

The Influence of Board Diversity and Board Conflict on Performance in Consumer Cooperatives in South Korea

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ABSTRACT

Board of directors are important elements in the structure and management of cooperatives. This study examines the relationships between cooperative board diversity (i.e., value and functional) and three performance variables (social performance, operational performance, and democratic performance). Additionally, we hypothesize that conflict (task or relational) mediates these relationships. We argue that decision making, policy, and performance depend on the composition of a board. The empirical analysis, using a sample of 423 female board members in 66 local consumer cooperatives in South Korea, finds that board value diversity can have a negative effect on performance, even though their functional background diversity may be positive, while conflicts over performing tasks may mediate functional background diversity and performance. More specifically, the results indicate that board value diversity is positive and significantly related to relational conflicts, while functional background diversity is negative and significantly related to task conflicts. The findings suggest that performance of cooperatives can be improved with more diverse board with functional backgrounds. We hope that this paper could offer a significant contribution to both the board and corporate governance literature and the diversity literature.

KEY-WORDS

DIVERSITY, DIVERSITY POLICIES, BOARD, CONSUMER COOPERATIVES, SOUTH KOREA

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1. Introduction

Cooperatives are a type of social economy organization that pursue social value through economic sustainability. They are jointly owned by their members through a system of democratic decision-making and work to tackle social problems that may arise due to market and government upheaval by the use of inclusive economic performance (Zamagni and Zamagni, 2010; Bouchard and Rousselière; 2015). The International Cooperative Alliance (ICA) states that a cooperative is “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise” (ICA, 2022). A cooperative is an enterprise owned by its members, which has the purpose of satisfying the common benefits of its members. It is, indeed, different from corporations owned by investors, and whose purpose is to maximize the profits of shareholders. It is also clearly distinguished from the society in that it operates in the marketplace. Since cooperatives are involved in people-centered businesses, human resources such as board of directors (BOD) can play an important role in sustaining a competitive advantage. It is vitally important for cooperatives to achieve the goal of sustainable development, based not only on tangible assets such as stores, facilities, equipment, etc., but also on intangible assets such as the board of directors, licenses, and so forth. In this paper we argue that intangible assets, in particular board characteristics, have an important effect on performance. It is important for cooperatives to exploit their human resources properly in order to achieve organizational goals. In order to do so, cooperatives must identify how human resources affect their performance. However, there are not many studies of cooperatives, especially regarding performance factors.

Cooperatives and for-profit firms may appear similar, but they have different characteristics in terms of their operation and membership. In particular, the role and composition of the board of directors may be very different (Park et al., 2020). Generally, the boards of for-profit firms have the authority to appoint the CEO and other executive personnel, evaluate firm performance, and determine salary and incentives (Monks and Minow, 2004). Cooperative boards are elected by their members and represent them. The boards make and execute decisions about cooperative strategies based on the authority delegated by the membership. In achieving the goals of the association, including social needs, and as an enterprise seeking economic efficiency, the boards of cooperatives play a core role. Thus, we posit that the resources and information conveyed by the board are major factors influencing the performance of cooperatives.

Researchers have asserted that membership diversity is an important resource to sustain a competitive advantage (e.g., McMahan, Bel and Verick, 1988; Urbancová, Hudáková and Fajčíková, 2020), but few empirical studies have been conducted regarding the direct effect of membership diversity on performance. For many years, researchers in the field of cooperatives have shown little interest in diversity related to different background, cultures, and values. However, diversity is a crucial factor that may influence the performance of organizations (e.g.,

Buyl et al., 2011; Tekleab et al., 2016), therefore research on the diversity of organizations is needed in cooperatives. Such diversity can play different roles depending on the context of the organization and the type of diversity (Tekleab et al., 2016). On the one hand, it serves as a major factor in improving the innovation and creativity of organizations; on the other hand, it can be the cause of conflict in an organization (Jehn et al., 1999). Thus, this study explores the relationship among board diversity, board conflict and performance in consumer cooperatives. Specifically, this paper looks at board value diversity and board functional background diversity because these two variables are much less explored in terms of the conflict and performance of cooperative even though two variables are important to pursue the principles of cooperatives. In this study, conflict variables are applied by dividing them into two according to the characteristics of the independent variables. Functional background diversity analyzes the relationship with performance using task conflict as a mediating variable and value diversity using relational conflict as a mediating variable. We use social performance, operational activity performance, and democratic performance as dependent variables considering the characteristics of cooperatives. Moreover, in this study, we control board diversity as regards age, tenure, and education.

Consumer cooperatives in Korea emerged in the 1920s. In the 1980s, direct trading of agricultural products was the main business, and this made possible their growth and development. These organizations are characterized by safe food, women's leadership, democratic governance, and voluntary board membership (Shin and Lee, 2018). Moreover, they have a positive impact on Korean society by implementing various activities such as eco-friendly free school meals, vitalization of local communities, social and economic participation channels for women with career interruptions, and the consumer sovereignty movement (Shin and Lee, 2018). In Korea, there are four major consumer cooperatives, namely are iCOOP, Hansalim Co-op, Dure Co-op, Happiness-Centered Co-op. Although their history and mission are slightly different from each other, they have in common that they are ultimately established and operate for the realization of social values such as protection of the environment, community contribution and cooperation. The total number of their members was 1,187,899 in 2018 (Lee, 2022). Among them, we have selected iCOOP, with 100 local cooperatives, to examine the relationship between diversity, conflict, and performance in BODs. Each local cooperative is implementing the mission of iCOOP according to the characteristics of the local context and of its members.

In doing so, the study contributes to BOD diversity research in four major ways. First, in examining the mediating role of conflict: we adapt two types of conflict, task conflict and relational conflict. They appear differently depending on the environmental context. Task conflict is related to functional background diversity and relational conflict is related to value diversity. Task conflict exists when BODs disagree about the tasks with differences in ideas and perspectives, whereas relational conflict exists when there is interpersonal incompatibility within BOD (Jehn, 1995). We expand diversity study by dividing conflict according to the types of diversity (functional background and value diversity) rather than one variable.

Second, in general, organizational researchers have measured only financial performance.

However, organizations have different indicators for measuring performance according to their characteristics and industries. Cooperatives are organizations which pursue democratic governance and social value as well as economic profit. Local BODs of iCOOP in South Korea sees also democratic governance and social value. They have a direct impact on the operation of their local cooperative, but indirectly affect economic profit. Therefore, it is necessary to apply these characteristics in performance variables. This study uses social performance, operational activity performance, and democratic performance as dependent variables. This reflects the characteristics and context of the research subject, and it is meaningful as various performance variables were presented.

Third, using a sample of 66 local cooperatives of consumer cooperatives in Korea, our study expands to a novel context. The growth of consumer cooperatives in Korea has been remarkable since 2000. This is the result of changes in people's perception of eco-friendly products, the need to revitalize local community and consumers' desire to secure a safety net for food (Lee and Choi, 2018). Consumer cooperatives have grown into representative organization of Korean cooperatives. To support the revitalization and expansion of cooperatives, the research about the factors affecting cooperatives performance, which it is still relatively underdeveloped, is needed. The results of this study suggest that other cooperatives that promote scale expansion and growth and other organizations that are similar to consumer cooperatives can be used as a benchmarking. As organizations become more diverse, it is vital for scholars and practitioners to know what diversities affect performance.

In addition, country research can serve to expand the theory by redefining and adapting the existing theories established predominantly in the United States (Crane et al., 2016). This study offers a theoretical contribution in redefining and adapting existing theories on diversity, conflict and performance by studying cooperatives in South Korea.

2. Theory Development and Hypotheses

2.1. Board Diversity and Performance

Diversity refers to the difference among members, based on attributes that lead to the perception that others are different from us (Williams and O'Reilly, 1998). Interest in the relationship between team diversity and performance is increasing (Klein et al., 2011; Triana et al., 2021). Many researchers have investigated the effect of team diversity on performance (e.g., Fouskas & D'Isanto, 2021; Wu et al., 2022; Zimmerman, 2008; Narayan, Sidh and Volberda, 2021; Triana et al., 2021), and focused on BOD's diversity (e.g., Wu et al., 2022; Veltri, Mazzotta and Rubino, 2021).

Diversity can be divided into task diversity and relational diversity (Van Knippenberg, De Dreu, and Homan, 2004). Deep diversity includes values, beliefs, and attitudes, while surface diversity includes gender, age, race, and ethnicity (Harrison, Price and Bell, 1998). Pelled (1996) categorized demographic diversity as visibility and job-related diversity which can include tenure, education,

and functional background. High visibility diversity involves age, gender, and racial characteristics that are visible to the naked eye. Much research has been conducted regarding the relationship between diversity and performance. Williams and O'Reilly (1998) aggregated forty years of studies on the impact of diversity on performance operating a classification of diversity through the social categorization perspective, the similarity-attraction perspective, and the perspective of informational decision making.

According to the social category perspective, when people consider themselves different from others, they tend to divide others into social categories. They separate in-groups from out-groups based on visible properties such as race, gender, and age. When in-groups and out-groups are differentiated in this way, prejudice toward out-groups may occur and communication within the group diminishes. People consider similar others as more friendly and trustworthy than those with more diverse traits. Through positive interaction, individuals can develop affinity for in-groups (Tsui, Egan and O'Reilly, 1992), and, as a consequence, the cohesion of the group will increase (O'Reilly, Caldwell and Barnett, 1989).

In the similarity-attraction perspective, diversity of biological attributes can lead to changes in processes such as conflict, cohesion, and communication, based on whether members feel similar or different to others in the group (Pfeffer, 1985). The similarities built on interaction with others can make people feel comfortable, but heterogeneity generally leads to less communication and cohesion. Individuals' loyalty to similar groups has a positive effect on performance while, on the contrary, their unfavorable attitude towards those considered different can lead to negative outcomes for the organization (Jehn et al., 1999). Similarity in values increases interpersonal attraction: values are related to life, work and preferences (Triana et al., 2021), are standards for guiding human behavior and foundational for human identity (Klein et al., 2011). Value diversity exists when team members assign different importance to each value type. The greater the variability in the importance, the greater the level of value diversity among team members (Woehr, Arciniega and Poling, 2013). Individuals whose values differ can have different assumptions and thoughts about one another's behavior, which makes it difficult to reach consensus or to collaborate with one another (Klein et al., 2011). Overall, teams with different values are more likely to be less cohesive and subsequently less performative due to the high level of conflicts and stress as a result of the heterogeneity in members' values. Thus, we propose,

Hypothesis 1: Board value diversity is negatively related to performance of cooperatives.

From the informational decision-making perspective, functional background diversity is interpreted in terms of exploiting information and solving problems. Functional background categories include finance, accounting, human resources, marketing, operation, engineering /R&D, strategy, law (Zimmerman, 2008). A group with a high level of functional background diversity may possess a variety of knowledge, skills and abilities related to their jobs, and may hold different views and opinions in terms of the tasks to be solved (Gruenfeld et al., 1996). Functional background diversity can be an advantage when it comes to absorbing skills, ability, information,

and knowledge. Therefore, greater functional background diversity may lead to more innovation and a greater ability to problem-solve tasks (Ancona and Caldwell, 1992; Bantel and Jackson, 1989). However, functional background diversity is not always positive related to performance, it varies in terms of diversity and groups (Van Knippenberg and Schippers, 2007; Horwitz and Horwitz, 2007). This is a good reason to investigate the impact of functional background diversity of board on the performance of consumer cooperatives in Korea.

Boards play a role in creating social value for the community as well as the consumer cooperative. Local cooperatives have similar but different goals, where boards of directors are mainly in charge of tasks related to promotion, commodity management, and the education of members. To carry out these tasks, cooperatives need to assign board members various functions contributing to the functional diversity of the board, an important element in sustaining local cooperatives. Therefore, we posit the following hypothesis:

Hypothesis 2: Board functional background diversity is positively related to performance of cooperatives.

2.2. Mediating role of Relational Conflict and Task Conflict

Conflict can occur when people have different or opposite views (Jehn, 1995). March and Simon (1958) referred to conflict as a difficult situation where an organization doesn't have clear decision-making criteria. In other words, conflict may occur during interactions between individuals or groups.

Conflict can be classified into relational conflict and task conflict (Jehn, 1995). The difference between relational conflict and task conflict is necessary for practitioners and scholars (Simons and Peterson, 2000). Relational conflict is the emotional conflict occurring in interpersonal relationships due to a difference in character, attitude, preferences, etc. It involves tension, annoyance, and hostility among team members (Simons and Peterson, 2000). Task conflict is a cognitive conflict that occurs when members have different views, ideas and opinions of a task. It is the perception of disagreement among team members about the task process and results (Simons and Peterson, 2000). Relational conflict involves human relations while task conflicts are related to the content or goals of a task (Jehn, 1995).

Diversity is one of the elements that can increase conflict (Williams and O'Reilly, 1998). Diversity related to social categories in particular can have a major impact on relational conflict that occurs due to individual factors such as preferences, political opinions, and human interactions (Peterson and Behfar, 2003). This relational conflict may have a negative effect on the performance of an organization since conflict causes tension and anger among members (Pelled, 1996) and reduces satisfaction in relationships with other people (Surra and Longstreth, 1990). As a consequence, difficulty in performing tasks, may result in low productivity. Therefore, we posit the following hypothesis.

Hypothesis 3: Board value diversity is positively related to relational conflict.

Task conflicts may occur when there is a difference of opinion or ideas about how to perform tasks. Studies show that task conflicts arise in the course of performing tasks by members with a

range of information, knowledge and perspectives. According to research, functional background diversity has a positive effect on task conflicts (Jehn, 1995). However, such findings do not apply in all contexts. Because boards of consumer-cooperatives are not hired but participate voluntarily, it is difficult to compose a board with the necessary ability and functionality.

Once the board is formed, the members must divide up tasks based on understanding and accepting that each person has different resources, knowledge, and skills. Boards carry-out tasks such as the Fair-Trade Campaign, local community revitalization, voluntary services for needy groups, commodity monitoring, etc. In order for the board of directors to perform various tasks, it is necessary to make quick decisions based on trust. Thus, we posit that functional background diversity may reduce task conflict.

Hypothesis 4: Board functional background diversity is negatively related to task conflict.

Acknowledging the contradictory results found in the literature, examining the impact of diversity on performance cited above, we hypothesize two mediating factors: relational conflict and task conflict. Buse, Bernstein and Bilimoria (2016) suggest that the adoption of functional inclusion is more impactful than social inclusion. In fact, without paying attention to the task-oriented conflict that are functionally inclusive, relational conflict from diverse value may not be as impactful. The investigation of the mediation hypotheses enables further understanding of the relationships between board diversity (value and function) and performance in cooperatives. Therefore, to further our understanding of the impact of board value and functional diversity on performance, we hypothesize that board task conflict, as well as relational conflict, will mediate the impact of board diversity on performance.

Hypothesis 5: Relational conflict mediates the relationship between board value diversity and performance of cooperatives.

Hypothesis 6: Task conflicts mediate the relationship between board functional background diversity and performance of cooperatives.

3. Methods

3.1. Sample and Data Collection

To find a relationship between diversity and performance and mediate the effects of conflict between these factors, we first reviewed research findings and conducted a survey. Then, we did a pretest with the directors of two local cooperatives to validate the results of the survey. Statistical analyses were performed to investigate the relationship between diversity, performance, and conflicts.

The sample used in this study is composed of the boards of iCOOP, one of the largest consumer

cooperatives in Korea. iCOOP was established in 1997 for the purpose of direct trading of eco-friendly agricultural products. Starting with the integration of six small local cooperatives, iCOOP has expanded to a hundred local cooperatives and 243 stores. iCOOP is implementing actions towards the promotion of sustainable environment, food safety, contribution to the local community, and strengthening the capability of members and activists through businesses and associations (Lee et al., 2021). Each local cooperative has a voluntary BOD that fulfills the purpose and social value of iCOOP in the local community. Although each local cooperative has similarity such as the purposes they pursue and the voluntary composition of BOD, the composition of the board of directors and the method of execution are different. Therefore, the performances are also different. This study focuses on the differences between local cooperatives boards. Taking local cooperative boards as our sample, we surveyed 873 directors of 95 local cooperatives, all female board members. Before conducting the main survey, we pre-tested it with directors of several local cooperatives who asserted that the composition and content of the survey were appropriate to the purpose of the study, but questions of a personal nature seemed beyond the scope of the survey. We took this suggestion before distributing the survey.

We received initial data from October 30, 2019 to November 10, 2019. The boards of individual local cooperatives consisted of nine people on average. Further data were collected until November 24, 2019, from 93 local cooperatives. Of these, 55.8% of the surveys were returned. We grouped questionnaires by individual local cooperatives and omitted those whose cooperatives had less than five participants. The final sample contained 423 questionnaires from 66 local cooperatives.

We performed a regression analysis with SPSS 21. We did multi-level analysis with rwg (within-group agreement index) and ICC (intraclass correlation coefficient) to change the individual variable to a group variable. This study was through several steps to produce a team level index of diversity from individual components.

3.2. Measures

3.2.1. Dependent Variables

Cooperatives have unique characteristics, so it is necessary to set indicators of performance that reflect these characteristics. This study uses social performance, operational activity performance, and democratic performance as dependent variables. Performance is the result of specific tasks or activities undertaken to achieve desired results. While most organizations measure performance based on financial performance, all organizations have unique performance indicators suited to their purposes. Since cooperatives have special characteristics such as protecting and developing community (Vieta and Lionais, 2015), their performance must be measured differently from for-profit firms (El Ebrashi, 2013). De Alwis (2012) suggests measuring the performance of

cooperatives using two indicators: the first is business performance and the second is social performance. Cooperatives seek both sustainable economic profit and social values, including democratic governance and community contributions. For this reason, it is necessary to set appropriate performance indicators.

We measured social performance and democratic performance using a survey based on the work of Shin and Park (2013) and Yoon and Lee (2019). All performance measurements were conducted via questionnaire with 5-Point Likert Scale. Social Performance was measured with the four following items:

1. “The vision and mission of our cooperative clearly states our efforts to contribute to society”,
2. “Our cooperative is concerned with social responsibility and has an action plan for it”,
3. “Our cooperative has a specific policy to encourage the activities of women, young people, the elderly and the socially disadvantaged”,

“Our cooperative carries out regular activities to contribute to the local community”.

The primary mission of cooperatives is democratic management by members. How democratically a cooperative operates is an important factor in its identity and sustainability. Democratic performance can serve as an important indicator. Democratic Performance was measured with four items:

1. “Our cooperative has an organizational culture (norms, values and practices) that encourages mutual respect, open dialogue and active participation”,
2. “Our cooperative members develop a high level of trust, mutual respect and community spirit among each other”,
3. “Our cooperative is allocating human resources and budget for the participation of its members”,
4. “Our cooperative is making efforts in various ways to involve its members in the operation of the organization”.

We measured Operational Performance by how directors perceive achievements compared to planned goals (McGrath, MacMillan and Venkataraman, 1995). The content includes activity progress, achievement of goals, and profitability over the last six months. Depending on how the board perceives it, such content is measured from 1 for worst to 5 for best. In terms of survey items of operational performance, board members were requested to assess the performance of their cooperative over the last 6 months, on each of the following dimensions: meeting budget objectives, meeting staffing objectives, meeting major deadlines, meeting quality objectives, meeting reliability objectives, meeting cost objectives, meeting efficiency objectives, meeting members' satisfaction objectives, meeting service objectives, meeting objectives overall.

According to Pitts (2009), there is little difference between measuring performance according to individual perceptions and actual performance. In other words, subjective and objective measurements may have similar results (Boyne and Walker, 2002). Following this logic, we applied subjective measures to cooperative performance.

3.2.2. Independent Variables

Boards of directors play a vital role in the sustainability and development of local cooperatives. This study focused on board value diversity and board functional background diversity. We define diversity as differences that may emerge among various members, and measured them using the following guidelines.

Board Functional Background Diversity. Board functional diversity was measured using Campion, Medsker and Higgs (1993)'s scale and Van der Vegt and Vliert's (2005) scale, where appropriate. There were 6 questions in the survey, including "Our boards have diverse functional background and experience", with a score of 1 for worst and 5 for best.

Board Value Diversity. Board value diversity was measured using Jehn et al. (1999)'s scale. There were 5 questions including "Our boards have similar value about activity", measured with scores from 1 for worst to 5 for best. In this study we concentrate on value diversity, so answers were coded in such a way that the measurement score was subtracted from a total score of 5.

3.2.3. Mediating Variables

Conflict. Conflict has an impact on the relationship between diversity and performance and can be divided into relational conflict and task conflicts. In this study, we define relational conflict as different emotions and beliefs held by members, and posit that it is related to board value diversity. We define task conflicts as differences of opinion about work, and posit that it is related to board functional background diversity. Both were measured using Jehn's (1995) research methodology. Relational conflict was measured using 4 items such as "Our boards frequently experience emotional conflict" with a score of 1 for worst and 5 for best. Task conflicts were measured using 4 items such as "Our boards frequently have a difference of opinion about operational activities" with a score of 1 for worst, and 5 for best.

3.2.4. Control Variables

Following prior studies about the relationship between diversity and performance, we controlled for 6 variables: age, tenure, education, number of participants involved in activities, the number of stores belonging to a local cooperative, the number of boards on the local cooperative. Age, tenure and education were calculated using Blau's (1977) heterogeneity index (1-). The data regarding the number of participants involved in the activities, the number of stores belonging to a local cooperative and the number of boards on the local cooperative were gathered from iCOOP.

4. Results

Table 1. Demographical Data (N=423)

Contents	Category	Frequency	%	Median
Age	20s	1	.2	45
	30s	31	7.2	
	40s	307	72.6	
	50s	82	19.5	
	60s	2	.5	
Level of Education	High school	31	7.3	University
	College	79	18.7	
	University	272	64.3	
	Master	40	9.5	
	PhD	1	.2	
Tenure	2 years or less	186	43.9	3
	4 years or less	112	26.5	
	6 years or less	63	14.9	
	8 years or less	27	6.4	
	10 years or less	22	5.2	
	More than 10 years	13	3.1	
Field of study	Engineering	60	14.2	Humanities and social sciences
	Education	44	10.4	
	Humanities and social sciences	144	34.0	
	Art of physical	38	9.0	
	Medicine	14	3.3	
	Natural science	71	16.8	
	Economic management	49	11.6	
	Others	3	.7	
Activity Satisfaction	1 (very unsatisfied)	1	.2	4 (satisfied)
	2 (unsatisfied)	12	2.8	
	3 (neutral)	112	26.6	
	4 (satisfied)	232	54.9	
	5 (very satisfied)	66	15.5	
Region	Seoul	40	9.5	
	Gyeonggi-do·Incheon	105	24.8	
	Chungcheongnam-do	33	7.8	
	Jeollanam-do	74	17.5	
	Gyeongsangbuk-do	36	8.5	
	Gyeongsangnam-do	47	11.1	
	Busan· Ulsan	72	17.0	
Jeju	16	3.8		

Source: Authors' own elaboration.

Table 1 presents demographical data regarding directors. The average age was about 45 years old. Highest education level was university degree (64.3%) with most majoring in humanities and social sciences. Average tenure was under two years (43.9%). We measured activity satisfaction using a 5-Point Likert scale, with 4 (54.2%) and 3 (26.2%) showing they were mostly satisfied with their activities.

Our study tested hypotheses using regression analysis. To do this, a principal components analysis (PCA) was conducted and Varimax applied. Our study extracted board value diversity, board functional diversity, relational conflict, and task conflict by setting the number of factors at 4. For the dependent variables, we looked at components with eigenvalues of higher than 1. For independent variables, the Kaiser-Mayer-Olkin (KMO) was .920 and Bartlett's was .00. For dependent variables, KMO was .917 and Bartlett's was .00. These results indicate that statistical significance was achieved.

This study tested Cronbach's α to analyze reliability. Generally, when Cronbach's α is .6 or more, it is judged to be highly reliable. In this study Cronbach's α for all variables was .8 or more. Tables 2 and 3 present the principal components extracted for reliability.

We went through several steps to produce a team level index of diversity from individual components. First, we identified several dimensions as a measure of board diversity: value, functional background, age, tenure, level of education, as well as relational conflict and task conflicts for each director, and three dimensions to measure performance: social performance, operational activity performance, and democratic performance. These were collected at the individual level. We then aggregated them at a group level and tested whether individual responses could be used at the group level with r_{WG} and ICC(2). The r_{WG} is a method of evaluating the degree of agreement for multiple responses to one question. It can be applied when it is greater than .7. The formula is as follows.

$$r_{WG} = 1 - \frac{S_x^2}{S_{mpv/m}^2}$$

$$S_{mpv/m}^2 = \frac{k[M(H+L) - M^2 - H \times L]}{(k - 1)}$$

- S_x^2 : observed rating variance
- K : the number of observed ratings
- M : mean rating under maximum variance
- H : highest rating on the scale
- L : lowest rating on the scale

ICC(2) represents the reliability of the group mean with data. It can be applied when it is generally greater than .7 (Yammarino, 1998). The formula is as follows.

$$ICC(2) = MSB - \left(\frac{MSW}{MSB} \right)$$

MSB: between-group mean square

MSW: within-group mean square

Table 2. Loading of principal components extracted and Reliability of independent variables and mediator variables

	Components				Cronbach's α
	1	2	3	4	
Board Value Diversity 4	.842				.918
Board Value Diversity 5	.833				
Board Value Diversity 2	.829				
Board Value Diversity 1	.798				
Board Value Diversity 3	.770				
Board Functional Background Diversity 2		.835			.870
Board Functional Background Diversity 6		.823			
Board Functional Background Diversity 1		.785			
Board Functional Background Diversity 5		.773			
Board Functional Background Diversity 3		.617			
Board Functional Background Diversity 4		.610			
Task Conflict 2			.827		.888
Task Conflict 4			.824		
Task Conflict 3			.797		
Task Conflict 1			.720		
Relational Conflict 1				.807	.910
Relational Conflict 2				.799	
Relational Conflict 3				.736	
Kaiser-Meyer-Olkin					.920
Bartlett's p					.000

Source: Authors' own elaboration.

Table 3. Loading of principal components extracted and Reliability of dependent variables

	Components			Cronbach's α
	1	2	3	
Operational activity performance 3	.822			.834
Operational activity performance 2	.788			
Operational activity performance 4	.782			
Operational activity performance 9	.778			
Operational activity performance 7	.770			
Operational activity performance 8	.764			
Operational activity performance 1	.757			
Operational activity performance 6	.686			
Operational activity performance 5	.629			
Democratic performance 1		.819		.880
Democratic performance 2		.819		
Democratic performance 4		.702		
Democratic performance 3		.664		
Social performance 2			.804	.930
Social performance 1			.788	
Social performance 3			.782	
Social performance 4			.713	
Kaiser-Meyer-Olkin				.917
Bartlett' p				.000

Source: Authors' own elaboration.

Table 4 presents the result of and ICC(2). In all variables, is .7 or more and ICC(2) is .8 or more. The results show that it is appropriate to analyze the responses individual-level responses at group-level.

Table 4. The Result of r_{WG} and ICC(2)

	Variables	r_{WG}	ICC(2)
Independent Variables	Board value diversity	.8270	.918
	Board functional background diversity	.8042	.870
Meditating Variables	Relational Conflict	.7611	.910
	Task Conflict	.8289	.888
Dependent Variables	Social performance	.8180	.834
	Operational activity performance	.8096	.880
	Democratic performance	.8756	.930

Source: Authors' own elaboration.

Table 5 presents the mean and standard deviation of the study variables. Table 6 presents the correlations among the variables. Mean of board value diversity and board functional background diversity in the sample was 1.261 and 4.028, respectively. From these results, it can be inferred that board value diversity was low and board functional background diversity was high. Mean of relational conflict and task conflict were 2.354 and 2.219, respectively. This shows that both types of conflicts were somewhat low. The mean of dependent variables was greater than 3.5 and the mean of democratic performance was 3.976, which was the highest score. Other details are shown in the table below.

Our main hypotheses were tested using hierarchical multiple regression analysis. To test the significance of estimating cooperative performance for board value diversity and board functional background diversity against our control variables, we used two-step hierarchical regression analysis. All the control variables were entered in Model 1. Model 2 shows all independent variables added to Model 1.

Table 7 presents the results of the hierarchical regression analysis. Model 1 shows the results of control variables (age, tenure, education, number of participants, number of stores, number of directors). None of the control variables were found to be significantly related to performance.

Table 5. Descriptive statistics (N=66)

		Mean	SD
Independent variables	Board value diversity	1.261	.4017
	Board functional background diversity	4.028	.2780
Mediating Variables	Relational conflict	2.354	.6145
	Task conflict	2.129	.4989
Dependent Variables	Social performance	3.872	.3995
	Operational activity performance	3.769	.3538
	Democratic performance	3.976	.4262
Control variables	Age diversity	.086	.033
	Tenure diversity	.650	.205
	The level of education	.450	.178
	The number of participants in activities	930.591	637.731
	The number of stores	2.303	1.301
	The number of directors	8.712	1.596

Source: Authors' own elaboration.

Table 6. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Age	1												
2 Tenure	.241	1											
3 Education	-.069	.068	1										
4 # of participants	-.074	.086	.096	1									
5 # of stores	-.087	.011	-.059	.529**	1								
6 # of directors	-.011	-.006	.128	.191	.065	1							
7 Board Value Diversity	-.140	-.058	-.111	-.159	-.010	-.254*	1						
8 Functional Back-ground Diversity	.210	.042	.001	-.042	-.153	.145	-.706**	1					
9 Relational Conflict	-.094	-.125	-.021	.015	.002	-.197	.741**	-.611**	1				
10 Task Conflict	-.118	-.125	-.045	.011	.050	-.164	.747**	-.669**	.876**	1			
11 Social Performance	-.024	.149	-.003	-.047	-.129	-.009	-.599**	.573**	-.513**	-.621**	1		
12 Operational Activity Performance	-.024	.016	.277*	.208*	.022	.155	-.645**	.561**	-.378**	-.495**	.422**	1	
13 Democratic Performance	.082	.077	.153	.208	-.015	.206	-.878**	.729**	-.664**	.691**	.541**	.708**	1

Source: Authors' own elaboration.

Table 7. Hierarchical Regression Analysis Results

Dependent variables	Social performance		Operational Activity Performance		Democratic Performance	
	Model1	Model2	Model1	Model2	Model1	Model2
Age	-.083 (-.626)	-.211* (-2.109)	.011 (.092)	-.122 (-1.188)	.090 (.704)	-.066 (-1.102)
Tenure	.172 (1.298)	.171* (1.738)	-.028 (-.223)	-.028 (-.301)	.029 (.227)	.027 (.460)
Education	-.030 (-.232)	-.060 (-.615)	.231 (1.891)	.208 (2.269)	.105 (.837)	.060 (1.024)
# of participants	.012 (.079)	-.072 (-.614)	.320 (2.207)	.248 (2.268)	.248 (1.659)	.132 (1.886)
# of stores	-.146 (-.964)	-.066 (-.581)	-.137 (-.966)	-.057 (-.534)	-.143 (-.974)	-.051 (-.752)
# of directors	.002 (.019)	-.146 (-1.466)	.074 (.602)	-.062 (-.660)	.155 (1.233)	-.036 (-.559)
Board Value Diversity		-.474*** (-3.343)		-.389** (-2.917)		-.682*** (-8.025)
Board Functional background Diversity		.284* (2.029)		.322* (2.449)		.264** (3.142)
R ²	.046	.491	.161	.550	.111	.817
Adjusted R ²	-.051	.420	.076	.487	.021	.792
Δ R ²		.445		.389		.706
F		6.876(.000)		8.719(.000)		31.849(.000)

We report standardized regression coefficients and t value.

*p<.10, *p<.05, **p<.01, ***p<.001

Source: Authors' own elaboration.

The independent variables, board diversity value and board functional background, were entered as a block into Model 2. The addition of board diversity variables to the equation of control variables were found to improve the model. For social performance, the adjusted R² was .420 at p<.001 (F = 6.876). For operational activity, the adjusted R² was .487 at p<.001 (F = 8.719). For democratic performance, the adjusted R² was .792 at p<.001 (F = 31.849). The variance inflation factors (VIF) showed no indication of multicollinearity issues among the variables. The highest VIF statistic was 2.250, below the rule of thumb level of 10.

The results in Model 2 showed that two types of board diversity can add significantly to our prediction of dependent variables beyond the control variables. Board value diversity was negative and significant related to social performance ($p < .001$), while operational activity performance ($p < .01$) and democratic performance ($p < .001$) provided support for Hypothesis 1. Board functional background diversity was positive and significantly related to social performance ($p < .05$), operational activity performance ($p < .51$), and democratic performance ($p < .01$), providing support for Hypothesis 2.

Table 8 shows significant conflict variables when analyzing the mediating effect of conflict on diversity and performance. This study posited that board value diversity is related to relational conflict, and that board functional background diversity is related to task conflicts. Results indicated that board value diversity was positive and significantly related to relational conflicts, while functional diversity was negative and significantly related to task conflicts.

Table 8. Significance of Conflict

Variables	Relational Conflict	Task Conflict
Board Value diversity	.741(8.835) ***	
Board Functional Background Diversity		-.669(-7.204) ***
R ²	.549	.448
Adjusted R ²	.542	.439
ΔR^2	.549	.448
F	78.052(.000)	51.894(.000)

We report standardized regression coefficients and t value.

* $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Source: Authors' own elaboration.

Table 9 presents the mediating effects of relational conflict. Relational conflict did not mediate board value diversity and performance. Table 10 presents the mediating effects of task conflicts. While task conflicts were found to mediate functional background diversity, social performance and democratic performance, they did not mediate functional background diversity and operational activity performance.

Table 9. Meditation Effect of Relational Conflict between Value Diversity and Performance

	Dependent variables	Social performance		Operational Activity Performance		Democratic Performance	
		β	p-value	β	p-value	β	p-value
Model1	Board Value diversity	-.599	.000	-.645	.000	-.878	.000
Model2	Board Value diversity	-.485	.002	-.811	.000	-.856	.000
	Relational conflict	-.153	.309	.223	.117	-.030	.740

We report standardized regression coefficients

Source: Authors' own elaboration.

Table 10. Meditation Effect of Task Conflict between Functional Diversity and Performance

	Dependent variables	Social performance		Operational Activity Performance		Democratic Performance	
		β	p-value	β	p-value	β	p-value
Model1	Board functional background diversity	.573	.000	.561	.000	.729	.000
Model2	Board functional background diversity	.286	.029	.416	.004	.483	.000
	Task conflict	-.429	.001	-.217	.120	-.368	.001

We report standardized regression coefficients

Source: Authors' own elaboration.

5. Conclusion

5.1. Summary

Our research questions were: Will board value diversity and functional background diversity influence the performance of cooperatives? and will conflict mediate diversity and performance? To get an answer, we examined the special features of consumer cooperatives and assumed that board value diversity and functional background diversity would have an impact on performance. To examine the relationship between conflict and diversity in depth, we divided conflict into relational conflicts that are related to value diversity and task conflicts that are related to functional background diversity. For dependent variables we considered the special features of consumer cooperatives and looked at social performance, operational activity performance, and democratic performance.

The results showed that board value diversity has a negative effect on all performance and functional background diversity has a positive effect on all performance. Value diversity had a

positive effect on relational conflict, but any mediating result was not significant. In consumer cooperatives in Korea, people who are interested in social purpose such as revitalizing rural areas, reducing environmental pollution, and safe food, rather than those who simply want to purchase organic food, participate as members. In particular, the BODs are those who actively reflect the mission of consumer cooperatives in their lives. Therefore, the reason that this study focused on the value diversity among other diversity variables reflect the characteristics of consumer cooperatives. In this study, we suggest that in an organization with clear mission regarding social purpose, BOD's similar value positively influence performance.

Functional diversity had a negative effect on task conflicts, the mediating result was significant. This result shows that functional diversity is negatively related to task conflict and a negative relationship between task conflict and team performance (De Dreu and Weingart, 2003). Weingart, Todorova and Cronin (2010) report that task conflict requires resolving inconsistencies while maintaining functional diversity, which is influenced by cooperative conflict management. Cooperatives are organizations based on cooperation among members, this characteristic can be also applied to conflict management. In particular, the BODs in iCOOP learn how to manage conflicts among members through various education (SAPENet, 2019). The result about the negative relationship between functional background diversity and task conflict can be interpreted to reflect these characteristics.

These findings extend the literature on the characteristics of the board and the performance of cooperatives. We viewed diversity as a strategic factor when forming a team and argue that different types of diversity affect performance differently. The context in which board diversity and conflicts are examined is important: the specific context we examined is one characterised by boards which are formed voluntarily. In cooperatives, value diversity and functional background diversity were found to have a significant impact on performance while task conflicts were found to mediate functional background diversity and performance, supporting the argument that given the context of cooperatives, board diversity and conflicts are significant.

Results of this study provide implications for board formation on cooperatives. Cooperatives share common interests such as contributing to the community, healthy eating and protecting the environment. Thus, it is important for boards to have similar values to reflect their interests. Functional background diversity was predicted to have benefits for performance, but this was found to have a negative effect on task conflicts, contrary to previous studies. This means that functional background diversity rarely affects task conflicts in cooperatives and that voluntary boards differ from those in for-profit firms. In addition, for the functional diversity of BOD to promote organization performance, the situation in which information within BOD is exchanged and integrated need to be formed (Buyl et al., 2011). The BOD of a consumer cooperative has high shared leadership (Park et al., 2021), and this has a positive impact on information exchange and integration (Hoch, 2014). The result in which functional background diversity had a positive effect on performance reflects these characteristics of consumer cooperatives.

To confirm our statistical results, we conducted five interviews with board members serving in different local cooperatives, asking about the research results. They agreed with our findings as below.

“The boards of iCOOP are formed voluntarily and have a difficult time assigning various functions. Directors need to perform various functions in order to achieve social value and operate local cooperatives; these include design functions, promotional functions, accounting functions, and so on. For example, when I was a member of the board, our local cooperative was preparing to open a new store. At that time the board organized different promotional events. I was in charge of hosting the grand opening because I had experience as an announcer. Other directors as well used their experience and ability in operating the cooperative. Although a board might need members with particular backgrounds, it cannot actively recruit them, since the board is a wholly voluntary organization. I think that a combination of directors with different functional backgrounds would result in better performance. When tasks were assigned at board meetings, there was little conflict. Most members trust and follow the process and performance since when there are not enough members to perform a task, it is better to pitch in to help than create conflict over a task”(Interviewee C).

“In the consumer co-op, there are many women who have lost their careers, and since they each tend to accept professional work experiences, conflicts due to work are actually lower than those in the inexperienced group”(Interviewee E).

“Most directors have their own values about the environment, politics, the economic system, education policies, and so on. When they engage in activities that promote social values while operating local cooperatives, they need to explain and understand each other’s values” (Interviewee A).

“The boards of iCOOP have the characteristics of an association. They share similar values, so I didn’t feel uncomfortable communicating with them. That’s why I joined the board of directors”(Interviewee B).

If a board consists of members with different values, the board may have relatively more time and energy to adjust their values, which will have a negative effect on the performance of local cooperatives. This supports our result that value diversity is negatively related to cooperative performance.

“Meanwhile, as various age groups are gradually participating (a generation that has not experienced the student movement), the value of the cooperative role seems to be expanding not only in social movements but also in solving social problems and discovering the meaning of personal life. For this reason, relationship conflicts increase, and eventually communication is cut off, resulting in poor performance”(Interviewee D).

This study shows that cooperatives with voluntary boards needs members with various backgrounds as previous research has shown. However, it indicates that unlike previous research, where a board is voluntary, the diversity of directors’ backgrounds will reduce conflicts when it comes to carrying out tasks. We found that reducing such conflicts had a positive effect on performance. Thus, depending on board characteristics, diversity and conflict may have different effects on performance. We suggest that when studying diversity and conflict in organizations, researchers have to consider each situation and different member characteristics.

5.2. Implications

Our research looked at the impact of team diversity on performance in a particular context to enhance the current understanding of team diversity. As previously noted, particular circumstances will likely affect team diversity, conflicts and performance because of the nature of relationships and interactions among members. When it comes to the relationship between functional background and task conflicts, most studies indicate that functional background diversity is positively related to task conflicts. However, our study shows that functional background diversity is negatively related to task conflicts.

This study that considers voluntary boards provides a different view about the relationships between team diversity, conflicts, and performance, which can contribute to the expansion of diversity research. The current team diversity literature will need more studies that consider the specific contexts. In practice, functional background and value diversity can be applied as a decision-making factor in team formation with voluntary characteristic.

In addition, existing research on gender diversity have focused on how women's participation in male-oriented BODs affects performance (e.g., Fouskas & D'Isanto, 2021). This study takes into consideration a new research subject paying attention to the diversity of functional background and value diversity in a situation where all members of BODs were women.

This paper is not without limitations. First, we focused on the three dependent variables, such as social, democratic and operational performance. Fouskas and D'Isanto (2021) find that organizations that sell final products based on local market have positive outcomes for organizations with more female senior managers. The board of directors of iCOOP are composed of all women and serve final products to members based on local market. Although the iCOOP board of directors are not directly involved in the store, they may affect sales. As such, it is necessary to consider the financial performance in the future study.

Second, we derived our results through self-administered questionnaires. Self-administered questionnaires are a common data collection in social science but they may entail the risk of common method bias (Kock, Berbekova and Assaf, 2021). Common method bias may occur when research measure the independent and dependent variables with same response method. Common method bias can have an effect on the reliability and validity of the study (MacKenzie and Podsakoff, 2012). To reduce the threat of the common method bias, this study applied clear and profound questionnaire designs (Kock, Berbekova and Assaf, 2021) such as concise question and explanation about unfamiliar terms. Nevertheless, there can be the common method bias. Therefore it is necessary to design studies to eliminate it with other methods in the future research.

Third, this study focuses on Korean consumer cooperatives. The unique characteristics of the Korean sample may influence the results and thus could limit the generalizability of the results to other cooperatives. More research is required to determine results from different organizations in different contexts.

Fourth, evidences regarding the negative effect of functional background diversity on task conflict is a major achievement of this study. This is a result reflecting the characteristics of cooperatives operating on the members' collaboration and voluntary BODs of consumer cooperatives. In addition, it is necessary to explore other factors that can influence the functional background diversity and task conflict. These will help expand diversity and conflict research.

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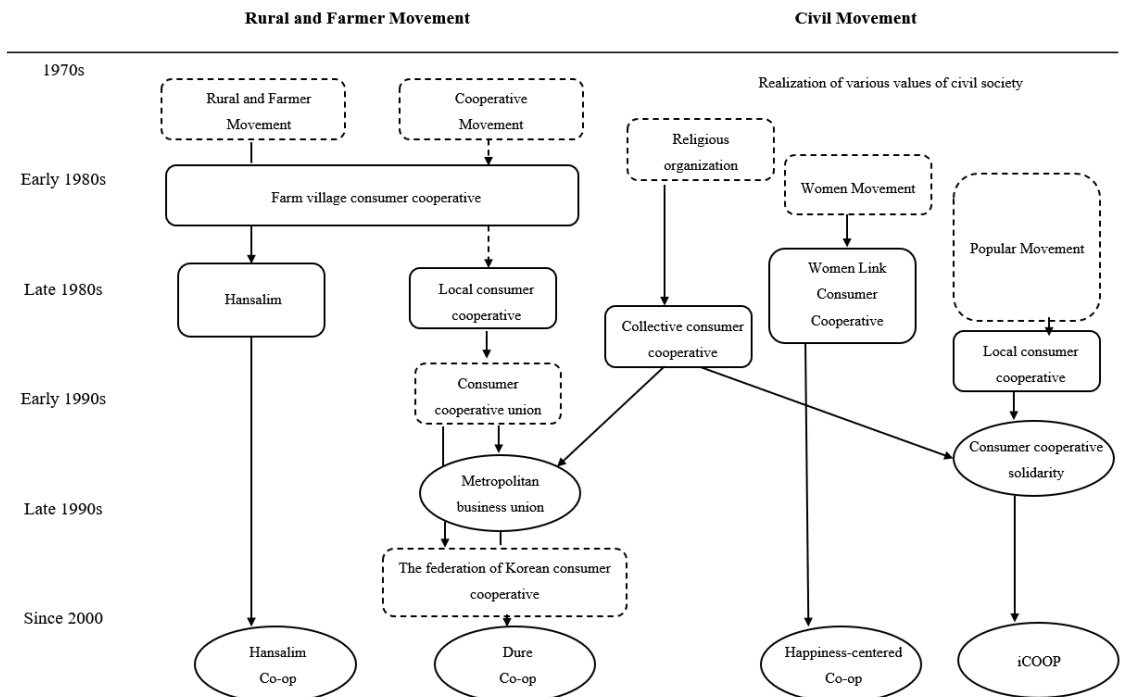
Appendices

Appendix 1. Mission of 4 major consumer cooperatives in Korea

Consumer Cooperatives	Mission
iCOOP	Healing for people, Cooling for the planet
Hansalim Co-op	Daily action to save Life and Earth
Dure Co-op	Enrich your life through collaboration
Happiness-Centered Co-op	Female subject / Alternative economy / Local community / Safe food / Welfare system

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Appendix 2. Changes in 4 major consumer cooperatives in Korea



Note: Adapted from Jeong, Kim and Kim (2011)