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ALGORITHMIC ECHO CHAMBERS, STIGMATIZATION, AND INTERGROUP HOSTILITY: UNDERSTANDING THE SOCIAL PSYCHOLOGY OF SECTARIAN DIVIDES IN PUNJAB THROUGH AI-DRIVEN MEDIA EXPOSURE

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Abstract
The emergence of AI-based social media platforms has dramatically changed the way people consume content, and in most cases, the use of social media has contributed to the development of social media echo chambers that promote facing the beliefs and restrict exposure to other forms of thinking. These echo chambers can contribute to worse stigmatization of outgroups and more intergroup hostility in religious and sectarian societies such as Punjab, Pakistan. The current research examined how AI-driven exposure to the echo chamber, stigmatization of religious outgroups, and intergroup hostility among mixed urban-rural young people (18-30 years old, N = 320) are related, with empathy serving as a moderating factor. A cross-sectional research design was used, which is quantitative in nature and the data were gathered through standardized psychological scales. Findings revealed that exposure to algorithmically curated content positively anticipated stigmatization as well as intergroup hostility. These relationships were greatly mediated by empathy whereby higher empathy alleviated the negative impact of the exposure to the echo chambers. The results indicate the psychological processes by which AI-based media forms sectarian attitudes and propose that the promotion of empathy can offset the effect of polarized online spaces. These findings have an implication to both digital literacy programs and social media policy as well as intercessions that maybe used to encourage intergroup knowledge and social cohesion among Pakistan youth.
Keywords: AI-powered echo chambers, stigmatization, inter-group hostility, empathy, young people, Punjab, Pakistan.

Introduction

Artificial intelligence (AI) has been changing the digital communication and information consumption structure in the last few years in a major way. Social media channels are more based on algorithmic systems that filter the content according to the preferences, interactions and engagement history of the users. Although these algorithms are aimed at improving the user experience and keeping them engaged, they may also cause the creation of so-called echo chambers, online spaces where people are constantly bombarded with information that supports their already held beliefs and attitudes (Cinelli et al., 2021; Pariser, 2011). These are algorithmically-based echo chambers that reduce the access to a variety of opinions and can cause social polarization and intergroup hostility.

The issue of algorithmic echo chambers implies several essential consequences on the societies with the religious and sectarian diversity. Sectarian identities are a major part of social organization and cultural belonging and interaction within the community in Punjab situated in Pakistan. The emergence of the social media has opened up new channels of communication of religious stories, ideological stories, and collective language. When AI-

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based recommendation systems filter such content, some people would see the same content over and over again that includes a narrative that depicts their group favorably and depicts other groups unfavorably. Such a biased exposure may result in stigmatization of outgroups and the development of increased intergroup hostility.

In the social psychological context, stigmatization is the process by which people or groups are labelled, stereotyped, and social devalued because of the differences that they are considered to have in identity or beliefs (Goffman, 1963). Stigmatization may be further increased in the digital space where algorithmic filtering strengthens the narratives of groups, specifically in situations where users are exposed to content that depicts a moral inferiority, threat, or incompatibility of the outgroups with the majority culture. By creating such images, attitudes and emotional reactions to other groups may also be formed over time, which creates negative stereotypes and solidifies sectarian boundaries.

Another important product of polarized online space is that of intergroup hostility. It is the hostile feelings, mistrust, and ill intentions about behavior towards an outgroup member (Tajfel and Turner, 1979). Past studies indicate that individuals tend to be more inclined towards taking extreme or polarized views when they are communicating with like-minded materials and communities. This is amplified more frequently in online environments where artificial intelligence exposes people to emotionally suggestive or provocative content and makes divisive stories more visible (Sunstein, 2017). Nonetheless, the psychological elements like empathy can be significant in relieving the adverse impact of the algorithmic echo chambers. Empathy means the ability to perceive and empathize with emotional experiences of other people, even strange social or cultural groups (Batson, 2011). Empathy has been largely accepted as a defense against prejudice, discrimination and intergroup conflict. Even in polarized digital settings, individuals with increased empathy might be less prone to internalizing stigmatizing accounts or the development of hostile attitude towards the outgroups.

In spite of the increasing interest to the issue of algorithmic echo chambers and digital polarization in the world, the literature focused on analyzing the aforementioned phenomena in the Pakistani context is limited. The current literature has concentrated on Western societies, which is why the gap with regard to the impact of AI-based media exposure on sectarian attitudes among the young (South Asian settings) remains enormous. Due to the active growth of the social media among the youth in Punjab, the study of these processes is timely and socially urgent. The current research aims to address the connection between the exposures to AI-induced echo chambers, stigmatization against outgroups, and intergroup hostility in urban and rural young people in Punjab. Moreover, it also examines whether empathy intervenes in the connection between algorithmic exposure and negative intergroup attitudes. These analyses will incorporate the views of social psychology, media studies and research on digital communications to give a more insightful view of how technological systems may come into contact with psychological processes to determine sectarian relationships in modern society.

Problem Statement

Growing use of AI-based recommendation services on social media platforms has resulted in creation of the digital spaces in which social media users often encounter ideologically consistent information. Whereas these systems improve the engagement levels, it is also possible that they contribute towards echo chambers that strengthen the negative perceptions of outgroups. In case of existing sectarian diversity in a society, e.g. Punjab, this dynamic can be used to aggravate stigmatization and intergroup animosity. Nonetheless, such empirical studies that explore the psychological effects of algorithmic echo chambers in the Pakistani context are limited. Moreover, very little attention has been directed towards

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protective psychological variables like empathy which can minimize the adverse impacts of polarized online space. Thus, the current paper will examine the extent to which AI-mediated exposure to the echo chambers affects stigmatization and intergroup hostility among the young population of Punjab and whether empathy mediates these effects.

Rationale of the Study

The importance of this research is that it tries to combine the technological, psychological, and sociocultural opinions to comprehend sectarianities in digital spaces. As the AI-driven systems in the media rapidly grow, the role of algorithmic exposure on intergroup attitudes has turned into a significant field of study within social psychology and media studies. This research can contribute context-dependent information on the role of digital media in social perceptions and group relations by targeting youth population in Punjab and where religious identity is highly socially important. Furthermore, the research paper adds to the ever-growing body of literature on the subject of digital polarization through its analysis of the issue of stigmatization and enmity in the context of a digital algorithmic-based echo chambers. Exploration of empathy as a moderating variable also offers a useful piece of information about potentially relevant psychological processes capable of lessening prejudice and enhancing social cohesion on the internet.

Objectives of the Study

The research problem of the proposed work is to examine the psychological consequences of AI-based exposure to an echo chamber on sectarian views among young people in Punjab. In particular, the research expects to address the connection between exposure to the algorithmic echo chambers and stigmatization against outgroups as well as intergroup hostility, and investigate whether empathy should moderate these relationships.

Research Questions

This research paper is aimed at answering some of the major research questions. It discusses the relevance of exposure to AI-based echo chambers to higher levels of stigmatization against outgroups and whether the stigmatization produced by this exposure is a factor driving more intergroup hostility in young people. Also, the research explores how empathy undermines the connection between negative intergroup attitude and algorithmic exposure.

Hypotheses

1. H1: A positive relationship exists between AI-driven echo chambers and outgroup stigmatization.
2. H2: Intergroup hostility is positively related to exposure to AI-driven echo chambers.
3. H3: Intergroup hostility is positively related to stigmatization of outgroups.
4. H4: Echo chamber exposure mediated by AI and stigmatization are related through empathy such that the relationship is less strong in the case of persons with higher empathy.
5. H5: Empathy mediates the association between AI-mediated echo chambers exposure and intergroup hostility in that, the relationship between them is less strong when the individuals have high levels of empathy.

Conceptual Framework

The hypothesis of the proposed conceptual framework is that the artificial intelligence-based exposure to the echo chambers (IV) is the cause of stigmatization against outgroups (DVs) and intergroup hostility (DVs). Empathy acts as a moderating factor that dilutes the power of the relationships.

Significance of the Study

The work has valuable implications to the social psychology, digital media research, and conflict studies disciplines. Considering how AI-controlled echo chambers affect

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sectarian attitudes, it builds upon the current body of knowledge regarding the influence of algorithmic systems on the development of social perceptions, and group relationships. The results can also guide the digital literacy initiatives, educational intervention, and policy initiatives to decrease online polarization and support intergroup understanding in Pakistan.

Literature Review

The emergence of social media, which is AI-powered, has changed the manner in which people obtain and process information at the core. Algorithms that are used to recommend specific content optimize it based on the previous interaction, allowing the creation of a bubble where users will only consume content that can support their existing ideas (Pariser, 2011; Cinelli et al., 2021). This type of algorithmic curation amplifies selective exposure which more frequently than not favors polarizing stories and strengthens cognitive biases. These echo chambers are especially strong within the framework of Punjab, Pakistan, among the younger generation, who are users of social media and are often subjected to the content of religious or sectarian ideologies (Hassan and Iqbal, 2021).

AI-Driven Echo Chambers

Echo chambers are web platforms where dissenting views are reduced to a minimum and users are continuously served with homogenous perspectives. Studies show that AI-based personalization increases the severity of such effects because it uses behavioral data to filter material (Allcott and Gentzkow, 2017; Tucker et al., 2018). Ideologically consistent material has been found to strengthen social biases, such as sectarian and intergroup bias (Cinelli et al., 2021). The phenomenon of algorithmic echo chambers can encourage selective attention to in-group messages and out-group derogation (Pakistan), where social behavior is greatly influenced by relations with the religion (Khan et al., 2022).

Stigmatization of the Outgroups

Stigmatization can be described as a negative stereotyping, prejudice, and social distancing by persons who are believed to be an out-group (Tajfel and Turner, 1979). Online exposure to biased or filtered information can also exacerbate stigmatizing attitudes; especially when the content depicts out-groups as being inferior or dangerous morally (Hogg, 2016). According to previous research done in Pakistan, the narratives of social media serve to strengthen religious and sectarian hierarchies, which result in the development of hostile attitudes towards minority communities (Hassan and Iqbal, 2021).

Intergroup Hostility

Having prejudice behavior is intergroup hostility, which in most cases leads to discrimination, conflict, or lack of social cooperation (Tajfel and Turner, 1979). Such hostility can be reinforced by algorithmic echo chambers through repeated exposure to content that causes emotional reaction, sets up a feeling of threat, or focuses on group distinctions (Cinelli et al., 2021; Sunstein, 2017). Among the young Punjab populations, habitual consumption of sectarian materials could both enhance cognitive bias and encourage the behaviors that are indicative of the hostile attitude towards the perceived out-groups (Khan et al., 2022).

Empathy as a Moderator

The mitigating effects of an echo chamber and anti-social behavior between groups can be reduced through empathy, which involves the capacity to comprehend and feel the emotions of others (Batson, Early, and Salvarani, 1997; Davis, 1983). Empirical research has shown that people having stronger dispositional empathy tend to be less inclined towards extreme out-group derogation despite being subjected to bias internet information (Davis, 1983). The encouraging aspect of youth-based empathy in the Pakistani context could shield the effects of AI-driven echo chambers on stigmatization and intergroup hostility.

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Integration of Variables

Based on the Social Identity Theory (Tajfel and Turner, 1979) and cognitive-affective models, it is clear that intergroup attitudes are affected on the cognitive and emotional levels by algorithmic echo chambers. Biased and controlled content affects an individual by strengthening stigmatization of the out-groups and enabling hostile attitudes. Empathy can be a moderating variable and hence create resistance to the effects by allowing perspective-taking and prosociality toward others (Batson et al., 1997). The proposed relationships are depicted in Fig. 5.1 (conceptual model), and they demonstrate how media exposure caused by AI leads to intergroup hostility through the mediation of stigmatization and moderation of empathy.

Research Gap

Despite the fact that echo chambers and intergroup bias have been studied at the international level (Cinelli et al., 2021; Tucker et al., 2018), the minimum number of studies have been conducted concerning the Pakistani setting, especially among young people in Punjab. Algorithms exposure, stigmatization, intergroup hostility and empathy are seldom combined in the current literature, and there is an empirical gap of how AI-driven media can impact sectarian attitudes. This paper will seek to address this gap by offering evidence of these dynamics on a context-specific manner.

Methodology

Research Design

The quantitative cross-sectional research design of this research was used to examine psychological and social consequences of AI-influenced media setting on sectarian relationships among young people in Punjab, Pakistan. The appropriate design is used to test the relationship between variables and test theoretically developed hypotheses using statistical methods (Creswell and Creswell, 2018). The AI-driven exposure of the echo chamber was introduced as an independent variable in this study, and the stigmatization of outgroups and intergroup hostility were the dependent variables. The moderating variable was empathy that was studied to determine what effect it has in mitigating the effect of content curated by algorithms. The study was done in the form of a correlational one since it was needed to observe naturally occurring variations in social media exposure and the way they relate to social attitudes but do not control any variables. By so doing, the researcher was able to study the potential of algorithmically curated information to reinforce the sectarian boundaries as well as being a contributor to the negative attitudes towards religious outgroups.

Research Setting

The research was carried on in Punjab, Pakistan, the most populated province, which consists of non-homogenous cultural, religious and socio-economical backgrounds. The data were gathered in urban and rural regions including universities, colleges and community centers in urban cities like Lahore, Faisalabad, Multan and Rawalpindi and the rural districts surrounding these cities. Such urban-rural structure provided representation in terms of socio-economic and cultural backgrounds. Considering the high rate of smartphone and internet penetrations, social media applications like Facebook, YouTube, Tik Tok, and X (formerly Twitter) have now become the main source of information in young adults. Recommendation algorithms on these sites usually tailor the content streams depending on the behavior of users and may form an echo-chamber where like-minded ideologies reach users again and again (Cinelli et al., 2021; Pariser, 2011). The studied environment was therefore suitable to examine how AI-based media exposure influences the development of intergroup perceptions and hostility.

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Participants

The sample population comprised of 320 social media users who were aged 18-30 years old and lived in Punjab, Pakistan. This last sample was acquired by screening the originally targeted 420 participants excluding incomplete or invalid responses. There were undergraduate and graduate students and non-student youth that were active on the social media platforms.

Sampling Technique

A multistage sampling plan would be used, which would involve purposive and convenience sampling. The first stage involved identification of universities and youth communities in the selected districts. In the second phase, study members who fit the inclusion criteria were contacted through visiting the campus and questionnaires via the internet. The sampling technique of purposiveness ensured that the respondents were active users of social media, which is important in determining exposure to AI-based echo chambers. The convenience sampling method helped in efficient data collection using the available time and resources without excluding diversity in the sample population. The social media research often resorts to non-probability sampling when the participants are required to correspond to certain behavioral criteria (Etikan et al., 2016).

Measures / Instruments

The standardized psychological scales, which are based on other studies, were applied to gather data. All the tools were given in English using simplified language to understand it in higher learning institutions. An adapted form of the Social Media Echo Chamber Exposure Scale was used to measure exposure to algorithmic echo chambers (Cinelli et al., 2021; Sunstein, 2017). The scale tested the frequency at which the participants are exposed to content that concurs with the current religious or ideological beliefs. The reactions were measured using a five-point Likert scale with 1 (strongly disagree) to 5 (strongly agree), with the higher the scale, the greater the exposure. Other literature indicates that similar scales have Cronbachs alpha more than 0.80. Stigmatization toward outgroups Scale involved negative stereotyping and social distancing of religious outgroups which was adapted based on the Social Distance and Stigma Scale (Allport, 1954). The respondents graded the statements indicating avoidance tendencies or even biased beliefs. The scores were higher showing more stigmatization. Intergroup Hostility Scale (Tajfel and Turner, 1979) were modified to evaluate the attitudes of antagonism, perceived threat, and emotional hostility against other sectarian groups. The Likert scale was five-point, where the higher the score, the more hostile. Empathy was measured based on a short form of Interpersonal Reactivity Index (Davis, 1983) that measured the capacity of participants to empathize and to share the emotional issues of the other people. The scores were higher where people were more concerned with empathy.

Data Collection Procedure

Once ethical approval was obtained, the participants were contacted by conducting face-to-face and online surveys. This was obtained with informed consent promising participants confidentiality and voluntary participation. The data collection was done in a four weeks period and the participants were administered the surveys either in a quiet environment or through the internet. Statistical analysis was done only after screening of surveys.

Data Analysis Plan

The SPSS 26.0 was used to perform the data analysis. The initial procedures were, data cleaning, missing values and skewness and kurtosis to determine normality. All the variables were calculated using descriptive statistics, and the reliability of scales was verified with the help of Cronbach alpha. Correlation was used to test the correlation between the

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exposure to the echo chamber, stigmatization, intergroup hostility and empathy. The predictive relationships of the independent and dependent variables were tested by the multiple regression analyses. The moderation was performed with the aid of the interaction terms to assess whether empathy lessened the effects of the exposure to the echo chambers on the stigmatization and intergroup hostility.

Results

The 320 people, a mixed urban-rural youth sample (18-30 years old active social media users) were then filtered on accuracy and completeness before the main statistical tests were undertaken. The prevalence of missing values was low (less than 3-percent) and the values were replaced with means, which is similar to Tabachnick and Fidell (2019). The outliers were detected based on standardized z-scores, with none of them being more than ±3.0. The skewness and kurtosis were used to measure the normality of all continuous variables; the values were between the acceptable range (-2 to +2), which implied that they could use parametric analyses (Kline, 2016).

Table 1

Reliability Analysis of Study Variables

Scale	No. of Items	Cronbach's Alpha
AI-driven Echo Chamber Exposure	9	.85
Stigmatization toward Outgroups	11	.87
Intergroup Hostility	8	.83
Empathy (Moderator)	7	.82

The reliability coefficients show that all constructs have good internal consistency, which confirms that the items used to measure the various variables do it in the same way (Nunnally and Bernstein, 1994).

Table 2

Demographic Characteristics of Participants (N = 320)

Variable	Category	Frequency	(n)	Percentage (%)
Gender	Male	155		48.4
	Female	165		51.6
Age	18–21	115		36.0
	22–25	134		42.0
	26–30	71		22.0
Residence	Urban	192		60.0
	Rural	128		40.0

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The sample size consisted of 320 students of urban (60 percent) and rural (40 percent) regions of Punjab. Age distribution was 18–21 (36%), 22–25 (42%), and 26–30 (22%). There were 155 males with 48.4 per cent gender and 165 females with 51.6 per cent gender respectively.

Table 3

Descriptive Statistics of Study Variables

Variable	***M***	***SD***
AI-driven Echo Chamber Exposure	3.52	0.70
Intergroup Hostility	3.15	0.65
Empathy (Moderator)	3.67	0.66

Note. *M*=mean, *SD*= standard deviation

The moderate exposure to echo chambers, stigmatization, and intergroup hate, with a more favorable empathy outcome, as revealed by the respondents, suggests the variability that could be examined using the moderation approach.

Table 4

Correlation Matrix of Study Variables

Variable	**1**	**2**	**3**	**4**
1. AI-driven Echo Chamber Exposure	1	1	1	1
2. Stigmatization toward Outgroups	.49**	1	1	1
3. Intergroup Hostility	44**	.57**	1	1
4. Empathy	-.27**	-.32**	-.29**	1

Note: $p < .01$

Exposure to AI-based echo chambers had a positive correlation with stigmatization and intergroup hostility. All the primary variables were negatively related to empathy, and this may be applied to justify the moderating factor.

Table 5

Multiple Regression Predicting Stigmatization and Intergroup Hostility

Predictor	**B**	**SE**	**Beta**	**t**	**p**
AI-driven Echo Chamber Exposure	.42	.06	.44	7.00	<.001
Empathy	-.29	.05	-.31	-5.80	<.001
Interaction (Exposure × Empathy)	-.18	.05	-.20	-3.60	.001

$R^2 = .41$, $F(3, 316) = 73.15$, $p < .001$

The effect of Echo chamber exposure was a significant predictor of stigmatization and intergroup hostility. This relationship was mediated by empathy, meaning the greater empathy is the less bad the effects of the algorithmic echo chambers are.

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Discussion

The current research examined how exposure to an AI-based echo chamber affects outgroup stigmatization and intergroup hostility of mixed urban-rural young people in Punjab, Pakistan. It also investigated the moderating effect of empathy on such a relationship. The researchers adopted cross-sectional correlational study design involving 320 respondents aged between 18 to 30 years and are active social media users. The data analysis involved reliability test, descriptive statistics, correlation analysis, regression analysis, and moderation analysis.

Interpretation of Findings

It was found that there is a strong positive correlation between exposure to AI-driven echo chambers and stigmatization as well as intergroup hostility. Young people who received more frequent interventions of algorithmically curated materials that supported their already held beliefs had stronger bias and antipathy towards outgroups. This is in accordance with the earlier research that highlights that echo chambers form information silos, limit contact with different views, and polarize information (Cinelli et al., 2021; Pariser, 2011).

Empathy was discovered to play a vital role in mediating the relationship. Namely, the less empathetic individuals demonstrated a stronger linkage between the exposure to the echo chambers and the intergroup hostility. This is in line with previous studies that empathy has been found to decrease prejudice and increases prosocial mindsets towards stigmatized or out group members (Batson et al., 1997; Davis, 1983). It proposes that such cognitive-affective qualities as empathy may provide them with their protective properties against the divisive power of algorithmically curated content. Additionally, correlations analyses showed that empathy was negatively correlated with all the major outcome variables, which proved the hypothesis that empathic individuals are not as vulnerable to the adverse psychosocial consequences of digital echo chambers. The outcomes of the regression also emphasized the effect of empathy as a buffer to the effect of exposure to biased algorithmic content, which is an empirical demonstration of the moderating role of empathy in the social psychological domain.

Comparison with Literature

The positive correlation between being exposed to algorithmic echo chambers and the intergroup hostility is a similar discovery by Cinelli et al. (2021) and Tucker et al. (2018), who observed a specific exposure to information makes people more ideologically rigid and less cognitively open. Empathy as a Protective Factor: The moderation impact of empathy also coincides with Batson et al. (1997) and Davis (1983), which suggests that people with more empathic concern are not prone to adopting negative stereotypes and prejudices. The findings build up the literature to a Pakistani socio-cultural background where the intergroup divisions are marked by religious or sectarian divisions. Hassan and Iqbal (2021) indicated in a previous study that online religious content has the potential to increase sectarian attitudes. This research has validated that algorithmically based echo chambers worry intergroup hostility, whereas empathy alleviates the impact. In general, the research paper adds to the subtle perspective of interaction between the user and the psychological characteristics of the impact of the algorithmically defined social media content on attitude and behavior.

Theoretical Implications

1. **Combination of Social Identity Theory and Media Psychology**: The results support the Social Identity Theory (Tajfel and Turner, 1979) because exposure based on groups enhancing with algorithmic curation positively influences the in-group favoritism and out-group derogation.

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2. **Empathy as a Moderating Mechanism**: The article adds to the body of theoretical knowledge about intergroup conflict by confirming that empathy is an important moderator, and can be integrated into prejudice reduction models on-line.
3. **Effect of algorithms on social cognition**: The given research provides empirical data about the association between algorithmically-filtered information exposure and cognitive as well as attitudinal effects, which can be discussed in the context of interdisciplinary research, i.e. the research in the social psychology, media psychology, and digital communication.

Practical Implications

1. **Digital Literacy Programs**: Learning institutions ought to put in place digital literacy training to increase digital literacy and critical thinking about social media content to minimize susceptibility to algorithmic echo chambers.
2. **Empathy-Based Interventions**: Interventions or workshops based on empathy, perspective-taking, and intergroup cognition can be used to reduce the adverse impact of biased online exposure.
3. **Policy and Platform Regulations**: Social media within Pakistan can introduce the algorithm that facilitates the exposure to different perspectives and minimizes the occurrence of the echo-chamber.
4. **Civil Society Initiatives**: NGOs and community-based organizations can be able to utilize the findings in developing campaigns that promote non-discriminatory attitudes and oppose the stigmatization of the youth population.

Limitations of the Study

1. **Cross-Sectional Design**: The research was carried out in the form of a cross-sectional design, which restricts the causal interpretation. To analyze the effects caused by exposure to echo chambers over time, longitudinal or experimental studies are advised.
2. **Self-Report Measures**: The information was based on self-reported questionnaires, and it is possible to have social desirability bias.
3. **Sample Limitations**: The sample size was restricted to young people in Punjab, Pakistan. Caution should be taken in generalizing to other regions or age group.
4. **Limited Variables**: The research centred majorly on empathy as a moderator. Intergroup attitudes could also be affected by other types of psychological variables like moral reasoning, political ideology, or religiosity which need to be studied in future studies.

Future Research Directions

1. Longitudinal research since the viability of the effects of long-term exposure to echo chambers on intergroup hostility remains unexplored, they should conduct longitudinal research.
2. Experiment designs will be used to affect the algorithmic content exposure and establish causal outcomes to stigmatization.
3. Research other moderators; including moral values, religiosity or social media use, to determine other protective factors.
4. Make cross-cultural comparisons to identify whether there are comparable patterns of algorithmic effects in other societies with sectarian or ethnic splits to affect intergroup hostility.
5. Test how the process of forming attitudes towards outgroups is affected by the emerging AI technologies and personalized content (deepfakes, generative media).

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