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Examining the Relationship between Common Rationality, Collective Decision-making, and Social Capital: A Structural Equation Modelling

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Abstract

This research aims to examine the effect of collective decision-making on social capital. Collective decision-making is about reaching a single decision by the members of a group or society. To accomplish this objective, the correlation among common rationality, collective decision-making, and social capital are assessed. To assess the overall adequacy of the model, the goodness of fit (GOF) measure is employed, yielding a value of 0.563. This criterion signifies that the research model exhibits an appropriate level of overall fit. The findings indicate that the direct pass from common rationality to social capital exhibits a notably low pass coefficient of 0.191. However, the indirect pass-through collective decision-making (as a mediating variable) exhibits higher pass coefficients of 0.691 and 0.589. These figures highlight the significance of utilizing collective decision-making as a means to leverage common rationality for the attainment of social capital.

Keywords: *Common rationality, Collective decision-making, Social capital, Structural Equation Modeling (SEM), Participation*

1. Introduction

Nowadays, alongside human and economic capital, social capital is also recognized as a valuable asset. Social capital is a sense of commitment or empathy that an individual or group has toward another person or group of people. The basic idea of social capital is that social relationships are a resource that can be used to produce valuable results. Social capital is a valuable resource that serves as a fundamental feature of socially structured communities. It enables individuals to address communal challenges with greater ease, enhance their resource accessibility, facilitate development, and significantly contribute to

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the restoration of trust and national identity. Moreover, it empowers individuals to expand their knowledge, impact, and unity within society [28].

Social capital arises from shared beliefs and values and the social relationships between members of the organization and communities. A collective view of "social capital" is proposed by James S. Coleman (1987): Unlike other forms of capital, social capital is inherent in the structure of relationships between individuals and there is no production in physical devices [7, 18]. According to this definition, it can be assumed that not only individuals but also groups and organizations such as the workplace have social capital.

Organizational social capital can be described as a valuable asset that embodies the nature of social connections within an organization. It is manifested through the collective goal orientation and shared trust among its members, ultimately enabling effective collaboration and achieving common objectives. The components of social capital are the existence of collective values and beliefs and mutual trust between the members of an organization. Social capital can be defined as a feature of social systems that can improve the performance capacity of its members [18].

Social capital is a complex and important social phenomenon with multiple dimensions including cognitive, relational, and structural dimensions. Previous research has acknowledged each dimension as a distinct element of social capital; however, the scope of these studies is constrained as they solely examine the influence of a special dimension on the diffusion of new products. A handful of studies have examined different dimensions of social capital in other contexts such as group performance such as collective decision-making. Examining the decision-making styles of managers shows that these styles are effective in increasing or decreasing the organization's social capital and are known as a support for social capital [16].

This paper investigates the complex interplay between common rationality, collective decision-making, and social capital, utilizing a structural equation modeling approach to explore the causal relationships among these constructs. By providing empirical evidence on these relationships, this research aims to contribute to the existing literature and identify the factors that either promote or hinder the development of organizational social capital. Specifically, the study examines whether collective decision-making styles within organizations contribute to enhancing social capital. Furthermore, it argues that the pursuit of common rationality is a fundamental prerequisite for effective collective decision-making, as it facilitates the integration of diverse individual personalities, attitudes, and viewpoints into a cohesive and productive process. Rationality encompasses a collection of justifications individuals and societies employ to support their "actions, beliefs, and behavior" [15, 21].

This study aligns with previous research highlighting the importance of fostering participation as a successful strategy for enhancing social capital. However, a significant gap exists in the literature concerning the practical aspects of fostering participation in collective decision-making. While previous studies have acknowledged the importance of participation, they often lack concrete guidance on how to effectively cultivate it. This study addresses this gap by investigating the following key research questions:

- How can organizations effectively promote meaningful participation among employees in collective decision-making processes?

- What are the key factors that contribute to establishing a foundation for successful employee participation?
- What appropriate indicators and methodologies can be used to measure and evaluate the effectiveness of participation initiatives?

Furthermore, the interrelationships between common rationality, collective decision-making, and social capital remain largely unexplored. While previous studies have examined these concepts in isolation, no research, to our knowledge, has investigated their combined influence. This study addresses this critical gap by developing and testing a novel model that examines the pathways through which common rationality influences collective decision-making, and how this, in turn, impacts social capital. Specifically, we hypothesize that *"common rationality positively influences the effectiveness of collective decision-making, which in turn positively influences social capital"*.

This study contributes to the literature in several key ways. First, it offers practical insights into the mechanisms for fostering participation in collective decision-making, addressing a critical gap in existing research. Second, it develops and tests a novel integrated model that examines the interconnectedness of common rationality, collective decision-making, and social capital, providing a more holistic understanding of their relationships. Third, by demonstrating the potential link between collective decision-making and social capital, this research offers valuable managerial implications for organizations seeking to enhance both individual and collective outcomes. A positive correlation between these constructs could offer a powerful strategy for leveraging collective decision-making to build social capital within both organizational and broader societal contexts.

The manuscript is structured as follows: Section 2 provides a comprehensive review of the relevant literature, exploring the theoretical underpinnings of common rationality, collective decision-making, and social capital. Section 3 outlines the research methodology, including the sample selection, data collection procedures, and the structural equation modeling approach employed. Section 4 presents the results of the data analysis, including the tests of the hypothesized relationships. Sections 5 and 6 discuss the findings, highlighting their implications for theory and practice. Finally, Sections 7 and 8 conclude the paper by summarizing the key contributions, acknowledging limitations, and suggesting avenues for future research.

2. Literature Review

The fundamental components of our model consist of common rationality, collective decision-making, and social capital as autonomous, intermediary, and reliant variables, correspondingly. Therefore, an examination of these three constructs will be conducted in the subsequent sections, as outlined.

2.1. Common Rationality

Rationality is defined as a set of abstract characteristics of individual attitudes that may involve beliefs, values, preferences, desires, and intentions. Rationality is greatly influenced by individual dispositions, and if one's beliefs, preferences, and intentions transform, rationality will also be altered. Rationality can be associated with the reasoning individuals employ to evaluate their surroundings and utilize this

information to make informed choices [15, 21].

Max Weber proposed the rationality principle as a key methodological framework, positing that by analyzing the underlying reasons for social actions, social scientists can gain insight into social actors and their motivations. According to Weberian *Verstehen* sociology, it is argued that "the actions of a social actor are consistently understandable". The principle of rationality can provide the basis for the understanding of society members from each other [23].

Rationality pertains to the collection of justifications that guide an individual's decisions and conduct. It is about being wise in what we believe and what we do or are interested in doing. It appears that effective collective decision-making in the organization necessitates common rationality among its members. Rationality is readily comprehensible in the context of individual decisions, yet it becomes more elusive when applied to interactive decisions. Interactive decision-makers are unable to optimize their anticipated advantages in the absence of robust assumptions regarding the behaviors of other stakeholders [8].

The presence of rationality is universal across all human cultures, and common rationality serves as the foundation for individuals with diverse cultures and attitudes to comprehend one another [23]. Common rationality refers to the idea that people have a shared set of cognitive abilities that allow them to reason, problem-solve, and make decisions logically and rationally. It is believed that common rationality is a key factor in guiding human behavior and decision-making and that understanding it can help us develop more effective strategies for problem-solving and decision-making [2].

Common rationality is significant not only in game theory but also in other areas of economics. In game theory, the rationality of players in strategic interaction is a fundamental principle on which the vast majority of game theoretical concepts are based. Also, in economic and business studies, common rationality provides the basis for reaching a common understanding and joint goal [27].

Mainstream models of industrial organizations assume common rationality and in the simplest case, where two companies are competing, both know that they are rational, moreover, they know that their opponent is also rational. Because of this, they end up solving the game with the best response performance, as a function of their decision and their opponent's decision. Another clear example of common rationality is applied in political economy, where assuming the common rationality of all politicians, they compete to get closer to voters [10].

In the section dedicated to the conceptual framework, several indicators of the construct of "common rationality" are elucidated. The indicators utilized in this study were derived from a thorough content analysis of scientific literature and official documents, and subsequently verified through consultation with subject matter experts. The indicators that have been extracted include common thinking, common goals, common benefits, and common interests.

Common rationality can be seen as a foundation for achieving common thinking, goals, benefits, and interests. When individuals or collectives share the same rationality, they are more likely to come to similar conclusions and make decisions that align with each other. This leads to a greater likelihood of common goals, benefits, and interests. In other words, when people can think and reason in similar ways, they are more likely to work together toward achieving common goals [20].

2.2. Collective Decision-Making

Decision-making is a cognitive procedure that results in the choice of one alternative among several available options. The concept of collective decision-making entails a collaborative process wherein individuals are afforded the chance to exert influence and make decisions about their respective tasks and group endeavors. Collective decision-making refers to the collaborative efforts of two or more individuals or groups who strive to enhance their position on a specific matter and work together to achieve a common objective.

The crux of collective decision-making resides in the deliberate contemplation of diverse actions by the individuals within a group. In collective decision-making processes, people share their viewpoints, taking into account specific constraints and preferences, on various options, leading to the eventual choice of one decision.

Collective decision-making's primary focus is on exploring how decision-makers can effectively select the best choices from a multitude of options. The primary objective of groups is to offer effective resolutions to the intricate problems they face. This aspect holds significant relevance in understanding the behavior of social groups, as the collective wisdom exhibited by these groups can surpass the quality of individual decision-making.

In light of the dynamic environmental changes, decision-makers need to possess a comprehensive understanding of various issues, sciences, and technologies to effectively address challenges or capitalize on opportunities. Nevertheless, it is unrealistic to expect individuals to possess expertise in every domain relevant to their managerial roles. Therefore, collective decision-making can significantly enhance the likelihood of identifying the most suitable solution [20]. The contemporary nature of societal transformation necessitates the active involvement of both managers and staff in the decision-making process and subsequent implementation procedures. Without their participation, the attainment of an optimal decision becomes unattainable.

Effective communication and conducive circumstances within groups can expedite the process of reaching a consensus at the group level. The behavior of group members plays a crucial role in facilitating collective decision-making. In cases where a collective decision does not yield the desired results, individuals partaking in the 'group issue' should partake in bargaining or negotiation activities until a mutual agreement is reached [4].

Within the conceptual framework section, various indicators of the construct of "collective decision-making" are delineated. The indicators that have been extracted include voting, information sharing, meetings, and consultation. According to the explanation given, collective decision-making involves a group of individuals making a decision together.

Voting is a common way to reach a collective decision, where each member of the group has an equal say in the outcome. Information sharing is important in collective decision-making because it ensures that all members of the group have access to the same information, which helps them make informed decisions. Meetings and consultations allow individuals to discuss and share their opinions and ideas, which can help to reach a consensus. These processes are all important components of collective decision-making and can help to ensure a fair and democratic outcome [20].

2.3. Social Capital

The social interactions within a society are influenced by social capital, which in turn affects both the quality and quantity of these interactions. Social capital is defined as "networks, norms of interaction and trust", and is generally built on shared beliefs and values or collective identities. Two primary concepts of social capital are often highlighted: (1) traditional capital generated through the collective effort of the proletariat, as per Marxist theory, ideally to be owned collectively but often held by individual capitalists; and (2) social capital as the inherent potential in relationships, whether personal, institutional, or communal [9].

Bourdieu [3] conceptualizes social capital as the sum of actual or potential resources linked to a durable network of institutionalized relationships of mutual acquaintance and recognition. This form of capital is embedded in social structures and is preserved through investment in social ties. He connects social capital with economic, cultural, and symbolic capital, suggesting it plays a critical role in maintaining social hierarchies.

Putnam [22] defines social capital as the features of social organization such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit. He stresses its importance in democratic governance and economic development, noting its decline due to decreasing civic engagement. Fukuyama [11] offers a complementary perspective, defining social capital as a set of informal norms and values promoting cooperation among group members, with cultural roots and significant variance across societies. He emphasizes trust as a core component and notes both positive and negative implications, such as the potential for nepotism.

Social capital is considered a resource available to individuals and organizations alike. It enables access to resources via relational networks and is vital for societal resilience and the promotion of collective action [5].

Three key dimensions of social capital—bonding, bridging, and linking—have been identified as fundamental to cooperative action. Bonding capital forms within groups through strong, reciprocal relationships, whereas bridging capital connects diverse groups and enhances broader cooperation. These relationships often reflect shared cultural or socio-economic characteristics [28].

Organizational social capital refers to the value derived from the relationships, norms, and trust within an organization. It influences communication, innovation, and problem-solving, directly affecting organizational performance.

Within the conceptual framework section, several indicators of the construct of "social capital" are elucidated. These indicators include reaching consensus, reducing conflicts, collective commitment, and increasing participation. Social capital encompasses the networks, norms, and trust among individuals, significantly influencing processes such as consensus-building, conflict reduction, and enhanced participation.

Strong social networks encourage cooperative behavior towards shared goals. Trust and mutual understanding reduce conflicts and transaction costs [22], while dense networks foster civic engagement and a sense of belonging [17]. Social capital also supports collective commitment to common objectives through shared norms and responsibilities.

3. Conceptual Framework

Previous research has yet to adequately explore the interplay among the three core dimensions of *common rationality*, *collective decision-making*, and *social capital*. This study addresses this gap by investigating the reciprocal influences among these constructs, positing that each dimension reinforces and is influenced by the others in organizational and social contexts.

Common rationality pertains to the shared beliefs, values, and goals among individuals in a group, forming a collective cognitive base upon which decisions are made. In contrast, collective decision-making is a procedural construct involving group-based deliberations and choices. The alignment of individual rationalities into a common framework enhances the likelihood of effective collective decisions, as mutual understanding and respect facilitate consensus and cooperation. Conversely, the absence of a shared rationality can impede collective processes, leading to conflict and decision paralysis.

The relationship between common rationality and social capital is also notably interdependent. Social capital, encompassing networks, norms, and trust, thrives in environments where common rationality prevails. Shared beliefs and goals enhance communication and mutual trust, thereby reinforcing social bonds and cooperative norms. In heterogeneous groups where rationalities diverge, the resulting fragmentation can erode social capital by undermining trust and shared norms.

Moreover, collective decision-making directly influences the development and sustainability of social capital. Participatory decision-making fosters engagement, mutual respect, and communication, all of which are fundamental to building trust and strong social networks. Successful collective processes, especially those perceived as inclusive and transparent, can enhance social capital by promoting civic engagement and reinforcing community norms. However, if these processes are perceived as ineffective or exclusive, they may diminish trust and weaken social cohesion.

This section seeks to establish the theoretical foundation of the research by identifying the indicators that operationalize the three key constructs: common rationality, collective decision-making, and social capital. These indicators are extracted through an extensive content analysis of the literature, aiming to map the intentional participation processes within employee groups.

The identification and validation of these indicators serve multiple research objectives: (1) to delineate the foundational constructs that support participatory structures in organizations; (2) to guide the development of reliable measurement instruments; and (3) to inform the selection of suitable methodological approaches. To reinforce the reliability of this framework, expert interviews and statistical analyses, such as factor loading assessments, are employed. This mixed-method approach ensures the logical integration and empirical robustness of the conceptual model, thus providing a comprehensive basis for subsequent structural modeling.

3.1. Common Rationality

Common rationality refers to the shared cognitive framework among individuals that guides decision-making based on mutual understanding, values, and goals. This section outlines four key indicators of common rationality: common thinking, common goals, common benefits, and common interests. These indicators are drawn from existing literature but are not exhaustive.

3.1.1. Common Thinking

Thinking is a rational and systematic process through which knowledge is processed and solutions are formulated. Individual differences in emotional and cognitive capacities result in diverse thinking styles, which influence decision-making outcomes. In the absence of a unifying rationality, individual thought patterns are unlikely to align, making convergence toward group solutions more difficult.

3.1.2. Common Goals

Decision-makers often pursue distinct personal goals shaped by their values and motivations. However, collective decision-making requires identifying and working toward shared objectives. The motivation for collective efforts is largely driven by the desire to achieve these joint goals. As such, aligning individual aspirations with collective targets is crucial for consensus-building and effective group functioning.

3.1.3. Common Benefits

The concept of benefit emerges when individuals evaluate the utility and appropriateness of an idea. In collective settings, individuals perceive themselves as stakeholders in achieving mutual gains. Organizations, particularly in the business sector, are increasingly emphasizing shared benefits to foster organizational unity and sustainability. Achieving common goals enables groups to secure advantages that are equitably distributed among members.

3.1.4. Common Interests

Interest denotes a desire or tendency toward a particular subject or action. It functions as a motivational force in decision-making and goal pursuit. Verified benefits often lead to increased interest and emotional engagement, which are vital for successful outcomes. When group members share common interests, they are more likely to remain aligned with collective goals and reduce deviations from agreed pathways.

These indicators form the basis for evaluating common rationality in organizational and collective contexts. They not only facilitate coherent decision-making but also strengthen group cohesion and direction.

3.2. Collective Decision-Making

Collective decision-making refers to the process through which groups reach conclusions or take actions based on the inputs and interactions of their members. It is a critical component in organizational and group settings, as it fosters inclusivity and enhances the quality of decisions. The following indicators, while not exhaustive, represent key elements that characterize effective collective decision-making: voting, information sharing, meetings, and consultation.

3.2.1. Voting

Voting is a formal mechanism used to capture the preferences of group members in collective decision-making contexts. The procedural frameworks that govern voting play a vital role in ensuring transparency and fairness. Voting serves as a decision-facilitating tool that helps aggregate individual preferences to

arrive at a group consensus. It is also recognized for its ability to enhance the efficiency and acceptability of decisions.

3.2.2. Information Sharing

Effective collective decisions are contingent upon the extent and quality of information shared among group members. Information sharing enables participants to integrate diverse perspectives and knowledge bases, leading to more informed decisions. This process typically occurs through both direct and indirect interactions among agents. Information exchange not only empowers individuals but also enhances group learning and decision accuracy.

3.2.3. Meetings

Meetings provide a structured platform for group members to deliberate collectively on specific issues. These gatherings—whether physical or virtual—foster engagement and inclusivity, which are essential for democratic decision-making [4]. Meetings contribute significantly to decision quality by facilitating discussion, clarification of viewpoints, and consensus-building. Metrics for evaluating the effectiveness of meetings include the number of decisions made and the time taken to reach those decisions.

3.2.4. Consultation

Consultation involves seeking advice, feedback, or expert opinion before arriving at a final decision. It is a critical step that can significantly influence the direction and quality of decision outcomes [4]. Consultative processes reshape the information environment and contribute to more reflective and inclusive decisions, even if the final authority does not strictly adhere to the advice received [19]. Thus, consultation is not only a knowledge-enhancing practice but also an essential dimension of collective decision-making.

These indicators collectively emphasize the dynamic and participatory nature of collective decision-making. By incorporating diverse voices and systematically processing information, collective decision-making enhances group coherence and strategic alignment.

3.3. Social Capital

Social capital is a vital resource in collective decision-making processes, as it encapsulates the networks, trust, and shared norms within a community or organization. This section outlines key indicators influencing social capital and its relationship with collective decision-making, particularly in managerial contexts.

3.3.1. Reaching Consensus

Reaching consensus is a pivotal aspect of collective decision-making that fosters group cohesion and effective collaboration. Consensus enhances member participation and provides a platform for unified movement towards a common goal. In the context of collective decision-making, achieving agreement on desired outcomes is essential for mobilizing members and aligning their efforts. Consensus-building is fundamental to mutual understanding and cooperation, and it is directly supported by strong social capital, which facilitates the exchange of information and builds unity within the group.

3.3.2. Reducing Conflicts

Conflict is a common outcome in decision-making processes where cooperation is lacking. When individuals or groups are focused on their own benefits at the expense of others, it results in competitive dynamics that increase conflict [4]. However, the establishment of cooperation significantly reduces these conflicts. Effective collective decision-making helps mediate disputes and fosters resolution, contributing to a more harmonious environment. Social capital plays a key role in mitigating conflict by encouraging cooperative behavior and promoting trust among group members.

3.3.3. Collective Commitment

Collective commitment refers to the sense of belonging and cohesion that individuals feel towards their group or organization. When members are invested in collective decision-making processes, they are more likely to demonstrate commitment to the goals and outcomes of the group [17]. This sense of commitment enhances organizational unity and drives higher levels of participation in decision implementation. The social exchange model underscores the importance of collective decision-making in fostering organizational commitment, as employees are more motivated to contribute to decisions that they have had a role in shaping.

3.3.4. Increasing Participation

One of the significant benefits of collective decision-making is its ability to increase participation among members of the organization. By incorporating mechanisms such as polling and voting, collective decision-making encourages active involvement in social and organizational issues, thereby supporting the development of social capital. Through participation, individuals gain insights and knowledge that enhance their ability to address organizational challenges [19]. Moreover, active involvement in decision-making can increase members' understanding of the decision-making process, leading to better implementation and stronger collective outcomes.

These indicators collectively highlight the importance of social capital in fostering cooperation, reducing conflicts, and enhancing commitment and participation within groups and organizations.

4. Conceptual Model

This study investigates the interplay between common rationality, collective decision-making, and social capital within organizational contexts. Our conceptual model is primarily grounded in social exchange theory, which provides a theoretical lens through which we examine how individual interactions within collective decision-making processes contribute to broader organizational outcomes. Social exchange theory posits that individuals engage in interactions based on perceived costs and benefits, seeking to maximize rewards and minimize costs. Within our framework, the pursuit of common rationality in collective decision-making can be viewed as a form of social exchange. Participants invest time, effort, and cognitive resources in reaching a shared understanding, anticipating benefits such as improved decision quality, enhanced interpersonal relationships, and increased influence over outcomes. The perceived benefit of this exchange is not only the potential for better decisions but also the development of trust and reciprocity among members.

Complementing social exchange theory, we also draw upon participatory rationality theory. Participatory rationality emphasizes the importance of inclusive dialogue and deliberation in decision-making processes. It suggests that when individuals are allowed to participate meaningfully in decision-making, their rationality is enhanced through exposure to diverse perspectives and information. This aligns with the concept of common rationality, which emphasizes the integration of diverse viewpoints to achieve a shared understanding. Participatory rationality theory helps explain the cognitive and communicative processes involved in reaching common rationality within collective decision-making. It suggests that through open communication, active listening, and reasoned argumentation, participants can move towards a shared understanding of the issues at hand, even if they initially hold differing opinions.

Social capital, in this model, is considered a key outcome variable. It represents the network of relationships, shared norms, and trust that emerges from collaborative interactions. We argue that the experience of participating in collective decision-making processes characterized by common rationality fosters trust and shared understanding, which, in turn, contributes to the accumulation of social capital within the organization. The shared understanding and trust developed through participatory processes create a sense of collective ownership and shared purpose, strengthening the social fabric of the organization.

This study proposes that collective decision-making mediates the relationship between common rationality and social capital. A mediating relationship is hypothesized because we argue that the influence of common rationality on social capital is not direct. Instead, common rationality affects social capital through its impact on the process of collective decision-making. Common rationality provides the foundation for effective collective decision-making, and it is this effective process that cultivates social capital.

Collective decision-making is specifically chosen as the mediator because it represents the mechanism through which common rationality is translated into social capital. Collective decision-making is the arena where common rationality is put into action. When individuals strive for common rationality in their collective decision-making, they engage in behaviors that build social capital. These behaviors include open communication, active listening, collaborative problem-solving, and trust-building. It is through these behaviors, enacted within the collective decision-making process, that trust, shared understanding, and reciprocal relationships – the building blocks of social capital – are developed. Therefore, collective decision-making serves as the crucial link between common rationality and social capital. It is not merely a contextual factor; it is the active process that facilitates the transformation of common rationality into tangible social capital.

In this study, the content analysis technique has been utilized to identify key indicators and develop the structures of conceptual models. Content analysis is the process of systematically analyzing and interpreting text, audio, or visual data. It involves identifying patterns, themes, and other meaningful insights to better understand the content and its context [26].

The process of content analysis involves several steps. First, the researcher defines the research question or objective and determines the scope of the analysis. Then, the researcher selects the sample of content to be analyzed and identifies the relevant data to be extracted. The next step is to create a coding scheme or categories that will be used to classify the data. This involves breaking down the content into manageable units and assigning codes or labels to represent different themes or concepts. Once the

coding scheme is established, the researcher applies it to the data and records the results. Finally, the researcher analyzes and interprets the data to draw conclusions and make insights about the content and its context [14]. In light of this procedure, the primary aim of the study is to explore the correlation between common rationality, collective decision-making, and social capital. Relevant materials about the three key concepts are gathered and analyzed. Subsequently, the gathered information is scrutinized, and the identified sentences and paragraphs are classified into three distinct categories: common rationality, collective decision-making, and social capital.

As a consequence of this examination, a total of 11 indicators have been derived, which are categorized into three primary constructs. The theoretical framework encompasses the three primary constructs of common rationality, collective decision-making, and social capital, with each construct consisting of four indicators (Figure 1).

The indicators of common rationality encompass four key components, namely common thinking, common benefits, common goals, and common interests. Also, collective decision-making is distinguished by four key indicators: information sharing, voting, consultation, and meeting. Lastly, social capital is defined by four indicators: reaching consensus, reducing conflicts, collective commitment, and increasing participation. According to the designed conceptual model, three hypotheses have been formulated:

- H1: Common rationality has a positive and significant relationship with collective decision-making.
- H2: Collective decision-making has a positive and significant relationship with social capital.
- H3: Common rationality has a positive and significant relationship with social capital.

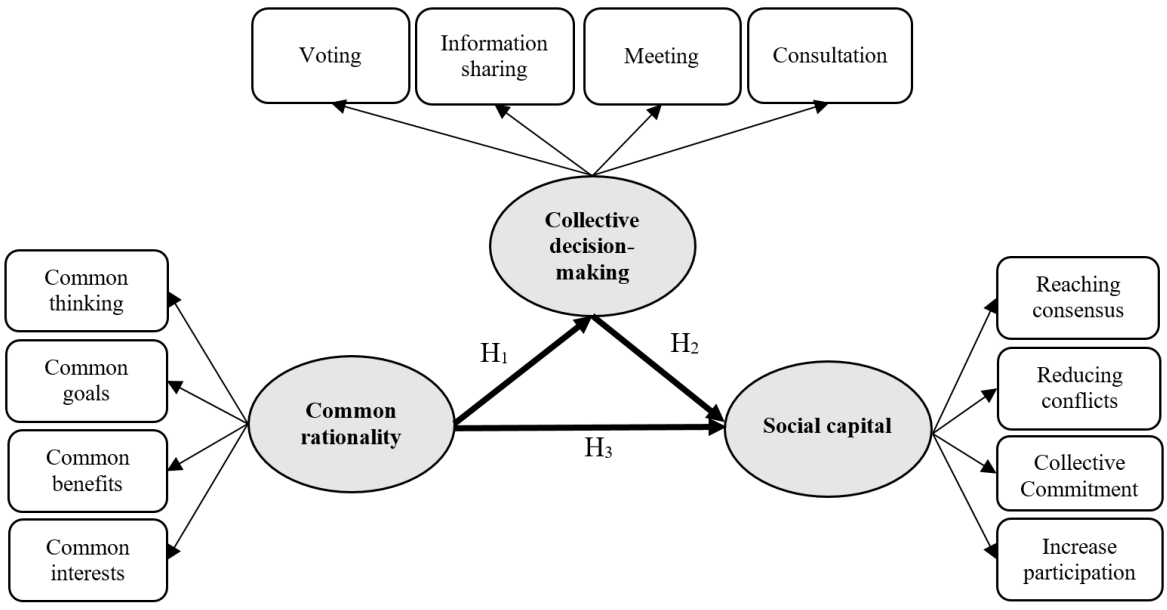

Figure 1. Conceptual model

To verify the analysis and validate the construct and logical connections among the indicators, interviews were carried out with university faculty members, managers, and employees from Iranian government organizations. The interviewees possess expertise in management and social sciences, with a common attribute being their familiarity with collective decision-making. These interviews were conducted

in a structured manner, aligning the questions with the research hypotheses. During these interviews, which ranged from 20 to 100 minutes in duration, the interviewee was provided with the conversation topics beforehand to ensure their active participation and the provision of relevant information. Initially, the conceptual model's constructs and indicators were identified through content analysis, followed by seeking the experts' opinions on these constructs and indicators, as well as their interrelationships. The results of this content analysis, including the coding scheme, classification criteria, and illustrative excerpts, are presented in the Appendix. The questions posed aimed to confirm the identified indicators and assess the accuracy of the relationships between them. The outcomes of the interviews indicate that while the experts do not confine the identified indicators solely to those cases, they do validate the identified instances and the logical connections among the indicators and the construct.

It is worth noting that the practice of requesting introductions to other individuals was initiated after the interview sessions, allowing participants to recommend the next person more effectively after becoming acquainted with the research objectives and question types. This sampling technique is referred to as the snowball method in methodological literature, where the sample size is determined dynamically, and sampling continues until theoretical saturation is reached [12]. A total of 32 professionals in this particular domain were interviewed, and the demographic information of the interviewees is presented in Table 1.

Table 1. Demographic details of the interviewees

Percent	Frequency	Feature	Parameters
44	14	University faculty members	Affiliation
31	10	Manager	
25	8	Employee	
69	22	Ph.D.	Level of education
25	8	Masters	
6	2	B.S.	
59	19	Male	Gender
41	13	Female	
100	32	Total	

5. Methodology

The present research employs a descriptive and analytical methodology, with data collection relying on library resources for theoretical foundations. The statistical population in this study are experts in the research area. To ensure the specificity of the subject, targeted sampling has been conducted. Experts who possess knowledge and experience in the research area are included as part of the statistical sample. The inclusion of experts in the sampling process is justified by their specialized expertise, which enhances the accuracy and reliability of the sample. By leveraging the insights of these professionals who possess a deep understanding of the subject matter, the sampling process can be optimized to gather the most pertinent and representative data. Consequently, this approach facilitates the generation of more precise conclusions and enables better decision-making based on the sample's results. The experts involved in this research meet at least one of the following criteria:

1. Have a doctorate in the field of management sciences and social sciences.

2. Have at least fifteen years of work experience.
3. Possess a minimum of five years of managerial experience.
4. Have at least five years of experience teaching courses related to decision-making or social sciences.

5.1. Sample size

The sample for this study consisted of managers and employees actively involved in or directly supervising collective decision-making processes within Iranian governmental organizations. While some respondents may have held adjunct faculty positions at universities, their primary role within the government organization was the basis for inclusion in the sample. The targeted organizations included the Ministry of Education, the Ministry of Energy, the Ministry of Agriculture, and the Ministry of Industry and Mining. Participants were identified using the snowball sampling method with the assistance of department heads, internal contacts, and others based on their demonstrated experience in collective decision-making. This purposeful sampling strategy was employed due to the focus on governmental organizations known to utilize collective decision-making.

The questionnaire was administered between January to March 2024 to 115 identified individuals, of whom 98 provided usable responses for statistical analysis. A limitation of this study remains the restricted access to comparable organizations in other countries employing similar methods. Demographic variables, including organizational affiliation, educational attainment, gender, and age, were included as controls to account for potential variations among participants. Descriptive statistics for these demographic variables are presented in Table 2.

Table 2. Demographic details of the interviewees

Percent	Frequency	Feature	Parameters
27	26	University faculty members	Affiliation
39	38	Manager	
34	34	Employee	
52	51	Ph.D.	Level of education
29	28	Masters	
19	19	B.S.	
64	63	Male	Gender
36	35	Female	
13	13	<40	Age
33	32	40-50	
34	34	50-60	
20	19	>60	
100	98	Total	

5.2. Data Collection

According to the framework of the conceptual model, the questionnaire consists of three main divisions and a total of 11 questions. These questions are measured using a 5-point Likert scale, where respondents provide their agreement scores ranging from extremely low to extremely high. Based on the level of respondents' agreement with the question, it is adjusted from strongly disagree to strongly agree and they are given values from 1 to 5. The number 1 represents "strongly disagree" and the number 5 represents

"strongly agree". Likert scale is used as a powerful tool to ask attitudinal questions and get measurable answers from respondents. The Likert scale is suitable for obtaining rating scale data when nonparametric techniques are preferred [13].

We implemented several procedural and statistical remedies to minimize the potential for Common Method Bias (CMB) to influence our results. CMB is a potential concern in studies that rely on self-reported data from a single source. To mitigate the potential impact of CMB on our findings, we employed several procedural and statistical remedies.

5.2.1. Procedural Remedies

Anonymity and Confidentiality: Participants were assured of the anonymity and confidentiality of their responses, which can reduce their tendency to respond in socially desirable ways.

Separation of Measures: While all constructs were measured in the same questionnaire, we attempted to separate the measurement of independent and dependent variables as much as possible by placing them in different sections of the survey. This can reduce the likelihood of participants' responses to one set of items influencing their responses to another set of items.

Clear and Concise Wording: We used clear and concise language in the questionnaire items to minimize ambiguity and confusion, which can reduce response biases.

5.3. Data Analysis Techniques

Data analysis is conducted using Excel, SPSS, and Smart PLS 4.0. Smart PLS is utilized to analyze the conceptual model. Structural Equation Modeling (SEM) is a statistical technique employed to analyze data derived from questionnaires. It enables researchers to investigate the correlations between indicators and constructs, as well as ascertain the individual contributions of each element within the conceptual model. Through the use of SEM, scholars can thoroughly investigate theories regarding the relationships between visible and hidden factors. This method enables the assessment of the accuracy and consistency of conceptual frameworks in particular settings. SEM has become widely accepted as a fundamental instrument for examining complex connections among variables in diverse scientific research fields [24].

The use of SEM technique is utilized to assess the accuracy of the variables and connections identified in the content analysis of the theoretical framework, as well as the predictive power of the model created. Hence, SEM and its examination elements (including coefficient of determination, factor loading, overall model fit, and goodness-of-fit) are utilized to ascertain the nature of the association between the three constructs of "collective decision-making," "social capital," and "common rationality." Additionally, they are employed to validate the conceptual model by evaluating eleven identified indicators.

Cronbach's alpha is utilized for the assessment of the questionnaire's reliability, with content validity and convergent validity being used to determine its validity. Before the distribution of the questionnaires, feedback from university professors and specialists in the area of collective decision-making is requested to guarantee the content validity of the questionnaire. For a questionnaire to be deemed valid, the P-value should be less than 0.05, and the T-value must surpass 1.96.

The regression coefficient is used to check the relationship between variables. The regression coefficient is a statistical measure that represents the relationship between two variables. It shows how much the dependent variable changes for every one-unit change in the independent variable. It is an important

tool for analyzing and interpreting regression models in various fields. In this conceptual model, common rationality is regarded as an index (independent) variable, collective decision-making as a mediating variable, and social capital as a dependent variable.

The R^2 criterion is employed to assess the explanatory capability of the model by quantifying the coefficient of determination. It provides insights into the accuracy of predicting dependent variables based on independent variables. Factor loading is another criterion that is used in data analysis to measure the strength of the relationship between a latent variable and its corresponding observed variables in the path analysis procedure. In the ideal scenario, factor loading should exceed 0.4 [25].

The assessment of a model's efficacy is largely dependent on the overall model fit, which consists of two crucial components: the measurement model and the structure. The goodness-of-fit (GOF) criterion is employed in this research to assess the overall model fit [25].

$$GOF = \sqrt{(\text{Communalities}) \times (R^2)}$$

The Communalities value is determined through the mean of the Average Variance Extracted (AVE) values of the latent variables. Regarding the Goodness of Fit (GOF) criterion, values of 0.01, 0.25, and 0.36 are categorized as weak, medium, and strong, respectively.

6. Results

The path coefficient of the model has been calculated using SmartPLS software. The path coefficient of a model refers to the strength of the relationship between the variables in the model. It is a measure of the extent to which a change in one variable affects another variable in the model.

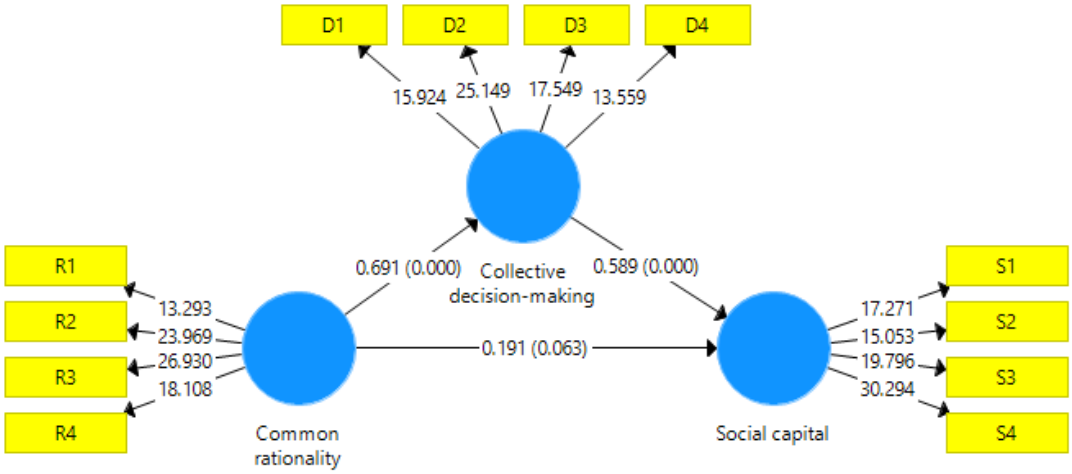

Figure 2. Path coefficient of the model

Figure 2 illustrates that common rationality is regarded as an autonomous factor, while social capital is viewed as a reliant factor, and collective decision-making serves as an intermediary factor. To ascertain

the validity of the designed model, evaluation criteria can be employed by examining the gathered data. If the model fails to meet the fit criteria, it becomes imperative to make necessary modifications. The fit criteria for the conceptual model are outlined in Table 3.

P-Value	T-Value	Stand. Deviation (STDEV)	Mean (M)	Coeff. Of Determ. (R^2)	Regr. Coeff. (R)	Causal Relation
0.000	17.676	0.039	0.701	0.478	0.691	Common rationality → Collective decision-ma
0.000	6.447	0.091	0.589	0.538	0.589	Collective decision-making → Social capita
0.063	1.865	0.102	0.195	-	0.191	Common rationality → Social capital

Table 3. Conceptual model valuation criteria

Based on the data presented in Figure 2 and Table 3, the statistical significance level (P-value) was calculated for the associations between the variables "collective decision-making → social capital" and "common rationality → collective decision-making" below 0.05, with a T-value exceeding 1.96. These findings suggest a significant relationship between these variables at a significance level of 0.05. In contrast, the P-value for the correlation between "common rationality → social capital" is above 0.05, while the T-value is less than 1.96. Consequently, the correlation between common rationality and social capital variables is considered to be insignificant.

The regression coefficient for the link between "common rationality → collective decision-making" is 0.691, whereas for "collective decision-making → social capital" it is 0.589, indicating a positive and direct correlation between these variables. On the other hand, the regression coefficient for "common rationality → social capital" is 0.191, implying a weak relationship between these two variables. Therefore, it can be argued that common rationality is primarily achieved through collective decision-making, leading to improved social capital with a minimal and insignificant effect.

7. Results

The R^2 values for the variables of "common rationality" and "collective decision-making" are 0.538 and 0.478, respectively, demonstrating a relatively strong predictive capability of these two intermediary and outcome variables. Subsequently, factor loading is employed to assess the correlation between observed variables and latent variables within the framework. The factor loading values for the research model indicators are presented in Table 4.

As previously mentioned, Table 4 displays the factor loading values, which indicate the relationship between the observed variables and latent variables. It is recommended to eliminate variables with a factor loading below 0.4 from the model. Upon conducting the calculations, it was determined that all indicators possess a factor load greater than 0.4. Consequently, all indicators are considered to be valid and none of them are excluded from the model.

In the subsequent analysis presented in Table 5, the assessment of the questionnaire's reliability and validity was conducted using Average Variance Extracted (AVE), Composite Reliability coefficient, and Cronbach's alpha coefficient.

Convergent validity is assessed using the Average Variance Extracted (AVE), as indicated by the findings in Table 5. AVE is considered satisfactory if it exceeds 0.5. The questionnaire is deemed valid as the Average Variance Extracted (AVE) for all three variables exceeds 0.5. Moreover, the questionnaire

Factor Loading	Indicator	Row
0.768	Social capital → S1	9
0.774	Social capital → S2	10
0.795	Social capital → S3	11
0.865	Social capital → S4	12
0.736	Collective decision-making → D1	5
0.813	Collective decision-making → D2	6
0.771	Collective decision-making → D3	7
0.731	Collective decision-making → D4	8
0.769	Common rationality → R1	1
0.831	Common rationality → R2	2
0.804	Common rationality → R3	3
0.804	Common rationality → R4	4

Table 4. Factor loading of model indices

Q^2=(1-SSE/SSO)	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha	Variables
0.401	0.644	0.878	0.819	Common rationality
0.309	0.583	0.848	0.762	Collective decision-making
0.404	0.642	0.878	0.815	Social capital

Table 5. Reliability and validity coefficients of model variables

demonstrates satisfactory reliability when both Cronbach's alpha coefficient and composite reliability coefficient surpass 0.7. As indicated in Table 5, all coefficients are above 0.7, confirming the questionnaire's reliability.

Another essential aspect to take into account when assessing the predictive capability of the model is Q^2. The values documented in the Q^2 segment exceed 0.3, indicating a good fit for the model that has been devised.

8. Goodness-of-Fit (GOF) and Reliability Analysis

The goodness-of-fit (GOF) criterion is employed to assess the overall model fit, yielding a resulting value of 0.563, which represents the measure of how well the model fits the observed data. Given that the calculated value exceeds 0.36, it can be concluded that the general model fit is satisfactory [1, 25].

$$\text{GOF} = \sqrt{(\text{Communalities}) \times (\text{R}^2)} = \sqrt{0.623 \times 0.508} = 0.563$$

Additionally, in assessing the robustness of questionnaire outcomes, reliability is employed similarly to examine the consistency and variability of variance. The presence of measurement inaccuracies and variability between two comparable test forms can diminish reliability [? ?].

Based on the findings presented in Table 6, the internal correlation among the questions is calculated to be 0.372, indicating that the correlation among the endogenous variables falls within the range of 0.2 to 0.4. Moreover, the endogenous correlation among the questions is deemed acceptable. The reliability of the questionnaire is reported to be 0.854, while the unbiased reliability stands at 0.867. Both reliability scores exceed the threshold of 0.7, signifying that the questionnaire demonstrates adequate reliability.

A post-hoc power analysis was conducted using G-Power 3.1 to determine the minimum sample size required to achieve a statistical power of 0.83, with an alpha level of 0.05 and an estimated effect size

Reliability Statistics	Value
Common Mean	4.932
Common Variance	0.486
True Variance	0.171
Error Variance	0.235
Common Inter-Item Correlation	0.372
Reliability of Scale	0.854
Reliability of Scale (Unbiased)	0.867

Table 6. Reliability coefficients of the questionnaire

(f^2) of 0.15. The analysis indicated that a sample size of 98 participants would be sufficient to detect the hypothesized effects with the desired level of power [6].

9. Discussion

This study investigated the relationships between common rationality, collective decision-making, and social capital. Our findings provide empirical support for the hypothesized indirect effect of common rationality on social capital through collective decision-making, while the direct effect of common rationality on social capital was not supported.

The results, as illustrated in Figure 2, demonstrate a strong indirect pathway from common rationality to social capital via collective decision-making. The path coefficients for the indirect effects (0.691 and 0.589) were substantially larger than the direct effect of common rationality on social capital (0.191). This suggests that common rationality, while a valuable organizational resource, exerts its influence on social capital primarily through its impact on collective decision-making processes. This finding aligns with studies on participatory leadership, collaborative cultures, etc.. It indicates that when individuals within a group share a common understanding and work towards common goals, it fosters more effective collective decision-making, which, in turn, strengthens social capital.

The significant mediating role of collective decision-making underscores the importance of participatory and inclusive decision-making practices. Our findings suggest that managers seeking to enhance social capital should focus on creating environments that encourage collective decision-making. This might involve implementing strategies such as open forums for discussion, structured decision-making processes, training in collaborative skills, etc. These strategies can help translate the potential of common rationality into tangible social capital by fostering consensus, reducing conflict, promoting commitment, and increasing participation.

The non-significant direct effect of common rationality on social capital (H3) suggests that common rationality alone, without being channeled through collective decision-making, is not sufficient to build social capital. While common understanding and shared goals are important, they need to be actively applied and integrated through collaborative processes to have a meaningful impact on social capital. This finding could be explained by the fact that individuals may hold shared understandings but not have the opportunity or mechanisms to act upon them collectively. This highlights the critical role of collective decision-making as a mediating mechanism in the relationship between common rationality and social capital.

9.1. Theoretical Implications

This study makes several important theoretical contributions. First, it extends social exchange theory by demonstrating the mediating role of collective decision-making in the relationship between common rationality and social capital. This adds to the existing literature by providing a more nuanced understanding of the mechanisms through which social capital is built within organizations. Second, our findings highlight the importance of participatory rationality theory in explaining the link between common understanding and collaborative action. Specifically, our research suggests that when individuals are given opportunities for meaningful participation in decision-making, their rationality is enhanced, leading to greater alignment with collective goals. Third, this study develops a novel integrated model that connects common rationality, collective decision-making, and social capital. This model offers a valuable framework for future research by providing a more holistic understanding of the interplay between these constructs and suggesting specific pathways for intervention.

9.2. Practical Implications

The findings of this research have several important practical implications for managers and organizations. First, our study suggests that investing in training programs that enhance collaborative decision-making skills can be an effective way to build social capital within teams and organizations. Second, our results indicate that creating opportunities for open communication and dialogue can foster common understanding and lead to more effective collective decision-making. Specifically, managers can implement regular team meetings with clearly defined agendas, establish online platforms for sharing ideas and feedback, or create cross-functional teams to address complex organizational challenges. Third, our research highlights the importance of aligning individual incentives with collective goals to encourage participation and collaboration. For example, organizations can implement profit-sharing programs, offer team-based bonuses, or recognize and reward collaborative efforts. By implementing these strategies, organizations can create a more collaborative and inclusive work environment, improve employee engagement and motivation, and enhance organizational performance and innovation.

10. Conclusion

This study set out to investigate the intricate relationships between common rationality, collective decision-making, and social capital. Specifically, we sought to answer the following research questions:

- Does common rationality influence collective decision-making?
- Does collective decision-making mediate the relationship between common rationality and social capital?
- Does common rationality have a direct effect on social capital?

Our findings provide strong support for the first two research questions. The results clearly demonstrate a significant positive relationship between common rationality and collective decision-making. As hypothesized, when individuals within a group share a common understanding, common goals, common benefits, and common interests, it fosters more effective and collaborative decision-making processes.

Furthermore, our analysis revealed a robust mediating effect of collective decision-making on the relationship between common rationality and social capital. This indicates that the positive influence of common rationality on social capital is primarily realized through its impact on collective decision-making. When common rationality is translated into active participation, information sharing, consultation, and collaborative problem-solving within collective decision-making, it significantly contributes to the development of social capital, as evidenced by increased consensus, reduced conflict, stronger commitment, and greater participation.

However, our findings did not support the third research question regarding a direct effect of common rationality on social capital. The non-significant direct path suggests that common rationality alone, without the mediating role of collective decision-making, is not sufficient to generate social capital. This highlights the critical importance of process. While shared understanding and common goals are essential ingredients, they must be actively channeled through collaborative practices within collective decision-making to translate into tangible social capital.

This study makes several important contributions. First, it empirically demonstrates the crucial role of collective decision-making as a mediating mechanism between common rationality and social capital, a relationship that has been largely unexplored in previous research. Second, it offers practical implications for managers seeking to enhance social capital within their organizations. Our findings suggest that fostering a culture of collective decision-making, characterized by open communication, active participation, and collaborative problem-solving, is essential for leveraging the benefits of common rationality and building stronger social capital. By prioritizing inclusive decision-making processes, organizations can unlock the potential of their human capital and achieve positive outcomes such as reaching consensus, reducing conflicts, collective commitment, and increasing participation.

This research was not without limitations. The cross-sectional nature of our data limits our ability to draw causal inferences about the relationships between the constructs. Future research employing longitudinal or experimental designs would be valuable in establishing causality. Additionally, the study was conducted within a context of Iranian governmental organizations. While this context is relevant and important, the generalizability of our findings to other contexts may be limited. Future research could explore these relationships in diverse cultural and organizational settings to enhance the external validity of the findings. Finally, while our model explained a substantial portion of the variance in social capital, other factors not included in the model may also play a significant role.

Future research could address these limitations by:

1. Conducting longitudinal studies to examine the causal dynamics between common rationality, collective decision-making, and social capital over time.
2. Comparing and contrasting these relationships across different cultural and organizational contexts to identify potential moderating factors.
3. Expanding the model to include other relevant variables that may influence social capital, such as leadership style, organizational culture, or communication patterns.
4. Investigating the specific mechanisms within collective decision-making that contribute most strongly to the development of social capital.

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