

On Determinants of Cooperatives' Perceived Effectiveness in Terms of Financial and Social Performance



Angelita L. Paradero¹, Danilo M. Te² and Leomarich F. Casinillo^{3*}

^{1,3}Visayas State University, Visca, Baybay City, Leyte, Philippines

²Ateneo de Davao University, Davao del Sur, Philippines

Article history:

Submitted: 7 January 2022

Revised: 22 March 2022

Accepted: 25 March 2022

Keywords:

Cooperatives
Financial and social performance
Cooperative members
Structural Equation Modeling
Philippines

*Corresponding Author:

Leomarich F. Casinillo
leomarichcasinillo02011990@gmail.com

ABSTRACT. Cooperatives are vital in the economy, hence, it is practically important to examine the factors that may influence their performance. This study focused on determining the factors that predict cooperatives' perceived effectiveness in terms of financial and social performance in Eastern Visayas, Philippines. A random sampling technique was employed to gather primary data to 438 respondents composed of the board of directors, managers, officers, and members. For data analysis, Partial Least Square-Structural Equation Modeling (PLS-SEM) was utilized to analyze the Likert scale data based on the survey participants' responses. Results showed that cooperatives' governance, members' participation, and training and development significantly predicted cooperatives' perceived effectiveness in terms of financial and social performance. Hence, management of the cooperatives should develop a culture of effective governance that includes transparency, management accountability, and members' democratic participation; encourage members' economic participation and; conduct periodic training to help the cooperatives attain their social and financial goals.

1.0. Introduction

Almost in every country, cooperatives are the instrument to combat poverty and unemployment (Burgos & Mertens, 2017; Castillo, 2018; Parma et al., 2020). The role of cooperatives in uplifting the socio-economic status of members and driving local and national economic growth cannot be underestimated. The paper of McInerney (n.d.) and Valenzona et al. (2020) points out that agricultural and food cooperatives and other forms of collective action, including farmers' associations and producer organizations, are critical to achieving food security, terminating hunger, and reducing poverty in the country. According to Parma et al. (2020), there are a lot of cooperatives worldwide serving over 1 billion members and clients. This means that numerous people in the world have a membership or are clients of a cooperative.

In the Philippines, about 28,784 registered cooperatives served approximately 15 million members as of 2018. The cooperatives generate about 390,000 employment (CDA, 2018). According to Castillo (2018), the cooperatives in the country are envisioned to help attain sustainable development goals. Membership and participation in cooperatives have positively impacted the lives of Filipino individuals and groups (Mdulid, 2015; Tomaquin, 2014).

Eastern Visayas or Region 8 is one of the regions in the Philippines composed of six provinces, namely, Leyte, Southern Leyte, Biliran, Samar (Western Samar), Northern Samar, and Eastern Samar. The region is third in terms of poverty incidence in the country (PSA, 2020). Cooperatives are seen to be one of the means to reduce poverty and alleviate the economy of the area (NEDA, 2016). Currently, there was a notable increase in the number of newly registered cooperatives in Eastern Visayas due to the help of various government agencies and the local and international non-government organizations (NGOs) in response to the super typhoon Yolanda devastation. This also increased the number of cooperatives' members.

The latest data from CDA-Region 8 shows a significant reduction (62.7%) in the number of cooperatives from 2016 to 2018, which can be attributed to the cooperative's failure to register to CDA (due to the inability of the cooperatives to cope with reporting standards and requirements



This article published by Philippine Social Science Journal (PSSJ) is licensed under a Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0). You are free to share (copy and redistribute the material in any medium or format) and adapt (remix, transform, and build upon the material). Under the following terms, you must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. You may not use the material for commercial purposes.

of the law), the cooperatives are in the process of dissolution or have ceased operation (CDA, 2018). Like another form of business organization, cooperatives fail for some causes linked to their business performance. The success of the cooperatives to continue their operations as business and social enterprises is important, considering that the cooperative sector is vital in the growth of the region's economy. Hence, it is important to investigate the factors that predict the effectiveness of cooperatives in Eastern Visayas in terms of their financial and social performance.

This study aims to answer the following objectives: determine the effects of trust, financial rewards, psychological factors, cooperative governance, and training and development to members' participation in cooperatives' affairs in Eastern Visayas; and determine the effects of cooperative governance, members' participation and training and development to the cooperatives' perceived effectiveness in terms of financial performance and social performance in Eastern Visayas.

2.0. Framework of the Study

Cooperatives bring up together individuals with common problems (economic problems) who cannot meet certain goals effectively if they act individually (Putnam, 2000; Barham & Chitemi, 2009; Birchall & Ketilson, 2009; Belay, D. (2020). In the case of the Philippines, the cooperatives sector has become an integral part of the government's policy process due to its enormous contribution to the local and national economy (Parma et al., 2020; Teodosio, 2009).

This study integrates different theories and tests their links in the context of cooperatives. Anchoring on the Participative Management Theory (Likert, 1967; Sashkin, 1984), this study has two (2) endogenous constructs (dependent variables), namely: members' participation and cooperatives' effectiveness. This study postulates that cooperatives' governance, members' participation, and training and development predict cooperatives' perceived effectiveness. In the study of Valenzona et al. (2020), it is stated that the cooperatives' effectiveness is influenced by management/leadership, participation, and responsibility of the members. Likewise, knowledge gained from training and development is vital in the productivity of the members, which correlates to the cooperatives' effectiveness (Red et al., 2021). On the face of it, cooperative effectiveness is measured in terms of its financial performance and social performance (Palmer, 2002).

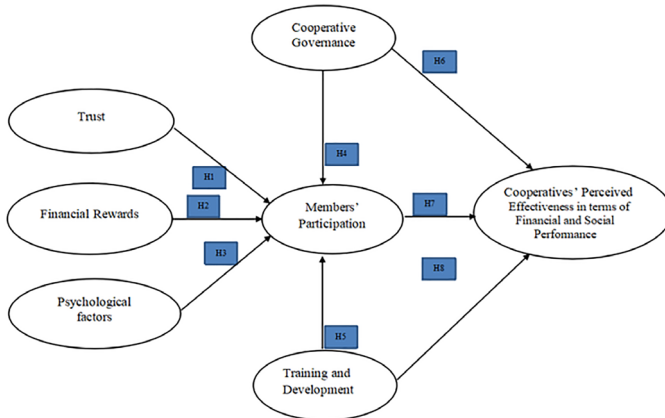


Figure 1. Conceptual Model

Founding on the theories of motivation for participation, agency theory and the concept of governance and Resource Development Concept, the researchers chose trust, financial rewards, psychological factors, cooperatives' governance, and training and development as the exogenous variables of this study. According to Xu et al. (2020), trust is a vital asset in decision-making under a dynamic and iterative behavior inside a cooperative enterprise. Financial rewards also can motivate its members in a cooperative to give their best services and efforts (Yousaf et al., 2014). Additionally, Awoke (2014) stated that the members' psychological factors affect their decision-making as well as

their attitudes that significantly influence the performance of a cooperative. Hence, the researchers assume that these constructs predict members' economic participation in their cooperatives (Figure 1).

3.0. Methodology

This research study employed both descriptive and causal-predictive research designs. The data gathered included both primary and secondary data. Secondary data such as the list of the top 120 cooperatives based on capitalization were obtained from the Cooperative Development Authority-Region 8, Philippines. On the other hand, the list of cooperative' BODs, managers, officers, and members was secured from these top 120 cooperatives. Finally, the primary data were obtained by conducting a personal interview with the respondents of the study. A disproportionate stratified random sampling method was employed to determine the total number of respondents. The stratification is based on the types of respondents, specifically BODs, managers, officers, and members of the cooperatives. One representative was picked as a sample from each type of respondent per cooperative. A 20% non-response rate was also employed if the cooperatives refused to participate in the survey.

The respondents of the study are the BODs, managers, officers, and members of the selected cooperatives in Eastern Visayas, Philippines. To determine the specific respondents to be surveyed, a list of their names was obtained from the cooperatives' staff with the managers' approval. Finally, the specific name of the respondents was randomly selected from this list. Moreover, out of the Top120 cooperatives, seven (7) cooperatives refused to participate in the survey. With the aid of field enumerators, the researcher was able to interview the respondents from the 113 cooperatives who voluntarily participated in the survey. The total responses gathered totaled 438.

Before the actual survey, the researcher sought the consent of the CDA-8 director to interview the respondents from selected cooperatives. Similarly, the approval of the managers to their participation in the survey was also asked. During data gathering, the respondents were informed of the purpose of the study. Most importantly, their voluntary participation was asked, and the researchers did not force them to participate in the survey. The respondents were also given the freedom to withdraw their participation in any stage of the research activity. The researcher also ensured the anonymity of the respondents and the confidentiality of their data.

The instrument used in this study is a self-developed survey questionnaire with two components based on the existing studies in the literature (Awoke, 2014; Valenzona et al., 2020; Xu et al., 2020; Red et al., 2020). The first component is a cover letter intended to inform the respondents about the purpose of the study and request their participation in the survey. The second part contained the main questions in Likert scale construction. The endogenous and exogenous constructs (variables) have a minimum of 5 indicators. A 6-point scale contains the following responses: 1=Strongly disagree, 2=Disagree, 3=Slightly disagree, 4=Slightly agree, 5=Agree, and 6=Strongly agree. Since the questionnaire is self-developed, experts validated it, specifically by practitioners or professors of the Ateneo de Davao University. It was also tested for scales reliability using Cronbach's Alpha through pre-testing. In the pre-testing, ten (10) active or CDA-registered cooperatives were chosen from which the respondents were drawn. The pre-testing was participated by one (1) BOD, one (1) manager, one (1) officer, and one (1) board of directors from each of the ten cooperatives or a total of 40 respondents. Table 1 shows the results of the reliability test during pre-testing. The overall Cronbach's alpha value is 0.964.

Table 1. Overall Cronbach's Alpha for Indicators

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | Number of Items |
|------------------|--|-----------------|
| .964 | .970 | 47 |

Similarly, all individual indicators have values of at least .963. A Cronbach's alpha of at least 0.7 is regarded as satisfactory, with a value above or equal to 0.95 indicating a high degree of consistency. The pre-testing results revealed that the overall Cronbach's alpha and all individual indicators have values above the threshold value; hence, the instruments used in this study are considered reliable. In the actual data gathering, the respondents were interviewed individually and were asked to fill up the survey instrument. The data gathered in this study were encoded in Microsoft Excel. PLS-SEM using WarpPLS Version 6 was utilized for the data analysis to determine the variables that significantly predict cooperatives' effectiveness. These predictor variables, trust (Trust), financial

rewards (FinRew), psychological factors (PycFac), cooperative governance (CoopGov), and training and development (T&D), are postulated to predict cooperatives' effectiveness (CoopEff) through members' participation (MemPar). Conversely, MemPar, CoopGov, and T&D are hypothesized to directly predict cooperatives' effectiveness.

Through PLS-SEM processing, the following global fit indices were generated: Average path coefficient (APC), Average R-squared (ARS), Average adjusted R-squared (AARS), Average block VIF (AVIF), Average full collinearity VIF (AFVIF), TenenhausGoF (GoF), R-squared contribution ratio (RSCR), Statistical suppression ratio (SSR), and Nonlinear bivariate causality direction ratio (NLBCDR). PLS-SEM involves separate assessments for the measurement model and the structural model. The reliability and validity tests were performed for the measurement model using composite reliability (a measure of internal consistency), convergent validity (through indicator reliability and average variance extracted or AVE), and discriminant validity. For the structural model, the following tests were performed: collinearity assessment, coefficient of determination (r^2) path coefficient, effect sizes for path coefficients (f^2), and predictive relevance (Q^2).

4.0. Results and Discussion

Model Construction

Hair et al. (2014) recommend some guidelines to evaluate the outer loadings of each reflective indicator, that is, to delete indicators with outer loadings equal to or lower than 0.4 and retain indicators with 0.7 or higher outer loadings. Additionally, according to Hair et al. (2014), if the indicators have outer loadings above 0.4 but less 0.7, there is a need to analyze first the impact of deleting the indicators to the composite reliability and content validity. Specifically, the indicators may be removed if it increases composite reliability. Hence, these variables may be considered for removal to improve the reliability of the indicators.

As for trust, financial rewards, psychological factors, cooperative governance, and training and development revealed that these constructs are well-measured by their indicators since the outer loadings are greater than 0.7 (Table 2). In terms of average variance extracted (AVE), all latent variables have AVEs greater than 0.5; thus, they have passed the convergent validity assessment. This indicates that the constructs explained more than 50% of the variance of their respective indicators.

Table 2. Convergent Validity and Internal Reliability Assessments

| Latent Variable | Item | Indicator Reliability | AVE | Composite Reliability |
|-----------------|------|-----------------------|------|-----------------------|
| Trust | T1 | .841 | .675 | .943 |
| | T2 | .860 | | |
| | T3 | .767 | | |
| | T4 | .809 | | |
| | T5 | .863 | | |
| | T6 | .872 | | |
| | T7 | .815 | | |
| | T8 | .738 | | |
| FinRew | FR1 | .916 | .805 | .954 |
| | FR2 | .895 | | |
| | FR3 | .897 | | |
| | FR4 | .907 | | |
| | FR5 | .871 | | |
| PycFac | PF1 | .787 | .719 | .939 |
| | PF2 | .869 | | |
| | PF3 | .793 | | |
| | PF4 | .810 | | |
| | PF5 | .914 | | |
| | PF6 | .905 | | |

Table 2A. Convergent Validity and Internal Reliability Assessments

| | | | | |
|---------|-------|------|------|------|
| CoopGov | CG1 | .872 | .706 | .923 |
| | CG2 | .914 | | |
| | CG3 | .848 | | |
| | CG4 | .716 | | |
| | CG5 | .839 | | |
| MemPar | MP1 | .834 | .659 | .904 |
| | MP2 | .563 | | |
| | MP3 | .907 | | |
| | MP4 | .913 | | |
| | MP5 | .792 | | |
| T&D | TR1 | .769 | .746 | .946 |
| | TR2 | .876 | | |
| | TR3 | .934 | | |
| | TR4 | .922 | | |
| | TR5 | .805 | | |
| | TR6 | .864 | | |
| CoopEff | EFF1 | .802 | .576 | .942 |
| | EFF2 | .779 | | |
| | EFF3 | .707 | | |
| | EFF4 | .801 | | |
| | EFF5 | .798 | | |
| | EFF6 | .738 | | |
| | EFF7 | .725 | | |
| | EFF8 | .832 | | |
| | EFF9 | .571 | | |
| | EFF10 | .621 | | |
| | EFF11 | .886 | | |
| | EFF12 | .793 | | |

Table 3 shows the Fornell and Larcker criterion, which compares the square root of AVE for each construct with its correlations with any other construct. The diagonal values (bolded) represent the square root of AVEs, while the off-diagonal elements are the intercorrelations between constructs. The criterion for the discriminant validity test is that, for each latent variable, the square root of the average variance extracted should be higher than any of the correlations involving that latent variable. The diagonal elements should be larger than off-diagonal elements in the table (Kock, 2017).

Trust, financial rewards, psychological factors, cooperative governance, and members' participation passed the criterion, implying that these constructs are distinct from other constructs. However, results also revealed that there is a discriminant problem involving cooperatives' effectiveness since its square root of AVE of .759 is less than its correlation with trust (.800), financial rewards (.775), cooperative governance (.783), and training and development (.601) found in the same row. This suggests an association between these constructs and cooperatives' effectiveness. A need arises to drop the indicators EFF9 and EFF10 under cooperatives' effectiveness to at least minimize discriminant validity and improve the model as a whole.

Table 3. Discriminant Validity Assessments

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D | CoopEff |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Trust | .822 | | | | | | |
| FinRew | .788 | .897 | | | | | |
| PsyFac | .781 | .682 | .848 | | | | |
| CoopGov | .770 | .743 | .757 | .840 | | | |
| MemPar | .705 | .653 | .694 | .699 | .812 | | |
| T&D | .540 | .452 | .437 | .511 | .485 | .864 | |
| CoopEff | .800 | .775 | .719 | .783 | .750 | .601 | .759 |

Collinearity among latent variables is assessed through variance inflation factor (VIF). A high collinearity VIFs of ≤ 3.3 suggests no multicollinearity (Kock, 2017). A more conservative VIFs threshold is ≤ 5 , while a more relaxed criterion is to have a VIFs value of < 10 . Table 4 shows no multicollinearity problem among the variables since all VIF values are less than 5.

Table 4. Collinearity among Latent Variables

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D | CoopEff |
|----------|-------|--------|--------|---------|--------|-------|---------|
| Full VIF | 4.20 | 3.298 | 3.208 | 2.665 | 3.589 | 1.621 | 4.530 |

Table 5 shows the r-square coefficients of the latent variables in this study. The results suggest moderate and substantial explained variances for members’ participation ($R^2=0.590$) and cooperatives effectiveness ($R^2=0.719$) endogenous latent variables, respectively. Although members’ participation has a moderate explained variance, a value of 0.590 for this endogenous construct suggests that the model has good predictive power. This is because, as a construct, members’ participation is a behavioral or social science concept wherein it is argued that it is undeniably difficult to predict human behavior.

The R^2 value of 0.590 also means that trust, financial rewards, psychological factors, cooperative governance, and training and development can explain 59% of the variance in members’ participation. Similarly, 71.9% of the variance in cooperative effectiveness is contributed by cooperative governance, members’ participation, and training and development. These findings are consistent with the findings from other studies (Amene, 2017; Ebbes, 2017; Valenzona et al., 2020).

Table 5. R-squared and Adjusted R-squared of the Latent Variables

| Latent variable | R^2 | Adjusted R^2 | Remarks |
|-----------------|-------|----------------|-------------|
| MemPar | 0.590 | 0.586 | Moderate |
| CoopEff | 0.719 | 0.717 | Substantial |

Table 6 presents the path coefficients value associated with each path in the model. From these results, the best predictor of members’ participation is the psychological factors ($\beta=0.249$), followed by cooperative governance ($\beta=0.215$), trust ($\beta=0.166$), training and development ($\beta=0.142$), and finally, financial rewards ($\beta=0.110$). Meanwhile, the greatest predictor of cooperatives’ effectiveness is cooperative governance ($\beta=0.411$), followed by members’ participation ($\beta=0.340$) and training and development ($\beta=0.208$). A path coefficient value of 0.411 means that a 1 standard deviation variation in cooperative governance leads to a 0.411 standard deviation in cooperative effectiveness.

Table 6. Path Coefficients

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D |
|---------|-------|--------|--------|---------|--------|-------|
| MemPar | 0.166 | 0.110 | 0.249 | 0.215 | | 0.142 |
| CoopEff | | | | 0.411 | 0.340 | 0.208 |

Table 7 shows the effect sizes of the total effects. Total effects refer to the sum of the direct effect and all indirect effects linking two constructs (Hair et al., 2014). Results show that the magnitude of the total effect of psychological factors ($f^2=0.174$), cooperative governance ($f^2=0.151$), and trust ($f^2=0.117$) on members’ participation is medium, while financial reward ($f^2=0.072$) and training and development ($f^2=0.076$) have a small effect. For cooperatives’ effectiveness, the magnitude of the total effect of cooperative governance ($f^2=0.382$) to the construct is found to be large while both members’ participation ($f^2=0.263$) and training and development ($f^2=0.163$) have a medium effect. Lastly, trust ($f^2=0.045$), financial rewards($f^2=0.029$), and psychological factors ($f^2=0.061$) have a small effect on explaining the variance of cooperatives’ effectiveness.

Table 7. Effect Sizes for Total Effects

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D |
|---------|-------|--------|--------|---------|--------|------|
| MemPart | .117 | .072 | .174 | .151 | | .076 |
| CoopEff | .045 | .029 | .061 | .382 | .263 | .163 |

According to Hair et al. (2014), greater Q^2 means greater model predictive accuracy. The acceptable predictive validity concerning an endogenous latent variable is that the Q-square coefficient must be greater than zero (Kock, 2017). In this study, member participation and cooperatives’ effectiveness have Q^2 values greater than zero, which indicates the model’s predictive relevance for each of these endogenous constructs (Table 8).

Table 8. Predictive Validity Assessment

| Latent variable | Q ² |
|-----------------|----------------|
| MemPar | 0.590 |
| CoopEff | 0.718 |

Model Modification

All constructs show indicator reliability values above the 0.7 thresholds with increased values for members’ participation and cooperatives’ effectiveness of 0.928 and 0.944, respectively, after omitting MP2, EFF9, and EFF10 indicators. The constructs proved to have a high internal consistency for the model (Table 9). Table 9 also shows that all indicators’ loadings are above the 0.7 threshold value after the analysis drops MP2, EFF9, and EFF10. Likewise, all constructs have AVEs greater than 0.5 with improved values for members’ participation (AVE=0.763) and cooperatives’ effectiveness (AVE=0.630). These results show that the measurement model confirmed convergent validity.

Table 9. Convergent Validity and Internal Reliability Assessments

| Latent Variable | Item | Indicator Reliability | AVE | Composite Reliability |
|-----------------|-------|-----------------------|------|-----------------------|
| Trust | T1 | .841 | .675 | .943 |
| | T2 | .860 | | |
| | T3 | .767 | | |
| | T4 | .809 | | |
| | T5 | .863 | | |
| | T6 | .872 | | |
| | T7 | .815 | | |
| | T8 | .738 | | |
| FinRewr | FR1 | .916 | .805 | .954 |
| | FR2 | .895 | | |
| | FR3 | .897 | | |
| | FR4 | .907 | | |
| | FR5 | .871 | | |
| PsyFact | PF1 | .787 | .719 | .939 |
| | PF2 | .869 | | |
| | PF3 | .793 | | |
| | PF4 | .810 | | |
| | PF5 | .914 | | |
| | PF6 | .905 | | |
| CoopGov | CG1 | .872 | .706 | .923 |
| | CG2 | .914 | | |
| | CG3 | .848 | | |
| | CG4 | .716 | | |
| | CG5 | .839 | | |
| MemPar | MP1 | .846 | .763 | .928 |
| | MP3 | .916 | | |
| | MP4 | .923 | | |
| | MP5 | .803 | | |
| T&D | TR1 | .769 | .746 | .946 |
| | TR2 | .876 | | |
| | TR3 | .934 | | |
| | TR4 | .922 | | |
| | TR5 | .805 | | |
| | TR6 | .864 | | |
| CoopEff | EFF1 | .814 | .630 | .944 |
| | EFF2 | .797 | | |
| | EFF3 | .722 | | |
| | EFF4 | .813 | | |
| | EFF5 | .811 | | |
| | EFF6 | .748 | | |
| | EFF7 | .722 | | |
| | EFF8 | .843 | | |
| | EFF11 | .892 | | |
| | EFF12 | .759 | | |

Correlations and the square root of AVEs values in Table 10 indicate an increase in the square root of AVE value for cooperative effectiveness (AVE=0.794) after removing EFF19 and EFF10 indicators. Although this value is still lower than 0.806 (i.e., correlations between cooperatives' effectiveness and trust), the model has slight discriminant validity compared to the original model.

Table 10. Discriminant Validity Assessments (square roots of AVE and correlations of latent variables) for the Model

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D | CoopEff |
|---------|-------|--------|--------|---------|--------|------|---------|
| Trust | .822 | | | | | | |
| FinRew | .788 | .897 | | | | | |
| PsyFac | .781 | .682 | .848 | | | | |
| CoopGov | .770 | .743 | .757 | .840 | | | |
| MemPar | .686 | .637 | .688 | .678 | .873 | | |
| T&D | .540 | .452 | .437 | .511 | .469 | .864 | |
| CoopEff | .806 | .787 | .716 | .778 | .701 | .569 | .794 |

Structural Model Evaluation

Full Collinearity VIF values for latent variables in the model have altered but were still less than 5.0, indicating the absence of multicollinearity among variables (Table 11)

Table 11. Collinearity among Latent Variables

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D | CoopEff |
|----------|-------|--------|--------|---------|--------|-------|---------|
| Full VIF | 4.484 | 3.373 | 3.236 | 2.382 | 3.584 | 1.558 | 4.250 |

In the model, the r-square value for members' participation is 0.565, which is a moderate explained variance. Drawing from Hair et al.'s (2011) argument on assessing R² values, the R² value of 0.565 for members' participation suggests that the model has a good predictive power because this specific construct is a behavioral or social science concept. This value further means that 56.5% of its variances in members' participation are explained by trust, financial rewards, psychological factors, cooperative governance, and training and development. On the other hand, cooperatives' effectiveness has a substantial explained variance (R²= 0.687). This means that 68.7% of the variances in cooperatives' effectiveness are attributed to cooperatives' governance, members' participation, and training and development (Table 12).

Table 12. R-squared and Adjusted R-squared of the Latent Variables

| Latent variable | R ² | Adjusted R ² | Remarks |
|-----------------|----------------|-------------------------|-------------|
| MemPar | 0.565 | 0.560 | Moderate |
| CoopEff | 0.687 | 0.685 | Substantial |

Although there are modifications in the values for path coefficients, the model also revealed that the first predictor of members' participation is still the psychological factors ($\beta=0.285$). On the other hand, the best predictor of cooperatives' effectiveness is members' participation ($\beta=0.471$). It can be noted that there is a significant increase in the path coefficient value between members' participation and cooperatives' effectiveness after the removal of MP2, EFF9 and EFF10 indicators. Table 13 summarizes the path coefficient results.

Table 13. Path Coefficients for Modified Model

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D |
|---------|-------|--------|--------|---------|--------|-------|
| MemPar | 0.143 | 0.115 | 0.285 | 0.182 | | 0.138 |
| CoopEff | | | | 0.471 | 0.271 | 0.194 |

Table 14 presents the effect sizes of the modified model. Results revealed that only psychological factors have a medium effect on members' participation for the modified model while all other exogenous variables have a small effect. Similarly, cooperative governance has a large effect on cooperatives' effectiveness, with a value that has increased from 0.382 in the original to 0.408 in the modified model. Members' participation (f²=0.199) and training and development (f²=0.141) have a medium effect on cooperatives' effectiveness.

Table 14. Effect Sizes for Total Effects for the Modified Model

| | Trust | FinRew | PsyFac | CoopGov | MemPar | T&D |
|---------|-------|--------|--------|---------|--------|------|
| MemPart | .098 | .074 | .197 | .125 | | .072 |
| CoopEff | .031 | .025 | .055 | .408 | .199 | .141 |

Model 2 produced Q^2 values of 0.565 and 0.686 for members' participation and cooperatives' effectiveness, respectively, which indicates the model's predictive relevance for each of these endogenous constructs (Table 15).

Table 15. Predictive Validity Assessment for the Modified Model

| Latent variable | Q^2 |
|-----------------|-------|
| MemPar | 0.565 |
| CoopEff | 0.686 |

Different model fit quality indices are used to assess the modified model. The model has an average path coefficient (APC) of 0.225, average r-square (ARS) of 0.626, and adjusted r-square of 0.622, which are all significant at a p-value<0.001. The results suggest a good model fit with the data. The model also has ideal values for average block VIF (AVIF) and average full collinearity VIF (AFVIF) of 2.855 and 3.263, respectively, suggesting low overall collinearity.

The original model (Model 1) and the modified model (Model 2) produced good global fit indices. The two models had substantial average r-square (ARS) of 0.655 and 0.626, respectively. Conversely, the average path coefficient (APC) for Model 1 was 0.230, while Model 2 had 0.225. Finally, the two models produced a similar number of significant paths (eight paths). However, based on measurement model assessment, Model 2 had lesser indicator reliability and discriminant validity problem than Model 1; thus, it is used to validate the proposed hypotheses of this study. Each path (denoted by an arrow) represented a hypothesis within the structural model. Kock (2017) suggested a p-value of ≤ 0.05 ; the path coefficient value is significant at 0.05 level. On the other hand, Hair et al. (2011) suggested the path coefficient has to be at least 0.1 to account for a certain impact within the model. Figure 2 shows the PLS-SEM analysis results, specifically the beta and the r-squared coefficients, and the p-values associated with the latent variable links. The arrow signifies a link between two variables in which each link represents the hypotheses of the study. Examining each path, it can be inferred that all the eight (8) paths are found to be significant and thus fail to support the hypotheses of the study.

Figure 2 revealed that all paths in model 2 were significant at a p-value<0.01. Based on the analysis, members' participation is significantly predicted by psychological factors, cooperatives' governance, trust, training and development, and financial rewards with beta coefficients of 0.28 0.18, 0.14, 0.14, and 0.12, respectively; thus, hypotheses 1, 2, 3, and 4 are rejected or not supported. In this case, psychological factors are the top predictor of members' participation. Similarly, cooperatives' governance, members' participation, and training and development significantly predict cooperatives' effectiveness; hence, null hypotheses 5, 6, 7, and 8 are rejected. Results further showed that the best predictor of cooperative effectiveness is cooperatives' governance based on beta coefficients.

Another important finding of the study is that members' participation is influenced by cooperative governance, which includes the management's transparency, accountability, and members' democratic participation. It implies that members considered management transparency as a vital aspect that encouraged their economic participation in the cooperatives. In the same way, members are also motivated to demonstrate active economic participation if they see that the management make themselves accountable for their actions and decisions and, finally, if the cooperative involves members in setting their policies and making decisions (Amene, 2017; Kurmanalina et al., 2020).

The results of the study have built on the theory of social capital, motivation theories, psychological ownership, mutual incentive theory, participative management, agency theory, and a concept on human resources and development. The social capital theory is based on the view that members involve themselves in the different levels and forms of activities in an organization essentially because they trust each other. Moreover, when there is vertical trust (i.e., members trust their management and vice versa), members tend to show participative behavior (Dorgi & Gala, 2016). As an exogenous variable of this study, the trust confirmed this theory as it significantly predicted the endogenous variable, members' participation ($\beta=0.14$, p-value <0.01).

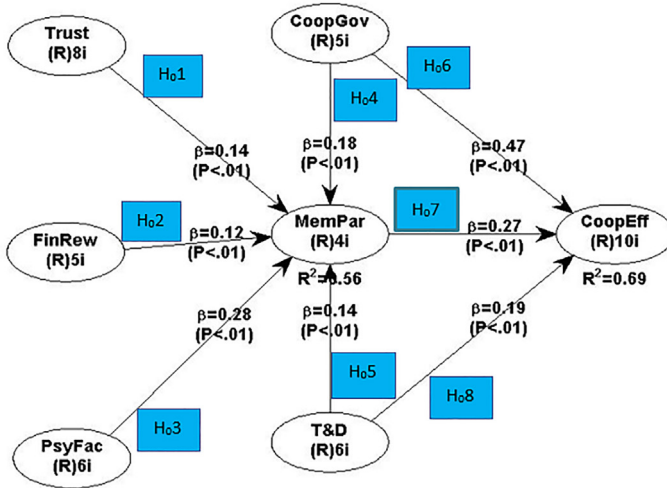


Figure 2. Hypotheses and related coefficients

The theory of psychological ownership postulated that a person’s feeling of psychological possession may lead to active organizational involvement (Pierce et al., 2001). This is supported by the finding of the study, which found that psychological factors significantly predicted members’ participation ($\beta=0.28$, $p<0.01$). In the same way, financial rewards ($\beta=0.12$, $p<0.01$), which were found to predict members’ participation, validated the theory of motivation and the individualistic approach of mutual incentive theory. The finding of the study also confirmed the applicability of participative management theory in predicting cooperatives’ effectiveness in terms of financial and social performance as it produced a significant path between the two variables with a beta coefficient of 0.27. The agency theory, which proposes that how management governs the firm may affect the effectiveness of the organization, was also confirmed by this study. Cooperative governance ($\beta=0.47$, $p<0.01$) strongly predicted cooperatives’ effectiveness among the exogenous variables. Finally, the human resource and development concept, which proposes the positive role of training and development in the effectiveness of an organization, was also supported in the study. Training and development, an exogenous construct for cooperatives effectiveness, produced a significant path between the two latent variables with a beta coefficient of 0.19.

As the findings revealed, all latent variables used in this study significantly predicted the two endogenous latent variables (e.g., members’ participation and cooperatives’ effectiveness) at varying degrees. Cooperative governance had the strongest influence on cooperatives’ effectiveness (Parma et al., 2020). This signifies the importance of transparency, management accountability, and members’ democratic participation in running a cooperative type of business organization. The significant influence of members’ economic participation on cooperatives’ effectiveness suggests the critical role of members as important assets of the organization (Valenzona et al., 2020). Lastly, training and development are necessary for cooperatives to attain effectiveness, both for their financial and social goals.

Results showed that the psychological factor is the top predictor of members’ economic participation. This implies the need for members to feel and believe that they are co-owners of their cooperatives and not just as investors. Other important findings of this study are the significant contribution of psychological factors, cooperative governance, trust, training and development, and financial rewards in encouraging members’ economic participation (Burgos & Mertens, 2017; Red et al., 2021). This denotes the importance of having effective cooperative governance and a culture of trust (both vertical and horizontal) within the cooperative organization (Belay, 2020). Additionally, members must be given financial benefits due to them. Finally, it is essential to consider the role of training and development to enhance members’ knowledge of cooperatives business.

5.0. Conclusion

This study concluded that it is important that cooperatives should continue this capacity-building activity for continuous improvement in the knowledge and skills of the management and members and maintaining transparency in all transactions. Similarly, the study also confirms that trust among members and members' trust with the management in cooperatives, psychological factors, and financial rewards influenced members' economic participation in the cooperatives. This finding deepens researchers' knowledge on the factors affecting members' participation.

Additionally, it is concluded that it is necessary to ensure that members are given the financial benefits (e.g., dividends or patronage refunds, interest on share capital). Moreover, the study suggested the following to be considered for Cooperative Development Authority (CDA): (1) continue requiring cooperatives to be subjected buy financial and social audit by external auditors periodically; (2) Continue mandating the cooperatives to conduct training to its internal stakeholders; and (3) assist cooperatives in conducting pieces of training and seminars. For future researchers, one may explore and investigate other variables not included in this study that would likely predict cooperatives' effectiveness in terms of financial and social performance.

6.0. Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

7.0. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

REFERENCES

- Amene, T. B. (2017). Assessment of factors affecting performance of agricultural cooperatives in the wheat market: The case of Gedeb Hasasa District, Ethiopia. *African journal of business management*, 11(16), 393-414. Retrieved from <https://academicjournals.org/journal/AJBM/article-abstract/2CA990165554>
- Awoke, H. M. (2014). Enhancing Member Commitment in Agricultural Cooperatives. Master's Thesis. <https://edepot.wur.nl/301428>
- Barham, J., & Chitemi, C. (2009). Collective action initiatives to improve marketing performance: Lessons from farmer groups in Tanzania. *Food policy*, 34(1), 53-59. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0306919208000742>
- Cechin, A., Bijman, J., Pascucci, S., Zylbersztajn, D., & Omta, O. (2013). Drivers of pro-active member participation in agricultural cooperatives: Evidence from Brazil. *Annals of public and cooperative economics*, 84(4), 443-468. Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1111/apce.12023>
- Belay, D. (2020). The effect of trust on farmers' milk market participation in dairy cooperatives in West Shoa, Ethiopia. *Agrekon*, 59(3), 287-302. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/03031853.2020.1734036>
- Birchall, J., & Ketilson, L. H. (2009). *Resilience of the cooperative business model in times of crisis*. International Labour Organisation. Retrieved from <https://dspace.stir.ac.uk/handle/1893/3255#YdVMLmhBw2w>
- Burgos, A., & Mertens, F. (2017). Participatory management of community-based tourism: A network perspective. *Community Development*, 48(4), 546-565. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/15575330.2017.1344996>
- Castillo, E. (2018). *Co-operative: A tool for solving poverty and unemployment*. Republic of the Philippines–Cooperative Development Authority. Retrieved from <https://cda.gov.ph/updates/co-operative-a-tool-for-solving-poverty-and-unemployment/>
- Cooperative Development Authority (CDA). (2018). *List of Active Cooperatives in Region 8*. Excel File. Retrieved from https://cda.gov.ph/wp-content/uploads/2020/12/Masterlist_Asof_2018Dec31.pdf
- Dorgi, O., & Gala, G. (2016). Assessment of factors affecting members' participation in fishery cooperatives (the case of Gambella region, Ethiopia). *Journal of Business Management & Social Sciences Research*, 5(12), 347-63. Retrieved from https://www.academia.edu/39353543/Assessment_of_Factors_Affecting_Members_Participation_in_Fishery_Cooperatives_The_Case_of_Gambella_Region_Ethiopia
- Ebbes, M. (2017). *The Role of Dividend Payment in Cooperative Member Commitment—A Study on Dividend Payment Structures in Ethiopian Multipurpose Farmer Cooperatives and Its Effect on Member Commitment*. Wageningen University. Retrieved from <http://edepot.wur.nl/411361>
- Kurmanalina, A., Bimbetova, B., Omarova, A., Kaiyrgaliyeva, M., Bekbusinova, G., Saimova, S., & Saparaliyev, D. (2020). A swot analysis of factors influencing the development of the agriculture sector and agribusiness entrepreneurship. *Academy of Entrepreneurship Journal*, 26(1), 1-8. Retrieved from <https://www.proquest.com/openview/bd63e9cf594bf7126c7d8b524c7c17d4/1?pq-origsite=gscholar&cbl=29726>

- McInerney, E. (n.d.). Cooperatives Key to Achieving Sustainable Agricultural Development. Retrieved from <https://www.un.org/esa/socdev/documents/2014/coopsegm/McInerney.pdf>
- National Economic and Development Plan (NEDA). (2016). Eastern Visayas Regional Development Plan (RDP), 2017-2022. Retrieved from <https://nro8.neda.gov.ph/development-plans-2/>
- Hair, J. F., Ringle, C. M. & Sarstedt, C. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152. Retrieved from <https://www.tandfonline.com/doi/abs/10.2753/MTP1069-6679190202>
- Hair, J. F., Hult, G. T. M., Ringle, C. M. & Sarstedt, C. (2014). *A primer on Partial Least Square-Structural Equation Modeling (PLS-SEM)*. SAGE Publications, Inc. California, USA. Retrieved from <https://us.sagepub.com/en-us/nam/a-primer-on-partial-least-squares-structural-equation-modeling-pls-sem/book244583>
- Kock, N. (2017). WarpPLS user manual: Version 6.0. *ScriptWarp Systems: Laredo, TX, USA*, 141. Retrieved from https://www.scriptwarp.com/warppls/UserManual_v_7_0.pdf
- Likert, R. (1969). The relationship between management behavior and social structure-improving human performance: Better theory, more accurate accounting. In *Symposium (C-3) presented at the meeting of the Conseil International Pour L'Organisation Scientifique, Tokyo*. Retrieved from https://isr.umich.edu/wp-content/uploads/historicPublications/Relationshipbetweenmanagement_3089_.PDF
- Mdulid, F. A. (2015). Institutional Viability of the Cooperatives in Northern Samar and the Variates affecting it. *International Journal of Scientific & Technology and Research*, 4(9), 316-329. Retrieved from <https://www.ijstr.org/final-print/sep2015/Institutional-Viability-Of-The-Cooperative-In-Northern-Samar-And-The-Variates-Affecting-It.pdf>
- Palmer, A. (2002). Cooperative marketing associations: An investigation into the causes of effectiveness. *Journal of Strategic Marketing*, 10(2), 135-156. <https://www.tandfonline.com/doi/abs/10.1080/09652540210125288>
- Parma, L. G., Pasquin, M. A. D., & Nito, B. P. (2020). Worker Cooperatives: A Social Innovation to the Issue of contractualization in the Philippines. In *Cooperatives and Social Innovation* (pp. 215-234). Springer, Singapore.
- Philippine Statistical Authority (2020). Poverty Press Releases. Retrieved from <https://psa.gov.ph/poverty-press-releases/data>.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster. New York. Retrieved from <https://scholar.google.com/citations?user=Me4t2sQAAAAJ&hl=en&oi=sra>
- Red, F. S., Amestoso, N. T., & Casinillo, L. F. (2021). Effect of Farmer Field School (FFS) on the Knowledge, Attitude, Practices and Profitability of Rice Farmers. *Philippine Social Science Journal*, 4(4), 145-154. Retrieved from <https://209.58.174.74/index.php/main/article/view/420>
- Sashkin, M. (1984). Participative management is an ethical imperative. *Organizational dynamics*, 12(4), 5-22. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/0090261684900081>
- Teodosio, V. A. (2009, April). Community participation through cooperatives in addressing basic services: The Philippine experience. In *Meeting on Cooperatives* (Vol. 28, p. 30). Retrieved from <https://base.socioeco.org/docs/teodosio.pdf>
- Tomaquin, R. D. (2014). The impact of cooperatives as an economic and social institution in the fishing villages of Surigao Del Sur (Philippines). *American International Journal of Research in Humanities, Arts and Social Sciences*, 5, 26-30. Retrieved from <http://iasir.net/AJRHASSpapers/AJRHASS14-112.pdf>
- Valenzona, R. M. P., Amestoso, N. T., & Casinillo, L. F. (2020). Assessing the success of farmers' associations: The case of Baybay City, Leyte, Philippines. *Journal of Agriculture and Technology Management (JATM)*, 23(1), 14-25. Retrieved from <http://jatm.ctu.edu.ph/index.php/jatm/article/view/338>
- Xu, X., Zhang, Q., & Chen, X. (2020). Consensus-based non-cooperative behaviors management in large-group emergency decision-making considering experts' trust relations and preference risks. *Knowledge-Based Systems*, 190, 105108. <https://www.sciencedirect.com/science/article/pii/S0950705119304800>
- Yousaf, S., Latif, M., Aslam, S., & Saddiqui, A. (2014). Impact of Financial and non-financial Rewards on Employee Motivation. *Middle-East Journal of Scientific Research*, 21(10), 1776-1786. <https://www.researchgate.net/profile/Madiha-Latif/publication/266739543>

Additional Authors' Information:

ANGELITA L. PARADERO
angelita.paradero@vsu.edu.ph
<https://orcid.org/0000-0002-3414-7671>

DANILO M. TE
dmte@addu.edu.ph
<https://orcid.org/0000-0001-6020-7116>

LEOMARICH F. CASINILLO
leomarichcasinillo02011990@gmail.com
<https://orcid.org/0000-0003-3966-8836>