# Impact of Confirmation Bias on Decision-Making with a Moderating Role of Tolerance for Disagreement

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| ARTICLE INFO | ABSTRACT |
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| | This study investigates the moderating role of tolerance for disagreement in the relationship between confirmation bias and decision-making. Further, it investigates the correlation of decision-making with confirmation bias and tolerance for disagreement. One hundred seventy students were randomly selected to participate in the survey, constituting pre-established measures related to tolerance for disagreement (TFD) (Teven & McCroskey, 2017), confirmation inventory (Rassin, 2008), and general decision-making style (Scott & Bruce, 1995). Statistical tools such as mean, standard deviation, t-test, and correlation were used to derive the conclusion. The data obtained revealed that people with high confirmation bias tend to have low tolerance for disagreement and vice versa. However, higher confirmation bias and lower tolerance for disagreement tend to exhibit poorer decision-making. |
| | **Keywords:** Confirmation Bias, Tolerance for Disagreement, Decision-making |

## Introduction:

When men wish to construct or support a theory, how they torture facts into their service! (Mackay, 1852/1932, p. 552) Confirmation bias is perhaps the best known and most widely accepted notion of inferential error to come out of the literature on human reasoning (Evans, 1989, p. 41). If one were to attempt to identify a single problematic aspect of human reasoning that deserves attention above all others, the confirmation bias would have to be among the candidates for consideration (Nickerson, 1998). Firstly, confirmation bias is characterized by the tendency to seek, interpret, and remember information in a way that confirms preexisting beliefs or hypotheses while disregarding contradictory evidence, representing a fundamental challenge to rational decision-making (Nickerson, 1998).

Confirmation bias is rooted in fundamental cognitive processes that shape how individuals perceive, process, and evaluate information. According to cognitive psychologists, confirmation bias arises from the interplay of several cognitive mechanisms, including motivated reasoning, biased assimilation, and cognitive dissonance reduction (Kunda, 1990; Lord et al., 1979). Motivated reasoning refers to the tendency of individuals to selectively process information in a manner that aligns with their preexisting beliefs or goals, thereby preserving a positive self-image or reinforcing existing worldviews (Kunda, 1990). Biased assimilation occurs when individuals interpret ambiguous information in a manner consistent with their prior attitudes or beliefs, leading to the reinforcement of existing cognitive schemas (Lord et al., 1979). Cognitive dissonance reduction mechanisms may also play a role in confirmation bias, as individuals strive to maintain internal consistency and reduce psychological discomfort by downplaying or dismissing conflicting evidence (Festinger, 1957).

Secondly, confirmation bias exerts a profound influence on decision-making processes, leading to suboptimal judgments and outcomes across various domains. In the context of information search and evaluation, individuals tend to selectively seek out and prioritize information that confirms their preexisting beliefs or hypotheses while neglecting contradictory evidence (Nickerson, 1998). This biased information processing can result in the overestimation of the validity of one's beliefs and the underestimation of alternative viewpoints, leading to flawed decision-making (Kahneman, 2011). Furthermore, confirmation bias can impede critical thinking and hinder the ability to objectively evaluate evidence, particularly in complex or ambiguous situations (Nickerson, 1998). Individuals may engage in motivated reasoning, rationalizing away disconfirming evidence or interpreting it in a manner consistent with their existing beliefs (Kunda, 1990). This selective information processing can lead to the persistence of erroneous beliefs or the adoption of suboptimal strategies, ultimately undermining the quality of decision-making.

Moreover, confirmation bias can have detrimental effects on group decision-making, exacerbating phenomena such as groupthink and echo chambers (Janis, 1982; Sunstein, 2009). In group settings, individuals may conform to the dominant viewpoint or suppress dissenting opinions to maintain group cohesion or preserve their social identity, leading to the suppression of valuable information and the reinforcement of collective biases (Janis, 1982; Sunstein, 2009). This group polarization effect can amplify confirmation bias and exacerbate the tendency to ignore or discount alternative perspectives, resulting in poor-quality decisions and outcomes (Moussa et al., 2024; Iyer et al., 2024; Jaafari et al., 2023; Gilani et al., 2023; Tantry & Singh, 2016). The pervasive influence of confirmation bias has far-reaching implications for individuals, organizations, and society at large. In professional settings, confirmation bias can compromise decision-making processes and undermine organizational performance by leading to strategic errors, misallocation of resources,

and missed opportunities (Kahneman, 2011). For policymakers and leaders, awareness of confirmation bias is essential for designing effective policies and strategies that account for diverse perspectives and mitigate the risk of groupthink (Sunstein, 2009). In interpersonal relationships, confirmation bias can contribute to misunderstandings, conflicts, and breakdowns in communication, as individuals may struggle to engage with differing viewpoints or challenge their own biases (Gernal et al., 2024; Khan et al., 2023; Tantry & Ali, 2020; Greenberg, 2019; Majeed, 2018a, 2018b; Tantry & Singh, 2017).

Furthermore, the anonymity and distance afforded by online interactions can exacerbate polarization and hostility, eroding the norms of civility and respectful disagreement (Pennycook & Rand, 2019). The prevalence of misinformation and echo chambers on social media platforms can also contribute to the amplification of extremist views and the marginalization of moderate voices, further undermining the foundation of democratic discourse (Guess et al., 2019). Moreover, confirmation bias can have profound implications for societal issues such as political polarization, misinformation, and ideological extremism (Sunstein, 2009). In an era of increasing information abundance and digital connectivity, individuals are exposed to a plethora of sources and perspectives, yet confirmation bias may lead them to selectively consume information that reinforces their existing beliefs or biases (Sunstein, 2009) (Sorour et al., 2024; Al Jaghoub et al., 2024; Mainali & Tantry, 2022; Nivetha & Majeed, 2022; Tantry & Singh, 2018).

Thirdly, while confirmation bias poses a significant challenge to effective decision-making, recent research has shed light on the moderating role of tolerance for disagreement in attenuating its effects. Tolerance for disagreement, defined as the willingness to consider and engage with divergent viewpoints, emerges as a crucial factor that influences how individuals process information and arrive at decisions (Baron, 1995). Individuals with higher tolerance for disagreement demonstrate greater openness to conflicting perspectives and are less susceptible to the distorting effects of confirmation bias. In this context, understanding and promoting tolerance for disagreement in the digital age is essential for safeguarding democratic values and fostering inclusive societies. By exploring the factors that influence individuals' attitudes towards disagreement, identifying strategies for mitigating the negative effects of echo chambers and polarization, and promoting media literacy and critical thinking skills, we can work towards creating digital environments that facilitate constructive dialogue and mutual respect (Gilani et al., 2024; Farooq & Majeed, 2024; Achumi & Majeed, 2024; Hussein & Tantry, 2022).

The purpose of this paper is to explore the impact of confirmation bias on decision-making with a moderating role of tolerance for disagreement, affecting the strength and direction of the relationship between confirmation bias and decision-making of an individual.

### Objectives of the study:
1. To understand any relationship between confirmation bias and tolerance for disagreement.
2. To find out any relationship between tolerance for disagreement and decision-making.
3. To find out any chance of any kind of interaction of tolerance for disagreement on confirmation bias and decision-making.

### Study Aims and Hypotheses
The current study examines the moderating effect of tolerance for disagreement on the impact of confirmation bias on decision-making. This study is an attempt to understand the process through which an individual's tolerance for disagreement has impacted decision-making with the causing effect of confirmation bias. Based on the preceding discussion, we suggest the following hypotheses:

• H1. To examine the negative correlation between confirmation bias and tolerance for disagreement.

• H2. To assess the positive correlation of tolerance for disagreement on decision-making.

• H3. To investigate the interaction of tolerance for disagreement on decision-making and confirmation bias.

### Research Methodology:
This study has utilized a quantitative approach in which a single cross-sectional design was employed. A measurement instrument adapted from pre-established scales was administered to the age group between 18 and 35. The collected data were subjected to descriptive and regression analysis.

### Participants and Procedure:
The present study included individuals in the age group between 18 and 35 years of age. A total of 177 students were recorded (77 male, 100 female) and randomly recruited after obtaining informed consent. The questionnaire was self-administered, and it took approximately 20-25 minutes for individuals to complete the survey. Out of 177 responses, only 170 valid responses were recorded to complete the survey, and no monetary benefits were provided to the participants.

### Measures:
All the measures pertaining to the 3 constructs (Confirmation bias, General decision-making style, and tolerance for disagreement) were adapted from previously validated scales (Rassin, 2008; Scott & Bruce, 1995; Teven & McCroskey, 2017) and administered in English language. Moreover, the reliability and validity of the measures used in the study are estimated by inter-construct correlation.

### Confirmation Inventory (CI):
The items in the Confirmation Inventory (CI), as developed by Rassin (2008), consist of 14 items. All the items were phrased in such a way that they would not represent confirmation as a problem, but rather as an efficient decision-making strategy. It was attempted to address various manifestations of the confirmation bias (e.g., the tendency to jump to conclusions and stick to one's opinion in the face of disconfirming evidence). All items were answered on a five-point scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree).

### General Decision Making Style (GDMS):
The General Decision Making Style (GDMS), as developed by Scott & Bruce (1995), consists of 25 items. It was designed to assess how individuals approach decision situations. It distinguishes between five decision styles:

• A rational style emphasizes a thorough search for and logical evaluation of alternatives.

• An avoidant style emphasizes postponing and avoiding decisions.

• A dependent style emphasizes a search for advice and direction from others.

• An intuitive style emphasizes a reliance on hunches and feelings.

• A spontaneous style emphasizes a sense of immediacy and a desire to get through the decision-making process as soon as possible. All items were answered on a five-point scale (1 = False, 2 = sometimes true, depending upon the situation, 3 = true).

### Tolerance for Disagreement (TFD):
The Tolerance for Disagreement (TFD), as developed by Teven & McCroskey (2017), consists of 15 statements written in Likert style with possible answers (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree). This construct of "tolerance for disagreement" has emerged from conceptualizations and research in organizational and group communication contexts. Whether the results are constructive or destructive, it often depends on the communication skills of an individual and the affinity between them.

### Review of the Literature:
This review synthesizes existing literature to elucidate the impact of confirmation bias on decision making and explores strategies to mitigate its adverse effects.

### Confirmation Bias: Mechanisms and Manifestations
Confirmation bias manifests through selective exposure, interpretation, and memory recall, perpetuating cognitive distortions and influencing decision-making processes. Studies by Nickerson (1998) and Klayman and Ha (1987) elucidate the underlying mechanisms of confirmation bias, highlighting its role in shaping individuals' information processing.

### Selective Exposure:
Research by Stroud (2008) and Garrett (2009) demonstrates how individuals selectively expose themselves to information that reinforces their existing beliefs, thereby perpetuating confirmation bias. This phenomenon is exacerbated by the design of social media algorithms, as elucidated by Pariser (2011), which create echo chambers and filter bubbles, limiting exposure to dissenting viewpoints.

### Interpretation Biases:
Cognitive processes such as motivated reasoning, as discussed by Kunda (1990), contribute to interpretation biases, wherein individuals tend to interpret ambiguous information in a manner consistent with their existing beliefs. This tendency leads to biased evaluations of evidence and influences decision making across diverse contexts.

### Memory Recall:
Studies by Lord et al. (1979) and Skurnik et al. (2005) highlight how individuals selectively recall information that aligns with their pre-existing beliefs, reinforcing confirmation bias over time. This memory recall bias influences subsequent decision making by shaping individuals' perceptions of past experiences and outcomes.

### Impact of Confirmation Bias on Decision Making
Confirmation bias exerts a profound impact on decision making across various domains, including politics, healthcare, finance, and consumer behavior. Research in these domains provides insights into the cognitive processes underlying decision making and elucidates the role of confirmation bias in perpetuating suboptimal decisions.

### Political Decision Making:
Studies by Taber and Lodge (2006) and Redlawsk (2002) reveal how confirmation bias influences political decision making by shaping individuals' perceptions of candidates, policies, and issues. This bias leads to partisan polarization and undermines deliberative democracy by impeding critical evaluation of alternative viewpoints.

### Healthcare Decision Making:
Research by Croskerry (2003) and Tversky and Kahneman (1974) elucidates the impact of confirmation bias on clinical decision making, wherein healthcare professionals may overlook contradictory evidence or dismiss alternative diagnoses that challenge their initial hypotheses. This bias contributes to diagnostic errors and suboptimal patient outcomes.

### Financial Decision Making:
Behavioral economics studies, such as those by Kahneman and Tversky (1979) and Thaler and Sunstein (2008), highlight how confirmation bias influences financial decision making by leading investors to selectively process information that supports their investment decisions. This bias contributes to market inefficiencies and irrational investment behavior.

### Consumer Behavior:
Research by Lee et al. (2014) and Simonson and Tversky (1992) examines the impact of confirmation bias on consumer decision making, wherein individuals selectively interpret product information and reviews to validate their initial preferences. This bias influences purchasing decisions and brand perceptions, shaping consumer behavior in the marketplace.

### Tolerance for Disagreement
Tolerance for disagreement encompasses cognitive, affective, and behavioral dimensions, reflecting individuals' openness to diverse viewpoints, emotional resilience in the face of conflicting opinions, and willingness to engage in constructive dialogue (Galinsky et al., 2008; Federico & Schneider, 2007). It serves as a cornerstone for fostering intellectual humility, promoting critical thinking, and mitigating polarization in society.

### Cognitive Biases:
Confirmation bias undermines tolerance for disagreement by reinforcing individuals' existing beliefs and inhibiting critical evaluation of alternative viewpoints (Kunda, 1990). Cognitive rigidity and resistance to conflicting information may lead to closed-mindedness and intolerance of dissenting opinions.

### Emotional Responses:
Confirmation bias and intolerance for disagreement often trigger emotional responses such as defensiveness, hostility, and avoidance (Galinsky et al., 2008; Federico & Schneider, 2007). Individuals may experience discomfort or threat when

confronted with opposing viewpoints, leading to defensive reactions and avoidance behavior (Vibin & Majeed, 2024; Monika et al., 2023a, 2023b; Kendler & Prescott, 2021; Tantry et al., 2019; Gilani, 2014).

**Behavioral Consequences:**
Confirmation bias and intolerance for disagreement can have significant implications for social interactions and decision-making processes. They may lead to echo chambers, polarization of attitudes, and hindered collaboration and innovation in organizational settings (Taber & Lodge, 2006; Bazerman & Moore, 2009). Individual differences, situational factors, and contextual variables may moderate the relationship between confirmation bias and tolerance for disagreement (Galinsky et al., 2008; Federico & Schneider, 2007). Personality traits, ideological orientation, and cultural norms may also shape attitudes towards dissenting opinions, affecting the degree of openness and receptiveness to alternative viewpoints (Gambiza et al., 2023; Yachna & Majeed, 2023; Sulthan et al., 2022; King & Hopwood, 2021; Tantry et al., 2018).

**Tolerance for Disagreement and Decision Making**
Studies have shown that groups characterized by high levels of tolerance for disagreement are more likely to engage in thorough deliberation, considering a wider range of perspectives and information (Janis, 1972). This inclusivity fosters collective learning and innovation, leading to more informed and effective decisions. Tolerance for disagreement can mitigate the impact of cognitive biases on decision-making processes. By encouraging individuals to critically evaluate alternative viewpoints, tolerance for disagreement promotes more objective and rational decision making (Gambiza et al., 2023; Yachna & Majeed, 2023; Sulthan et al., 2022; King & Hopwood, 2021; Tantry et al., 2018). This helps mitigate the influence of biases such as confirmation bias and groupthink, which can distort decision outcomes.

In conclusion, there is a close relationship between confirmation bias and tolerance for disagreement, which affects how the mind processes information, how people feel, and how people behave. It is crucial to comprehend the workings and outcomes of this relationship in order to encourage tolerance, productive discussion, and well-informed choices in a variety of settings. Confirmation bias can be addressed and various perspectives can be valued by individuals and organizations by addressing cognitive biases and cultivating a culture of tolerance and intellectual humility (Bhardwaj et al., 2023; Sabu et al., 2022; Brown & Barlow, 2022; Tantry & Ahmad, 2019; Majeed, 2019a, 2019b, 2019c; Cacioppo & Patrick, 2018).

**Result & Discussion:**

**Fig 1: Demographic Data**
The figure shows the sex groups and the number of individuals from each sex group who participated in the research (N = 176).
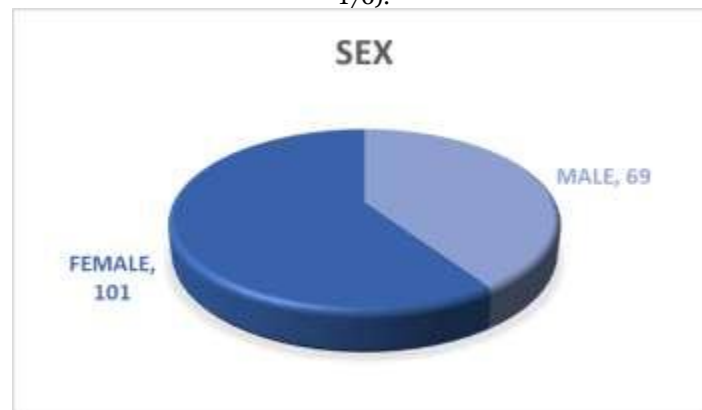


**Table1:Descriptivestatisticsandcorrelationsofallmeasures(N=176)**

| | DESCRIPTIVE STATISTICS | | | CORRELATIONS | | |
|---|---|---|---|---|---|---|
| | MEAN | MEDIAN | STANDARD DEVIATION | TDTT | CBTT | DMTT |
| TDTT | 38.7955 | 38.0000 | 14.31016 | 1 | | |
| CBTT | 75.1705 | 72.5000 | 23.48214 | .685** | 1 | |
| DMTT | 43.4261 | 42.0000 | 6.50408 | .590** | .703** | 1 |

**\*\*.Correlationissignificantatthe0.01level(2-tailed).**

**Table2:Meandifferencesintolerancedisagreement(TDTT),Decisionmaking(DMTT), Confirmation bias (CBTT) with respect to gender and the t-test of all the variables**.

| | | GROUP STATISTICS | | | | T-TEST | | |
|---|---|---|---|---|---|---|---|---|
| | Gender | N | Mean | Std. Deviation | t | df | Sig.(2-tailed) | |
| TDTT | Male | 69 | 40.9420 | 16.21626 | | | | |
| | Female | 101 | 37.6733 | 12.93221 | 1.458 | 168 | .147 | |
| DMTT | Male | 69 | 44.8261 | 7.03553 | | | | |
| | Female | 101 | 42.9010 | 5.95904 | 1.921 | 168 | .056 | |
| CBTT | Male | 69 | 77.5217 | 23.08336 | | | | |
| | Female | 101 | 74.2475 | 24.15012 | .884 | 168 | .378 | |

**Table3:**Summaryofmultipleregressionsfor ConfirmationBias(CBTT),ToleranceDisagreement (TDTT).

| REGRESSION | | | | | |
|---|---|---|---|---|---|
| MODEL | Unstandardized Coefficients B | STD ERROR | Standardized Coefficients Beta(β) | t | Significance |
| CBTT | .156 | .020 | .564 | 7.769 | .000 |
| TDTT | .092 | .033 | .203 | 2.798 | .006 |
| R Square | | Adjusted R Square | | F | |
| .516 | | .511 | | 92.326 | |

**a)** *Dependent Variable:DMTT*

**b)** *Predictors(constant):TDTT,CBTT*

**c)** The results of descriptive statistics, including Pearson's correlations between tolerance for disagreement, confirmation bias, and decision-making, are presented in Table 1. The table shows that Tolerance for Disagreement (TDTT) (r = .590, p < .01) and Confirmation Bias (CBTT) (r = .703, p < .01) both have significantly positive correlations with Decision-Making (DMTT) at the 0.01 level. According to the statistics, participants with a higher tolerance for disagreement tend to exhibit lower confirmation bias, and higher confirmation bias is associated with poorer decision-making abilities, thus stipulating a negative correlation between the variables TDTT and CBTT, as well as CBTT and DMTT. There is a significant positive correlation between TDTT and DMTT, as higher tolerance for disagreement is associated with better decision making. The average participants displayed a moderate level of tolerance for disagreement, with a mean of approximately 38.8 and a standard deviation of 14.3. The mean score for confirmation bias was 75.2, indicating a moderate level of bias among participants, with considerable variability and a standard deviation of approximately 23.5. Participants also displayed an average decision-making score of 43.4, with relatively low variability, and a standard deviation of approximately 6.5. Hence, both H1 and H2 are supported. The results of the t-test reported in Table 2 indicate that the calculated t-value for TDTT (t = 1.458), CBTT (t = .884), and DMTT (t = 1.921). In the case of TDTT (tolerance for disagreement) and CBTT (confirmation bias), the results are insignificant, suggesting that they do not differ significantly based on gender. However, for DMTT, the t-test reveals a borderline significant difference between males and females, suggesting a slight difference in the mean scores of DMTT between males and females, approaching statistical significance. The results of the multiple regression analysis presented in Table 3 indicate that both TDTT and CBTT are significant predictors of DMTT. The regression model is significant (Adjusted R-square = .511, R-square = .516, F = 92.326, p < .01). As shown in the table, TDTT (tolerance for disagreement) (β = .564, p < .01), and CBTT (confirmation bias) (β = .203, p < .01) significantly predicted DMTT, but tolerance for disagreement plays a more significant role in decision-making. The significance level for both TDTT and CBTT is 0.006 and 0.000, respectively, which explains that both TDTT (tolerance for disagreement) and CBTT (confirmation bias) account for approximately 51.6% of the variance in DMTT (decision-making). Therefore, H3 is also supported.

**d)** **Moderation Analysis**:
The moderation analysis examines the relationship between the independent variable (CBTT) Confirmation Bias, moderator (TDTT) Tolerance for Disagreement, and the dependent variable (DMTT) Decision-Making. In this analysis, TDTT moderates the relationship between CBTT and DMTT, influencing the individuals being studied. Specifically, when there is a higher level of tolerance for disagreement (TDTT), the effect of confirmation bias (CBTT) on decision-making (DMTT) may be amplified or diminished.

**e)** **DISCUSSION**:

The purpose of the study was to investigate the impact of confirmation bias on decision-making with the moderating role of tolerance for disagreement. As predicted, the correlational analysis revealed a significant positive correlation between confirmation bias (CBTT), tolerance for disagreement (TDTT), and decision-making (DMTT). Confirmation bias, a subconscious tendency to seek information that aligns with preconceived notions while disregarding opposing evidence, can lead to errors in judgment and decision-making (Zhou, 2020). These results correspond to earlier research on mitigating the role of tolerance for disagreement on decision-making with the influence of confirmation bias (Moa Lidén, 2023). Confirmation bias, a common cognitive tendency, influences decision-making by causing individuals to seek information that confirms their existing beliefs while disregarding contradictory evidence ("The Confirmation Bias in

Judgment and Decision Making," 2012; Kappes et al., 2019; "Tolerance for Disagreement," 2010). Although the research has explored several mediating factors between the variables, the moderating role of tolerance for disagreement on confirmation bias in decision-making has not been previously explored. As expected, tolerance for disagreement moderated the relationship between confirmation bias and decision-making, supporting all three hypotheses (H1, H2, H3). The study shows that reduced tolerance for disagreement leads to confirmation bias, affecting decision-making by diminishing the influence of others' conflicting opinions on judgment confidence, as also supported in the research (Kappes et al., 2019). Therefore, it can be seen that individuals who demonstrated increased confirmation bias had less tolerance for disagreement and tended to have poor decision-making skills. In decision-making meetings, confirmation requests can be used strategically to imply disagreement, highlighting the importance of recognizing and addressing differing viewpoints (Chavaglia Neto et al., 2022). This bias can be moderated by factors such as tolerance for disagreement. Research suggests that when individuals encounter dissenting opinions, they may strategically use preference confirmation to navigate competition and dissent in group decision-making scenarios (Toma et al., 2011). Disagreement is a prevalent factor in human communication, with interactions often involving differing viewpoints (Gatlin et al., 2018). Understanding and addressing confirmation bias, along with fostering tolerance for disagreement, are crucial in improving decision-making quality. One potential explanation for these findings could be that individuals who do not have tolerance for disagreement indulge themselves in making diabolical decision-making by aligning themselves with their beliefs, ideas, thoughts, and circumstances (i.e., the unconscious bias present in them). The confirmation bias in the individual limits them to selective exposure; they interpret any ambiguous or conflicting information that confirms their existing beliefs, and individuals tend to have a biased evaluation which leads to flawed reasoning (Pilgrim et al., 2022). Confirmation bias also distorts one's memory, leading them to recall information in a way that supports their interests (Frost et al., 2015). At last, confirmation bias also leads to group polarization, where one could become more extreme in their views. Confirmation bias in a group setting can have both positive and negative effects on learning and decision-making (Cailin O'Connor & Gabriel, 2022). While moderate confirmation bias can enhance group learning by encouraging the exploration of diverse theories and preventing premature consensus on suboptimal ideas, strong confirmation bias can lead to persistent polarization and hinder the community's knowledge production capacity (Ruzzier & Woo, 2023). Tolerance for disagreement allows individuals to challenge existing beliefs, engage in constructive criticism, and explore alternative perspectives leading to more innovative solutions and effective risk management strategies. Studies have shown that individuals with higher levels of tolerance for disagreement are more likely to pursue postsecondary education, exhibit better conflict management styles, and demonstrate readiness to tolerate differing viewpoints ("Tolerance for Disagreement," 2010). Tolerance for disagreement plays a crucial role in fostering critical thinking, reducing groupthink, enhancing innovation, managing risks, and improving decision-making ("Tolerance for Disagreement for Students," 2014; Nauman, 2018; Miller et al., 2020; "Tolerance for Critical Thinking via Entrepreneurial Storytelling," 2018). Embracing disagreement in communication is essential for stimulating meaningful discussions, preventing group conformity, and ultimately enhancing the quality of decision-making processes within organizations. Decision-making is a process that helps in problem-solving, seizing opportunities, and selecting appropriate solutions. Decision-making processes involve memory-based, value-based, and free-choice decisions, impacting personal and professional life. The ability to make decisions influences adaptation to the environment, autonomy, and overall success. Making informed decisions, managing consequences, and considering emotional involvement are key aspects of decision-making. Decision-making is crucial in life as it enables individuals to navigate various situations effectively (Morelli et al., 2021; "Decision-Making in Private and Professional Life," 2023; Zheng et al., 2023; "Decision-Making," 2022). Moreover, the results state that both TDTT (tolerance for disagreement) and CBTT (confirmation bias) are significant predictors of DMTT (decision-making). The stronger relationship between CBTT and DMTT, as evidenced by the higher coefficient and standardized coefficient, suggests that confirmation bias may have a more substantial impact on decision time compared to tolerance for disagreement. The group statistics t-test results for DMTT based on gender show that for males (N=69), the mean DMTT is 44.8261 with a standard deviation of 7.03553. The t-value for the comparison is 1.921 with a p-value of 0.056. For females (N=101), the mean DMTT is 42.9010 with a standard deviation of 5.95904. The t-value for the comparison is the same as for males, 1.921, with a p-value of 0.056. These results indicate that there is a borderline significant difference in decision-making time (DMTT) between males and females, with males showing a slightly higher mean DMTT compared to females. The p-value of 0.056 suggests that the difference is approaching statistical significance. Decision-making abilities show variations between males and females. Research indicates that males tend to have advantages in decision-making tasks like the Iowa Gambling Task (IGT) (Truckenbrod et al., 2022). However, other studies suggest that there may not be significant gender differences in decision-making overall. In terms of risk-based decision-making, males have been shown to make riskier choices compared to females ("Gender Perspective on Decision-Making: A Study of Sarpanches of Bhiwani District," 2023; Errante et al., 2021). Additionally, dopamine plays a role in effort-related decision-making, where males exhibit different training behaviors but respond similarly to dopamine antagonists compared to females ("Sex Differences in Risk-Based Decision Making," 2020). Therefore, while some studies suggest a male advantage in certain decision-making tasks, the overall picture is nuanced, with various factors like risk preferences and dopamine modulation contributing to differences in decision-making between males and females.

**Fig 2: Model Analysis of Examining Decision-Making: Confirmation Bias as a Key Factor and Tolerance for Disagreement as a Moderator**



**.** *Correlation is significant at the 0.01 level (2-tailed).*
**a =.685 ; **b = .703 and **c =.590.*
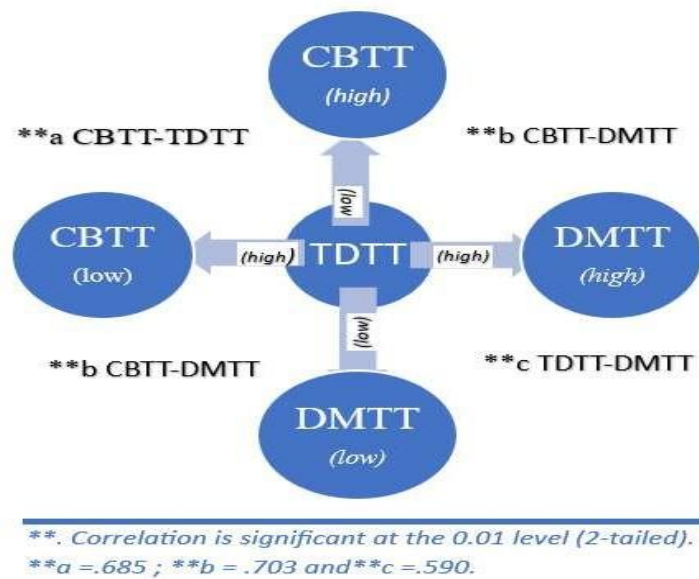
**Implications:** This study contributes novel insights into the intricate dynamics of the relationship between confirmation bias, tolerance for disagreement, and decision-making among the population in the age group 18-35 years of age. The outcomes of the study provide compelling evidence for the external validity that confirmation bias (CBTT) and tolerance for disagreement (TDTT) are significant predictors of decision-making (DMTT) among individuals. Our findings have practical implications for endorsing effective decision-making skills as the study found that decision-making can be influenced by the factor of tolerance for disagreement and confirmation bias.

Tolerance for disagreement significantly influences decision-making processes (Song et al., 2016). Research on communication highlights that disagreements are common in interactions, with scholars suggesting that they are essential for effective group communication ("Tolerance for Disagreement," 2010). Studies on tolerance emphasize its importance in respecting diverse viewpoints and accepting differing beliefs, contributing to improved communication and decision outcomes ("Tolerance for Disagreement for Students," 2014). Overall, a high level of tolerance for disagreement enhances the resolution of conflicts and promotes more informed and inclusive decision-making processes.

Thus, by enhancing people's tolerance for disagreement and reducing confirmation bias tendencies, the current study's findings highlight the significance of implementing interventions that help people become better decision-makers and more aware of what they do. Developing better decision-making skills is an important life skill that can have a positive impact on many different areas. Here are some methods to improve decision-making skills and elements that can support it:

• Become more self-aware: Recognize your beliefs, advantages, disadvantages, and biases. Being conscious of yourself makes it easier to see how these things affect your choices. To obtain a more comprehensive understanding of the situation, it is advisable to seek out diverse perspectives and collect information from various sources. Making educated decisions is aided by this.

• Develop your critical thinking skills by learning to assess options, analyze situations, and predict possible outcomes. Making logical decisions based on logic and evidence is made possible by critical thinking.

• Learn from the past: Consider the choices you've made in the past, both good and bad. Recognize trends, absorb lessons from errors, and use the knowledge gained to inform future choices.

• Control your emotions: Feelings can impair judgment and cause rash decisions. Acknowledge and control your emotions to help you make more thoughtful decisions. Prior to making decisions, clearly identify your priorities and objectives, possessing lucidity.

**Limitation and Future Research Direction:** This study, like any other academic research, is subject to limitations that necessitate further consideration. Firstly, it utilized cross-sectional data, suggesting the need for future longitudinal or experimental studies to confirm the moderating effect of tolerance for disagreement in decision-making processes. Secondly, the reliance on self-report measures in data collection introduces potential bias due to social desirability. Subsequent research could benefit from employing diverse assessment methods to enhance the credibility of the results. Thirdly, as the study focused on a non-clinical sample, the generalizability of the findings to more varied or clinical populations remains uncertain.

Notwithstanding these constraints, the current study represents a distinctive endeavor to explore the influence of confirmation bias with the moderating influence of tolerance for disagreement on decision-making processes, elucidating the underlying mechanisms of the relationship within the demographic aged 18-35 years. The study's outcomes unveiled a previously unidentified mechanism for understanding the correlation between tolerance for disagreement and decision-making. These discoveries hold potential for informing the development of effective therapeutic interventions aimed at enhancing decision-making abilities, reducing internal biases, and fostering increased core self-evaluation.

**Conclusion:** In summary, this study has illuminated the intricate relationship between confirmation bias, tolerance for disagreement, and decision-making proficiency. The results suggest that individuals with a strong inclination towards

confirmation bias tend to make suboptimal decisions, although the degree of this impact is significantly influenced by the level of tolerance for disagreement they possess. The research highlights that tolerance for disagreement plays a crucial role in moderating the influence of confirmation bias on decision-making. Individuals with higher tolerance for disagreement demonstrate greater resistance to the distorting effects of confirmation bias, enabling them to consider diverse perspectives, evaluate information critically, and make more informed and rational decisions.

These findings emphasize the importance of nurturing tolerance for disagreement as a key competency in mitigating the adverse effects of confirmation bias on decision-making. By fostering an environment that promotes constructive debate, diverse viewpoints, and respectful dissent, both individuals and organizations can enhance their decision-making abilities and diminish the impact of cognitive biases. Looking ahead, future studies should investigate additional variables that could affect the interplay between confirmation bias, tolerance for disagreement, and decision-making. Furthermore, interventions designed to enhance tolerance for disagreement should be formulated and assessed to assist individuals and organizations in improving their decision-making processes and outcomes across different scenarios. Overall, this research contributes to a deeper comprehension of the complexities inherent in decision-making and provides practical guidance for addressing cognitive biases in practical settings. .Subsequentresearchcouldbenefitfromemployingdiverse assessment methods to enhance the credibility of the results. Thirdly, as the study focused on a non-clinical sample, the generalizability of the findings to more varied or clinical populations remains uncertain.

Notwithstanding these constraints, the current study represents a distinctive endeavour to explore the influence of confirmation bias with the moderating influence of tolerance for disagreement on decision- making processes, elucidating the underlying mechanisms of the relationship within the demographic aged 18-35 years. The study's outcomes unveiled a previously unidentified mechanism for understanding the correlation between tolerance for disagreement and decision-making. These discoveries hold potential for informing the development of effective therapeutic interventions aimed at enhancing decision-making abilities, reducing internal biases, and fostering increased core self-evaluation.

**Conclusion:** In summary, this study has illuminated the intricate relationship between confirmation bias, tolerance for disagreement, and decision-making proficiency. The results suggest that individuals with a stronginclinationtowards confirmationbias tend to makesuboptimal decisions, althoughthedegreeofthis impact is significantly influenced by the level of tolerance for disagreement they possess. The research highlights that tolerance for disagreement plays a crucial role in moderating the influence of confirmation biasondecision-making.Individualswithhighertolerancefordisagreementdemonstrategreaterresistance to the distorting effects of confirmation bias, enabling them to consider diverse perspectives, evaluate information critically, and make more informed and rational decisions.

These findings emphasize the importance of nurturing tolerance for disagreement as a key competency in mitigating the adverse effects of confirmation bias on decision-making. By fostering an environment that promotesconstructivedebate,diverseviewpoints,andrespectfuldissent,bothindividualsandorganizations can enhance their decision-making abilities and diminish the impact of cognitive biases. Looking ahead, future studies should investigate additional variables that could affect the interplay between confirmation bias, tolerance for disagreement, and decision-making. Furthermore, interventions designed to enhance tolerance for disagreement should be formulated and assessed to assist individuals and organizations in improving their decision-making processes and outcomes across different scenarios. Overall, this research contributes to a deeper comprehension of the complexities inherent in decision-making and provides practical guidance for addressing cognitive biases in practical settings.

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