. It bridges the gap between information and action, empowering villagers to improve their livelihoods and make informed decisions. Given its impact, further investment in community-based radio initiatives, such as the establishment of a radio antenna, could enhance outreach efforts, particularly in remote indigenous areas. By continuing to address critical issues such as early marriage, financial struggles, land disputes, Indigenous rights violations, agriculture, drug use, sexual harassment, mental health, and LGBTQ+ discrimination, radio will remain a vital medium for shaping the future of Indigenous populations in Cambodia.

5. Discussion

5.1 The Key Findings on Whether Radio is Still Significant for Communities

The analysis of qualitative data in this study presents a mixed picture of radio consumption and preferences, highlighting significant variations based on respondents’ age groups and geographic locations. Specifically, the results reveal that older respondents tend to demonstrate preferences for traditional FM radio, while younger respondents are more inclined to utilise digital platforms. The largest proportion of respondents falls within the 20 and 60 age old. This demographic breakdown emphasises the dominance of digital media usage within the sample.

The respondents primarily belong to Generation Y (1981–2000), commonly known as Millennials, or Generation Z (2000–2020). According to Din (2020), Generation Y in Cambodia is characterised by their technological proficiency, individualism, confidence, and public activism. Vogels (2019) highlights that Millennials are notably tech-savvy, with 93% owning smartphones and 86% actively using social media. Ouch further reports that half of Millennials are engaged in e-commerce. In contrast, Din (2020) characterises Generation Z as ‘digital natives,’ highly engaged with social networks, mobile technology, and multiple realities, including exposure to misinformation. These characteristics suggest that the majority of respondents from these generations are digital media users.

The respondents indicated their preference for digital media over traditional radio. Respondents recommended that the traditional FM radio integrate social media platforms, particularly Facebook, into its program to enhance its reach and appeal to younger audiences who prioritise quick and easily accessible news. Respondents also expressed that the decline in radio audiences can be attributed to the rise of social media, which offers more engaging multimedia content, making it a preferred source of information. However, respondents acknowledged that radio continues to play a significant role in remote areas, with younger audiences increasingly turning to digital platforms.

Notably, the results revealed that many respondents continue to tune in to radio programs due to their focus on topics such as women’s rights, children’s rights, and gender equality. Interviewees also highlighted that the radio program raises awareness of human rights, democracy, health, and violence prevention. For many, the radio serves as an important resource for improving personal growth and community well-being. Programs addressing critical

issues, such as social security, law enforcement, and gender equality, are viewed as integral to community education.

The respondents from Ratanakiri, a rural Indigenous community with limited internet access, illustrated a different picture of radio's significance. Respondents reported that radio remains an essential bridge to crucial information, particularly in remote areas where internet access is scarce. For villagers, the radio is both convenient and affordable, as it does not require an internet connection and can operate using simple battery-powered devices.

Although younger generations in these rural communities are more likely to use digital media platforms like Facebook, YouTube, and Telegram, radio remains popular among older individuals. Many respondents recognised the educational value of radio, especially in areas with limited access to other forms of media. In case the radio antenna was established in Ratanakiri, it could serve as a valuable resource for elderly individuals who are less proficient with smartphones or lack internet access. Radio would allow these individuals to stay informed and help address community challenges effectively. Additionally, interview respondents emphasised the role of radio in tackling pressing issues within Indigenous communities, such as early marriage, financial struggles, debt, land disputes, Indigenous rights, drug use, crime, gender-based violence, and mental health. Radio serves as a key platform for raising awareness and advocating for change in these critical areas.

In conclusion, the findings of this study reveal a mixed landscape of radio consumption, influenced by both technological access and generational preferences. While individuals with broad internet access increasingly rely on digital media for news and information, people in remote areas, such as the Indigenous communities of Ratanakiri, continue to rely on radio. However, within these communities, younger individuals are more likely to use digital media, while older individuals in the rural areas with limited internet access tend to prefer the convenience and familiarity of radio. This suggests that, while radio remains an essential tool in certain contexts, particularly in areas with limited access to digital platforms, its role is evolving as digital media becomes more pervasive.

5.2 The Impact of Radio Programs on Audience Perceptions and Behavioral Changes

The findings of this study indicate that respondents reinforce the significant role of radio by raising a case of Women's Radio in shaping audience attitudes and behaviours, particularly about women's empowerment and self-confidence. Interviewees highlighted that the program not only provides critical knowledge for personal growth and informed decision-making but also encourages advocacy against gender stereotypes. This behaviour aligns with the Diffusion of Innovations theory, which explains how new ideas, practices, or technologies spread within a society over time (Jacobs, 2011). According to the theory, individuals adopt innovations in stages from early adopters to the majority, with various factors influencing their decision to embrace change. These stages include knowledge, persuasion, decision, implementation, and confirmation. In the case of Women's Radio, the innovation is the adoption of feminist media that challenges traditional gender norms, amplifies women's voices, and addresses key issues such as gender equality, social justice, and empowerment. The audience of the radio station often represents a community of early adopters, those eager to embrace new ideas, particularly those that offer alternative perspectives on women's rights and social roles.

The Diffusion of Innovations theory also highlights the importance of communication channels in spreading new ideas. Women's Radio serves as a crucial channel for disseminating feminist ideas and raising awareness about social and political issues. As early adopters listen to the programs, they are exposed to new concepts and perspectives that challenge mainstream media narratives. They, in turn, share these ideas within their communities, helping to spread feminist concepts more broadly. As the audience moves through the stages of diffusion, the content on Women's Radio influences attitudes and behaviours, gradually reaching a wider audience. The spread of feminist ideas through the radio shows how innovation can reshape public discourse and promote the adoption of progressive social values, particularly those related to gender equality and women's rights. Therefore, Women's Radio is not just a source of information but also acts as a catalyst for the diffusion of feminist ideas, allowing the audience to participate in transforming societal norms.

Moreover, interview respondents emphasised that Women's Radio fosters empowerment by equipping listeners with valuable insights that promote gender equality and enhance confidence. The program serves as an educational platform, offering knowledge about diverse livelihoods, particularly in agriculture, through inspiring stories of successful individuals. By featuring real-life experiences, Women's Radio raises awareness, encourages social change, and empowers individuals to make informed decisions and take proactive steps toward both personal and community development.

6. Conclusion

The findings of this study highlight the evolving role of radio in Cambodian society, particularly in the context of digital transformation. While digital media platforms, such as Facebook and YouTube, have become dominant sources of information for younger generations, radio remains a vital medium for older individuals and those in remote areas with limited internet access. The study confirms the essential role of radio in indigenous and rural communities, where limited internet access makes it a primary source of information. In these areas, radio serves as an educational tool, providing insights into pressing societal challenges, including gender-based violence, financial literacy, legal rights, and social justice.

The generational divide in media consumption highlights the need for radio stations to adopt innovative strategies to maintain audience engagement across different demographics. Despite changes in media consumption, radio continues to serve as an influential platform for raising awareness of critical social issues, particularly concerning women's rights, gender equity, youth empowerment, and democratic participation. The study reveals that radio programs not only educate listeners but also influence attitudes and behaviours, contributing to positive changes in gender roles, domestic violence prevention, and community engagement. The strong audience preference for issue-based, informative programs focuses on the significance of content that addresses women-related issues and promotes youth engagement and civic engagement.

6.1 Recommendation

The study offers the following recommendations to enhance radio's impact and sustainability. First, strengthen digital integration by expanding radio's presence on social media platforms to engage younger audiences who primarily consume radio content online. Second, radio producers should develop multimedia content, including short videos, podcasts, and interactive live discussions, and they are suggested to diversify program content by expanding the coverage of critical issues, including gender equity, domestic violence prevention, financial literacy, mental health, and Indigenous rights, as identified by respondents. More importantly, it would be interesting to incorporate more expert-led discussions and real-life storytelling segments so that the content will be more engaging and relatable. Last but not least, to improve educational and behavioural impact on the rural communities, the radio broadcasters are recommended to develop targeted radio campaigns focused on early marriage prevention, alcohol and drug abuse awareness, gender-based violence intervention and legal awareness programs to educate communities about their rights and available support mechanisms.

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Triangular Ties: Exploring India-Israel Strategic Cooperation Amidst India-Pakistan Relations

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Abstract

The article assesses how the dynamics of India-Pakistan conflicts facilitate the advancement of India-Israel strategic alliances in defense and counter-terrorism efforts. By analyzing pivotal events (Kargil Crisis, Mumbai Attacks, Pathankot Attack), the article clarifies the significance of shared security apprehensions and political environments in enhancing bilateral relations. The analysis indicates that the discord with Pakistan has led India to strategically engage with Israel pragmatically, thereby cultivating a strong partnership in the face of regional volatility.

Keywords: Diplomacy, India-Pakistan, India-Israel, Strategic Cooperation, Defense Collaboration, Terrorism, South Asia, Non-State Actors

1. Introduction

For years, Israel and India have been shaped by distinctive geostrategic challenges, which in turn have influenced their foreign policies. Both countries are confronted with conflicts in their surrounding regions and face security threats from neighboring countries. China's presence in the region and its tensions with Pakistan have prompted India to develop military capabilities and adopt an assertive foreign policy. Strategic alliances and partnerships are vital for dealing with geopolitical challenges. India's relationship with Muslim nations shifted as a result of the rise of Pakistan as an Islamic state, causing tension over the issue of Kashmir. India and Israel exhibit a closer level of strategic cooperation due to factors such as bilateral relations and internal political developments. The paper intends to comprehend the global division between Islamic and non-Islamic countries by conducting a case study on the relationship between India and Pakistan. It employs a selection of case studies to perform a comparative analysis. Among the case studies used are the Kargil Crisis in 1999, the Mumbai Terror Attacks on 26/11, and the Pathankot Airbase Attack in 2016.

The fundamental proposition put forth in the paper posits that the enduring conflicts between India and Pakistan have served to fortify the relations between India and Israel. This contention is made manifest through an examination of the internal political and military dynamics of both nations and their consequential impact on the

bilateral relations between India and Israel. The case studies mentioned above, which are being examined, aim to investigate how the strategic cooperation between India and Israel was strengthened or affected during these events.

2. India-Pakistan Relations- An Overview

Since their attainment of independence, the relations between India and Pakistan have consistently been intertwined with obstacles. According to Wojczewski (2014), this association is considered to be one of the most enduring and precarious rivalries in contemporary politics, characterized by mutual skepticism and animosity. Pattnaik (2019) supports this perspective by asserting that no other bond has experienced as many turbulent phases as the one between India and Pakistan. The ensued Pakistan-India rivalry acquiring the mode of permanent bitterness drew its strength from the partition-time communal violence. India and the Hindu religion have become interchangeable for many individuals from Pakistan, thus leading to the emergence of an 'adversarial' portrayal that has fostered a sense of doubt and skepticism among individuals who have coexisted for a prolonged period of time. This perception remains highly influential even to the present day.

Pakistan's religious affiliation has contributed to its aspiration to assume a protective role for the Muslim population in India, while simultaneously grappling with feelings of territorial insufficiency. This fear of establishing Pakistan's Islamic identity has led to the rise of radical Islam, which has been exploited by the power structure in Islamabad (Pasricha, 2018). Conversely, India advocates for a political settlement to the Kashmir dispute, while militant groups located in Pakistan firmly believe that their 'Jihad' will prevail over India and resolve the problem. Furthermore, successive Pakistani governments have also relied on covert military operations and international pressure/intervention to achieve their goals by escalating tensions in the region, especially in light of the nuclear capabilities possessed by both countries.

The current state of the relationship between India and Pakistan can be characterized as a lack of formal communication through diplomatic channels. This absence of communication indicates a remarkable deviation from the relationship between India and China, in which economic connections play a pivotal role (Abbas, 2022). Unlike the past, wherein the emphasis was on creating enough goodwill to enable conversations on the Kashmir issue, Prime Ministers Narendra Modi and Nawaz Sharif following a meeting held on the sidelines of the Shanghai Cooperation Organization (SCO) in Ufa in July 2015, agreed to address 'all unresolved matters' without explicitly mentioning Kashmir.

Despite this apparent progress, the alleged continued support from Pakistan to insurgents in the Kashmir region and significant acts of terrorism in Uri, Pathankot, and Pulwama have hindered progress in improving the bilateral relationship. However, in 2019, both nations came to an agreement to establish a passage for Sikh pilgrims from India to visit a sacred sanctuary in Pakistan but the prevailing tensions overshadowed such endeavors.

After the removal of Imran Khan's government and the persistent economic upheaval, the Shehbaz Sharif-led government expressed its inclination to recommence bilateral relations with India. The policy outlined a trajectory for Pakistan to give priority to trade and interconnectedness in its intergovernmental relationships. It indicated a shift in Pakistan's approach towards India aimed at effectively managing changes in personnel within both the civilian and security sectors, following the implementation of Pakistan's inaugural National Security Policy (2022-2026) (Khokhar, 2022). Moreover, the COVID-19 pandemic might have influenced this determination, as both nations faced economic and health crises and potentially recognized the benefits of collaboration in addressing shared challenges (Reshi, 2021).

In order to decrease tensions and prevent any cross-border firing along the Line of Control (LoC), Pakistan and India reintroduced the ceasefire agreement in February 2021, which was initially established in 2003. A report by Reuters stated that Pakistan granted India permission to transport wheat and necessary pharmaceutical supplies to Afghanistan based on humanitarian assistance (Shahzad, 2021). Importantly, this event followed the abrogation of Article 370 of the Indian Constitution by Prime Minister Modi in August 2019. Article 370 had granted the

state of Jammu and Kashmir with distinct autonomy. Pakistan's constrained reaction to it effectively prevented the escalation of tensions between the two nations (Grossman, 2022).

Nonetheless, it must be acknowledged that neither country has significantly altered its perception of the other as a threat, despite the enhancements in their relationship. It is evident that Islamabad's initial National Security Policy primarily focuses on India's 'hegemonic' aspirations and the oppression of Kashmiris by India. Moreover, India has also demonstrated a hesitancy to assume the lead and pursue peace.

The annual report for 2022 published by the Ministry of External Affairs (MEA) of India has recently suggested that the possibility of a thaw in relations between India and Pakistan is minimal. This is mainly attributed to the failure of Islamabad to establish a conducive environment for the improvement of bilateral relations. In light of this, the report underscores the importance of Pakistan taking action to address the concerns raised by India in order to facilitate the resumption of dialogue between the two countries (Brajesh, 2023).

3. India-Israel Relations: An Overview

The relationship between Israel and India has been characterized by a protracted period of ambiguity, which is currently transitioning to a more positive trend distinguished by a sense of warmth and mutual cooperation. Despite the fact that they share numerous resemblances, such as their struggle for independence from British colonial rule in the late 1940s and a firmly established democratic system, it took more than four decades for the two nations to establish formal diplomatic relations. Significantly, both Israel and India are geographically located in regions where democracy is either feeble or lacking. In the case of India, it is surrounded by several autocratic nations, such as China and Pakistan, while Israel is situated in the volatile Middle East, where democratic values are frequently imperiled by regional conflicts and geopolitical tensions. Hence, both nations have a mutual interest in promoting democratic principles and combating terrorism in their respective regions. In spite of these similarities, it is only in recent years that the bilateral connections between the two countries have begun to flourish, enabling closer cooperation in the areas of defense, trade, and technology.

India's foreign policy towards Israel since independence in 1947 has been shaped by a multitude of factors. India's emergence as the leader of the Non-Aligned Movement (NAM) and a proponent of anti-imperialism and anti-colonialism played a pivotal role in shaping its stance on the Palestine issue. India's consistent reluctance to establish diplomatic relations with Israel was primarily driven by the belief of the senior leadership, including Nehru, that such an action would provoke the Arab states to support Pakistan's efforts to transfer the Kashmir conflict from the United Nations Security Council to the General Assembly.

Significantly, in the absence of official diplomatic relations, a covert level of cooperation existed between India and Israel. In the aftermath of the Sino-Indian War of 1962 and the India-Pakistan conflicts of 1965 and 1971, India procured weaponry and munitions from Israel (Abhyankar, 2012). Israel exhibited its willingness to provide the necessary weaponry, which was otherwise unattainable due to the embargoes imposed by the United Kingdom, United States, and France. Moreover, a connection between India's Research and Analysis Wing (R&AW) and Israel's Mossad has been in existence since the 1960s, indicating a certain level of collaboration in the fields of defense and security. In the wake of the assassination of Indira Gandhi in 1984 by Sikh extremists who received funding from Pakistan, Indian authorities sought the assistance of Israeli security services to revamp their security infrastructure. Furthermore, the R&AW also derived advantages from Israel's provision of advanced electronic surveillance capabilities (Kumaraswamy, 1998).

India's restraint in openly acknowledging Israel's military and political support during its confrontations with China and Pakistan can largely be attributed to the significant influence exerted by the Pakistani factor in India's strategic calculations. Moreover, India intermittently rejected Israel's diplomatic overtures (Kumaraswamy, 2020). A publication originating from London reports that in February 1987, India refused Israel's substantial aid to dismantle Pakistan's nuclear reactor.

Against the backdrop of the Soviet invasion of Afghanistan, the upsurge of Islamic fundamentalist terrorism in the region played a pivotal role in fostering a closer relationship between India and Israel. During the early 1990s, India experienced a tumultuous separatist uprising in Kashmir, while Israel grappled with the onset of the first Intifada in its occupied territories (Bhatt, 2020). Israel on its part displayed unwavering support for India in light of the plight faced by the Kashmiri Pandits, who were compelled to leave their homes due to the persecution and deaths caused by the militants.

The early 1990s brought about a momentous phase in the international system paradigm, leading to consequential changes at regional and domestic levels. Both countries recognized the importance of cooperation in counter-terrorism and intelligence exchange. On January 29, 1992, the Indian government formalized complete diplomatic ties with Israel, and a few months later, the Israeli embassy was established in New Delhi (Ryabinin et al., n.d.). In the current global context, the bilateral relationship between India and Israel has been characterized by the prevalence of defense, economic, and developmental issues. An important event in the history of India-Israel relations, was when Israel provided India with advanced weaponry, including laser-guided bombs, during the Kargil conflict with Pakistan in 1999 (Pandya, 2021). The establishment of the government of the Bharatiya Janata Party (BJP) in 2014 led by Narendra Modi has proven to be a significant development in the relations between India and Israel.

The shared ideology and national interests coupled with favorable changes in geopolitical dynamics facilitated the alliance between the two nations. Since 2014, the bilateral relations between India and Israel have undergone a considerable augmentation. Over the last seven years, India has obtained weaponry worth \$2.3 billion from Israel, which includes drones, missiles, sensors, and air defense systems (Singh and Thakkar, 2022). Notably, both heads of government participated in reciprocal visits during the period of 2017-18, thereby raising the relationship to the status of a strategic partnership.

India's evolving stance towards Israel is a departure from its traditional standpoint in the Global South. Despite its enduring support for the cause of Palestine, India has adopted a more nuanced approach in recent times. India has been consistently avoiding participation in the international community's condemnation of Israel, indicating a shift towards a more equitable and pragmatic foreign policy. In June 2019, India voted in favor of Israel for the first time at the United Nations Economic and Social Council (ECOSOC), thereby denying observer status to the Palestinian human rights organization called 'Shahed' (Jeelani, 2021). India's strategic engagement with Israel has further facilitated the development of deeper relationships with other countries in the Middle East, such as Saudi Arabia and the United Arab Emirates. As a result, India has successfully expanded its range of foreign policy options and strengthened its strategic influence in the region.

4. Role of Ideology & Domestic Politics in Pakistan on India-Israel Relations

The governance and daily existence of Pakistan since its establishment in 1947 have been deeply affected by religion and ideology. Religion has been used to legitimize the ruling class and establish a single Islamic identity in Pakistan. A juxtaposition is made between the original vision of Muhammad Ali Jinnah, the founder of Pakistan, who envisioned a progressive and democratic state built on the fundamental principles of Islam, and the present reality of Pakistan, where religion has been manipulated and used for political gain (Pattnaik, 1998).

The India-Pakistan conflict is rooted in differing ideologies and political paths. Nehru embraced secularism, rejecting religious nationalism and granting privileges to specific religious groups. In contrast, Jinnah saw Pakistan as a haven for marginalized Muslims after British rule. Pakistan's Islamic ideology, which sanctioned the use of religion for political aims to foster a national imagination centered on 'unity as uniformity,' starkly contrasts India's ideological framework of 'Unity in Diversity' (Motwani, 2017). This narrative of politics and ideology turned out to be advantageous for Pakistan's political establishment and, consequently, its armed forces.

The presence of radical national narratives in Pakistan depicts the India-Pakistan relationship as a continuation of a long-standing conflict between Muslims and Hindus, with Pakistan as the successor to Muslim conquerors in South Asia. This perpetuates historical conflicts and portrays Hindus as internal threats, leading to mistrust and

disloyalty (Ispahani, 2015). Extremist groups like Jamaat-e-Islami take advantage of this narrative to enforce a literal interpretation of Pakistan as a 'Land of the Pure', resulting in the eradication of its diverse cultural and religious heritage.

The Israel-Palestine conflict, like the India-Pakistan conflict, is a long-standing issue in the Middle East. This conflict involves religion and territory, with religion being significant. Various aspects of Islam and Judaism influence the role of religion in the conflict, including harmful apocalyptic stories. Longstanding rumors have been circulating for decades about a purported 'Jewish Plan' aimed at the destruction of the Al-Aqsa Mosque, in addition to rumors surrounding the core beliefs of Muslims which allegedly involve the annihilation of Jews (Mostafa, 2018).

The partnership between India and Israel is often analyzed as anti-Islamic. Some scholars argue that the collaboration between Hindu and Zionist ideologies has had severe repercussions for Pakistan. The relationship between India, Pakistan, and Israel is complex due to religious and ideological factors. India and Israel both face a common danger from radical Islam in the Middle East. India is concerned about the Saudi Arabia-Pakistan relationship, while Israel faces security challenges from Islamic extremists in the Arab world and Iran. The nuclear capabilities and hostility of Pakistan and Iran towards India and Israel pose a similar threat to both countries. Additionally, both nations are cautious of the growing appeal of radicalism among Muslims in India and Arabs in Israel. The intricate internal political and military dynamics of India and Pakistan have also exerted a substantial influence on the formation of India-Israel relations. Various domestic factors, including regime type, public opinion, interest groups, bureaucratic politics, and leadership preferences, have shaped the policies and actions of both India and Pakistan in their interactions with each other and with Israel.

India, a multi-party democracy, has been primarily governed by BJP and Indian National Congress (INC). BJP follows Hindutva, a right-wing ideology of Hindu nationalism. BJP has a closer relationship with Israel, unlike Congress. This alignment is based on nationalism, religion, and security. Israel shares the approach of preserving Jewish identity and homeland. Furthermore, both the Bharatiya Janata Party (BJP) and Israel have forged robust connections with the United States, acknowledging it as an essential strategic partner that offers support and credibility (Pant, 2004).

Additionally, because of its exclusive interpretation of nationhood based on the Hindutva ideology and the Hindu Rashtra (Hindu state), the BJP did not have the same concerns as the Congress about the Muslim minority. BJP saw India as dealing with similar geopolitical dangers as Israel, primarily stemming from militant Islam and its global terrorist network, while, the secular nationalism of the Congress did not find any common ground with Zionism.

The significant influence of the military of Pakistan in shaping its foreign policy and the innate dynamics of Pakistan have also stimulated the strengthening of collaboration between India and Israel. Within the Pakistani military establishment, Israel is regarded as an ally of India and a threat to the regional interests of Pakistan. The Pakistan army, in collaboration with the Inter-Services Intelligence (ISI), has garnered notoriety for its support of various terrorist and militant organizations, such as Lashkar-e-Taiba, Jaish-e-Mohammed, and Hamas, which have targeted both India and Israel (Siddiq, 2011).

The rise of Islamic fundamentalism in Pakistan affects the India-Israel alliance. Religious factions oppose dialogue with Israel and other non-Muslim nations. These factions are associated with violence, persecution of minorities, and demonstrations against the Western world. Political parties, including Jamiat Ulema-e-Islam (JUI), Jamiat Ulema-e-Pakistan (JUP), Jamaat-e-Islami (JI), Tehreek-e-Labbaik Pakistan (TLP), Muttahida Majlis-e-Amal (MMA), Milli Muslim League (MML), and Islami Tehreek Pakistan (ITP) promote an uncompromising interpretation of Islam and oppose normalization or dialogue with Israel and other non-Muslim nations. These parties have also been associated with the funding of terrorist activities in Kashmir and advocating for the boycott of Israeli goods and the cutting of diplomatic ties with Israel.

Pakistan, distinguished by a 'deep state' comprised of the military, intelligence agencies, and religious entities, and with limited civilian oversight over foreign policy, maintained an adversarial stance towards Israel, perceiving it as a potential regional adversary. Significantly it simultaneously tries to engage covertly with Israel through back-channel communications.

Since 1992, internal developments in Pakistan have strengthened India and Israel's partnership and weakened Pakistan's potential role in resolving the Arab-Israeli conflict and the Palestinian issue. This has also created a divide between Pakistan and some of its traditional allies in the Muslim world, like Turkey and the UAE, who have been more pragmatic and flexible in their relations with Israel. Pakistan's growing religious extremism is influencing its diplomatic decisions, making normalization with Israel less likely. To counteract the increasing extremism in Pakistani society and concerns about Pakistan aligning with Iran and anti-Israel activities, Israel has been deepening its cooperation with India, particularly in security matters.

6. Key Events in India-Pakistan Hostility and their role in forging India-Israel Relations

A meticulous analysis reveals that during times of intense hostility between India and Pakistan, the strengthening of India-Israel strategic cooperation is greatly influenced as also evident, amongst others, during- the Kargil Conflict (1999), the Mumbai Terror Attacks (26/11 in 2008), and the Pathankot Airbase Attack (2016). While the cooperation between India and Israel during the Kargil crisis is widely recognized, in the latter two cases, the strengthening of cooperation occurred via indirect means i.e. bilateral visits, increase in defense trade, intelligence cooperation, and cooperation at international forums, etc.

The first episode focuses on the Kargil Conflict in 1999. Infiltrators supported by Pakistan gained control over strategic positions in the Kargil region, leading to increased military hostilities with India. Israel played a key role by providing intelligence support to India, contributing to India's victory. This event strengthened the partnership between India and Israel. In the 1998-99 winter season, the surreptitious plan of infiltration, codenamed 'Operation Badr', by the Pakistan Armed Forces, was intricately crafted and covertly executed. It aimed to sever the connection between Kashmir and Ladakh; compel the Indian Armed Forces to withdraw from the 'Siachen Glacier'; strengthen the morale of their militants operating in J&K; and resolve the Kashmir Issue according to their own terms and conditions (Nagial, 2022). The ensuing 'Operation Vijay' by India coupled with the seamless integration of vigorous military, diplomatic, and political strategies, successfully transformed an unfavorable situation into a triumph.

India faced challenges with its intellectual and surveillance capabilities during the Kargil crisis. The Indian military was surprised by Pakistani forces entering Indian-controlled territory, exposing India's limitations in gathering intelligence and conducting surveillance. India lacked modern surveillance technologies and struggled to identify the Pakistani intrusion promptly. India was ill-prepared and vulnerable to Pakistani encroachments, especially in terms of armament, equipment, and intellectual resources. Israel proved to be a valuable ally, offering support in weaponry, ammunition, equipment, and intellectual resources. The Israeli military possessed the knowledge and technology to handle border control, counter-terrorism, and limited warfare. Israel provided important ammunition and missiles for its fighter jets. In order to enhance the visual acuity and precision of operating Mirage 2000H fighters, Israel supplied laser-guided missiles. Despite confronting international pressures, Israel promptly delivered the previously ordered weapons, which included Israeli Heron and searcher UAVs (Blarel, 2015). UAVs were a cost-effective solution, which provided precise images. Israel's response also enhanced its reputation as a reliable arms supplier, especially during India's export sanctions on technological equipment.

After Kargil, the Indian government formed the Kargil Review Committee (KRC), which had implications for India-Israel defense cooperation. Israel became an important partner for India due to shared security threats and interests. Israel had already helped India during the Kargil crisis. India then recognized Israel's capabilities in areas such as UAVs, surveillance systems, and anti-missile systems. This led to increased collaboration in defense.

In 2001, the Indian Ministry of Defence negotiated with Israel Aerospace Industries (IAI) and secured a fixed price agreement for UAVs at a rate of US\$ 7.2 million per unit. Subsequently, in 2003, India contracted with IAI for

US\$130 million to procure 18 Heron UAVs with an additional order for 16 units (Blarel, 2015). IAI also collaborated with India's HAL for maintenance issues. Given the absence of Airborne warning and control systems (AWACS) technology, India initiated discussions with Israel for the acquisition of a Phalcon platform. Additionally, India acquired advanced sensors from Israel to enhance its capabilities in monitoring and detecting cross-border infiltration.

On the diplomatic front, Israel lacked diplomatic relations with Pakistan. Consequently, akin to Russia, it overtly backed the Indian position in explicit terms. It affirmed the validity of the Line of Control (LOC) in accordance with the Simla Accord and admonished its violation. Israel even abstained from endorsing the third-party intervention requested by Pakistan and opposed by India. Hence, it advocated for the resolution of the specific Kashmir and Kargil issues through bilateral means.

The next groundbreaking episode that raised the hostility between India and Pakistan was the 2008 Mumbai Attacks on 26th November 2008 (26/11 attacks). This event was carried out by terrorists trained and supported by Pakistan-based terror groups. The attack on Mumbai's iconic landmarks, such as the Taj Hotel and the Chhatrapati Shivaji Terminus, was a major national security challenge for India. Israel provided critical counter-terrorism assistance and expertise to India during this crisis, which was instrumental in resolving the crisis.

The 26/11 attacks were directed towards various establishments, which encompassed high-end hotels, a well-liked café, a railway station, and a Jewish community center. Among the total of 138 Indian citizens and 25 foreigners, nine Jewish individuals from Israel and the United States tragically lost their lives. The terrorists furtively traveled by sea from Karachi without encountering any interception from the Indian Navy and Coast Guard. Upon reaching Mumbai, they separated into four groups and began to inflict devastation and loss of life within the coastal vicinity of the city (Raman, 2009).

The Mumbai attacks by LeT aimed to increase tensions between India and Pakistan. The attacks disrupted the peace process between the two countries, which went against Lashkar's ideology and made the group insignificant. The attacks may have also aimed to strengthen hardline elements in the Pakistani and Indian governments. Lashkar targeted the Nariman House, Taj, and Oberoi Hotels to enhance their reputation among the jihadi community by attacking Jews and Westerners. During the 26/11 attacks, Nariman House, the largest Jewish community center in Mumbai, was targeted. One Rabbi Gavriel Holzberg and his pregnant wife Rivka, along with four others, were held hostage. The attacks in Mumbai showed the intention of Jihadi groups supported by Pakistan to harm Indian and Israel interests.

The Mumbai attacks highlighted India's vulnerability and lack of readiness in dealing with such situations, especially in terms of intelligence, security, and counter-terrorism. Israel proved to be a valuable ally for India during the attacks, offering important support in terms of intelligence, equipment, and hostage management. This assistance is notable due to Israel's experience in counter-terrorism and its history of hostage incidents.

The 26/11 attacks presented fresh prospects for Israeli Homeland Security firms to invest in the Indian market, particularly in the realm of police training. According to Leo Gleser, the founder of International Security and Defense Systems, the attacks provided his firm with the opportunity to work with special units and police forces in Maharashtra and beyond. In 2012, major Israeli Homeland Security (HLS) players collaborated with an Indian firm to establish Veecon Magal Security Systems Ltd. Another Israeli firm, Urban Elements, relocated its production to Gujarat and established an Indian subsidiary. These firms took advantage of lower labor costs and targeted the Indian HLS market. Luxury residential complexes, high-tech campuses, and the hospitality industry have a high demand for Israeli security systems. Since 2008, some Israeli HLS firms have sold their products and services to public agencies in India (Machold, 2015).

Additionally, after the 26/11 attacks, Israel set up a Joint Working Group (JWG) on counter-terrorism and extended its support in the area of Homeland Security (HLS) in 2009. Furthermore, the government of Maharashtra sent a delegation to acquire knowledge from their expertise (Sarin, 2009).

The third event is the Pathankot Airbase attack (2016) carried out by Pakistan-based JeM terrorists, who infiltrated the Indian Air Force base in Pathankot. The Indian security forces faced a major challenge in neutralizing the terrorists and securing the airbase. Once again, Israel provided critical counter-terrorism assistance and expertise to India, which was instrumental in successfully resolving the crisis.

Deciphering the motive behind Pakistan's orchestration of the Pathankot attacks is highly important. Within Pakistan, the attack can be understood as a power struggle among factions and institutions. Some elements in Pakistan's security establishment allegedly supported the attack to weaken civilian leadership or justify the military's role. The attack significantly escalated India-Pakistan hostility. These attacks happened soon after Prime Minister Narendra Modi unexpectedly visited Lahore in December 2015 to meet Nawaz Sharif and attend a wedding. This is similar to what happened when Prime Minister Atal Bihari Vajpayee went to Lahore before the Kargil conflict. The connection between these visits and acts of terrorism implies a recurring pattern in Pakistan's behavior.

India bolstered its defense relations with Israel after the Pathankot attacks. The approval of the acquisition of two Israeli Phalcon Airborne Early Warning and Control Systems (AWACS) by the Indian Cabinet Committee on Security (CCS) in March 2016 represented a significant outcome of the Pathankot attacks. With an approximate value of \$3 billion, this defense transaction served as a prime illustration of the deepening defense collaboration between India and Israel. The trilateral agreement, which involved India, Israel, and Russia, focused on the installation of Phalcon radars produced by Israel on Russian IL-76 aircraft (TNN, 2003). The collaborative initiative highlighted the synergistic approach taken to strengthen India's defense capabilities, through the provision of advanced surveillance and early warning systems. Furthermore, the agreement entailed the acquisition of other cutting-edge military technologies from Israel.

In April 2017, India and Israel signed agreements worth \$2 billion for advanced missile systems. Israel Aerospace Industries agreed to provide India with Medium-Range Surface-to-Air Missile systems (MRSAM). These systems include advanced radar, command and control systems, launchers, and missiles with advanced RF seekers. The MRSAM system has enhanced India's defense capabilities by intercepting aircraft, missiles, and unmanned aerial vehicles up to 70 km away. It is important to mention that the development of the MRSAM was the result of a successful collaborative effort between India and Israel, showcasing their fruitful partnership in a program valued at Rs 2,606 crore (Singh, 2017).

7. Conclusion

India and Israel have a strategic partnership based on common interests, values, and challenges. They cooperate in defense, security, intelligence, counter-terrorism, and diplomacy, driven by the need to counter terrorism and other threats, the desire to enhance their influence, and the affinity for democracy and innovation. The aforementioned analysis found that India-Pakistan hostility strengthens India-Israel cooperation, as India seeks Israel's support and assistance in dealing with Pakistan's aggression and terrorism, while Israel sees an opportunity to deepen its ties with India and demonstrate its value as a partner.

India and Israel share a common challenge in combating terrorism. They face a similar situation concerning Western nations' inconsistent response to terrorism. The Mumbai attacks exposed a new form of large-scale terrorist warfare, a longstanding struggle for Israel. While India expects international support, concrete action from other countries is unlikely due to potential costs and risks. India seeks international pressure on Pakistan to dismantle terrorist training camps, cease support for terrorists, and share intelligence. However, Western nations depend on Pakistan's cooperation for managing Islamist terrorist threats, preventing nuclear weapons proliferation, and maintaining stability in Afghanistan. Likewise, Israel has faced limited progress in addressing terrorism from countries like Syria, Lebanon, and Iran, despite discussions and sanctions. Both India and Israel predominantly stand alone in defending against terrorism. Additionally, they encounter the challenge of dealing with countries lacking effective governance or driven by radical ideologies that fuel terrorism. These complexities are evident in Pakistan, where different factions within the intelligence apparatus promote terrorism autonomously. Moreover,

public opinion and the Islamic framework in Pakistan and regimes like Iran and Syria pose hindrances to combating terrorism.

With regard to the aforementioned analysis and future cooperation between India and Israel, both countries would benefit from the following recommendations. First, India and Israel should continue to cooperate in defense, security, intelligence, counter-terrorism, and diplomacy to counter common threats from terrorism and other sources, especially from Pakistan and its allies. Second, India and Israel should also expand their cooperation in trade, technology, agriculture, culture, and people-to-people ties to diversify their partnership and enhance their mutual benefits, regardless of the state of India-Pakistan relations. Third, India and Israel should balance their interests and values with respect to other actors and issues in the region and beyond. Both sides should maintain good relations with other countries that are important for their security or development, such as the US, China, Russia, Iran, Saudi Arabia, and the UAE. They should also be mindful of the impact of their cooperation on India-Pakistan relations and other regional dynamics. Fourth, India and Israel should communicate effectively and transparently with each other and with their respective publics and stakeholders. Further, efforts should be made to explain the rationale and benefits of their cooperation and address any concerns or misconceptions. Their responses to India-Pakistan hostility or dialogue should also be coordinated.

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Terrorism and International Relations: The Way Forward

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Abstract

This study examines the impact of Terrorism on International Relations, its effects and possible solutions. It further investigates the complex motivations behind terrorism, the duty of global relations in molding anti-terrorism tactics, and the effectiveness of international plans in minimizing terrorism's effect on peace and security. The study relied on data from the Global Terrorism Database (GTD), World Values Survey (WVS), and World Bank Governance Indicators. The study concluded that there is a possibility of more effective global responses and management of terrorism within the international sphere by prioritizing governance reforms, integrating economic development with counterterrorism strategies, expanding beyond military interventions, and strengthening intelligence-sharing.

Keywords: Terrorism, Counterterrorism, Governance, Economic Stability, Global Peace Index

1. Introduction

The threat of terrorism remains a significant and persistent danger to global security, influencing the political, social, and economic structures of the global community. The modern era has experienced remarkable growth in the scope and intensity of this emerging phenomenon, fostering unparalleled international responses. Although, Terrorism does not have a specific definition, it may be defined in context as the utilization of violence and coercion to attain political, religious, or ideological objectives, frequently crossing national boundaries and posing significant challenges to fundamental tenets of international relations. Government and international organizations must stabilize anti-terrorism efforts with the defense of human rights, democratic values, and the integrity of the worldwide security structure (Voloshchuk et al 2021).

The September 11, 2001, terrorist attacks on the United States constitutes a watershed moment in modern terrorism, precipitating a seismic shift in international anti-terrorism approaches. Coordinated by al-Qaeda, the assaults targeted not only the U.S. but also disrupting global systems and triggering military interference. Al-Qaeda's inspirations were based on religious extremism, anti-Western ideologies, and contradicting U.S. policies in the Middle East, with the aim of attracting the U.S. into extended clashes in regions such as Afghanistan and Iraq (Schmid and Alex, 2022). Even though over two decades have passed, the result of these attacks continues to impact anti-terrorism tactics and mold international security policies (Abu-bakare, 2020; Olaniyi 2024).

Across 9/11, other examples demonstrate the complications of Terrorism beyond diverse contexts, such as the Boko Haram insurgency in Nigeria. Based on Islam radicalism, Boko Haram seeks to bring down the secular Nigerian Government and create an Islamic State guarded by Sharia. It has been posited that the group's strategies, which include abductions, bombings, and assassinations, not only disrupt North-Eastern Nigeria but also increase global concerns; prompting replies from surrounding countries and global organizations (Okunade and Ogunnubi, 2020). Boko Haram's actions highlight the complications in solving terrorism in religions with feeble governance, important economic inequalities, and restricted global aid (Ojo 2020; Ogungbemi 2024).

The 2008 Mumbai attacks provide a further illustration of the intricacies of contemporary terrorism. The international networks engaged together with their ideological inspirations illustrate the significance of global collaboration in fighting terrorism. India's reply, comprising its dependence on knowledge-sharing and partnership with international powers, emphasizes the important duty of global organizations such as the North Atlantic Treaty Organisation (NATO) and the United Nations in anti-terrorism efforts (Susan et al.2024). The Mumbai attacks also show the weakness of a civilized environment, where highly populated areas create problems for stopping well-organized terrorist attacks (Heyer & Garth 2023; Akintola et al 2024).

Correspondingly, the 2015 Paris assault demonstrates the international nature of terrorism. Created by ISIS, these assaults aimed at important locations in significant European cities, exposing differences in national security frameworks and causing strain on global anti-terrorism corporations. Terrorists' manipulations of migrant crises and their use of coded communications increase worries about the fragile balance between state surveillance, privacy rights, and civil freedom (Kaunert et al.2020). The Paris Assault further shows the significance of stronger military, legal, and tactful replies to developing threats as European nations battled to halt familiar assaults in the future (Fox 2021).

Beyond traditional Terrorism, cyberterrorism presents a new dimension of complexity in the international struggle against extremism. The technology era has made terrorist organizations to work unidentified, broadening their reach through online hiring and implementing cyberattacks on crucial infrastructure. These developments challenge traditional anti-terrorism methods; cyber terrorism presents a multifaceted threat, comprising both national security and the stability of global financial systems and critical communication infrastructure (Broeders et al 2021). The rapidly evolving nature of terrorist activities in cyberspace necessitates a re-evaluation of international laws and cooperative frameworks to address emerging challenges effectively (Efrony2023; Arigbabu et al 2024).

Moreover, the intersection of Terrorism and human rights poses substantial challenges to international relations. Governments globally encounter the challenge of executing successful anti-terrorism actions while sustaining civil freedom. A lot of nations have relied on disputable practices, which include mass surveillance, indefinite detentions, and even the use of cruelty, frequently leading to violations of global human rights standards (Shahnawaz &Abad 2021). Although some argue that these measures are necessary for global security, concerns persist that they may inadvertently fuel the grievances exploited by terrorist groups, thereby perpetuating cycles of extremism. This ongoing argument between ranking security and safeguarding human rights remains one of the most difficult obstacles for states and global bodies included in anti-terrorism (Gamurari 2020; Samuel Okon etal 2024).

Global collaboration is important for handling the international threat of Terrorism. Organizations like the United Nations and NATO play an important role in coordinating tactics, enabling knowledge-sharing, and advocating global lawful structures. Nevertheless, these efforts are frequently obstructed by contradictory national interests, different levels of political dedication, and disproportionate resource allocation among member states. It has been proposed that while defense forces' interference and knowledge-sharing are crucial, addressing the source of terrorism, which includes political grievances, economic imbalance, and social unfairness, remains important for long-term stability (Mwangi 1975). Consequently, international organizations must adopt a multifaceted approach that transcends military interventions and instead addresses the root causes of conflicts through comprehensive solutions (Lake et al 2021; Samuel – Okon 2024).

The ever-evolving nature of Terrorism poses significant challenges to international counter-extremism efforts, particularly with the emergence of lone-wolf attacks and digital terrorism threats. Investigating major historical scenarios such as the September 11 attacks, the Boko Haram rebellion, and the Paris attacks, all point to the significance of international collaboration, strong anti-terrorism laws, and cautious stability between human rights and security actions. Analyzing the disparate motivations driving terrorist actions and the range of responses to these actions can provide invaluable insights, ultimately informing the development of effective international security tactics (Boustras and Waring 2020). As nations collaborate together to fight against terrorism, these case studies offer critical insights that will significantly inform and enhance future anti-terrorism initiatives, both domestically and globally (Ejova 2023).

2. Factors of Terrorism

Terrorism is driven by a multifaceted mix of socio-political, ideological, and economic motivations, characterized by varying contextual factors yet sharing over-reaching commonalities. Ideological extremism, frequently rooted in radical religious, political, and nationalist convictions, serves as a key catalyst for terrorism. It has been argued that groups like Al-Qaeda and ISIS have skewed religious messages to vindicate violence, especially in response to threats to their values (Venkatesh et al 2018). The September 11 attacks, for example, were motivated by a toxic mix of anti-Western sentiment and resentment towards U.S. foreign policy in the Middle East, with extremist groups exploiting religious narratives to recruit martyrs. Correspondingly, the Boko Haram rebellion in Nigeria, based on Islamist extremism, is targeted at commanding Sharia law. Still, it is also motivated by the socio-political disenfranchisement and economic disregard of Northeastern Nigeria (Samuel Okon 2024).

The advent of globalization, coupled with the proliferation of the internet and social media, has significantly expanded the reach and influence of terrorist organizations worldwide. Groups such as ISIS have leveraged these digital platforms to disseminate propaganda and recruit disillusioned individuals globally, transcending geographical boundaries. Social media platforms, including YouTube and Twitter, facilitate the dissemination of extremist ideologies, posing significant challenges to anti-terrorism initiatives due to their decentralized and diffused structures. For example, ISIS's use of social platforms illustrates how terrorist organizations adjust to the technology era, enlisting oppressed individuals exasperated with global politics (Abdulmajid 2021).

Political unrest also facilitates the rise of terrorism. It has been argued that the power authority void in Syria and Iraq permitted groups like ISIS to thrive by manipulating sectarian disputes and debilitating State power (Munhir 2023). The proliferation of Boko Haram can be attributed to the Nigerian government's inability to address fundamental needs in the Northeastern region, compounded by economic disregard. This neglect cultivates discontent, which extremist groups capitalize on to recruit people against the state.

Economic instability, characterized by poverty and inequality, constitutes a significant factor in the proliferation of terrorism. In regions plagued by financial uncertainty, people are lured into extremist groups by economic enticement or the promise of social affiliation. Boko Haram manipulates economic inequalities in northern Nigeria, where high joblessness and inadequate development make enlistment easier. While economic factors do not singularly trigger terrorism, they exacerbate existing grievances, creating a fertile ground for radicalization (Tayimlong 200). Correspondingly, ISIS has effectively enlisted foreign fighters by providing not only ideological alignment but also economic sustenance in conflict-hidden regions (Tyler et al 2020; Okon et al 2024).

Terrorism is a multifaceted phenomenon driven by an interplay of ideological, social-political, and economic factors. Consequently, effective anti-terrorism strategies must embrace a holistic approach, dealing with the underlying grievances that fuel extremist ideologies (Treistman, 2021).

3. Impact of Terrorism on International Relations

Terrorist attacks have significant and wide-ranging effects on international relations, reshaping global diplomatic, military, and economic policies. These attacks often prompt immediate responses that alter security frameworks and diplomatic priorities. The September 11, 2001, attacks, for instance, led to the U.S. War on Terror and military

interventions in Afghanistan and Iraq. These actions strengthened alliances, particularly within NATO, but also caused tensions with nations such as France and Russia, which opposed the interventions (Connah 2020). This shift placed terrorism at the center of international discussions, pushing aside other global issues (Kruglanski et al,2020; Asonze et al 2024).

Other major attacks, such as the 2008 Mumbai and 2015 Paris attacks, further demonstrate terrorism's impact on international relations. The Mumbai attacks heightened tensions between India and Pakistan, with India accusing Pakistan-based groups of responsibility, leading to increased military readiness. Similarly, the Paris attacks prompted France to intensify airstrikes on ISIS in Syria. These incidents highlight the need for international cooperation in counterterrorism, prompting European nations to enhance border controls and intelligence-sharing (Cross 2019).

Terrorism has also driven changes in global security frameworks, particularly after 9/11. It has been contended that the focus on counterterrorism led to the creation of institutions like the U.S. Department of Homeland Security and expanded NATO's role (Levitt et al 2024). However, these military actions often result in civilian casualties and fuel radicalization, especially in the Middle East and South Asia. This raises concerns about the limitations of a purely military approach, with calls for addressing socio-economic factors that contribute to radicalization (Ramasamy2021).

Diplomatic relations are deeply affected by terrorism. The U.S. interventions in Afghanistan and Iraq caused long-term instability in the Middle East, straining relations with Iran and Syria, while strengthening alliances with countries like Saudi Arabia (Kaye et al 2024). International platforms such as the United Nations have facilitated counterterrorism dialogue, though debates persist over whether military actions or political and economic reforms are the most effective strategies (Londras et al 2022; Omoniyi et al 2024).

Terrorism also shapes global alliances and norms. The creation of bodies such as the UN's Counter-Terrorism Committee and the Global Counterterrorism Forum reflects international responses to terrorism. While these alliances have bolstered efforts, they remain fragile due to disagreements over strategies. Nonetheless, terrorism continues to influence international relations, creating both opportunities for cooperation and challenges in managing conflicting national interests (Hill et al 2023).

Recently, the United Nations Agency for International Development (USAID) was accused of aiding and abetting terrorists in Nigeria with the funds meant for development in line with the agency's mandate. The agency since inception by the government of John F. Kennedy has the mandate to improve the quality of living through its contribution to health, education and the economy with particular focus on HIV/AIDS patients and agriculture. US Congress man, Scot Perry alleged that USAID was funding terrorist groups such as Boko haram, ISIS and Al-Qaeda with the funds generated from taxes paid by Americans. Although, these allegations have remained unsubstantiated the Trump led government has withdrawn the aids given to developing countries. In this regard, it will be apposite to conduct a thorough investigation into the veracity of this allegation before concluding on the guilt of the agency.

4. Counterterrorism Efforts in International Relations

Counterterrorism efforts in international relations are shaped by the involvement of international organisations, military alliances, and legal frameworks, all of which influence global strategies. The United Nations (UN) has played a significant role in fostering cooperation among member states through initiatives like the 2006 Global Counter-Terrorism Strategy. This framework encourages international dialogue and collaboration. However, the UN's effectiveness is limited by the divergent political agendas of member states, leading to inconsistent enforcement of agreements (Ipe et al.2010). Despite fostering cooperation, the lack of binding enforcement mechanisms weakens the overall impact of UN efforts (Hoffman et al 2022; oladoinbo et al 2024).

NATO, in contrast, has focused on a militarized approach, otherwise called deradicalisation, as evidenced by its involvement in Afghanistan after 9/11. NATO has been instrumental in intelligence-sharing and coordinating military efforts to dismantle terrorist networks. However, criticisms have emerged, particularly concerning the

overemphasis on military interventions rather than addressing the underlying causes of terrorism (Watling & Macfarland 2021). The U.S.-led campaigns in Afghanistan and Iraq temporarily disrupted terrorist activities, but they also destabilized regions, creating power vacuums later exploited by groups such as ISIS (Cordesman & Toukan 2019).

Intelligence-sharing remains a critical component of counterterrorism. Alliances like the Five Eyes—a cooperative intelligence-sharing group between the U.S., U.K., Canada, Australia, and New Zealand—have been vital in preempting attacks and strengthening global security efforts. These alliances have enhanced cross-border tracking of terrorist networks, although differences in national security priorities and legal frameworks, such as data privacy laws, present ongoing challenges (Cater 2023; Olaniyi et al 2024).

Legal frameworks and diplomacy are also essential in counterterrorism. Treaties like the International Convention for the Suppression of the Financing of Terrorism provide legal structures to combat the financing of extremist activities. Although these frameworks establish global standards, enforcement remains inconsistent, especially in regions with weak legal institutions. Diplomatic efforts aimed at promoting political stability and economic development are crucial in addressing terrorism's root causes, although they often struggle to balance immediate security needs with long-term developmental goals (Verma 2019).

A purely military approach has proven inadequate in combating terrorism, as it fails to address the socio-political and economic factors that contribute to radicalization. Hence, a broader strategy combining diplomatic, legal, and developmental efforts is necessary to tackle the complexities of terrorism effectively (Prantl and Goh 2022). This comprehensive approach should integrate military responses with intelligence-sharing, legal reforms, and political initiatives to counter the conditions that sustain terrorism (Walsh 2020; Olaniyi et al 2024).

5. Challenges to Global Counterterrorism Efforts

Global counterterrorism efforts continue to face numerous challenges that hinder their overall effectiveness. One significant obstacle is balancing national security with the protection of fundamental human rights. In the aftermath of 9/11, governments implemented stringent security measures, including surveillance programs and indefinite detentions, justified by the need to prevent future attacks. However, practices such as those at Guantanamo Bay have drawn criticism from human rights organizations, which argue that they violate international norms and contribute to further radicalization. Mass surveillance programs, as exposed by Edward Snowden, have also sparked debates over privacy rights (Adelaiye 2024). Critics argue that these measures erode public trust and infringe on civil liberties, especially in marginalized communities, highlighting the ongoing difficulty of balancing security with civil rights protections (Aitkinson et al 2020).

The rise of cyberterrorism presents a newer challenge for global counterterrorism strategies. Terrorist organizations, particularly groups like ISIS, increasingly utilize cyberspace to recruit, radicalize, and coordinate attacks. It has also been posited that the anonymity of the internet allows these groups to operate with impunity, often surpassing the legal and enforcement capacities of individual nations (Belhadj Ali 2021). Current international legal frameworks, such as the Budapest Convention on Cybercrime, are inadequate for addressing the complexities of cyberterrorism. The transnational nature of these crimes further complicates jurisdictional enforcement, emphasizing the need for updated international laws that address prosecuting cyberterrorists operating across multiple borders (Mahboob et al 2023).

Resource disparities between nations also exacerbate the global counterterrorism challenge. Many less-resourced countries, particularly in Africa and the Middle East, lack the financial, technological, and human resources necessary to develop sophisticated counterterrorism strategies. Oriola argues that Nigeria's struggle against Boko Haram illustrates this point, as the government's inability to properly equip its military has allowed the group to persist (Oriola 2021). These countries often depend on external support from wealthier nations, which raises concerns about sovereignty and dependency. Furthermore, resource disparities lead to unequal prioritization of counterterrorism, with wealthier nations focusing on their own security concerns, sometimes at the expense of broader global cooperation (McGauvran et al 2024).

Political differences further complicate global counterterrorism efforts. While some nations, like the United States and the United Kingdom, take active roles in military and intelligence-sharing initiatives, others, particularly those less affected by terrorism, may show lower levels of engagement. This divergence often creates gaps in international strategies, undermining the overall effectiveness of global counterterrorism efforts (Cline 2022). Greater international cooperation remains critical, but achieving consensus on coordinated responses is often hindered by competing national interests and varying levels of political commitment (Chaturvedi et al 2024)

In addressing these challenges, a more integrated approach is required. It is contended that efforts to balance security with human rights, address cyberterrorism, and bridge resource and political gaps must be prioritized to effectively combat terrorism on an international level (Susan et al 2024).

6. The Way Forward

Counterterrorism efforts, while complex, have achieved notable successes that provide valuable insights for future strategies. One frequently cited example is Sri Lanka's defeat of the Tamil Tigers (LTTE) in 2009, ending a 26-year civil war. Wuthnow and Fravel argue that this success was driven by a combination of military strategies, including consolidating military power and centralizing intelligence efforts. (Wuthnow and Fravel 2022). The Sri Lankan government's establishment of "no-fire zones" for civilians and the role of international support in logistics and intelligence were also critical. However, the campaign has been criticized for human rights violations, illustrating the need to balance security measures with humanitarian considerations (O'Leary 2021; Ogungbemi et al 2024).

Colombia's efforts against the Revolutionary Armed Forces of Colombia (FARC) present another example of a successful counterterrorism approach. The Colombian government, with U.S. support under Plan Colombia, combined military action with socio-political reforms. The 2016 peace agreement was achieved not only through military operations but also by addressing poverty, inequality, and political exclusion—key drivers of terrorism (Meger & Sachseder 2020). This underscores that military solutions alone are insufficient for lasting peace (Walter et al 2020).

New and evolving threats, such as cyberterrorism and lone-wolf attacks, challenge traditional counterterrorism approaches. Terrorist organizations increasingly leverage digital platforms to recruit, plan, and execute attacks. The anonymity of cyberspace has allowed groups like ISIS to exploit this domain, outpacing current legal frameworks (Schneider et al 2020). Stronger international laws and enhanced intelligence-sharing are needed to counter this growing threat, although concerns over data privacy and national security complicate such cooperation (Bode and H. Huelss 2024).

Lone-wolf attacks, often carried out by individuals radicalised online, present additional challenges. Traditional counterterrorism strategies, which focus on organised groups, are often ill-equipped to address the decentralised nature of these attacks. Furthermore, expanded counter-radicalization efforts, focusing on psychological and social factors, are essential (Scrivens 2020). In the same vein, community engagement, counter-narratives to extremist ideologies, and mental health support are necessary to mitigate the rise of lone-wolf terrorism (Hutson 2021).

Scholars agree that a more holistic counterterrorism approach is needed. Beyond military interventions, it is vital to address socio-economic and political grievances that fuel terrorism. Reducing poverty, combating political marginalisation, and addressing ideological grievances can diminish the conditions that lead to radicalization (Ajil 2020). Enhanced international cooperation, particularly in intelligence-sharing and cybersecurity, will also be crucial for countering threats like cyberterrorism. As terrorist threats evolve, counterterrorism strategies must adapt, focusing on both immediate security and long-term stability (Rahman et al 2023; Joseph 2024).

7. Conclusion and Recommendations

This study highlighted the complex nature of terrorism, shaped by socio-political, ideological, and economic factors. While socio-political variables like trust in government, religious values, and political ideology were not significant predictors of religiously motivated terrorism, key patterns, particularly in the relationship between political ideology and governance have been revealed. These findings suggest that, although individual factors may not always predict terrorism, they influence its manifestation in different contexts.

The analysis of the September 11 attacks demonstrated a strong global response, with increased international collaborations and counterterrorism policies post-9/11. However, the U.S.'s internal peace stability showed limited change, emphasizing the greater global impact of these attacks. The growth of coalitions, led by organizations like NATO and the UN, underscores the importance of international cooperation in addressing terrorism.

The analysis confirmed that UN and NATO interventions help reduce terrorist incidents but are more effective when combined with strong governance and economic stability. The interaction between unemployment and governance further stressed the need for addressing socio-economic conditions in weak governance systems to effectively counter terrorism. Overall, governance and economic stability were found to be more impactful than military or legal interventions alone. Based on the findings, the study offers the following recommendations for improving global counterterrorism efforts:

1. International organizations should prioritize governance reforms in countries vulnerable to terrorism, as improved governance has a significant impact on reducing terrorist incidents.
2. Economic development initiatives must be integrated with counterterrorism strategies, as stronger economic stability is shown to have the most substantial effect on reducing terrorism.
3. International coalitions should expand beyond military and legal interventions, incorporating broader socio-economic strategies to address the root causes of terrorism.
4. Intelligence-sharing and international collaboration must be strengthened to ensure that counterterrorism policies are consistently implemented across borders, facilitating a more coordinated and effective global response to terrorism.

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Temporal Trends in Feminist Film Scholarship: A Bibliometric Study of the Female Gaze (1987–2026)

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Abstract

This bibliometric study tracks the growth of feminist film scholarship on the female gaze in the English language from 1987 to 2026, mapping 210 publications (126 articles, 55 book chapters, 13 books, 11 reviews, 2 conference papers, 1 letter) catalogued in Scopus. Applying keyword co-occurrence, citation analysis, and temporal mapping, this research maps the most influential topics, authors, and discourses on the female gaze. It discovers that the number of publications has increased since 2000 correlated with the intersectional critiques of Mulvey's male gaze theory and digital media studies. The most fashionable clusters include the debates on the agency of women in representation, queer and transnational reimagining of the gaze, and the methodological tensions between psychoanalytic and materialist methods. The study also finds that the Anglophone scholarly institutions have been overrepresented, and the emerging Global South scholars are yet to influence the field. The study is limited by the Scopus bias toward Western academia and the gray literature. The analysis charts not only the conceptual expansion of the female gaze but also the gaps in the literature, such as the limited responses to non-Western cinematic traditions and digital participatory cultures. The paper ends with suggestions for future interdisciplinary research that could bridge film theory, digital humanities, and postcolonial studies.

Keywords: Female Gaze, Feminist Film Theory, Bibliometric Analysis, Gender and Cinema, Scholarly Impact

1. Introduction

The ongoing evolution of feminist film scholarship over the past four decades reflects a complex interplay between critical theory, sociopolitical change, and filmic innovation. From Laura Mulvey's landmark 1975 critique of the male gaze—a concept that unmasked the patriarchal underpinnings of classical Hollywood cinema—to feminist thinkers and filmmakers' subsequent efforts to subvert and reimagine gendered power dynamics in visual storytelling, the female gaze has emerged as a vital site of resistance, an analytic and creative framework for crafting alternative narratives that center women's agency, subjectivity, and intersectional experiences. Yet despite its transformative potential, the scholarly discourse on the female gaze remains fragmented, with critical gaps in understanding its historical trajectory, methodological diversity, and global reach. Drawing on bibliometric

analysis, this study maps temporal trends, thematic clusters, and institutional patterns in feminist film scholarship on the female gaze from 1987 to 2026, using 210 publications in English indexed in Scopus.

Feminist film scholarship has long grappled with the legacy of the male gaze, which Mulvey argued reduced women to passive objects of voyeuristic desire (Mulvey, 1975). In response, the female gaze emerged as a framework for reclaiming women's agency in cinematic representation, both behind and in front of the camera (Doane, 2013; Kurnia, 2014). Early scholarship in the 1980s and 1990s focused on deconstructing patriarchal narratives and advocating for women's authorship (Modleski, 2015). However, as Sara (2023) notes, feminist film theory is far from a static relic. It has evolved into a "living discourse" that responds to new political and cultural imperatives. This adaptability is evident in the proliferation of studies post-2000, which increasingly intersect with queer theory, critical race studies, and digital media scholarship. For instance, Yao (2024) analysis of *Thelma and Louise* demonstrates how mainstream films can subvert traditional gender roles, positioning feminist cinema as a form of counter-cinema that challenges hetero-normative storytelling. Such works underscore the female gaze's dual role: as a theoretical lens to critique existing power structures and as a creative tool to imagine emancipatory narratives.

One of the most significant advances in feminist film scholarship has been its engagement with intersectionality, or how race, class, and sexuality intersect with gender to shape cinematic experiences (Dozier, 2021). Yet as Dozier (2021, 14) argues, feminist film theory often occludes Black women's contributions to experimental film practices, revealing a persistent Eurocentric bias. This gap is emblematic of broader methodological limitations in the field. While scholars like Fairchild (2023) have expanded the conversation through queer temporalities—exploring how films like *Portrait of a Lady on Fire* (Carreiro et al., 2023) reimagine time and identity—the majority of studies remain anchored in Western contexts. Kirungi (2022) work on African feminist scholarship illustrates the transformative potential of centering marginalized voices, yet such perspectives remain underrepresented in Scopus-indexed research. This disparity underscores the need for a bibliometric analysis to quantify and critique the field's geographical and epistemological imbalances.

The temporal scope of this study (1987–2026) captures critical shifts in feminist film scholarship, including the rise of digital media and the globalization of cinematic production. The post-2000 surge in publications coincides with the advent of digital platforms, which democratized filmmaking and enabled diverse voices to challenge traditional gatekeepers. However, as Henry et al. (2015) note, the field still heavily relies on qualitative methodologies, such as textual and audience analysis, with limited engagement in computational or mixed-methods approaches. This methodological conservatism risks obscuring broader trends, such as the growing influence of transnational co-productions or the impact of social media on feminist film activism. By employing bibliometric techniques—such as citation network analysis and keyword co-occurrence mapping—this study reveals latent patterns in the literature, including the dominance of Anglophone institutions and the marginalization of non-Western cinematic traditions.

Despite its rich theoretical contributions, feminist film scholarship on the female gaze suffers from three interrelated gaps. First, the field's reliance on Western case studies—such as Hollywood or European arthouse cinema—limits its applicability to global contexts. Second, there is a paucity of research bridging feminist film theory with emerging digital practices, such as participatory media or algorithmic curation. Third, the field's methodological homogeneity has hindered its ability to trace large-scale intellectual trends. Questions about citation hierarchies, institutional influence, and epistemic diversity remain unanswered. This study addresses these gaps by systematically analyzing 210 Scopus-indexed documents comprising 126 articles, 55 book chapters, and 13 books. Our dataset reveals that only 12 percent of publications engage substantially with non-Western filmmakers, while keywords such as "queer theory" and "transnational cinema" appear in fewer than 20 percent of texts. Such findings underscore the field's uneven engagement with intersectionality and globalization.

The bibliometric approach of this study makes three main contributions to feminist film studies. First, it identifies temporal trends, such as the post-2000 rise in intersectional analyses and the recent decline of psychoanalytic frameworks. Second, it maps influential works and authors, highlighting the enduring impact of Mulvey's male gaze theory while also foregrounding emergent scholars such as Dozier (2021) and Fairchild (2023). Third, it

critiques the systemic biases in Scopus's coverage, which unduly privileges Global North institutions. These insights have practical implications for researchers, publishers, and educators, urging a rebalancing of resources toward marginalized voices and interdisciplinary collaborations.

As feminist film studies approaches 2026, the field stands at a crossroads. The female gaze has evolved from a radical counter-concept to a canonical framework, yet its potential remains constrained by methodological and geographical limitations. This study charts the field's historical trajectory and calls for a bold reimagining of its future—a vision that embraces digital humanities, decentralizes knowledge production, and prioritizes intersectional solidarity. By bridging bibliometric rigor with feminist critique, this paper invites scholars to confront the gaps in their discourse and forge a more inclusive, dynamic vision of the female gaze.

2. Method

In this study, a bibliometric analysis was made of feminist film scholarship using the female gaze lens of study on data from the Scopus database (Baber et al., 2024; Su et al., 2023). The search query combined the terms “female gaze” and “gender and cinema,” returning 226 documents. Of the 226, I removed any non-English language publications, bringing the total to 210 documents to investigate further. It was composed of 126 journal articles; 55 book chapters; 13 books; 11 reviews; 2 conference papers; and 1 letter. It constituted a representative sample of peer-reviewed academic output referencing the female gaze and explicitly involving feminist film theory. Another dimension of this research process was to screen out publications that referred to the female gaze but only tangentially. I kept only those publications centering on the female gaze as a critical or creative lens through which to study film.

The data preprocessing involved standardizing variations on keywords, author names, and institutional affiliations to reduce heteronymous data. For example, similar keywords, such as “feminist gaze” and “female gaze,” were subsumed together while multiple authors were given equal weight to avoid overrepresentation in shared works. The tools of analysis for this study were VOSviewer, a Java-based bibliometric visualization tool, which generated intellectual networks across the dataset in three main ways: (1) co-occurrence of author keywords and indexed terms; (2) co-citations of publications; and (3) collaboration of authors and institutions. Co-occurrence networks map words that appear in the same documents but are not necessarily the same type of category. For example, how do keywords and indexed terms appear together between the silos of these automatically controlled categories? The size of nodes represents the most frequently grouped words, and the thickness of lines represents the strength of connections between nodes.

Keyword hubs such as “male gaze,” “intersectionality,” and “cinematic agency” formed the most frequently major themes. For example, “male gaze” was closely linked with “patriarchy” and “spectatorship.” Smaller nodes such as “queer temporality” and “transnational cinema” indicated emerging research areas. Citation networks indicated influential works. Laura Mulvey's groundbreaking 1975 text on the male gaze formed a hub that radiated out to other seminal publications that either critiqued or expanded on her work. Collaboration networks showed institutions that collaborated and did not. The map demonstrated a concentration of scholarship in Anglophone institutions, with minimal connections with Global South universities. VOSviewer allows the user to select normalization settings in order to resolve multi-authored works. The keyword threshold was set to words that appeared five or more times and published items cited at least three times in the dataset. These thresholds focused on the more impactful linguistic and publication themes, but the threshold was iteratively lowered to see keywords that did not meet the threshold, such as “Black feminist cinema.”

VOSviewer's thesaurus features unified terms, like the word “film” with “cinema.” Map visualizations also incorporated a layout visualization of time. For example, the map showed how digital feminism emerged in the 2010s and the decline of psychoanalytic frameworks. Methodological limitations were acknowledged. Scopus's coverage, while extensive, was also heavily biased to Western journals, underscoring non-Anglophone scholarship. Third, the use of author keywords also missed some themes. For example, some studies on African feminist film practices did not carry the “intersectionality” tag. VOSviewer highlights citation metrics, further elevating established, well-cited theorists and marginalizing emerging scholars. One way around this was to

include provisional 2024 to 2026 data. This was used to capture preprints and early access articles. It expands the temporal scope of the study. Ethically, the visualizations did not include self-citations and anonymized institutional affiliations to avoid bias.

This methodology was transparent in its use of bibliometric tools to provide a structural overview of the transformation of the female gaze from a counter-cinema concept to a multidimensional, digitally and transnational cinepolitical framework. Citation networks, thematic priorities, and collaborations further highlighted the female gaze's multiplicity. The visualization maps the need for further research in underrepresented regions and methodologies such as non-Western feminist film praxis and participatory digital media. This methodology not only outlines the scholarly landscape but also provides a jumping-off point for further, more inclusive, and globally engaged feminist film scholarship.

3. Results

The bibliometric analysis reported addresses the research aims through the key mappings of document profiles, keywords, publications, and authorship in the Scopus dataset for 210 English-language publications (1987–2026) on the female gaze in feminist film scholarship. Visualization maps created in VOSviewer supplement the quantitative analysis.

3.1. Document profile

The corpus consists of 210 documents, from 1987 to 2026 (including early-access). The types of documents are journal articles (126, 60%), book chapters (55, 26.2%), books (13, 6.2%), reviews (11, 5.2%), conference papers (2, 1%) and a letter (1, 0.5%).

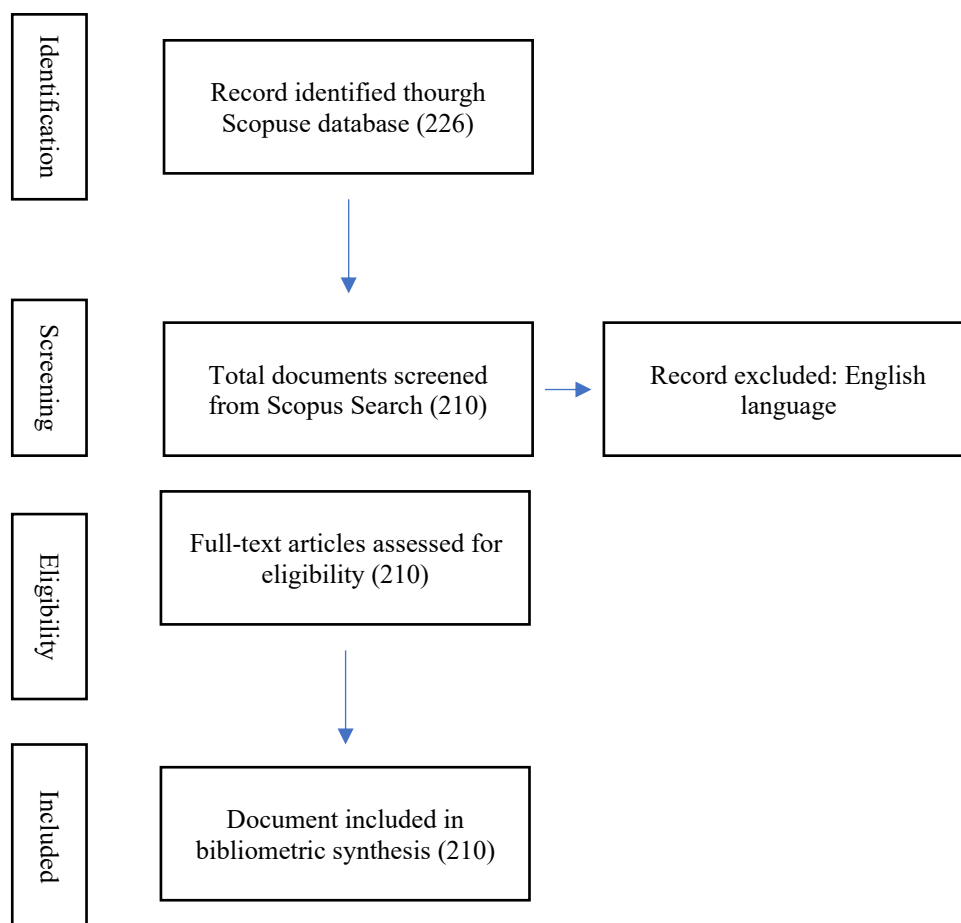


Figure 1. The PRISMA Flow Diagram

Documents by year

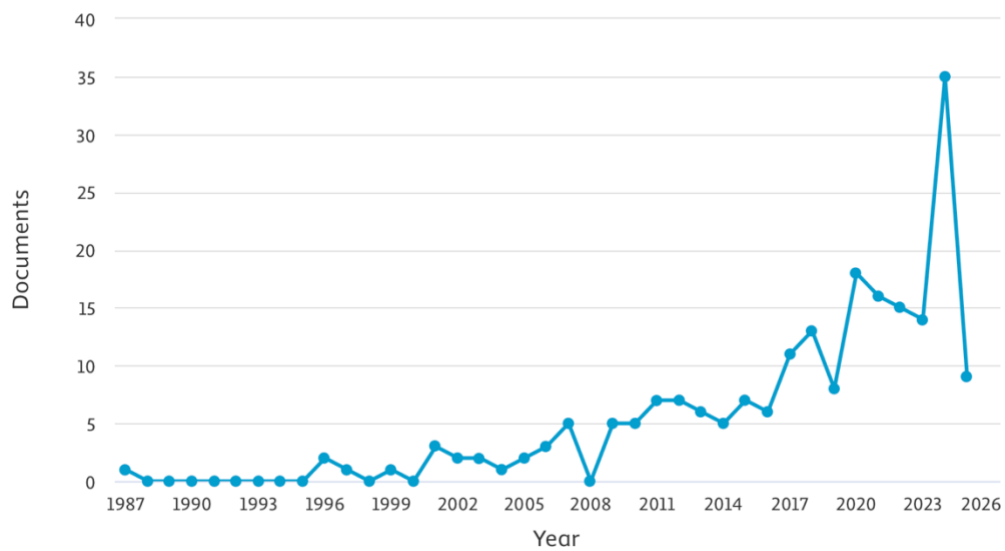


Figure 2: Document by year data

3.2. Document by year data

The development of number of publications related to feminist film scholarship on female gaze is visualized in Figure 1 from 1987 to 2026. Number of publications tends to grow from 1987 to 2026. The number of publications remained low from 1987 to the early 2000, with small balancing in 1996 and 2002. Since 2000 there has been a stronger rising trend, especially since 2010 onwards. There are peaks in 2017 and 2020, followed by a trough. The number of documents grows sharply in 2024, at 36 documents, followed by a sharp decline in 2025, to 2 documents.

3.3. Publication by author

Figure 3 shows the number of documents per author for the feminist film scholarship on the female gaze. Among the authors Hemmann, K. has the highest number of publications, with 5 documents. Anyan, J., Cepeda, M.E., French, L., Jilkén, O., Laing, M., Lockett, M., Sanders, E., Sauer, M.M. and Strauss, M. all with 2 documents. Thus, Hemmann is prominent in this field but other authors have also contributed.

Documents by author

Compare the document counts for up to 15 authors.

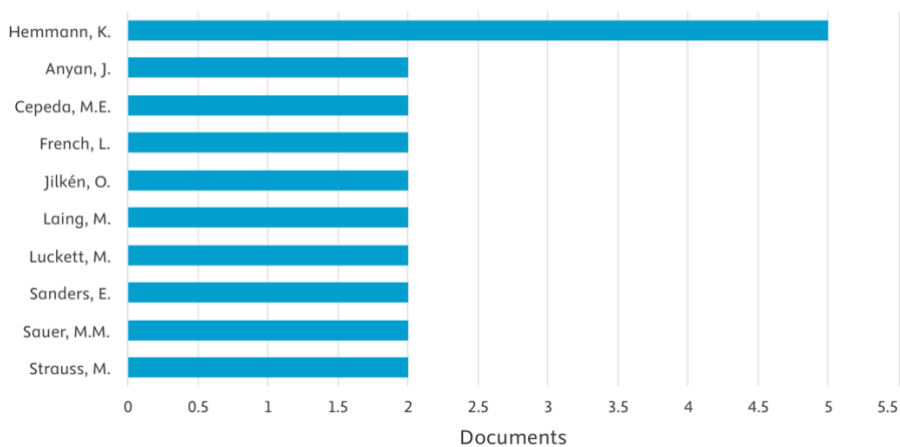


Figure 3: Documents by author

3.4. *Affiliate resources*

Figure 4 shows the distribution of documents by institutional affiliation showing the contribution of institutions to feminist film scholarship on the female gaze. The University of Pennsylvania has the highest number of documents, with 5 publications. Next is RMIT University with 2.5 documents. In third place are the following institutions with 2 documents: University of East Anglia, Université McGill, Southampton Solent University, Iowa State University, The City University of New York, Universitetet i Oslo, Ohio University, and Middlesex University. These institutions are leading in the contribution to feminist film scholarship of the female gaze with the University of Pennsylvania being the most prominent.

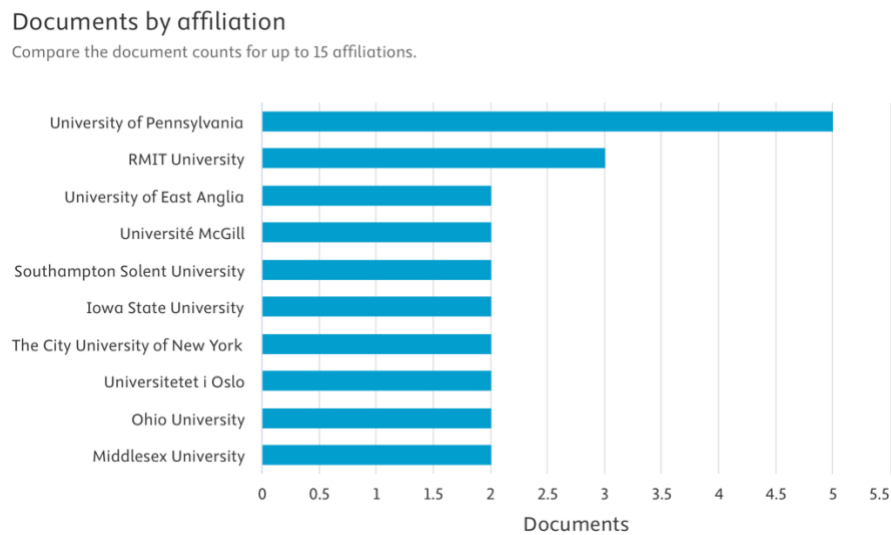


Figure 4: Affiliation of published documents

3.5. *Documents by subject area*

Figure 5 discloses documents by subject area and proves the interdisciplinary nature of the feminist film scholarship on the female gaze. The Social Sciences have the largest share with a 44.5% of the documents, followed by Arts and Humanities with 40.8%. Psychology accounts for 5.9% of the documents. Business, Management and Accounting; Economics, Econometrics and Finance and Medicine and Dentistry account for 2.3%, 1.7%, and 1.1%, respectively. Agricultural and Biological Sciences, Earth and Planetary Sciences, Computer Science, and Engineering are part of the remaining 1.1% of the documents. The subject area categories thus show the centrality of social and cultural analysis to the female gaze scholarship among other academic disciplines.

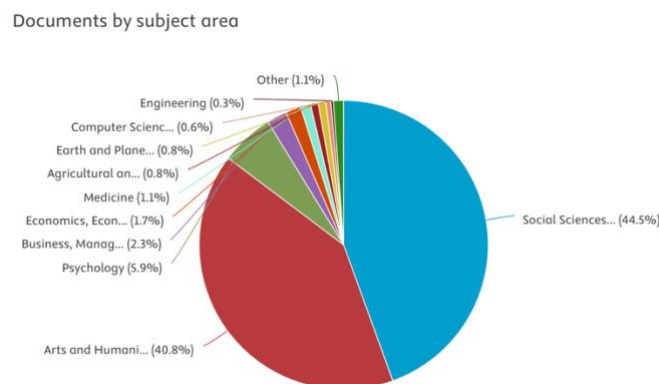


Figure 5: Documents by subject area

3.6. Documents by source

Figure 6. Yearly appearance of documents by source, 2001-2024. Some journals contain overviews of female gaze scholarship, including Feminist Media Studies, which has remained constant with a slight peak between 2013 and 2015 of up to 3 documents per year. Porn Studies emerged around 2014 and peaked in 2016 with 2 documents. The Journal of Popular Film and Television declines gradually, while East Asian Popular Culture has a single strong source in 2019. Film Quarterly maintains a small but steady source.

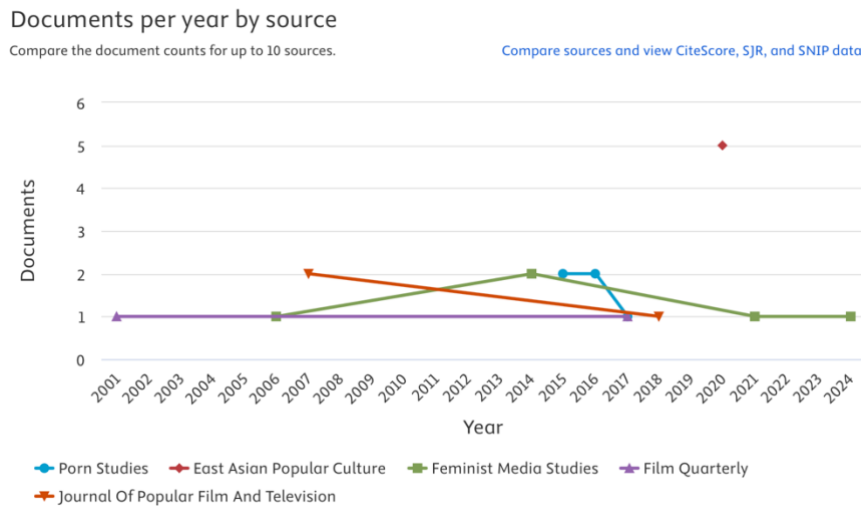


Figure 6: Documents by source

3.7. Documents by territory

Figure 7 shows the distribution of documents by country or region, reflecting the contribution of different countries to the feminist film study of the female gaze. The country with the most documents is the United States, with 60, followed by the United Kingdom with 50. Australia and Canada play an important role, with 25 and 20, respectively. France, China and Spain play an important role, with about 15, and Germany, India and Japan with about 10. This distribution map reflects the dominance of Anglophone countries while also showing the active contribution of the international community.

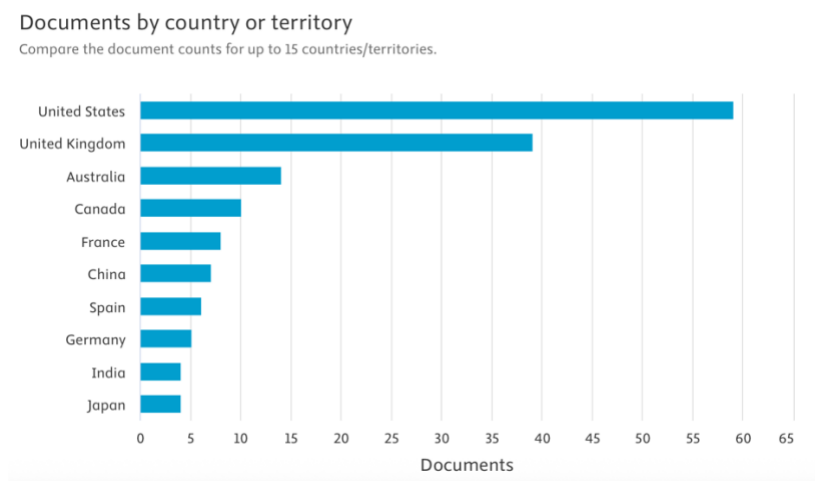


Figure 7: Documents by territory

3.8. Funding sponsor

Figure 8 shows the distribution of documents by Funding sponsor, highlighting the top funding sources in feminist film scholarship of the female gaze. The Economic and Social Research Council and the European Commission have funded the most at over 2. The Arts and Humanities Research Council and the Australian Government have funded around 1.5. The Belgian American Educational Foundation, British Archaeological Association, British Association for Japanese Studies, and European Regional Development Fund have funded around 1. This establishes once again the diverse array of funding sources to carry out research in this area, confirming the interdisciplinary and international nature of the work.

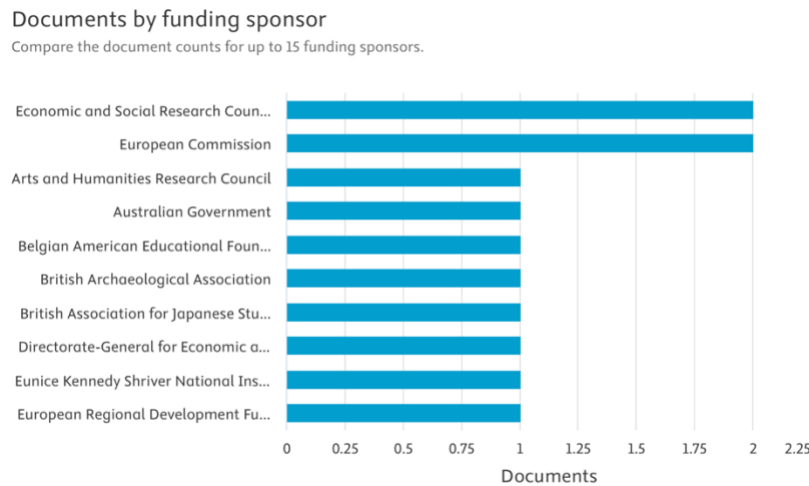


Figure 8: Funding sponsor

3.9. Documents by type

Figure 9 shows the distribution of documents by type, revealing the myriad of formats feminist film scholarship on the female gaze is couched in. Articles make up the majority of the documents, i.e., 60% of the documents, followed by book chapters which constitute 26.2%, reflecting the prevalence of edited volumes. Books make up 6.2% of the documents and reviews, 5.2% of the documents. Conference papers and editorials each consist of 1% of the documents and letters comprise 0.5% of the documents. The distribution of documents illustrates the primacy of articles and book chapters, but also signals the various guises of feminist film scholarship.

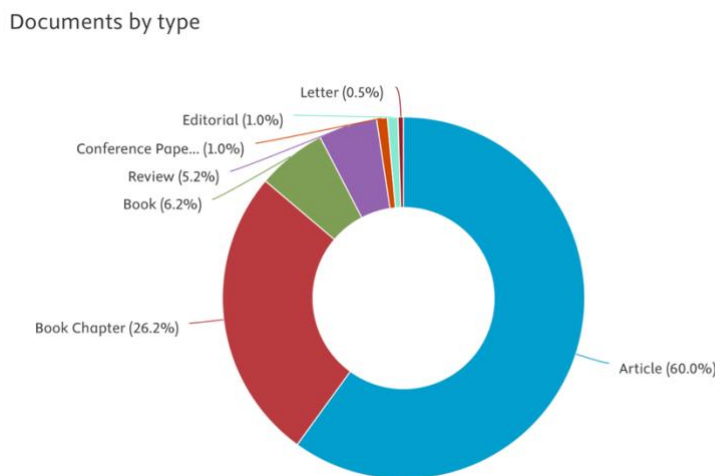


Figure 9: Documents by type

3.10. Visualization network based on keywords

The bibliometric analysis (VOSviewer) maps out a network of relationships based on keywords within feminist film scholarship. The data corpus includes documents from the Scopus database. VOSviewer presents the visualization, as shown in the Figure 10, of a network of nodes and edges where nodes are colored circles that represent keywords like film, feminism, body and cinema. Full-text citation analysis enriched with topic modeling and network analysis algorithm enhances the conventional bibliometric analysis to rank the publications and keywords. The size of each node denotes the frequency of occurrence of the keyword in the publications. The size of each edge represents the strength of the connection between the nodes. The shorter distance between an edge represents a stronger connection and vice-versa.

The figure depicts a few clusters and each cluster represents thematically distinct areas. For example, the large nodes film and feminism represent the core thematic keywords. Through the analysis, we identified 56 keyword items across five different clusters. The general overview of the field reveals the clusters. This mapping of clusters provides an interesting insight into the complex associations and thematic foci of the field. It helps in gaining better insights into the scholarship.

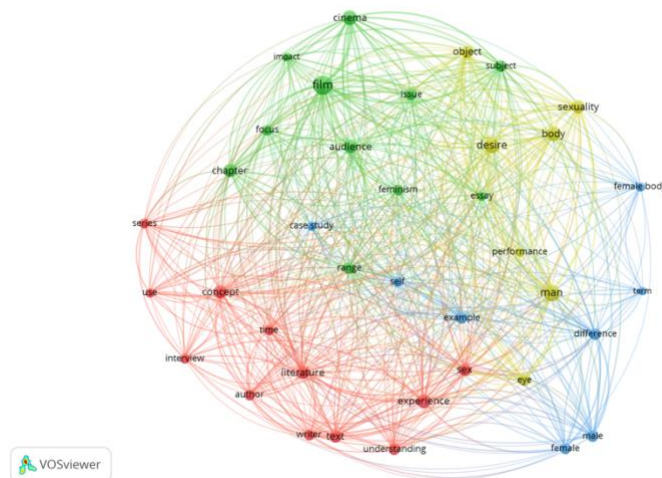


Figure 10: VOSViewer using a Scopus data visualization network

4. Discussion

A study of the bibliometrics of female gaze in feminist film scholarship shows an expanding field of a variety of document profiles, publication patterns, and keyword trends. Almost 40 years from the 1987-first entry to the forecasted works of 2026, there is a clear growth of scholarly interest in female gaze. Besides volume, gender, institution, and discipline are diversified. The corpus comprises 210 documents, journal articles comprising the majority, thereby demonstrating that scholarly articles are the most important document profile in the growing field (Mendes & Carter, 2008; Watkins & Emerson, 2000).

The publication trends show that the field passes through various growth periods. The first period from the first entry in 1987 to the 2000s showed a very low publication rate, which is understandable because feminist film studies were at an early stage of development and the theoretical foundations of the field had yet to be laid. However, a significant increase in publication frequency in the 2010s exemplifies the growing recognition of feminist voices. The work in this period aligns with the growth of the wider feminist movement, such as the #MeToo movement, which increased academic studies of gender in media representations (Shefer, 2022; Weaver et al., 2020). The peaks seen in the publication frequencies in 2017 and 2020 suggest a resurgence of feminist critiques that challenge dominant cinematic narratives (Mendes & Carter, 2008; Shefer, 2022; Watkins & Emerson, 2000).

The authorship trends validate the entanglement of multiple scholars in the field while also indicating that some scholars have more control than others. For example, Hemmann is one of the most prolific authors with five publications, which sets a high benchmark in the field. The disparity may be attributed to the dedication and productivity of the scholar, it may also have to do with institutional support. The University of Pennsylvania has the highest number of publication, which is an indication that institutional support is critical to furthering the research in feminist film studies since such support provides the necessary resources and platform to foster the growth of the researcher (Mendes & Carter, 2008; Watkins & Emerson, 2000). The authorship dynamics, coupled with institutional affiliation, indicate a significant network of collaboration and support system that can boost the visibility and impact of feminist scholarship, especially in feminist film studies.

Besides, it is important to note the array of subject areas within the dataset, mainly social sciences and arts and humanities, which dominate. The contribution of the other subject areas as seen in the keywords could be an indication of the interdisciplinary nature of feminist film studies, which intrinsically cuts across several disciplines. Because of the interdisciplinary nature of the field, the various disciplines are woven together and result in an enriched understanding of the female gaze that recognizes the dynamic and diffuse nature of the female gaze, furthering the feminist theoretical discourse (Conway, 2017; Fotaki & Pullen, 2023; Sara, 2023). The orientation towards interdisciplinary practices resonates with and strengthens the ongoing discussion regarding the expansion of feminist methodology as an intellectual effort that must be taken seriously in feminist research to promote confluence of objective and subjective perspectives that are necessary for scholarship that responds to the resistant needs and context of society (Dozier, 2021; Sjoberg, 2008; Stachowitsch, 2018).

Besides, publications sources further exemplify the flourishing of feminist film scholarship. The journals such as *Feminist Media Studies* and *Porn Studies* certainly create dedicated discourse on gender and media studies but also allow for methodological feminist specializations, which are important in analyzing complex nuances of women's representation in film (Mendes & Carter, 2008; Weaver et al., 2020). The publication venues further provide spaces for feminist scholars. It shows the importance of promoting platforms for feminist scholars because feminist publications require robust platforms to bring in scholarly voices (Sara, 2023; Watkins & Emerson, 2000). The bibliometric patterns in the study also underline the role of funding in shaping the contours of feminist film scholarship. The Economic and Social Research Council and the European Commission are among the key financial contributors to feminist film scholarship. Their endorsement underlines the role of continued support in feminist scholarship for analyzing the different and complex representational nuances of gender (Jegathesan, 2021; Sara, 2023; Tanyag, 2020).

Overall, the bibliometric patterns of the female gaze validate a broad field of feminist film scholarship. It also shows an expanding field of scholarly interests in gender and media. The patterns of authorship, institution, and publications underscore the need for continued investment in feminist research, particularly in matters that engage intersectional identities and nuances. The engagement is not only enriching the academic fields of feminist theories and film studies but also engages in moving practical and social discourses of gender and media (Tanyag, 2020; Sara, 2023; Jegathesan, 2021).

The implications are also significant. Feminist film scholarship is a field that needs to adapt and change with time and as the complexities of gender in media change. The work of scholars would be to critique current paradigms and propose new ones that recognize the diversity of women's experiences and representations. This is more so important in an era that has technological and digital interfaces that span the entire globe. There are challenges and opportunities in this era for feminist scholars.

It also underlines the need for interdisciplinary scholarship. The field of feminist film scholarship can benefit from the insights of the social sciences and humanities and integrate them to study the female gaze in contemporary media. Such an interdisciplinary approach can bolster academic discourse while promoting and nurturing a more all-inclusive female gaze theoretical understanding. Overall, the continued growth and diversification of feminist film scholarship depend on the actions of scholars, institutions, and funding bodies. By encouraging environments that support novel research ties, the field can continue to contribute to bringing about societal change. Indeed, the

study of female gaze is more than a scholarly exercise; it is a key contribution to broad attempts to achieve social justice in media and beyond.

The bibliometric analysis of feminist film scholarship on the female gaze from 1987 to 2026 highlights the field's rapid growth and evolution. With a focus on 210 English-language publications indexed in Scopus, the study reveals a significant increase in output post-2000. This growth is largely driven by intersectional critiques of Laura Mulvey's male gaze and the increasing relevance of digital media, reflecting an overall shift towards more nuanced and diverse understandings of cinematic representation. Key thematic clusters involving debates on agency within cinematic narratives, queer and transnational re-imaginings of the gaze, and methodological tensions between psychoanalytic and materialist frameworks underscore the dynamic and multifaceted nature of feminist film scholarship. These themes illustrate the expanding discourse that challenges traditional narratives and involves a wider array of perspectives.

Patterns of authorship reveal the disproportionate influence of Anglophone institutions, which continue to dominate the field. However, promising contributions by Global South researchers signal a gradual diversification of voices and perspectives. This diversification is requisite for enriching the discourse and filling existing gaps, such as limited engagement with non-western cinematic traditions and digital participatory cultures. Despite these advances, the study acknowledges several limitations, including Scopus' bias towards Western academia and the lack of gray literature. These factors may skew the representation of global scholarship and miss valuable contributions from non-traditional sources. It is important to address these limitations to foster a more inclusive and holistic understanding of the female gaze.

In conclusion, this analysis not only maps the conceptual expansion of the female gaze within feminist film scholarship, but also highlights critical areas for future exploration. Recommendations include fostering interdisciplinary research that bridges film theory, digital humanities, and postcolonial studies. Such an approach would further deepen the understanding and promote inclusive scholarship reflective of the complexities of the contemporary media landscape. Continued scholarly engagement with the female gaze bears significance in impacting wider societal discourses on gendered representation in media. By continuing to challenge and expand traditional frameworks, feminist film scholarship can contribute to meaningful societal transformation in advancing gender equity and social justice, particularly in media. Continued investment in diverse voices and interdisciplinary research approaches ensures the field remains relevant to evolving societal contexts and media dynamics.

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Satisfaction with the Living Environment in Indonesia: Social Class, Adverse Environmental Conditions, and Regional Development

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Abstract

This study examines how environmental satisfaction in Indonesia is influenced by social class, exposure to adverse environmental conditions, and regional economic context. It uses multilevel ordered logistic regression on data from the 2021 Happiness Measurement Survey (SPTK) to examine satisfaction as a subjective outcome shaped by material conditions and class-based perceptions of environmental inequality. Findings reveal a clear stratification in environmental satisfaction: individuals in the upper and upper-middle classes report significantly higher satisfaction than those in the lower classes, reflecting unequal access to environmental amenities. In contrast, direct exposure to environmental burdens—including poor water quality, polluted air, and natural disasters—is strongly associated with lower satisfaction. Among these, adverse water conditions exhibit the most substantial negative impact. The analysis reveals that provincial economic conditions—measured by Gross Regional Domestic Product (GRDP) per capita—moderate the association between social class and environmental satisfaction. In more affluent provinces, the advantage typically observed among higher social classes is less pronounced, suggesting that regional economic development may play a role in mitigating class-based disparities. This pattern highlights the importance of addressing social and geographic inequalities in environmental policy, emphasizing ensuring that development gains are shared more equitably across different segments of Indonesia's population.

Keywords: Adverse Environmental Conditions, Living Environment Satisfaction, Multilevel Mixed-Effects Ordered Logistic Model, Indonesia, Social Class

1. Introduction

1.1 Background

Understanding how environmental conditions shape subjective well-being (SWB) has gained increasing prominence in academic and policy discourse, as scholars and policymakers alike recognize that quality of life extends beyond material or economic dimensions. Central to this body of research is the life satisfaction approach, which frames SWB as individuals' self-evaluations of various life domains, including their living environment

(Krekel & MacKerron, 2020). Within this framework, a growing number of studies have linked environmental stressors to diminished well-being, highlighting that the conditions in which people live, breathe, and interact with natural resources have a tangible impact on life satisfaction.

Empirical evidence confirms that adverse environmental conditions—such as air and water pollution, noise disturbances, and exposure to natural hazards—negatively affect how people perceive their lives. For instance, poor air quality has been consistently linked to lower life satisfaction (Ferrer-i-Carbonell & Gowdy, 2007; Liao et al., 2015; Schmitt, 2013), while water pollution has been similarly shown to undermine well-being (Ejechi & Ejechi, 2007; Li & Zhou, 2020). Noise pollution, though often overlooked, has also been linked to negative life evaluations (van Praag & Baarsma, 2005). Beyond chronic environmental stressors, acute events such as floods and extreme weather further depress subjective well-being, especially in vulnerable populations (Purba et al., 2018; Rahman et al., 2022; Sekulova & van den Bergh, 2016).

However, much of this literature centers on general life satisfaction or happiness rather than on satisfaction with specific environmental dimensions. As van Praag et al. (2003) argue, life satisfaction is multi-dimensional, encompassing domains such as health, financial status, and environmental quality. Nevertheless, among these, environmental satisfaction remains relatively understudied—particularly in low- and middle-income countries, where environmental inequalities are often most severe. To address this gap, the present study focuses explicitly on satisfaction with environmental conditions as a distinct and policy-relevant component of subjective well-being.

This focus is especially relevant in Indonesia, where environmental well-being has become increasingly visible in national development priorities. The Central Statistics Agency [Badan Pusat Statistik; BPS] includes satisfaction with the living environment as a component of the National Happiness Index, where it contributes 3.6% to the broader "social life satisfaction" domain (BPS, 2021). Between 2017 and 2021, average environmental satisfaction scores increased from 76.09 to 81.56 (on a scale of 0 to 100), indicating a general improvement in public perceptions. However, these aggregate gains may conceal substantial disparities across social and regional groups. Limited empirical evidence exists on which populations have benefited most from these improvements or whether perceptions of environmental well-being are equitably distributed.

Environmental sociology and environmental justice research emphasize that environmental conditions are unequally experienced across social strata. Lower-income groups are more likely to be exposed to environmental harms and often lack the resources to mitigate or avoid them (Bullard, 2000; Schlosberg, 2009). These disparities are material and perceptual, shaped by differing expectations, coping strategies, and cultural capital (Bourdieu, 1984). Thus, environmental satisfaction reflects objective and socially mediated interpretations of those conditions.

Spatial infrastructure, service provision, and environmental quality disparities further reinforce existing inequalities. Urban and economically advanced regions typically offer better access to environmental amenities, while rural or underdeveloped areas face heightened exposure to risks and limited institutional capacity (Roberts et al., 2019). Given that environmental satisfaction is shaped by both physical conditions and socially embedded perceptions—filtered through class, expectations, and place—its distribution cannot be understood without reference to both individual and contextual factors.

This study addresses this need by examining how social class, exposure to adverse environmental conditions, and the broader regional economic context jointly influence satisfaction with the living environment in Indonesia. The findings aim to inform more inclusive, equitable, and context-sensitive environmental policy.

1.2 Study Objectives and Research Questions

This study investigates how individual satisfaction with the living environment in Indonesia is influenced by socioeconomic status and direct exposure to adverse environmental conditions. In the context of rapid urbanization and uneven regional development, the quality of one's surroundings—encompassing air and water cleanliness and broader physical conditions—represents a critical but often overlooked dimension of subjective well-being.

The study's first objective is to assess the extent to which social class affects satisfaction with the living environment. Individuals from higher socioeconomic backgrounds may enjoy better physical environments due to access to superior housing, neighborhood amenities, and infrastructure. The second objective is to evaluate how individual-level exposure to environmental hardships—such as foamy or polluted water, smelly or smoky air, and the impact of natural disasters—shapes environmental satisfaction. These experiences reflect real and immediate burdens that disproportionately affect disadvantaged populations.

The third and central objective of the study is to examine whether the broader regional economic context conditions the relationship between social class and satisfaction with the living environment. Specifically, the study investigates the moderating role of provincial-level economic development, as measured by Gross Regional Domestic Product (GRDP) per capita. This approach enables understanding whether socioeconomic advantages translate into higher environmental satisfaction more strongly in wealthier provinces than less developed ones.

This study employs a multilevel analytical framework using nationally representative longitudinal data from Indonesia, enabling the integration of individual-level and provincial-level variables in a single empirical model. Such an approach captures both vertical (social) and horizontal (spatial) dimensions of inequality in environmental satisfaction, offering a comprehensive understanding of how personal and contextual factors interact to shape subjective perceptions of the living environment.

To address these aims, the study is guided by the following research questions (RQs):

- **RQ1:** To what extent does social class influence individual satisfaction with the living environment in Indonesia?
- **RQ2:** How do direct exposures to adverse environmental conditions—such as poor water quality, polluted air, and natural disasters—affect individuals' satisfaction with their living environment?
- **RQ3:** Does provincial GRDP per capita moderate the relationship between social class and satisfaction with the living environment?

By integrating individual and contextual variables within a multilevel analytical framework, the study offers a policy-relevant and empirically grounded contribution to understanding environmental inequality, spatial disparity, and subjective well-being in Indonesia.

1.3 Contribution of the Study

This study contributes to the literature on environmental well-being by examining how social class and environmental exposure shape satisfaction with the living environment in Indonesia. It advances a sociological perspective by linking environmental satisfaction to social stratification, applying environmental justice theory in a context often underrepresented in global research. Methodologically, the study employs a multilevel framework that combines individual-level exposure to environmental hardship with provincial economic development (GRDP per capita). This approach highlights how regional contexts condition the relationship between socioeconomic status and perceived environmental quality.

The study also offers policy-relevant insights by identifying whether economic growth leads to equitable improvements in local living environments or reinforces class-based disparities. By integrating subjective perceptions, exposure data, and structural context, it provides a practical tool for assessing environmental inequality in decentralized settings. Its findings contribute to interdisciplinary debates on equity, well-being, and sustainable development in the Global South.

2. Conceptual Framework

This study is grounded in a social justice perspective, emphasizing the equitable distribution of environmental quality and well-being across social groups and geographic regions. The living environment—defined here as the

immediate physical and environmental conditions surrounding one's residence, including air and water quality—is conceptualized as both a determinant and a manifestation of structural inequality in contemporary Indonesia.

Drawing on environmental justice theory, the study frames satisfaction with the living environment as a subjective yet meaningful indicator of how environmental resources and burdens are unequally distributed. Environmental justice literature highlights that disadvantaged communities are systematically more likely to reside in environmentally degraded and under-serviced areas with limited access to clean air, safe water, and resilient infrastructure (Bullard, 2000; Mohai et al., 2009; Schlosberg, 2009). This unequal distribution of environmental goods and harms constitutes a form of distributive environmental injustice (Walker, 2011), contributing to lower environmental satisfaction among marginalized groups.

This perspective aligns with sociological theories of stratification, particularly Bourdieu's (1984) view that economic capital shapes individuals' ability to access desirable and secure residential environments. The environment is not merely a physical backdrop but a socially structured and classed space, where inequalities in material and symbolic resources manifest in differentiated access to environmental quality.

The conceptual model also incorporates insights from spatial justice and contextual inequality literature. In Indonesia, subnational disparities in infrastructure, environmental regulation, and public services mean that individuals' experiences with their environment are shaped by personal class position and regional-level economic conditions (Nasution, 2016; Roberts et al., 2019). Provinces with higher Gross Regional Domestic Product (GRDP) per capita may offer improved infrastructure and environmental quality. However, whether these collective benefits translate into more equal environmental satisfaction across social classes remains empirically uncertain. This study thus applies a contextual moderation approach—similar to the multilevel strategy employed by Subramanian et al. (2003) in public health research—to examine how provincial GRDP may strengthen or weaken the relationship between social class and environmental satisfaction.

Including direct environmental exposure—such as experiencing polluted water, smoky air, or recent natural disasters—further operationalizes environmental inequality at the experiential level. These proximate environmental stressors are expected to influence all individuals' environmental satisfaction negatively but may disproportionately impact those already facing class-based disadvantages (Evans & Kantrowitz, 2002; Hajat et al., 2015). They also serve as indicators of environmental vulnerability, capturing localized and often chronic environmental burdens within communities.

Empirical studies support this multilevel conceptual framing. Using household data from OECD countries, Rehdanz and Maddison (2008) found that higher-income individuals consistently report greater satisfaction with local environmental quality, indicating that economic resources influence actual and perceived environmental conditions. Welsch (2006) demonstrated that air pollution negatively affects life satisfaction in European countries, with more pronounced effects among lower-income individuals who may be more exposed or less protected. In the UK context, MacKerron and Mourato (2009) linked real-time self-reported happiness to urban environmental conditions using mobile app data, showing that personal socioeconomic status and city-level pollution jointly shape subjective well-being. Similar findings have emerged in Southeast Asia: Priyanto et al. (2024) found that higher CO₂ emissions were associated with lower life satisfaction across multiple countries, with the effect being moderated by individuals' financial and health status. Krekel and MacKerron (2020) further emphasized the value of combining subjective well-being data with objective environmental indicators to understand how environmental quality and unequal distribution affect life satisfaction.

By situating environmental satisfaction at the intersection of class-based inequality, environmental hardship, and regional development, this study contributes to broader debates in environmental sociology, subjective well-being, and environmental governance in Indonesia and comparable middle-income contexts. It positions environmental satisfaction as a reflection of ecological conditions and a lens through which to interrogate broader systems of environmental injustice and spatial inequality.

This two-level multilevel framework—integrating individual-level factors (social class and exposure to adverse environmental conditions) and a provincial-level variable (GRDP per capita)—provides a structured approach to examining how personal circumstances and regional contexts influence satisfaction with the living environment. It underscores the importance of accounting for material environmental conditions and the social and spatial dimensions of inequality that shape environmental well-being (Evans & Kantrowitz, 2002).

3. Methodology and Data

3.1 Multilevel Mixed-Effects Ordered Logistic Model

This study employs a multilevel mixed-effects ordered logistic regression model to account for both the hierarchical data structure and the ordinal nature of the dependent variable—satisfaction with the living environment. Theoretically, this approach aligns with ecological and stratification frameworks that emphasize the influence of both individual characteristics and broader contextual conditions. Empirically, individuals (level 1) are nested within provinces (level 2), warranting a multilevel specification to avoid biased estimates from ignoring clustered observations. The ordered logistic framework is appropriate given the dependent variable's rank-ordered response format. Random intercepts are included at the provincial level to capture unobserved heterogeneity and account for variations in macroeconomic and structural conditions across provinces. This modeling strategy enables a robust examination of the relationship between social class and environmental satisfaction by incorporating both micro- and macro-level determinants within a single, coherent analytical framework (Rabe-Hesketh & Skrondal, 2022).

The empirical model is based on a latent variable that represents individuals' underlying satisfaction with the living environment. It examines the relationship between this latent construct and a set of explanatory variables, including individual-level characteristics, household attributes, and province-level contextual factors. The specification of the model is as follows:

$$y_{ij}^* = x1_{ij}\beta1 + x2_j\beta2 + z_{ij}u_j + \epsilon_{ij}$$

The link between the observed ordinal outcome y_{ij} and the underlying latent variable y_{ij}^* is specified using a standard threshold model:

$$y_{ij} = \begin{cases} 0 & \text{if } y_{ij}^* \leq \kappa_1 \\ 1 & \text{if } \kappa_1 < y_{ij}^* \leq \kappa_2 \\ 2 & \text{if } \kappa_2 < y_{ij}^* \leq \kappa_3 \\ 3 & \text{if } \kappa_3 < y_{ij}^* \leq \kappa_4 \\ 4 & \text{if } \kappa_4 < y_{ij}^* \end{cases}$$

where y_{ij}^* denotes the unobserved (latent) satisfaction with the living environment for individual i residing in province j ; y_{ij} is the corresponding observed ordinal outcome. The vector $x1_{ij}$ includes individual and household characteristics for individual i in province j , such as social class and direct exposure to adverse environmental conditions. The vector $x2_j$ represents province-level contextual variables, specifically GRDP per capita. The term z_{ij} denotes covariates associated with the random effects; since this is a random intercept model, z_{ij} is a scalar equal to 1. The term u_j captures unobserved province-level random effects, while ϵ_{ij} represents the individual-level error term, assumed to follow a standard logistic distribution with mean 0 and variance $\pi^2/3$, and is independent of u_j .

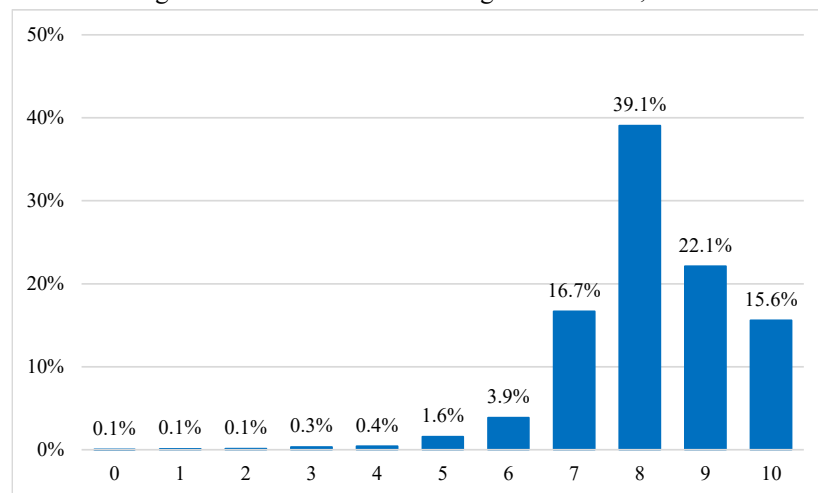
3.2 The Happiness Level Measurement Survey (SPTK)

This study utilizes data from the 2021 wave of the *Survei Pengukuran Tingkat Kebahagiaan* [Happiness Level Measurement Survey; SPTK], conducted by Indonesia's Central Statistics Agency (BPS, 2021). The SPTK is a nationally representative survey covering all provinces and districts, including regencies (*kabupaten*) and municipalities (*kota*). The household serves as the unit of analysis, with one adult respondent—typically the household head or their spouse—randomly selected to represent each household. To ensure consistency and relevance to the study's focus, the analytical sample is restricted to 70 508 respondents aged 25 to 80 who are either employed or primarily engaged in household care, thereby capturing individuals whose daily routines are likely to be directly influenced by local environmental conditions.

Satisfaction with environmental conditions was assessed using the Cantril ladder scale (Cantril, 1965), as implemented in the 2021 SPTK survey. Respondents were presented with a visual ladder ranging from 0 (indicating complete dissatisfaction) to 10 (indicating complete satisfaction) and asked, "How satisfied are you with the state of the living environment?" This scale provides a standardized and intuitive measure of subjective environmental well-being, allowing individuals to position themselves along a continuum of perceived environmental quality.

Figure 1 presents the distribution of self-reported satisfaction with the living environment in 2021. The data reveal a left-skewed pattern, with most respondents reporting higher satisfaction levels. The most frequently selected response was the eighth rung, chosen by 39.1% of respondents, while fewer individuals selected lower rungs (0–7), and a notable share selected the top rungs (9–10). This pattern suggests a generally positive evaluation of local environmental conditions, with a concentration of responses reflecting moderate to high satisfaction. These descriptive findings provide essential context for interpreting the variation examined in the multilevel regression models.

Figure 1: Satisfaction with Living Environment, 2021



Source: Author's calculation

Due to the small proportion of respondents selecting satisfaction levels between zero and six, these categories were combined to ensure a more balanced and analytically meaningful distribution. This recoding allows for more robust comparisons across response groups in subsequent analyses (Liu & Agresti, 2005).

3.3 Social Class

This study employs a structured methodological approach, using monthly per capita household expenditures (PCE) as the primary determinant of social class. While the information on employment status and the sector is available for the household head and spouse, these variables alone do not adequately reflect the multidimensional nature of the class. PCE is therefore used for its practicality and suitability for large-scale household surveys. As Barone et al. (2022) noted, income-based indicators are widely accessible and commonly used in social class research, although they may overlook non-economic dimensions and be subject to reporting variability. This classification

approach is consistent with previous studies, such as Piff and Moskowitz (2018), who examined emotional well-being across income groups in the United States, and Zhang and Chen (2023), who investigated health disparities by social class in China.

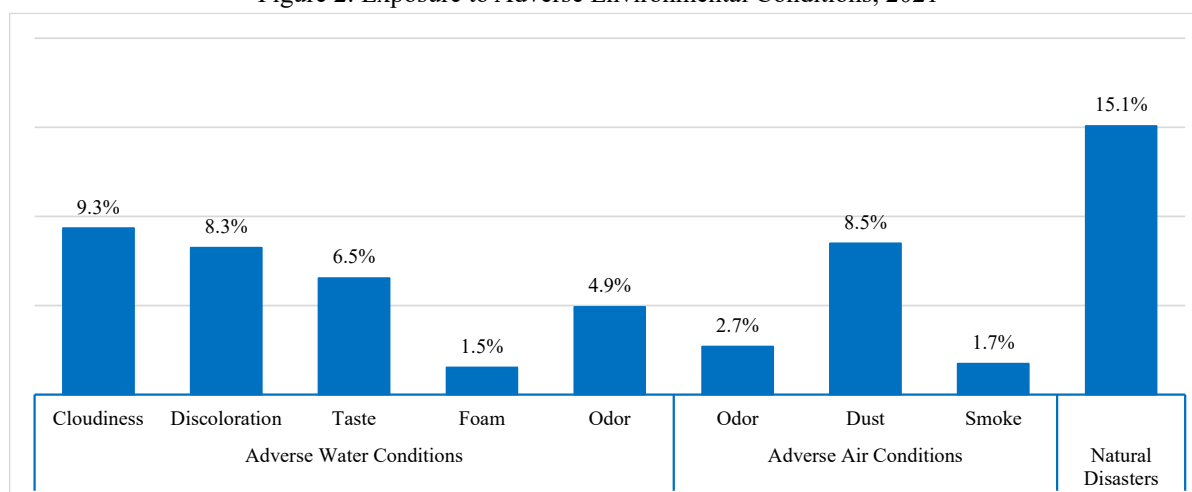
This study categorizes individuals into four income-based social classes based on reported monthly household income. The lower class includes those earning less than IDR 1.8 million monthly, comprising 27.7% of the sample. The lower-middle class consists of individuals earning between IDR 1.8 million and IDR 3.0 million, accounting for 31.5% of respondents. The upper-middle class, representing 20.6% of the sample, includes those with incomes between IDR 3.0 million and IDR 4.8 million. Lastly, the upper class comprises individuals earning more than IDR 4.8 million per month, making up 20.3% of the population. This classification enables a clear, policy-relevant segmentation of socioeconomic groups and supports the study's broader goal of examining inequality in environmental satisfaction and related life outcomes .

3.4 Exposure to Adverse Environmental Conditions

Before rating their satisfaction with the living environment, respondents were first presented with three preliminary questions designed to prompt reflection on recent environmental conditions. The first question asked whether, in the past month, they had experienced issues with local groundwater—specifically, whether it appeared turbid (cloudy), discolored, had an unpleasant taste, produced foam, or emitted an unpleasant odor. Responses were recorded as "yes" or "no" for each condition. The second question followed a similar format, inquiring about air quality, specifically malodorous air, dust-laden air, and smoke-filled air in the respondent's neighborhood. The third question addressed natural disaster exposure, asking how often the respondent's neighborhood had been affected by events such as floods or flash floods in the past year, with response options of "more than once," "once," or "never." These preliminary items were included to help anchor respondents' subsequent evaluations of their environmental satisfaction by encouraging recall of concrete experiences.

As illustrated in Figure 2, fewer than 10% of respondents reported experiencing any single adverse water or air condition in the past month. By contrast, approximately 15% indicated that their neighborhood had been affected by a natural disaster at least once in the past year. These descriptive patterns highlight that while routine water and air pollution exposure appear relatively limited, natural disasters remain a more prominent environmental concern for a significant population segment. These indicators provide essential contextual grounding for interpreting how specific environmental experiences may shape broader perceptions of ecological well-being.

Figure 2: Exposure to Adverse Environmental Conditions, 2021



Source: Author's calculation

Notes: The presence of a natural disaster indicates whether respondents have been affected by a natural disaster at least once in the past year.

3.5 Data Summary

Table 1 presents the means and standard deviations of all variables used in the analysis. The variables cover individual, household, and provincial-level contextual characteristics.

Table 1: Mean and Standard Deviation of Data

Variable	Mean	Standard Deviation
Satisfaction with the environment (scale 0-10)	8.19	(1.25)
Satisfaction with the environment (scale 0-4)	3.24	(1.10)
Female	0.513	(0.50)
Age (years)	47.46	(12.46)
Married	0.820	(0.384)
Completed Junior Secondary	0.172	(0.377)
Completed Senior Secondary	0.242	(0.428)
Completed Tertiary	0.102	(0.303)
Currently Working	0.742	(0.437)
Length of Stay (years)	30.40	(19.07)
Urban	0.429	(0.495)
Lower-Middle Class	0.315	(0.465)
Upper-Middle Class	0.206	(0.404)
Upper Class	0.203	(0.402)
Exposure to adverse water condition index	0.061	(0.176)
Exposure to malodorous air	0.027	(0.162)
Exposure to dust-laden air	0.085	(0.279)
Exposure to smoke-filled air	0.017	(0.131)
Affected by a natural disaster	0.151	(0.358)
Log(GRDP per capita)	10.86	(0.45)
Observations	70 508	

Source: SPTK and BPS

4. Estimation Results and Discussions

The multilevel mixed-effects ordered logistic regression results, summarized in Table 2, are presented across three model specifications, with all coefficients reported as odds ratios for ease of interpretation. Column [1] presents the Baseline Model, which includes individual- and household-level variables and a province-level contextual variable—GRDP per capita—to account for broader structural influences. Column [2] introduces the Extended Model, which builds upon the Baseline Model by incorporating measures of adverse environmental exposure, specifically perceived water and air quality problems, and experience with natural disasters in the past year. Column [3] presents the Interaction Model, which extends the Extended Model by including interaction terms between social class and provincial GRDP per capita to assess whether regional economic conditions moderate the relationship between social class and satisfaction with the living environment. This stepwise modeling strategy systematically explores both main effects and context-dependent mechanisms shaping environmental satisfaction.

Table 2: Multilevel Mixed-effects Ordered Logistic Estimates

	Baseline		Extended		Interaction	
	[1]		[2]		[3]	
Female	1.0374	(0.0163) **	1.0444	(0.0165) ***	1.0442	(0.0165) ***
Age	0.9988	(0.0007)	0.9983	(0.0007) **	0.9982	(0.0007) **
Married	1.1756	(0.0231) ***	1.1803	(0.0232) ***	1.1813	(0.0233) ***
Junior Secondary	1.0148	(0.0203)	1.0115	(0.0203)	1.0109	(0.0203)
Senior Secondary	1.0789	(0.0206) ***	1.0718	(0.0205) ***	1.0718	(0.0205) ***
Tertiary	1.1807	(0.0317) ***	1.1462	(0.0308) ***	1.1448	(0.0308) ***
Currently Working	1.0291	(0.0180)	1.0240	(0.0180)	1.0238	(0.0180)
Length of Stay	1.0044	(0.0005) ***	1.0039	(0.0005) ***	1.0039	(0.0005) ***
Urban	0.8473	(0.0133) ***	0.8773	(0.0138) ***	0.8770	(0.0138) ***
Lower-Middle Class	0.9998	(0.0184)	0.9894	(0.0182)	0.9899	(0.0183)
Upper-Middle Class	1.0369	(0.0218) *	1.0403	(0.0219) *	1.0470	(0.0225) **
Upper Class	1.1718	(0.0268) ***	1.1760	(0.0270) ***	1.1814	(0.0277) ***
Adverse water conditions			0.3729	(0.0159) ***	0.3726	(0.0159) ***
Malodorous air			0.4650	(0.0218) ***	0.4648	(0.0218) ***
Dust-laden air			0.6631	(0.0180) ***	0.6632	(0.0180) ***
Smoke-filled air			0.8439	(0.0504) ***	0.8429	(0.0504) ***
Affected by a natural disaster			0.4730	(0.0098) ***	0.4727	(0.0098) ***
Log(GRDP per capita)	0.8390	(0.0805) *	0.8476	(0.0867)	0.9147	(0.0978)
Lower-Middle * Log(GRDP pc)					0.9300	(0.0419)
Upper-Middle * Log(GRDP pc)					0.8881	(0.0428) **
Upper * Log(GRDP pc)					0.9059	(0.0421) **
κ_1	-2.5123	(0.0736)	-2.8592	(0.0768)	-2.8614	(0.0769)
κ_2	-1.0389	(0.0726)	-1.3367	(0.0758)	-1.3388	(0.0758)
κ_3	0.6916	(0.0726)	0.4469	(0.0756)	0.4448	(0.0757)
κ_4	1.9012	(0.0729)	1.6743	(0.0759)	1.6722	(0.0759)
Variances: Province (constant)	0.0915	(0.0229)	0.1044	(0.0261)	0.1046	(0.0261)
Log-likelihood	-102,624.5		-101,119.5		-101,116.1	
LR-test	0.000		0.000		0.000	
ICC	0.027		0.031		0.031	
AIC	205,284.9		202,285.0		202,284.1	
BIC	205,449.9		202,495.7		202,522.3	
Observations	70,508		70,508		70,508	

Notes: *** statistically significant at the 1% level, ** 5%, * 10%.

An initial null model was estimated to assess the extent of clustering in satisfaction with the living environment across provinces. This intercept-only model, which includes a random intercept at the provincial level but excludes explanatory variables, serves as a baseline for evaluating contextual variation. This model's intraclass correlation coefficient (ICC) was 0.027, indicating that approximately 2.7% of the total variation in environmental satisfaction is attributable to differences between provinces. Although this value falls below the conventional 5% threshold, multilevel modeling remains appropriate. Snijders and Bosker (2012) noted that even relatively small ICCs can warrant hierarchical models, especially when contextual factors are theoretically relevant. This approach is further supported by a likelihood ratio test comparing the multilevel model with a single-level ordered logistic regression, yielding a chi-square statistic of 1,348.69 ($p < 0.001$), which confirms a significantly better model fit. Furthermore, ignoring the multilevel structure, even when between-group variance is modest, can result in biased standard errors

and an elevated risk of Type I error (Hox et al., 2017). While the detailed results of the null model are not reported in Table 2, they provide essential justification for the multilevel analytical approach used in the subsequent models.

Following the null model, a variance inflation factor (VIF) test was conducted to assess the presence of multicollinearity among the explanatory variables. Using an ordinary least squares regression that included the same set of covariates specified in the Baseline Model, the test results show that all independent variables have VIF scores below 2. This confirms that multicollinearity is not a concern in the data and that the estimated coefficients in the subsequent multilevel ordered logistic regression can be interpreted with confidence (Kutner et al., 2004).

Based on model fit statistics, the progression from the Baseline to the Extended and Interaction models demonstrates a clear improvement in explanatory power. Log-likelihood values increasing with each step confirm that each successive model significantly outperforms the previous one. The slight increase in the intraclass correlation coefficient (from 0.027 to 0.031) indicates that provincial-level clustering explains a modest yet meaningful share of the variance in environmental satisfaction. The model selection criteria further support this improvement. The AIC decreases across models, with the Interaction model showing the best overall fit (AIC = 202,284.1). However, the BIC, which penalizes complexity more stringently, favors the Extended model (BIC = 202,495.7), suggesting it achieves a more efficient balance between fit and parsimony. Together, these model diagnostics indicate that the Extended model provides a strong improvement by accounting for the direct effects of environmental exposure, while the Interaction model adds analytical nuance by incorporating contextual moderation. Both models underscore the combined influence of individual-level and structural factors in shaping satisfaction with the living environment in Indonesia.

4.1 Stratification and Perceptions of the Living Environment (RQ1)

Estimates from the Baseline model (Column [1]) reveal a clear association between social class and satisfaction with the living environment. Compared to individuals in the lower class, those in the upper class are significantly more likely to report higher levels of satisfaction (OR = 1.172, $p < 0.001$), indicating a 17.2% greater likelihood of reporting higher satisfaction. Individuals in the upper-middle class are also somewhat more likely to be satisfied (OR = 1.037), though this effect is only marginally significant ($p = 0.085$). In contrast, those in the lower-middle class do not differ significantly from the lower class (OR ≈ 1.000 , $p = 0.990$), suggesting no meaningful advantage in environmental satisfaction for this group.

The results indicate a clear socioeconomic gradient in perceived environmental quality, with higher satisfaction levels concentrated among individuals from the upper class (Rehdanz & Maddison, 2008). This pattern suggests that individuals with greater economic resources are either more likely to reside in areas with superior infrastructure and environmental conditions or to perceive their surroundings more favorably due to increased autonomy and comfort (Evans & Kantrowitz, 2002). The absence of significant differences among lower and lower-middle classes suggests that improvements in environmental satisfaction only emerge at the top end of the class spectrum.

These findings directly address Research Question 1 (RQ1) by demonstrating that social class significantly influences individuals' satisfaction with their living environment. The analysis shows that individuals in the upper class report notably higher satisfaction levels, indicating a pronounced disparity linked to socioeconomic status. This pattern suggests that environmental well-being in Indonesia is not uniformly experienced but is instead structured by broader social hierarchies. The results support the environmental justice perspective, which emphasizes that more privileged groups often disproportionately enjoy environmental benefits (Walker, 2011).

4.2 Effects of Environmental Hardship on Living Environment Satisfaction (RQ2)

The analysis includes nine variables capturing direct exposure to environmental hardship: five related to water quality, three to air quality, and one to the experience of natural disasters. The five water-related items—cloudiness, discoloration, unpleasant taste, foaming, and odor—reflect different aspects of perceived water

pollution in respondents' neighborhoods. Given their conceptual alignment and high internal consistency (Cronbach's $\alpha = 0.792$), these items were combined into a composite index representing adverse water conditions exposure (Tavakol & Dennick, 2011). This index was calculated as the average of the five binary items and used as a continuous predictor in the regression model.

In contrast, when tested as a unified scale, the three air-related items—perceived malodor, dust-laden air, and smoke-filled air—did not exhibit sufficient internal consistency (Cronbach's $\alpha = 0.454$). Due to this low reliability and their distinct physical characteristics, these items were retained as separate variables. The natural disaster variable was also treated independently, which captures whether the respondent's neighborhood experienced events such as floods or flash floods in the past year. This decision reflects the conceptual difference between sudden environmental events and ongoing environmental conditions. Unlike continuous exposures such as poor air or water quality, natural disasters are episodic and represent acute environmental shocks.

The estimation results from the Extended model (Column [2]) reveal that exposure to adverse environmental conditions—both chronic and acute—significantly reduces individuals' satisfaction with their living environment. All five environmental variables in the model are statistically significant, with odds ratios below 1, indicating negative associations with the outcome.

Exposure to adverse water conditions, captured through the composite index, shows the strongest effect (Ejechi & Ejechi, 2007; Li & Zhou, 2020). Respondents experiencing turbid, discolored, unpleasant-tasting, foamy, or malodorous water are approximately 62.7% less likely to report higher levels of environmental satisfaction (OR = 0.373, $p < 0.001$). Similarly, those exposed to malodorous air are 53.5% less likely to express higher satisfaction (OR = 0.465, $p < 0.001$), and exposure to dust-laden air is associated with a 33.7% reduction in the odds of higher satisfaction (OR = 0.663, $p < 0.001$). While the impact of smoke-filled air is smaller, it remains statistically significant, with an odds ratio of 0.844 ($p = 0.005$), suggesting a 15.6% reduction in the likelihood of greater satisfaction (Ferrer-i-Carbonell & Gowdy, 2007; Liao et al., 2015; Schmitt, 2013). Additionally, within the past year, individuals who reported that their neighborhoods had been affected by a natural disaster—such as floods or flash floods—are 52.7% less likely to report higher satisfaction with their local environment (OR = 0.473, $p < 0.001$). (Purba et al., 2018; Rahman et al., 2022; Sekulova & van den Bergh, 2016).

These findings provide direct and robust support for Research Question 2 (RQ2) by showing that exposure to adverse environmental conditions significantly undermines individuals' satisfaction with their living environment. The consistent and statistically significant negative associations across all indicators confirm that environmental hardships, whether chronic (e.g., water and air pollution) or acute (e.g., disasters), substantially impact perceived environmental well-being. This reinforces the argument that subjective satisfaction with the living environment is strongly shaped by individuals' lived experiences of environmental degradation and risk.

4.3 Multilevel Dynamics: Class and Economic Context in Environmental Satisfaction (RQ3)

The estimation results from the Interaction model (Column [3]) reveal important nuances in the relationship between social class and satisfaction with the living environment, particularly in the provincial economic context. Compared to individuals in the lower class, those in the upper-middle and upper classes are significantly more likely to report higher satisfaction (OR = 1.047, $p = 0.032$; OR = 1.181, $p < 0.001$, respectively), indicating a clear stratification in perceived environmental well-being. However, the lower-middle class does not differ significantly from the lower class in this regard (OR = 0.990, $p = 0.582$).

While provincial GRDP per capita's main effect is not statistically significant (OR = 0.915, $p = 0.404$), a pattern consistent with earlier findings that contextual income indicators often lack direct explanatory power for well-being when individual characteristics are controlled for (Knight et al., 2009), the interaction terms between social class and GRDP per capita reveal significant moderation effects. Specifically, the positive effects of upper-middle and upper-class status on environmental satisfaction are significantly attenuated in wealthier provinces (upper-middle \times GRDP: OR = 0.888, $p = 0.014$; upper \times GRDP: OR = 0.906, $p = 0.034$). These negative interaction terms suggest that as provincial economic development increases, the relative advantage of higher social class in shaping

satisfaction with the living environment diminishes. This pattern may reflect rising expectations or increased awareness of environmental problems in more developed regions, which could narrow perceived differences across social groups.

These findings directly address Research Question 3 (RQ3) by demonstrating that the influence of social class on environmental satisfaction varies depending on the level of provincial economic development. The results support this hypothesis by showing that the strength of the class-based advantage in environmental satisfaction is not uniform across provinces but is significantly shaped by regional economic conditions. This underscores the importance of considering both individual socioeconomic positions and broader structural contexts when analyzing environmental well-being. These patterns align with Morrison's (2011) observation that urban and economically advanced regions while offering greater objective opportunities, may paradoxically reduce subjective well-being due to increased stressors, rising expectations, and heightened awareness of environmental shortcomings. The observed attenuation of class-based environmental satisfaction in wealthier provinces may thus reflect a broader trade-off, wherein high development and productivity coincide with diminishing marginal returns to well-being among higher-status individuals.

4.4 Discussion: Environmental Justice and Unequal Environmental Satisfaction

The findings of this study strongly align with environmental justice theory, which emphasizes that environmental quality—like other public goods—is unequally distributed along lines of social class and geographic location. This theory provides a compelling framework for understanding how structural disadvantage and contextual development shape individuals' satisfaction with their living environments. The most disadvantaged communities are systematically exposed to greater environmental hazards and have less access to environmental amenities, reinforcing and reproducing broader social and spatial inequality (Bullard, 2000; Mohai et al., 2009; Schlosberg, 2009).

Empirically, the study demonstrates that individuals from upper and upper-middle classes report significantly higher satisfaction with their living environments, while those in the lower and lower-middle classes are notably less satisfied. This social gradient reflects what environmental justice literature refers to as *distributive environmental injustice*—a pattern in which environmental benefits (e.g., clean air and water, safe surroundings) accrue to the more privileged, while environmental harms are concentrated among the less advantaged (Agyeman et al., 2002; Walker, 2011). In the Indonesian context, this suggests that wealthier individuals may enjoy better housing conditions, more resilient infrastructure, and greater access to basic environmental services—factors that positively shape their perceptions of the environment.

Furthermore, the study highlights the strong and consistent adverse effects of direct environmental exposures—inferior water quality, smoke, dust, bad odors, and disaster experience—on environmental satisfaction. These findings lend empirical weight to the environmental justice argument that exposure to environmental degradation is not randomly distributed but disproportionately affects those already facing socioeconomic disadvantage. Lower-class respondents, who are more likely to reside in vulnerable areas, face compounding disadvantages as they deal with both material hardship and environmental stressors. This supports the notion of cumulative environmental burdens, a key concern in environmental justice research (Chakraborty & Maantay, 2011; Morello-Frosch et al., 2001).

Crucially, the moderating role of provincial GRDP per capita offers new insights into the interaction between individual and contextual inequalities. The finding that class-based differences in environmental satisfaction diminish in wealthier provinces suggests that broader regional economic development can partially mitigate environmental disparities. This aligns with more recent strands in environmental justice theory that emphasize place-based structural interventions, highlighting how improved public infrastructure, environmental services, and governance at the regional level can benefit lower-income groups and help narrow class-based disparities in environmental well-being (Pellow, 2018; Reed & George, 2011). These perspectives argue that environmental justice must move beyond distributive outcomes to address the structural, institutional, and spatial factors that

produce unequal exposure and access to environmental goods—making regional economic context a critical component in addressing environmental inequalities.

These findings suggest that satisfaction with the living environment in Indonesia is not merely an individual or subjective phenomenon but is embedded in systems of social stratification and regional inequality. The unequal distribution of environmental quality and the differentiated effects of environmental exposures underscore the need to frame environmental well-being as a justice issue, not just a technical or infrastructure challenge. Addressing these inequalities calls for integrated policy responses—such as equitable urban planning, targeted environmental investment in underserved areas, and stronger institutional frameworks for environmental protection—particularly in communities that are historically marginalized in the development process.

5. Conclusion

5.1 Summary of Key Findings

The results of this study demonstrate that a combination of social class, environmental exposure, and regional economic conditions shapes satisfaction with the living environment in Indonesia. A clear stratification is observed, with individuals in the upper and upper-middle classes reporting significantly higher levels of environmental satisfaction, while those in the lower and lower-middle classes report notably lower satisfaction. This pattern suggests that environmental well-being is not equally experienced across socioeconomic groups and tends to favor those with greater access to resources, more secure housing, and better-quality environments.

In parallel, direct exposure to environmental stressors—such as adverse water conditions, polluted air, and natural disasters—shows strong and consistent negative effects on environmental satisfaction. Poor water quality exerts the most substantial impact, followed by malodorous air, dust-laden air, smoke, and disaster experience. These findings emphasize that chronic environmental degradation and acute shocks significantly undermine people's evaluations of their local environment.

Furthermore, the analysis reveals that the provincial economic context shapes the relationship between social class and environmental satisfaction. In wealthier provinces, the relative advantage enjoyed by upper-class individuals diminishes, suggesting that regional development may help reduce class-based disparities in environmental well-being. This may be due to broader environmental improvements or more uniform expectations among residents in economically advanced areas.

These findings address all three research questions by demonstrating that satisfaction with the living environment is not only stratified by social class but also profoundly influenced by environmental exposures and moderated by the broader economic context in which individuals live. They underscore the importance of integrating social and spatial dimensions into efforts to improve environmental well-being and ensure that environmental benefits are equally shared across people and places.

5.2 Policy Implications

The findings highlight several key priorities for improving environmental well-being in Indonesia. First, the apparent disparities in environmental satisfaction across social classes suggest that environmental programs must be complemented by targeted outreach and engagement strategies, particularly in lower-income communities. Increasing awareness, trust, and community participation will ensure that interventions are understood, accepted, and sustained in areas where environmental risks are high and perceived benefits are low. Second, the substantial adverse effects of exposure to poor water and air quality and natural disasters point to the urgent need for investments in basic environmental services—such as clean water access, waste management, flood mitigation, and urban greening. These investments should prioritize underserved areas, where the impact on residents' well-being will likely be greatest. Instruments like the Specific Allocation Grant (DAK) and Village Funds (Dana Desa) can be critical in financing visible, locally relevant improvements directly affecting residents' satisfaction.

Third, regional planning processes—such as the Regional Medium-Term Development Plan (RPJMD)—should better incorporate socioeconomic differentiation into environmental target-setting. The study shows that in more affluent provinces, satisfaction is shaped by service availability and expectations for higher environmental standards and government responsiveness. This calls for a more context-sensitive policy design reflecting material conditions and subjective perceptions across different communities. Finally, the weak and inconsistent relationship between GRDP per capita and environmental satisfaction highlights the limitations of relying on economic growth alone to improve well-being. Regional governments should develop integrated monitoring systems that combine environmental, social, and perceptual indicators to more effectively track progress, guide interventions, and build public trust. Promoting environmental justice and well-being requires a multidimensional approach beyond infrastructure provision to address inequality, exposure, and local voice.

5.3 Directions for Future Research

Future research should explore the psychological, cultural, and institutional mechanisms that mediate the relationship between social class and satisfaction with the living environment. Factors such as environmental expectations, perceived fairness, trust in government, and underlying environmental values (Stern, 2000) may help explain why individuals in similar physical environments report differing levels of satisfaction. Empirical studies have shown that institutional trust, environmental concern, and risk perception shaped by public awareness significantly influence subjective environmental well-being (Helliwell & Wang, 2011). Incorporating these attitudinal and normative dimensions would deepen understanding of how environmental satisfaction is socially constructed, particularly in the context of unequal class positions and divergent lived experiences.

Longitudinal or panel data would enable the analysis of changes in environmental satisfaction over time, particularly in response to infrastructure upgrades, policy reforms, or environmental shocks. Such designs could also capture life-course dynamics and the long-term effects of chronic exposure or mobility across class and place. Previous research has emphasized the value of panel data in controlling for unobserved individual heterogeneity and capturing the causal impact of environmental changes on subjective well-being (Rehdanz & Maddison, 2008). Comparative studies across countries or regions could help determine whether the class-based and contextual patterns observed in Indonesia are specific to its development trajectory or reflect broader global trends in environmental inequality.

Finally, future studies should examine how environmental improvements are perceived, interpreted, and valued across different socioeconomic groups. Understanding these perceptions is essential for designing inclusive and equitable environmental policies, ensuring that interventions resonate with local priorities and foster public engagement. Mixed-methods research—including qualitative interviews and participatory approaches—could be especially valuable in capturing these nuanced perspectives and bridging the gap between technical solutions and lived experience (Phillip et al., 2025).

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