

## **Optimisation of Monetary Policy Instruments Criteria for Niche Banks using Delphi and Full Consistency Method (FUCOM)**

*Joshy Mathew K*

Research Scholar

Department of Mechanical Engineering

College of Engineering Trivandrum

APJ Abdul Kalam Technological University

Thiruvananthapuram, Kerala, India.

[joshymathewk.87@gmail.com](mailto:joshymathewk.87@gmail.com)

*Regi Kumar V*

Professor

Department of Mechanical Engineering

College of Engineering Trivandrum

APJ Abdul Kalam Technological University

Thiruvananthapuram, Kerala, India.

[regikumaracet@gmail.com](mailto:regikumaracet@gmail.com)

### **Abstract**

The banks under the umbrella of Niche Banks in India began a new phase since the inception of Small Finance Banks and Payments Banks in 2015. These banks are playing a vital role in professional banking with its focus on cost-effective financial products in semi-urban and urban areas of India where the scope of better financial inclusion is higher. Since these new-age banks are also operating under the regulations of the Reserve Bank of India (RBI), this paper studied the importance of various monetary policy instruments on the performance of Niche Banks-Small Finance Banks and Payments Banks through an analytical model Delphi and Full Consistency Method (FUCOM). Eleven closely related experts were consulted who gave a strong base for the ranking of six criteria and the generation of optimal weights for each of the criteria. They are further ranked based on the average weights. It is found that the Repo rate took 1/3<sup>rd</sup> which is the largest weightage, followed by Cash Reserve Ratio, Statutory Liquidity Ratio, Reverse Repo rate, and Standing Deposit Facility respectively. The least weight generated is for the Marginal Standing Facility. The results obtained are also validated using proper methodology.

**Keywords:** *Niche Banks, Small Finance Banks, Payments Banks, FUCOM, MCDA.*

### **I. Introduction**

Small Finance Banks and Payments bank are additions to the Indian Banking System, which were introduced and licensed based on the recommendations of Nachiket Mor Committee formed on 2013. The committee was entrusted with studying and suggesting ways to improve the financial inclusion and

**9th International Conference on****Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024**

improve the financing capabilities of the bank. The Committee proposed (Committee on Comprehensive Financial Services for Small Businesses and Low Income Households, 2014) the following to be achieved by 1<sup>st</sup> January , 2016 : (i) provide every major Indian resident with an individual, full-service electronic bank account, (ii) implement extensively distributed Electronic Payment Access Points offering deposit and withdrawal facilities at reasonable cost,(iii) provide each household living with low-income convenient access to formally regulated finance service providers that can provide suitable: (a) credit products, (b) investment and deposit products, and (c) insurance and risk management products at a reasonable price, and (iv) to provide every customer the legally protected right to be offered suitable financial services. The committee also focused on the improved credit exposure in priority sector lending. These suggestions have directed to the formation of new Niche Banks-Small Finance Banks (SFB) and Payments Bank (PB).

The SFB and PB are Licensed under Section 22 (1) of the Banking Regulation Act, 1949, Small Finance and Payment banks have to comply with all regulatory and supervisory frameworks that are applicable to commercial banks with suitable calibrations in view of the differentiated scope of such banks(Ministry of Finance, 2024). The regulator thus insists the new Niche banks to comply with the monetary policies of the RBI.

**II. Literature Review**

Indian economy is a growing economy that requires active monetary policy interventions to manage the aggregate demand. in general, monetary policy aims to maintain price stability and facilitate economic growth. The Reserve Bank of India has employed various monetary policy instruments over the years to achieve these objectives. (Dua, 2020) mentions the key components of monetary policy frameworks to be Monetary Policy Instruments, Operating Targets, Intermediate Targets, and achievement of monetary policy goals. Since the 1990s, the RBI has transitioned from a fixed exchange rate system to a market-based monetary policy framework with a focus on inflation targeting (Adil & Rajadhyaksha, 2021) . In the year 2016 the RBI constituted Monetary Policy Committee (MPC), with the RBI Governor as the Chairman. The Committee is required to meet at least four times a year although it has been meeting on a bi-monthly basis since October 2016. The MPC is entrusted with the task of fixing the benchmark policy rate (repo rate) required to contain inflation within the specified tolerance band. In addition to the repo rate, the instruments include liquidity facility (Reverse Repo), CRR, OMOs, lending to banks (MSF) and foreign exchange operations (RBI 2018). The same year also witnessed the implementation of Fixed Inflation Targeting (FIT) Framework. With the implementation of FIT, India joined the group of various developed, emerging, and developing countries that have implemented inflation targeting since 1990.

When it comes to the analytical model, Multi-Criteria Decision Analysis is a widely used approach for addressing complex decision problems involving multiple, often conflicting, criteria (Abdessamadd kobi, n.d.). There are many popular MCDA methods available, each with its own strengths and limitations. One such method is the Full Consistency Method (FUCOM), which has gained attention in recent years for its

**9th International Conference on****Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024**

ability to effectively handle complex decision scenarios. FUCOM was developed (Pamučar et al., 2018) as an alternative to the well-known Analytic Hierarchy Process method, aiming to address some of the perceived shortcomings of Analytical Hierarchy Process (AHP)(Sáenz-Royo et al., 2024).

The key distinguishing feature of FUCOM is its focus on establishing full consistency among the criteria weights. This is achieved by pairwise comparisons of the criteria, where the decision-maker provides information on the relative importance of each criterion. The FUCOM method then uses an optimization process to determine the weights that best reflect the decision-maker's preferences while ensuring complete internal consistency(Durmić, 2019; Everest et al., 2024; Pamučar et al., 2018; Prentkovskis et al., 2018; Yadav et al., 2023)

The use of FUCOM in MCDA has been explored in various application domains (Coşansu & Okursoy, 2022; Makalesi et al., 2020; Prentkovskis et al., 2018), such as systems design and fuzzy multi-criteria decision-making. The method has been shown to provide more stable and reliable results compared to other MCDA techniques, particularly in scenarios with a large number of criteria. As with any MCDA approach, the effectiveness of FUCOM is dependent on the quality of the input data and the decision-maker's ability to accurately represent their preferences.

**III. Objectives of the Research Work**

The objective of the work in this article is to find the RBI monetary policy instruments affecting the performance of the Small Finance Banks and Payments Banks. For this purpose, 6 monetary policy instruments- REPO, REVERSE REPO, STATUTORY LIQUIDITY RATIO, CASH RESERVE RATIO, STANDING DEPOSIT FACILITY, MARGINAL STANDING FACILITY. The next objective is to find the weights of each of the monetary policy instruments from the ranking and pair-wise comparison values placed by the experts through Delphi method and data analysis using a Multi-Criteria Decision Analysis (MCDA) model Full Consistency Method (FUCOM).

**IV. Methodology**

The methodology used in the quantitative research includes identifying the monetary policy instruments used by RBI and considering them as the criteria. The next step includes interviewing 11 experts in the managerial area of Niche Banks through Delphi method collecting their individual insights on the ranking of the instruments (Criteria) followed by pair-wise comparison of the criteria in the scale of relative importance (Saaty, 1977) shown in

Table 1. When the weights with the highest consistency are reached the weights of all the experts under each criterion are averaged and ranked from the highest to the lowest to decide which of the monetary

ISBN code 978-93-83302-74-1

Page | 3

### 9th International Conference on

## Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024

policy instruments are influencing the financial performance of the Niche Banks. The full process of the flow is shown in the Figure 1

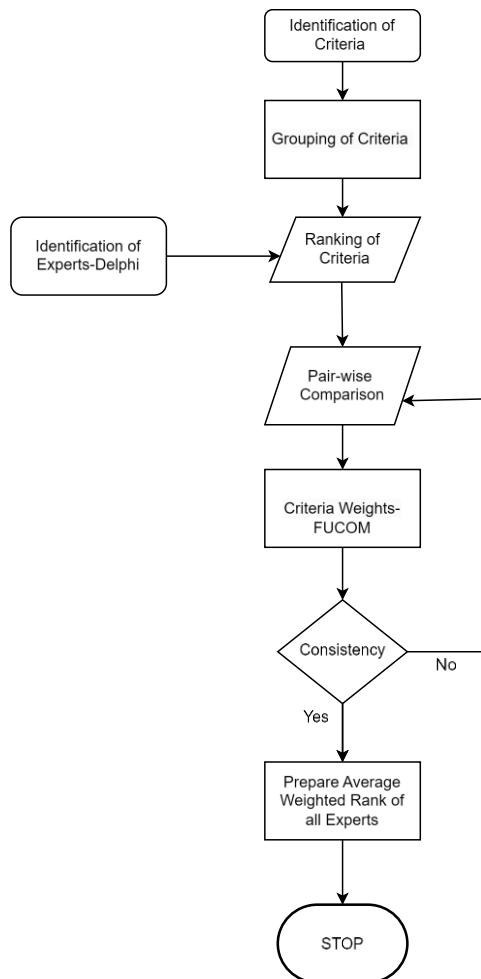


Figure 1 Flowchart of the Study. Authors Drawing

The consistency if not reaching near to zero, will give unreliable weights that are not contributing to the study. In such situations, the experts can be asked to revalue their pair-wise comparison scores. This process should be continued until the best consistency score is reached, that is Deviation from Consistency (DFC) near to or equal to zero.  $DFC=0$  will prove that the weights generated have the highest validity and reliability.

### 9th International Conference on

## Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024

Table 1 The Scale of Relative Importance

<i>Scale Value</i>	<i>Interpretation</i>
<b>1</b>	<b><i>Equal importance</i></b>
<b>2</b>	<b><i>More than equally</i></b>
<b>3</b>	<b><i>Moderately more important</i></b>
<b>4</b>	<b><i>Moderately to more strongly</i></b>
<b>5</b>	<b><i>Strongly more important</i></b>
<b>6</b>	<b><i>Very strongly important</i></b>
<b>7</b>	<b><i>Very strongly more important</i></b>
<b>8</b>	<b><i>Very Strongly to Extremely more important</i></b>
<b>9</b>	<b><i>Extremely more important</i></b>

Step 1: Identification of the monetary policy instruments (Criteria) from the group of Monetary policy instruments.

The monetary policy instruments are the tools by which the RBI exerts its control on the money availability in India. Such instruments are expected to maintain price stability while keeping in mind the objective of growth—as well as the target inflation rate within the tolerance band (Dua, 2020). In this analysis, 6 popular Monetary policy instrument rates declared by the Monetary Policy Committee (MPC); those that are in due diligence with the Niche Banks selected in this analysis are

1. REPO
2. REVERSE REPO
3. STATUTORY LIQUIDITY RATIO
4. CASH RESERVE RATIO
5. STANDING DEPOSIT FACILITY
6. MARGINAL STANDING FACILITY

The explanations provided by RBI (*Reserve Bank of India - Function Wise Monetary*, n.d.) regarding the listed rates are quoted below.

**9th International Conference on****Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024**

- **Repo Rate (REPO):** “The interest rate at which the Reserve Bank provides liquidity under the liquidity adjustment facility (LAF) to all LAF participants against the collateral of government and other approved securities”.
- **Reverse Repo Rate (RREPO):** “The interest rate at which the Reserve Bank absorbs liquidity from banks against the collateral of eligible government securities under the LAF. Following the introduction of SDF, the fixed rate reverse repo operations will be at the discretion of the RBI for purposes specified from time to time”.
- **Statutory Liquidity Ratio (SLR):** “Every bank shall maintain in India assets, the value of which shall not be less than such percentage of the total of its demand and time liabilities in India as on the last Friday of the second preceding fortnight, as the Reserve Bank may, by notification in the Official Gazette, specify from time to time and such assets shall be maintained as may be specified in such notification (typically in unencumbered government securities, cash and gold)”.
- **Cash Reserve Ratio (CRR):** “The average daily balance that a bank is required to maintain with the Reserve Bank as a per cent of its net demand and time liabilities (NDTL) as on the last Friday of the second preceding fortnight that the Reserve Bank may notify from time to time in the Official Gazette”.
- **Standing Deposit Facility (SDF) Rate:** “The rate at which the Reserve Bank accepts uncollateralised deposits, on an overnight basis, from all LAF participants. The SDF is also a financial stability tool in addition to its role in liquidity management. The SDF rate is placed at 25 basis points below the policy repo rate. With the introduction of SDF in April 2022, the SDF rate replaced the fixed reverse repo rate as the floor of the LAF corridor”.
- **Marginal Standing Facility (MSF) Rate:** “The penal rate at which banks can borrow, on an overnight basis, from the Reserve Bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a predefined limit (2 percent). This provides a safety valve against unanticipated liquidity shocks to the banking system. The MSF rate is placed at 25 basis points above the policy repo rate”.

**Step 2: Identification of the Experts and ranking of the criteria**

The minimum number of experts required for a MCDA analysis is three and the maximum is subject to the requirements of the study. In this study eleven professionals who are having expertise in managerial aspects of the Small banks in India are approached using a Delphi method. Counting the experience there were four experts had experience more than five years but below ten years, one expert had experience between eleven years to fifteen years and six experts with experience of more than twenty years. Three experts were qualified Certified Accountants, four with Master of Business Administration, three experts were Doctor of Philosophy and one of them had other post-graduate qualification.

## 9th International Conference on

### Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024

Each expert was asked to rank the select monetary policy instruments in the monetary policy group (which are subsequently called Criteria) as per their insights based on their banking experience.

#### Step 3: Finding the pair-wise comparison of the criteria and running FUCOM

The experts were further asked to do a pair-wise comparison of the ranked criteria using Scale of Relative Importance (Saaty, 1977) starting from 1 of equal importance to 9 measured as extremely more important as depicted in

Table 1

The values of paired comparison are then used to run the MCDA based FUCOM using the formula in eq(1) to find the optimal weights.

$$\begin{aligned}
& \min \chi && (1) \\
& \text{Subject to:} \\
& \left| \frac{w_k}{w_{k+1}} - \varphi_{k/(k+1)} \right| \leq \chi, \forall j \\
& \left| \frac{w_k}{w_{k+2}} - \varphi_{k/(k+1)} \otimes \varphi_{(k+1)/(k+2)} \right| \leq \chi, \forall j \\
& \sum_{j=1}^n w_j = 1 \\
& w_j \geq 0, \forall j
\end{aligned}$$

The data based on the equation is executed using MS Excel and MATLAB to reach the Optimal weights of the criteria are generated with the least Deviation from the Full Consistency (DFC), which proves the reliability of the analysis.

#### Step 4: Averaging of the weights and Reranking of the criteria.

The optimal weights that are generated for each criterion by each expert are then averaged to find the average weights of the criteria which are then taken as the final optimal weights when ranked in the descending order completed providing final information for the decision-making.

## V. Analysis and Discussion

The monetary policy instruments from the group of RBI's monetary policy instruments are considered as the Criteria that affect the performance of the Niche Banks-SFB and PB. The criteria are selected based on the literature review and experts' opinion. Table 2 shows how the experts have ranked their

### 9th International Conference on

## Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024

opinions about the criteria and done the pair-wise comparison or Best to Other criteria comparison on the scale of relative importance in 1-9 as shown in

Table 1. Eleven experts were approached in the Delphi method and they have suggested their unbiased opinions during discussions from their experiential insights about niche banks. Table 2 gives an outline that seven experts are of the opinion that REPO rate has the highest importance of the other criteria and the SDF and MSF were opinionated equally by 5 experts. The ranks of criteria in the initial step and the Best to Other pair-wise comparisons are then used to analyse FUCOM and the weights of each of the criteria with zero DFC is generated as shown in Table 3. The FUCOM method has 2 constraints inducted which are subjected to minimisation to near to or equal to zero. The weights that are generated (Table 3) have DFC equal to zero showing its highest reliability and optimality. The Comparison of the weights generated is shown in Figure 2, which depicts that the larger weights are distributed among REPO followed by SLR and CRR. The next in the line of weight distribution is SDF and RREPO. And least weight was for MSF.

Table 2 Expert's Criteria Ranking and Pair-wise Comparison

Experts	Rankings of Criteria and Pair-Wise Comparisons					
	REPO	RREPO	SLR	CRR	SDF	MSF
E1	1	9	8	8	7	4
	REPO	RREPO	SLR	CRR	MSF	SDF
E2	1	1	5	5	7	9
	REPO	RREPO	MSF	CRR	SLR	SDF
E3	1	8	7	6	5	5
	CRR	SLR	REPO	MSF	RREPO	SDF
E4	1	1	5	5	6	6
	SDF	RREPO	CRR	SLR	MSF	REPO
E5	1	3	7	7	8	8
	REPO	RREPO	CRR	SLR	SDF	MSF
E6	1	9	8	7	3	2
	REPO	RREPO	SLR	RREPO	SDF	MSF
E7	REPO	CRR	SLR	RREPO	SDF	MSF

**9th International Conference on**
**Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024**

	1	7	7	6	3	2
<i>E8</i>	<i>REPO</i>	<i>CRR</i>	<i>SLR</i>	<i>RREPO</i>	<i>MSF</i>	<i>SDF</i>
	1	9	8	7	5	3
<i>E9</i>	<i>CRR</i>	<i>SLR</i>	<i>REPO</i>	<i>MSF</i>	<i>RREPO</i>	<i>SDF</i>
	1	2	3	4	5	6
<i>E10</i>	<i>REPO</i>	<i>RREPO</i>	<i>CRR</i>	<i>SLR</i>	<i>SDF</i>	<i>MSF</i>
	1	2	3	4	5	6
<i>E11</i>	<i>SLR</i>	<i>CRR</i>	<i>RREPO</i>	<i>SDF</i>	<i>REPO</i>	<i>MSF</i>
	1	2	3	4	9	9

Table 3 FUCOM Weights

<i>Criteria</i>	<i>E1</i>	<i>E2</i>	<i>E3</i>	<i>E4</i>	<i>E5</i>	<i>E6</i>	<i>E7</i>	<i>E8</i>	<i>E9</i>	<i>E10</i>	<i>E11</i>
<i>CRR</i>	<b>0.0713</b>	<b>0.0754</b>	<b>0.0909</b>	<b>0.3659</b>	<b>0.0764</b>	<b>0.0565</b>	<b>0.0625</b>	<b>0.0581</b>	<b>0.4082</b>	<b>0.1361</b>	<b>0.2169</b>
<i>MSF</i>	<b>0.1425</b>	<b>0.0538</b>	<b>0.0779</b>	<b>0.0732</b>	<b>0.0669</b>	<b>0.226</b>	<b>0.2187</b>	<b>0.1046</b>	<b>0.102</b>	<b>0.068</b>	<b>0.0482</b>
<i>REPO</i>	<b>0.5701</b>	<b>0.3768</b>	<b>0.5451</b>	<b>0.0732</b>	<b>0.0669</b>	<b>0.452</b>	<b>0.4375</b>	<b>0.5229</b>	<b>0.1361</b>	<b>0.4082</b>	<b>0.0482</b>
<i>RREPO</i>	<b>0.0633</b>	<b>0.3768</b>	<b>0.0681</b>	<b>0.061</b>	<b>0.1783</b>	<b>0.0502</b>	<b>0.0729</b>	<b>0.0747</b>	<b>0.0816</b>	<b>0.2041</b>	<b>0.1446</b>
<i>SDF</i>	<b>0.0814</b>	<b>0.0419</b>	<b>0.109</b>	<b>0.061</b>	<b>0.535</b>	<b>0.1507</b>	<b>0.1458</b>	<b>0.1743</b>	<b>0.068</b>	<b>0.0816</b>	<b>0.1084</b>
<i>SLR</i>	<b>0.0713</b>	<b>0.0754</b>	<b>0.109</b>	<b>0.3659</b>	<b>0.0764</b>	<b>0.0646</b>	<b>0.0625</b>	<b>0.0654</b>	<b>0.2041</b>	<b>0.102</b>	<b>0.4337</b>
	<b>1.00</b>										
<i>DFC</i>	<b>0</b>										

### 9th International Conference on

## Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024

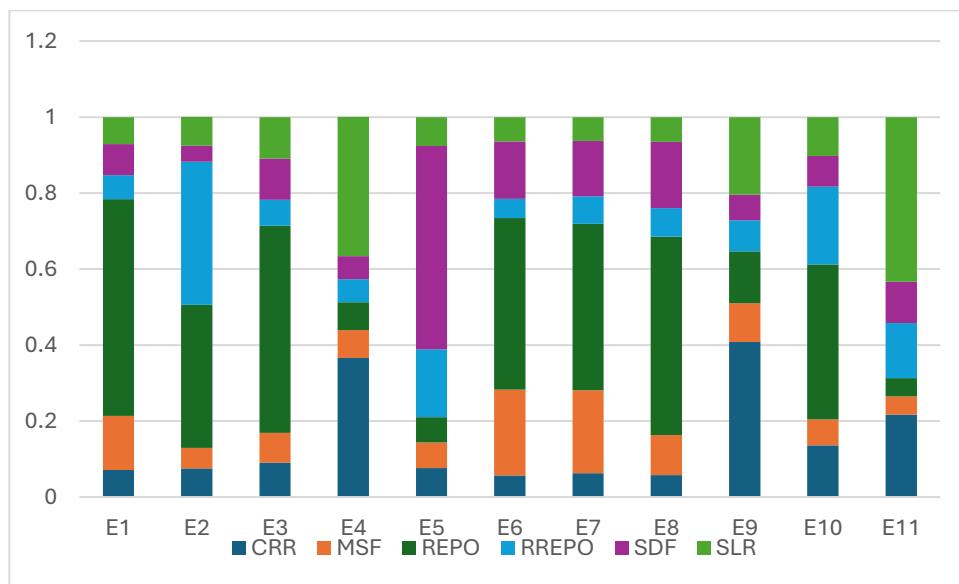


Figure 2 Criteria Weight Comparison Expert Wise

To consolidate the weights given by all the experts the weights based on the Criteria were averaged to reach the Final Optimised weights. The Final values are shown in Table 4 and are drawn in Figure 3. The weights show that 1/3<sup>rd</sup> of the weights are allotted to REPO Rate and the balance is allotted among other criteria. The SLR and the CRR share weights of 0.15, followed by SDF with 0.14. 0.13 weight was generated for RREPO and MSF has the least weight of 0.11. The final ranking based on descending weights are shown in Table 4.

The REPO and MSF are in nature the bank's borrowing from the central banking system and the rest of the Criteria SLR, CRR, SDF and RREPO are rates by which the banks move their excess cash or cash equivalents to the Central bank or keep as reserve under as per RBI directives. This interprets that the Niche Banks are highly influenced by their borrowing capacity from the Central bank through REPO than the lending or reserve capacity to the RBI. However, it is learned that Niche banks prefer REPO more to MSF as a higher interest of MSF may have reasoned behind. It is also found that the popular reserve ratios CRR and SLR are found next equal influencers of the performance of SFB and PB than to SDF and RREPO. But they are only less than half influencing when compared to REPO. It should also be noted that SDF and RREPO are the least lending/reserve category that influences the efficiency level.

Table 4 Average Weights Generated and Final Ranks

Criteria	Average Weights	Rank
REPO	0.33	1

### 9th International Conference on

## Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024

<b>SLR</b>	<b>0.15</b>	<b>2</b>
<b>CRR</b>	<b>0.15</b>	<b>3</b>
<b>SDF</b>	<b>0.14</b>	<b>4</b>
<b>RREPO</b>	<b>0.13</b>	<b>5</b>
<b>MSF</b>	<b>0.11</b>	<b>6</b>
	<b>1.00</b>	

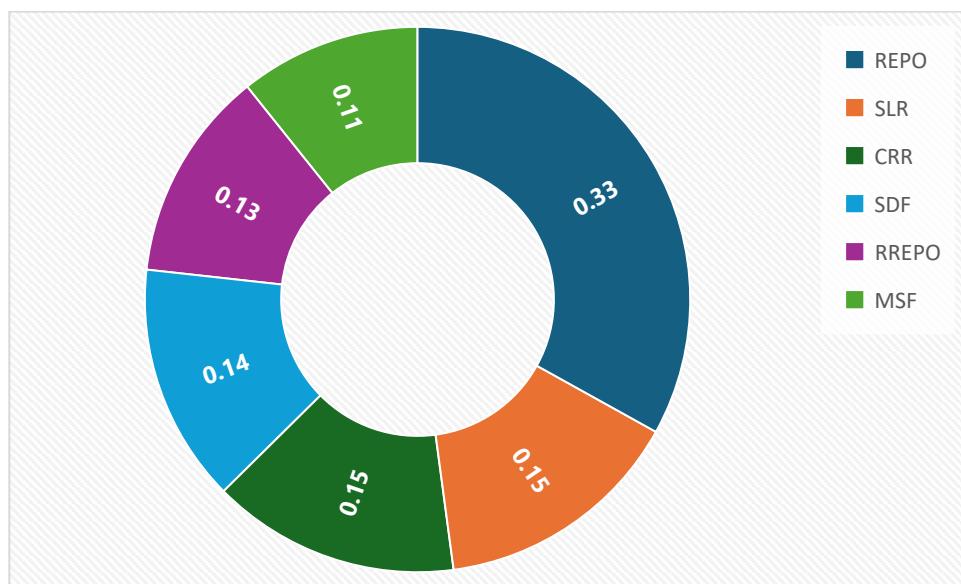


Figure 3 Optimal Average Weights

#### VI. Conclusion

The analysis in this paper finds out the very crucial monetary policy instruments used by the Central Bank of India-RBI and finds out its optimal weights in influencing the performance of the new Niche Banks- Small Finance Banks and Payments Banks. The Monetary Policy Instruments from its functioning group are selected; REPO, RREPO, SLR, CRR, SDF and MSF through Literature study and from expert's view. Through Delphi approach eleven professional banking experts in managerial understanding of the Niche banks are interviewed to collect their ranking and pair-wise comparison of criteria. The data thus collected is used in FUCOM model to generate the Optimal weights of which are further averaged to reach the final optimal values. The optimal weights give the measured impression by how much value each monetary policy instruments influence the performance of the SFBs and the PBs. From the analysis it is found that REPO had the highest weight with 1/3<sup>rd</sup> of the total weights being allocated, which was followed by SLR and CRR equally sharing 0.30 weight. SDF and RREPO had 0.14 and 0.13 weights respectively and the MSF was having a weight of 0.11. The reliability and validity of the analysis are based

**9th International Conference on****Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024**

on the Deviation from Full Consistency (DFC) which is zero for all the Expert's weights generation, which proves the reliability and validity to be highest.

**VII. Scope of Further Research**

The scope of this study is limited to finding the criteria and optimal weights for the monetary policy instruments within the boundary of new small/niche banks operational in India. The FUCOM model has a wider scope when it can be used for finding optimal weights for other multicriteria in areas of human resources, marketing, and operational areas where the decision makers need to find weights. An extended scope exists how the weights can be used for finding the best alternatives by simply multiplying the weights with the alternative's measured values, or it can also be used for advanced Multi-criteria Decision Making (MCDM) methods like but not limited to VIKOR, TOPSIS, RAFSI, MOORA.

**VIII. Acknowledgment**

The authors acknowledge the support and facilities provided by A P J Abdul Kalam Technological University, Kerala, India as well as The Department of Mechanical Engineering, College of Engineering Trivandrum, Kerala, India.

The First Author is a recipient of the Indian Council of Social Science Research (ICSSR) Centrally Administered Full-term Doctoral Fellowship. This article is largely an outcome of his doctoral work sponsored by ICSSR. However, the responsibility for the facts stated, opinions expressed and the conclusions drawn is entirely that of the authors.

**Select References**

Abdessamadd Kobi, L. A. D. A. (2020). *International Series in Operations Research & Management Science TheeMulti-Criteria Approach forrDecision Support An Introduction withhPractical Applications* (Vol. 300). <https://doi.org/10.1007/978-3-030-57262-4>

Adil, M. H., & Rajadhyaksha, N. (2021). Evolution of monetary policy approaches: A case study of Indian economy. *Journal of Public Affairs*, 21(1). <https://doi.org/10.1002/pa.2113>

Committee on Comprehensive Financial Services for Small Businesses and Low Income Households. (2014).

Coşansu, D., & Okursoy, A. (2022). Financial Performance Analysis of Retail Trade Firms Registered in BIST with FUCOM Based VIKOR Method. *Alphanumeric Journal*, 10(2), 2022. <https://doi.org/10.17093/alphanumeric.1205322>

Dua, P. (2020). Monetary policy framework in India. *Indian Economic Review*, 55(1), 117–154. <https://doi.org/10.1007/s41775-020-00085-3>

Durmić, E. (2019). The evaluation of the criteria for sustainable supplier selection by using the fucom method. *Operational Research in Engineering Sciences: Theory and Applications*, 2(1), 91–107. <https://doi.org/10.31181/oresta1901085d>

**9th International Conference on****Economic Growth and Sustainable Development- Emerging Trends- November 21-22, 2024**

Everest, T., Savaşkan, G. S., Or, A., & Özcan, H. (2024). Suitable site selection by using full consistency method (FUCOM): a case study for maize cultivation in northwest Turkey. *Environment, Development and Sustainability*, 26(1), 1831–1850. <https://doi.org/10.1007/s10668-022-02787-5>

Kaya, A., Pamucar, D., Gürler, H., Innovation, M. O.-F., & 2024, undefined. (n.d.). Determining the financial performance of the firms in the Borsa İstanbul sustainability index: integrating multi criteria decision making methods with simulation. *Springer*. Retrieved July 12, 2024, from <https://link.springer.com/article/10.1186/s40854-023-00512-3>

Makalesi, A., Research, /, Mehmet, A., Sofuoğlu, A., Fakültesi, M., Bölümü, M. M., & Üniversitesi, O. (2020). Fuzzy applications of FUCOM method in manufacturing environment. *Dergipark.Org.Tr*, 23(1), 189–195. <https://doi.org/10.2339/politeknik.586036>

Ministry of Finance. (2024, October 16). Press Release\_Press Information Bureau. *Press Information Bureau*.

Pamučar, D., Stević, Ž., & Sremac, S. (2018). A new model for determining weight coefficients of criteria in MCDM models: Full Consistency Method (FUCOM). *Symmetry*, 10(9). <https://doi.org/10.3390/sym10090393>

Prentkovskis, O., Erceg, Ž., Stević, Ž., & Tanackov, I. (2018). A new methodology for improving service quality measurement: Delphi-FUCOM-SERVQUAL model. *Symmetry*, 10(12). <https://www.mdpi.com/2073-8994/10/12/757>

Reserve Bank of India - Function Wise Monetary. (n.d.). Retrieved October 4, 2024, from [https://www.rbi.org.in/scripts/FS\\_Overview.aspx?fn=2752](https://www.rbi.org.in/scripts/FS_Overview.aspx?fn=2752)

Saaty, T. L. (1977). A Scaling Method for Priorities in Hierarchical Structures. In *JOURNAL 01: MATHEMATICAL PSYCHOLOGY* (Vol. 15).

Sáenz-Royo, C., Chiclana, F., & Herrera-Viedma, E. (2024). Ordering vs. AHP. Does the intensity used in the decision support techniques compensate? *Expert Systems with Applications*, 238. <https://doi.org/10.1016/j.eswa.2023.121922>

Yadav, R. S., Kaya, S. K., Pant, A., & Tiwari, A. (2023). AI-enabled human capital management (HCM) software adoption using full consistency method (FUCOM): evidence from banking industry. *Global Knowledge, Memory and Communication, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/GKMC-04-2023-0128/FULL/XML>