

## Advancing Indigenous Tribal Development: Bibliometric Insights and Moderation Analysis of Financial Practices

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### Abstract

This study seeks to strengthen financial practices among tribal communities in ways that promote their socio-economic advancement while safeguarding their cultural heritage and natural environment. Despite a substantial rise of nearly 46% in government allocations for tribal development in 2025 (₹14,925.81 crore), many tribal groups continue to face challenges related to financial literacy and limited access to essential services such as banking and savings. To address these issues, the research is framed within the Sustainable Development Goals (SDGs) and employs a dual methodological design: first, a review of existing literature, and second, an empirical analysis of financial behaviour across different demographic segments. Tools such as VOSviewer and RStudio Biblioshiny (TITLE-ABS-KEY “TRIBAL DEVELOPMENT”) are used for bibliometric mapping, while Smart-PLS facilitates multi-group moderation analysis to examine how variables like age and gender influence saving and spending patterns. Findings reveal significant variations in the way tribal populations manage financial resources, underscoring the urgent need for culturally sensitive financial inclusion programs that encourage growth without eroding traditional values. By aligning with the SDGs, the study provides actionable insights for policymakers and development practitioners committed to building a more equitable and inclusive future.

**Keywords** - Sustainable Development, Indigenous Empowerment, Financial Behaviour, Inclusive Growth.

### INTRODUCTION

Tribal communities, often residing in remote and ecologically sensitive regions, represent a vital yet underrepresented segment of global development. Their sole cultural heritage, traditional knowledge systems, and symbiotic relationship with nature position them as key stakeholders in achieving the United Nations (SDGs). However, systemic exclusion from formal financial systems and limited scope to education, healthcare, and infrastructure continue to hinder their full participation in economic development.

### SUSTAINABLE DEVELOPMENT GOALS FOR TRIBAL OR INDIGENOUS COMMUNITY

This study is anchored in the SDG framework, with particular emphasis on goals that directly impact tribal development. **SDG 1 (No Poverty)** and **SDG 2 (Zero Hunger)** address economic deprivation and food insecurity, which are prevalent in tribal regions. **SDG 3 (Good Health and Well-being)** and **SDG 4 (Quality Education)** aim to improve access to essential services, while **SDG 5 (Gender Equality)** promotes empowerment of tribal women. **SDG 6 (Clean Water and Sanitation)** and **SDG 7 (Affordable and Clean Energy)** are critical for improving living standards. **SDG 8 (Quality Work and Fiscal Growth)** and **SDG 10 (Reduced Inequalities)** focus on inclusive economic participation, and **SDG 13 (Climate Action)** and **SDG 15 (Life on Land)** recognize the role of indigenous communities in environmental stewardship.

Despite these global commitments, tribal communities remain marginalized in the world economic landscape. Their participation is often informal, centered around subsistence agriculture, forest-based livelihoods, and artisanal crafts. Financial behavior among tribal populations is shaped by cultural norms, trust in informal systems, and limited exposure to formal banking and credit institutions. This gap in financial inclusion not only restricts their monetary potential but also impedes broader sustainable development efforts.

To discover these dynamics, this paper employs a **bibliometric review** to map the evolution of scholarly research on tribal financial behavior and sustainable development. It identifies key themes, influential authors, and research gaps that inform policy and practice. Complementing this, a **multi-group moderation analysis** is conducted to examine how demographic factors—such as age, gender, education level, and geographic location—moderate financial behavior

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outcomes within tribal populations. This approach reveals intra-group disparities and highlights the requirement for personalized interventions that respect cultural diversity and local contexts.

By integrating bibliometric insights with empirical analysis, the study offers an inclusive understanding of the financial dimensions of tribal sustainability. It emphasizes the significance of inclusive financial systems, culturally sensitive development strategies, and targeted policy contexts that align with the SDGs. Ultimately, the study aims to contribute to a more equitable and sustainable upcoming for tribal communities, ensuring that their voices and contributions are recognized in the global development narrative.

### TRIBAL DEVELOPMENT IN INDIA

India's indigenous communities, officially recognized as Scheduled Tribes (STs), represent one of the most culturally rich and historically resilient populations in the country. These tribal groups have preserved unique languages, customs, and ecological knowledge systems for centuries. As of 2025, the tribal population in India is projected to reach **128.6 million**, accounting for approximately **8.6% of the total national population**.

Tribal communities are primarily concentrated in central and eastern India. The states with the highest tribal populations include:

- **Madhya Pradesh** – the most populous tribal state
- **Maharashtra**
- **Odisha**
- **Rajasthan**
- **Gujarat**
- **Jharkhand**
- **Chhattisgarh**

India's tribal communities, officially recognized as Scheduled Tribes (STs), represent a vital segment of the country's social and cultural fabric. With over 700 distinct tribes, they account for approximately 8.6% of the national population, primarily residing in forested and hilly regions across states like Madhya Pradesh (MP), Maharashtra, Odisha, Chhattisgarh, Jharkhand, and Rajasthan. Despite increased government investment—₹14,925.81 crore allocated in 2025 for tribal development—many indigenous groups continue to face challenges in education, healthcare, and financial inclusion. These communities often rely on traditional economies and subsistence practices, making financial literacy and access to formal banking systems limited. The requirement for evolution strategies that respect tribal customs while promoting economic empowerment is critical. Positioning with the Sustainable Development Goals (SDGs), this paper emphasizes the benefits of culturally sensitive financial interventions. By understanding behavioural patterns and demographic influences, policymakers can design inclusive programs that uplift tribal populations without disrupting their ecological balance or heritage. This approach ensures that growth is both sustainable and respectful of indigenous identity.

Tribal communities in India continue to face severe socio-economic challenges. According to **the state of art of the tribal studies; an Annotated bibliography by Dr Nupur Tiwary**, has provided the twenty-four (24) themes on the tribal studies **Sen (2003)** highlights that over 85% of tribal families in Gajapati district, Odisha, live below the poverty line, with widespread feminization of poverty. **Singh (1999)** reveals that the JRY scheme failed to benefit tribal populations in Bihar and Madhya Pradesh due to lack of awareness and misuse by local authorities. **Tripathy (2005)** documents persistent unemployment, lack of social security, and poor living conditions among tribal labourers. **Lalrinliana and Kanagaraj (2006)** demonstrate the potential of Self-Help Groups in Mizoram to support tribal development through structured community engagement.

### REVIEW OF LITERATURE AND SEARCH PROTOCOLS

#### Theme One: Adivasi / Tribal Narratives, Phenomena and Life World Studies

##### 1. Susana B.C. Devalle

**Source:** "Tribe in India: The Fallacy of a Colonial Category", in *Studies on Asia and Africa from Latin America*, edited by David N. Lorenzen, Colegio de Mexico (1990)

Devalle critiques the colonial construct of "tribe" in India, arguing that it oversimplifies Adivasi identities. Drawing on Jharkhand's ethno-history, she challenges the assumption that Scheduled Tribes are inherently primitive or backward.

She highlights how anthropologists often accepted official classifications without questioning their historical context, detaching tribal communities from broader socio-political processes. Her work calls for a more dynamic understanding of tribal identity—one that recognizes historical agency and rejects static, colonial-era labels still influencing policy and research.

## 2. Samar Kumar Biswas

**Source:** “Socio-Economic Crisis and Its Consequences on a Little-Known Tribal Community in West Bengal, India”, in *Identity in Crossroad Civilizations: Ethnicity, Nationalism and Globalism in Asia*, edited by Erich Kolig, Vivienne SM. Angeles, and Sam Wong, Amsterdam University Press (2009)

Biswas explores the socio-economic challenges of the Toto tribe in northern West Bengal, near the Indo-Bhutan border. Unlike advanced communities with access to modern infrastructure, the Totos face limited healthcare, education, and technology. This disparity hinders their development and quality of life. He investigates how geographic isolation and systemic neglect contribute to their marginalization and raises a central question: why do some tribal groups remain underdeveloped despite national progress? Biswas urges policymakers to address structural barriers and recognize the unique challenges faced by lesser-known tribal communities.

## 3. Sanjay B. Salunke

**Source:** “Occupational Transitions of Ghisadi Nomadic Tribe: Special Reference to Aurangabad District”, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Salunke examines the Ghisadi tribe, a nomadic community in Maharashtra, focusing on their exclusion from development due to constant mobility. Their lack of permanent settlement limits access to education, employment, and welfare services. He emphasizes how occupational transitions and wandering lifestyles are overlooked in policy frameworks. Salunke promotes for comprehensive tactics that recognize the evolving roles of nomadic tribes and address their unique socio-economic challenges. His study calls for development models that accommodate mobility and ensure equitable access for communities like the Ghisadis .

## SEARCH PROTOCOL AND STRATEGIES'



**Figure 1 Methodologies for Databases**

*Source 1 Author's Calculation through database*

## OBJECTIVE AND HYPOTHESES

### OBJECTIVES -

1. To Evaluate the Bibliometric dataset on Biblioshiny
2. To Evaluate the Bibliometric dataset on VOSviewer
3. To investigate the moderation effects of select demographic variables on Financial Sources (Income Sources/IS), Savings Behaviour (SB) and Availability of Financial Services (AFS) Consumption Behaviour (CB) and their relationship with Financial Behaviour (FB) in North-Central region of Chhattisgarh State.

**Hypotheses:** To statistically examine the objectives in the North-Central region of Chhattisgarh, the following null hypotheses were formulated:

- **H<sub>01</sub>** – No significant relationship exists between exogenous constructs and the endogenous construct of financial behaviour in the North-Central region of Chhattisgarh.
- **H<sub>02</sub>** – Income sources, access to financial services, saving behaviour, and consumption behaviour show no significant interconnection with financial behaviour in the North-Central region of Chhattisgarh.
- **H<sub>03</sub>** – Exogenous constructs exert no significant influence on the endogenous construct of financial behaviour in the North-Central region of Chhattisgarh.
- **H<sub>04</sub>** – Exogenous constructs do not produce mediation effects on financial behaviour in the North-Central region of Chhattisgarh.
- **H<sub>05</sub>** – Selected demographic variables have no moderation effects on income sources (IS), saving behaviour (SB), availability of financial services (AFS), and consumption behaviour (CB), nor on their collective relationship with financial behaviour (FB) in the North-Central region of Chhattisgarh.

## RESULT AND DISCUSSION

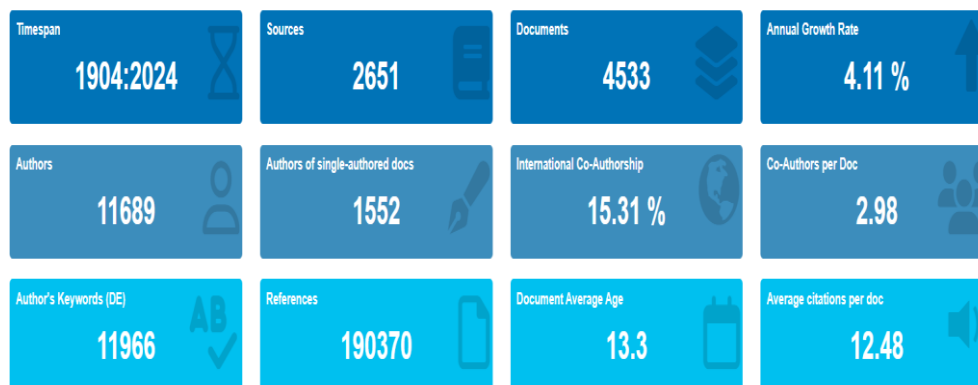
### Identification and Screening

1. Descriptive Analysis
2. Network Analysis

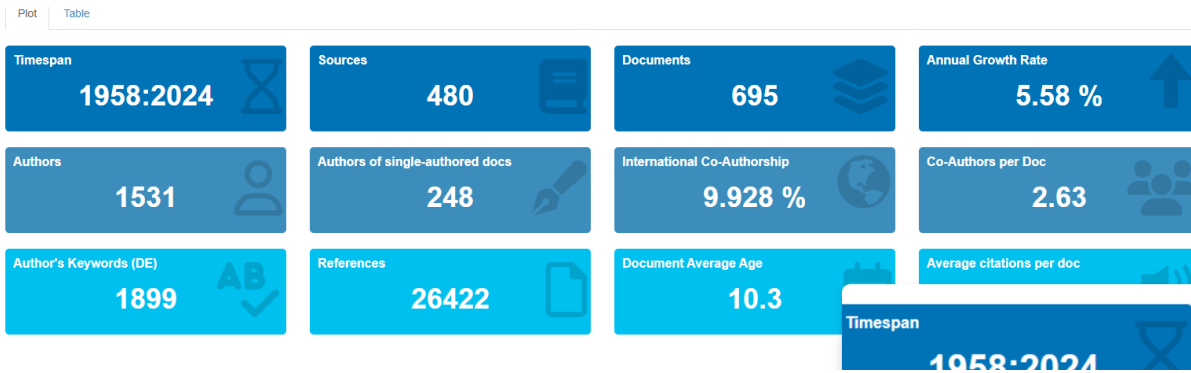
#### 1. Descriptive Analysis

Descriptive analysis in the Biblioshiny environment provides a structured snapshot of research activity within a chosen field. It captures yearly publication patterns, highlights leading contributors—whether individuals, articles, or nations—and brings forward the most common keywords associated with the discipline. This type of analysis acts as an entry point for exploring the broader landscape of academic output.

Although valuable for identifying trends, influential sources, and thematic clusters, descriptive analysis does not engage in hypothesis testing or causal exploration. Its role is to present an objective summary of bibliographic information referenced in scholarly work. Within bibliometric research, this includes essential metadata such as journal titles, author and co-author information, document categories, and institutional affiliations. Together, these details help scholars better understand the intellectual framework and publishing dynamics of their area of study.



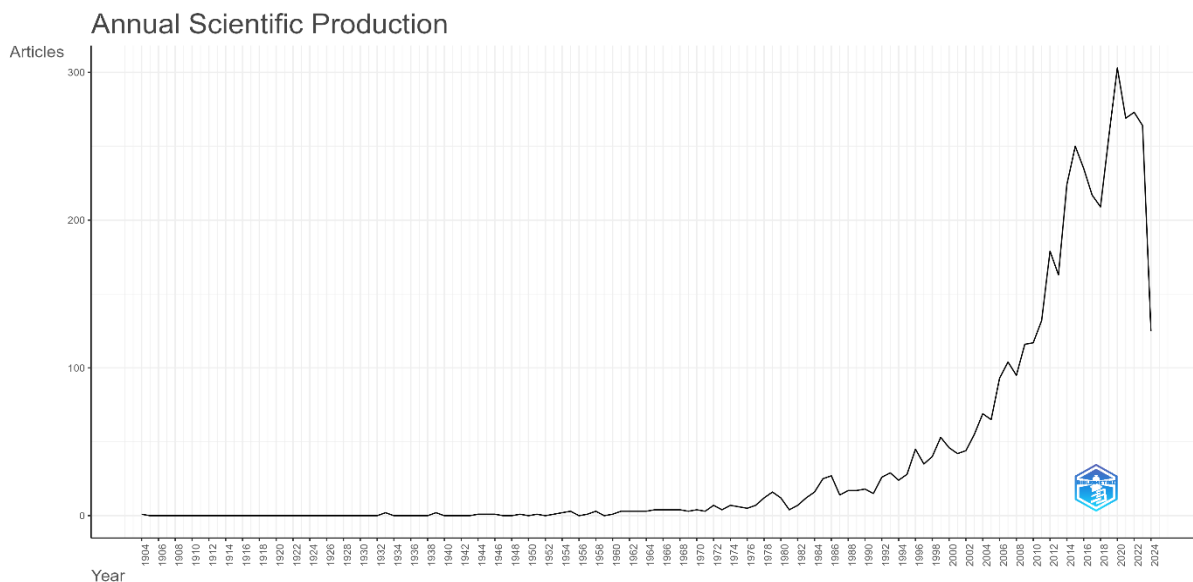
Source 2 Author's Calculation through database



A body of 695 academic studies has employed a range of bibliometric techniques—such as evaluating journal influence, measuring author productivity, tracking publication timelines, analyzing citation patterns, and mapping institutional contributions—to reveal major developments in the field of financial behaviour research.

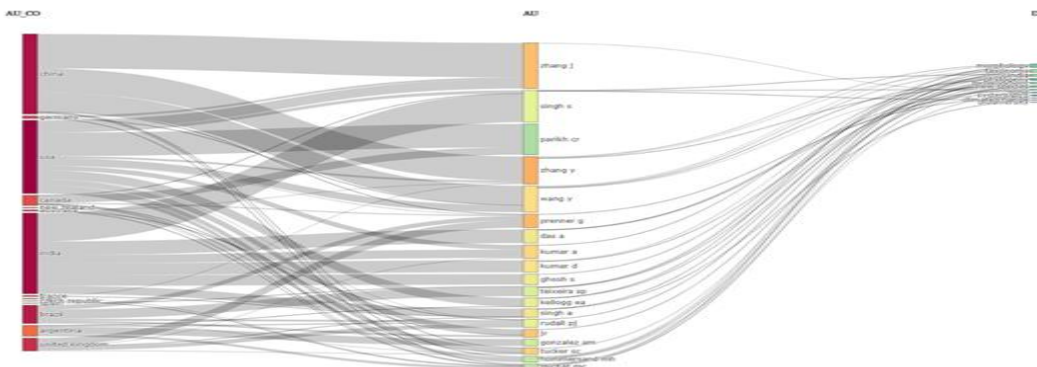
### Trend Analysis

The dataset traces the annual growth of scholarly output from 1969 to mid-2023. A descriptive summary highlights a clear upward trajectory in the number of publications over this period. volume, rising from just one document in 1969 to 75 by the year 2023.



Source

3 Author's Calculation through database



Source 4 Author's Calculation through database

**Three – field Analyses**

Three – field plot analysis mentioned above showing the authors country, authors and authors key words. China has the largest no. of authors collaborating with USA and India majorly with the term tribals as their part of study.

**Most Relevant Affiliations**

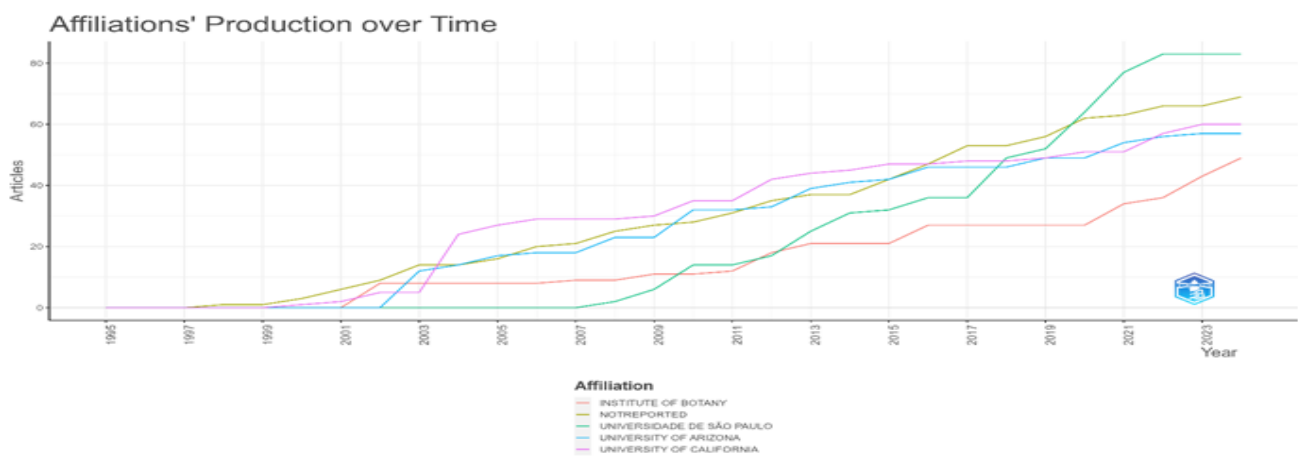
Figure ... shows that Universidad de Sao Paulo has the highest number of publications in the field of tribal research. The affiliations data shows top 10 most important institutions conducting research with collaborations.

**Affiliations Production Overtime**

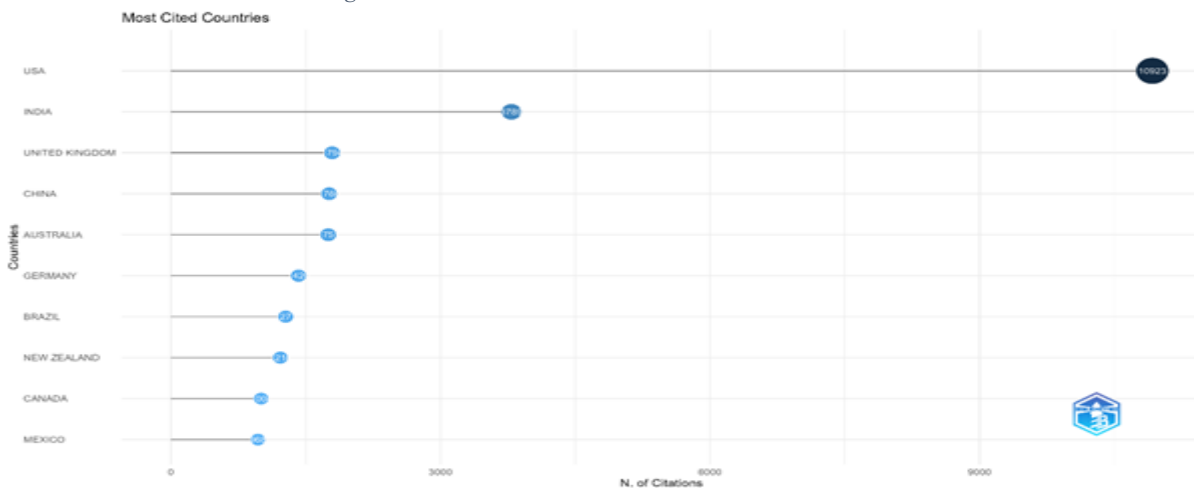
Figure... showing the publications related to institutions. University of California was the pioneer in this field having publication since 1995 though over the time Universidad de Sao Paulo published highest amount of publication.

**Most Cited Countries**

Figure . showing that in top 10 most cited countries USA grabbed the top position and the second top most cited county as India.



Source 5 Author's Calculation through database



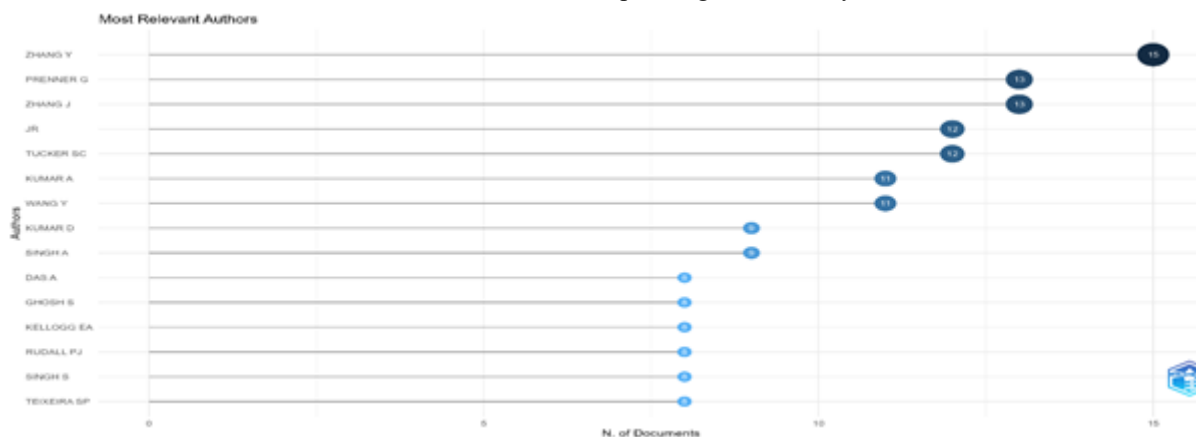
Source 6 Author's Calculation through database

**Most Relevant Authors**

On the basis of database available till 2024 there are six Indian authors who were listed in top 15 most relevant authors in tribal research works.

**Co- Authorship country collaboration**

from the dataset feeded in VOSviewer through Scopus database most collaborate countries are USA, India, Russia, Thailand. Authors also attach the collaboration world map through Biblioshiny.

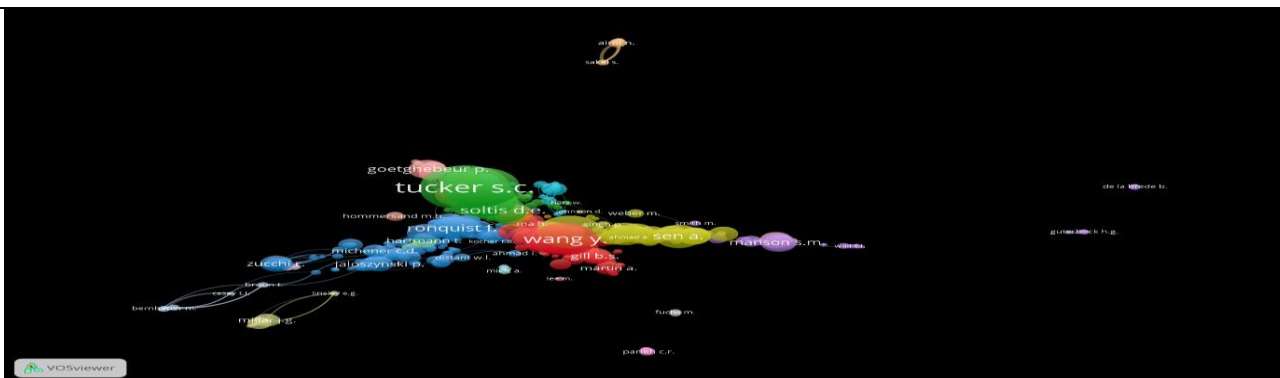


Source 7 Author's Calculation through database  
 Source 8 Author's Calculation through database

**Co-citation od Authors Network Vi**

The figure is showing the highly cited authors bigger the circle shows the higher no. of citation.

**Country Collaboration Map**

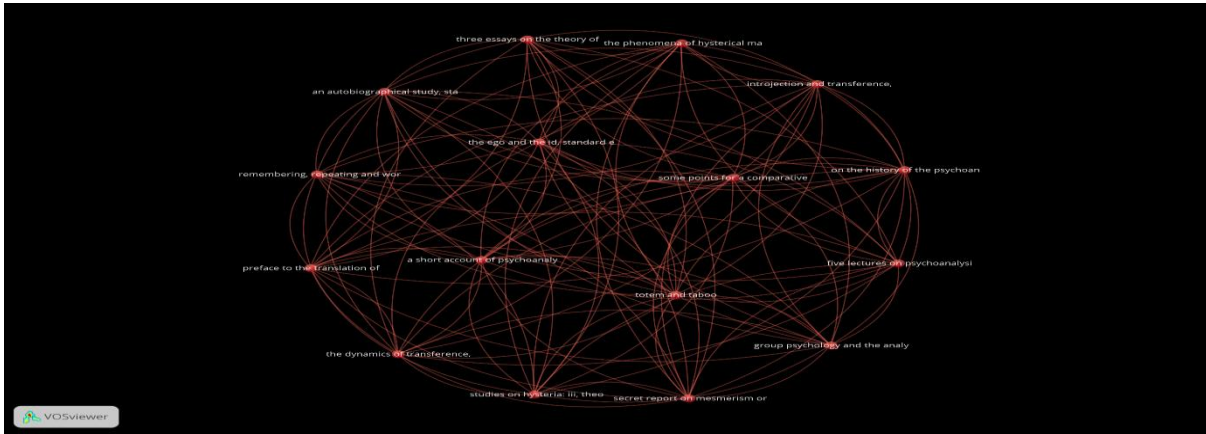


Source 9 Author's Calculation through database

**Co-citation of sources Network Vi**

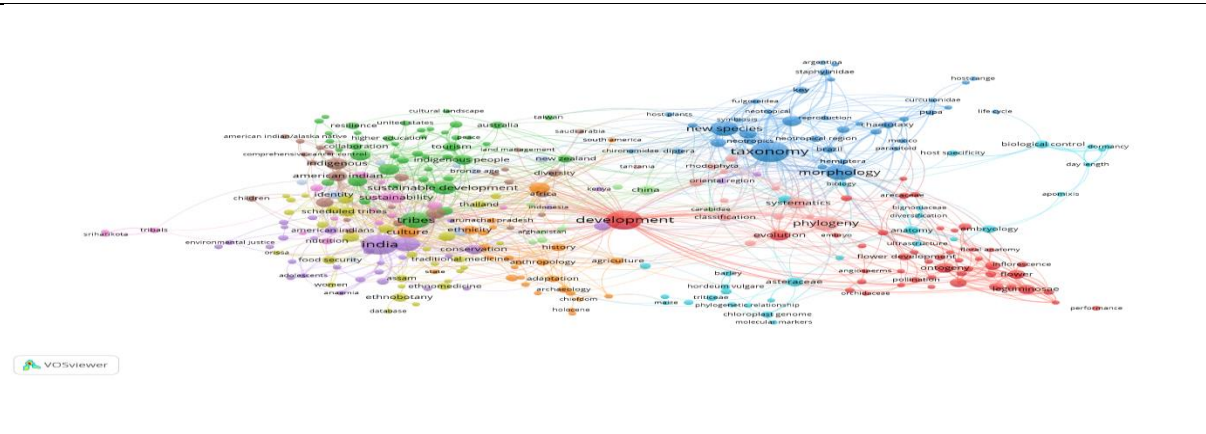
Co-citation network visual overlay framing the perfect mapping of core citations.

Source 10 Author's Calculation through database



Co-occurrence Author's keyword

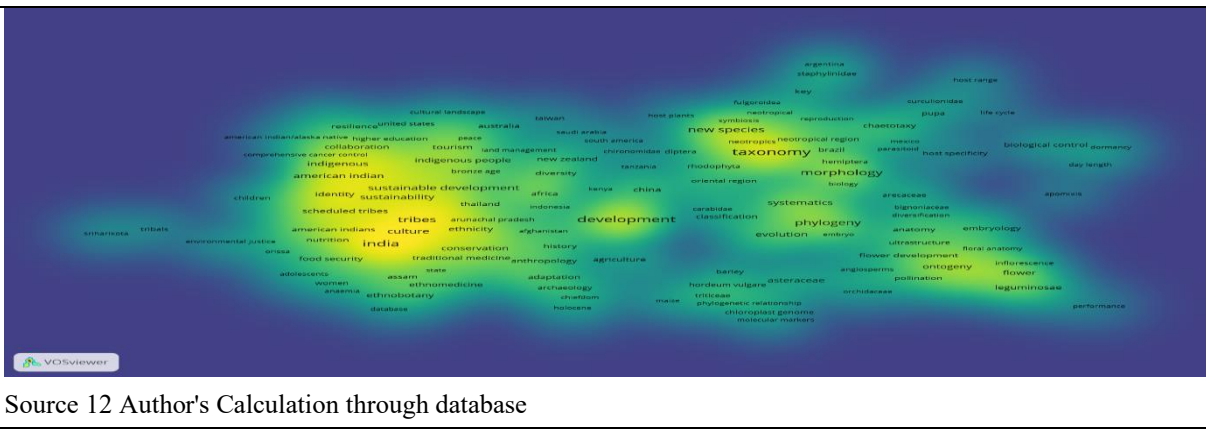
Highly cited authors and most of the researches are connecting the world development with morphology, taxonomy, India, tribes etc.



Source 11 Author's Calculation through database

Co-occurrence Author's keyword Density

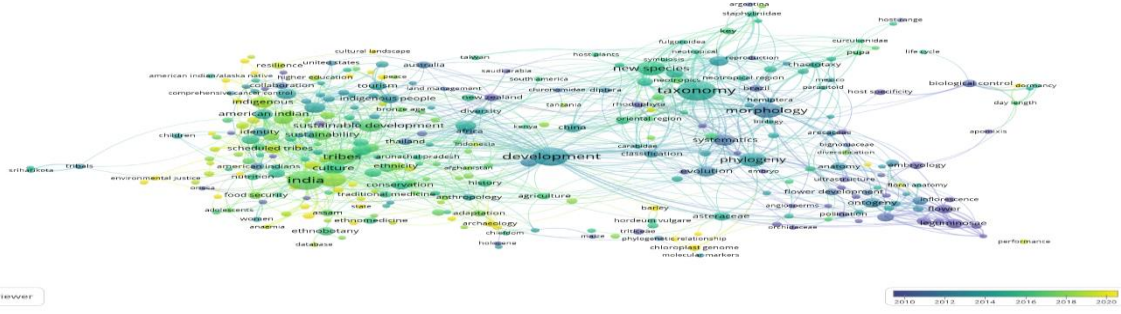
Density analysis showing the connected words together with yellow highlighted colours as tribes with culture, with sustainable development, with American Indian, with indigenous.



Source 12 Author's Calculation through database

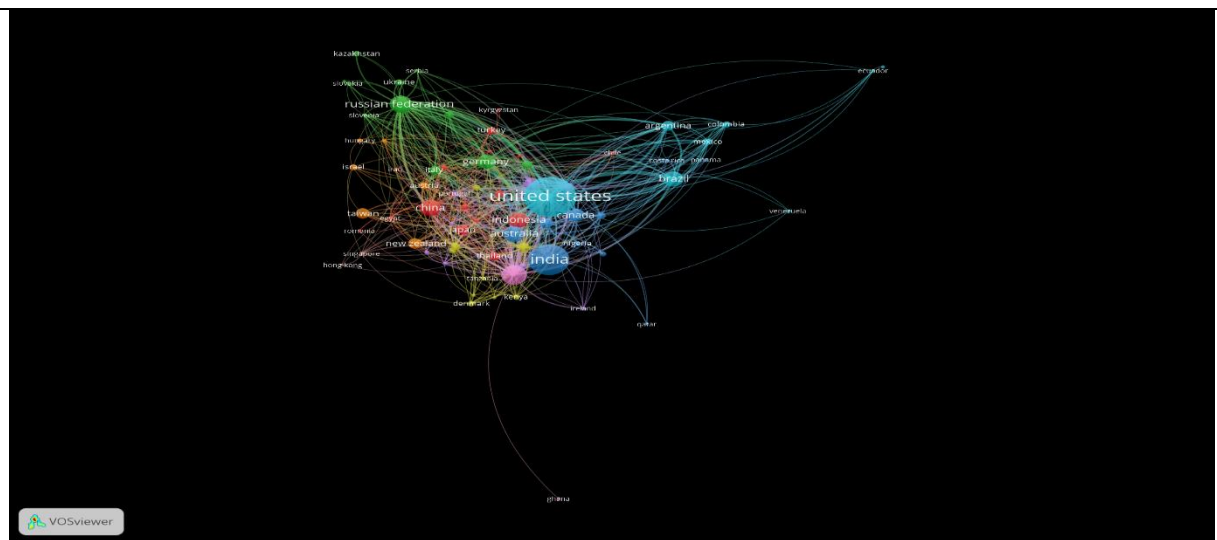
### Co-occurrence Author's keyword Overlay

Overlay visualization shows the frequent research patterns darker the colour older the pattern. Lighter the colour newest the pattern



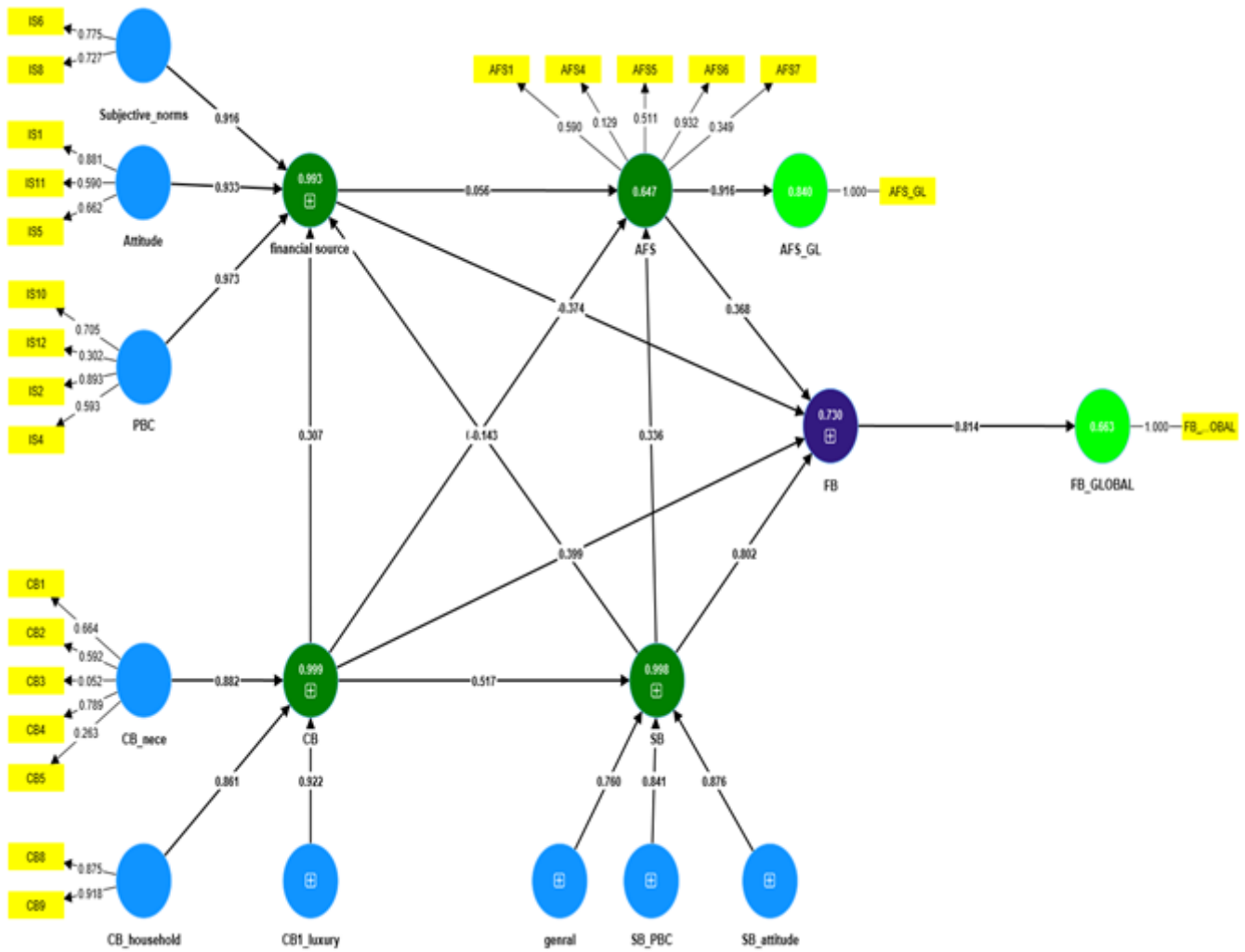
Source 13 Author's Calculation through database

### County Collaboration



Source 14 Author's Calculation through database

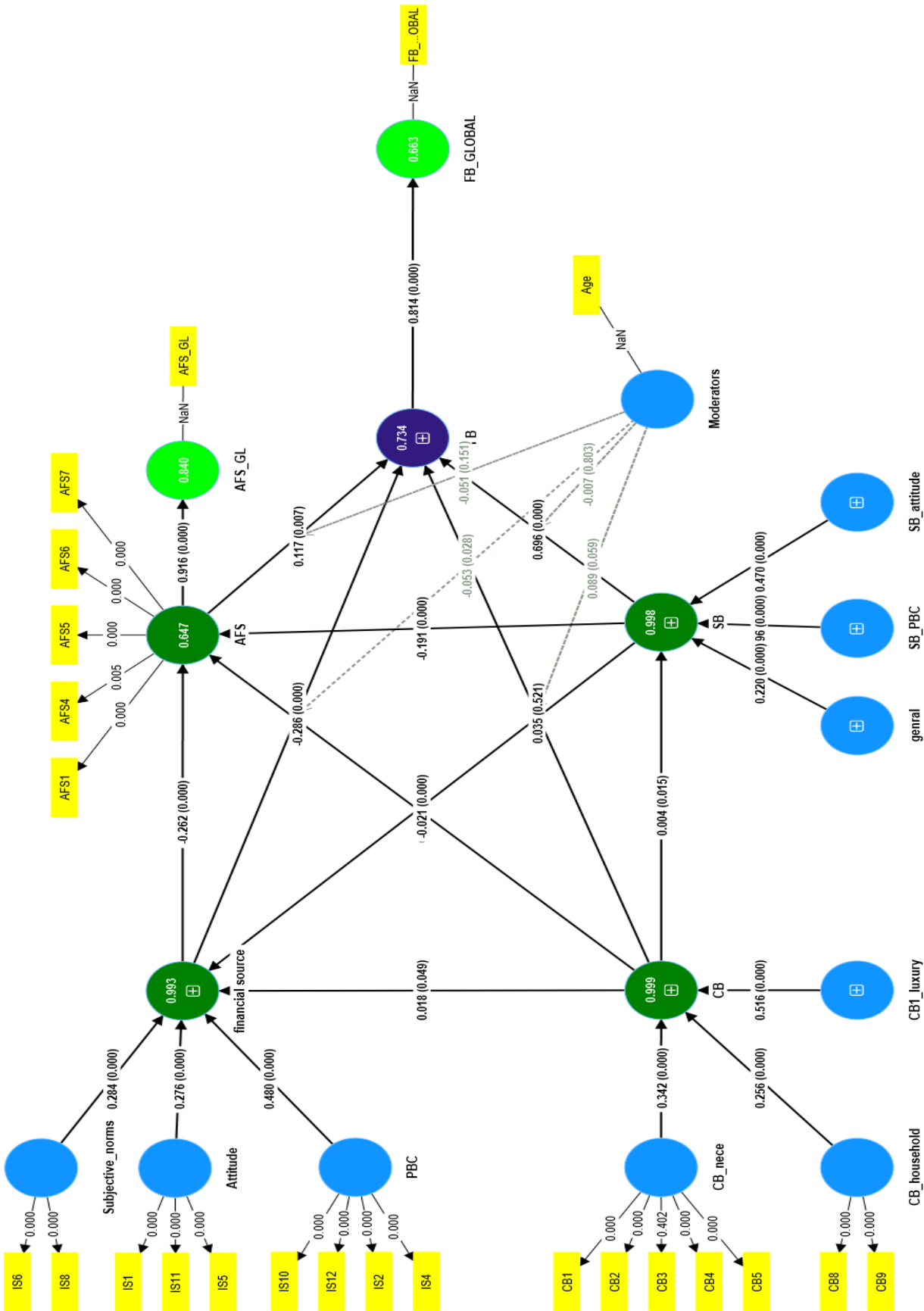
Moderation Analysis :The moderation analysis has been conducted through SmartPLS software in the pattern of second higher order reflective formative measurement model. Exogenous construct as financial behaviour and endogenous construct as saving behaviour, consumption behaviour, availment of financial sevicees and availability of financial sources.



Source 15 Author's primary Data Result

**Hypothesis results-**Result of hypotheses will refer the following three techniques in the order of testing **hypotheses-**

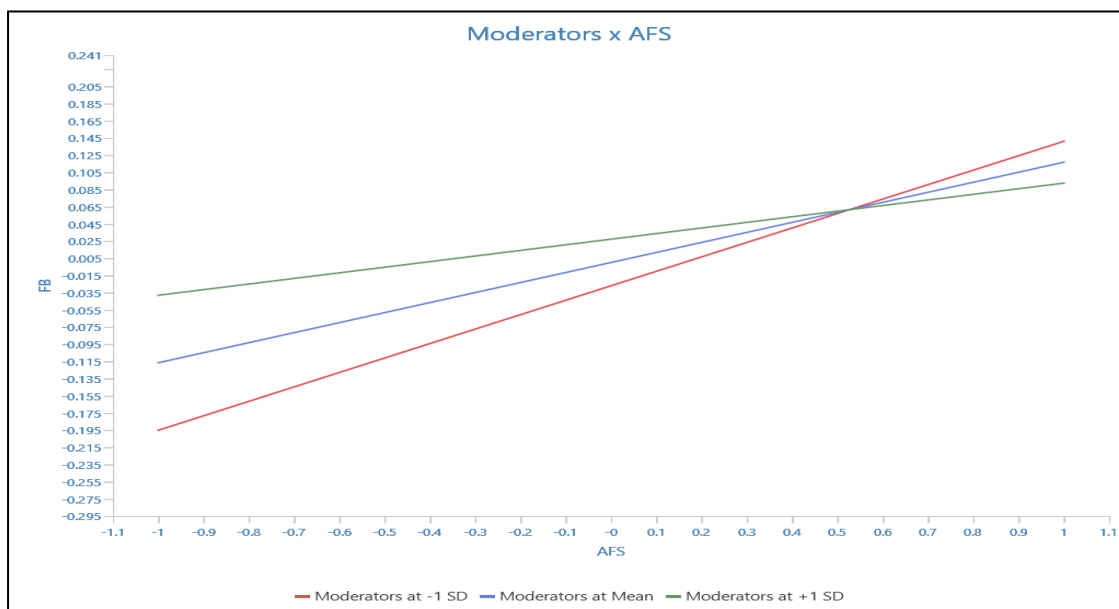
1. Calculated value < Table value = Null hypothesis accepted
2. P (probability Value, Significance value (Sig. in SPSS)) > .05 = Null hypothesis accepted
3. Software providing arc of results (either calculated value & table value or Limits), Same signs signify the rejection of null hypotheses.



Source 16 Author's primary Data Result

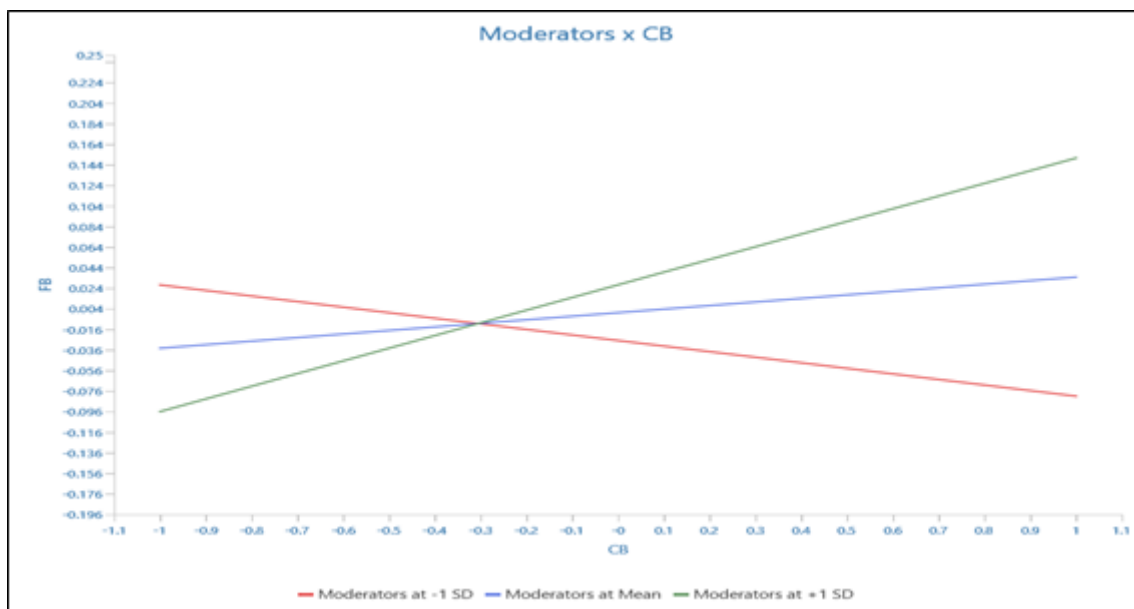
Furthermore, the slope analysis is presented to better understand the nature of the moderating effects (Figure. ). Moderator at mean line is much steeper for low Age ,the impact of Availability of financial services on financial behaviour is much stronger in comparison to high moderator. However, at higher ambiguity, the line tends to straighten. This shows that at higher role of age.

As shown in the figure the line is much steeper for low Age, the effect of Consumption Behaviour on financial behaviour is much stronger in comparison to high moderator. However, at higher ambiguity, the line tends to straighten. This shows that at higher role of age.



Source 17 Author's primary Data Result

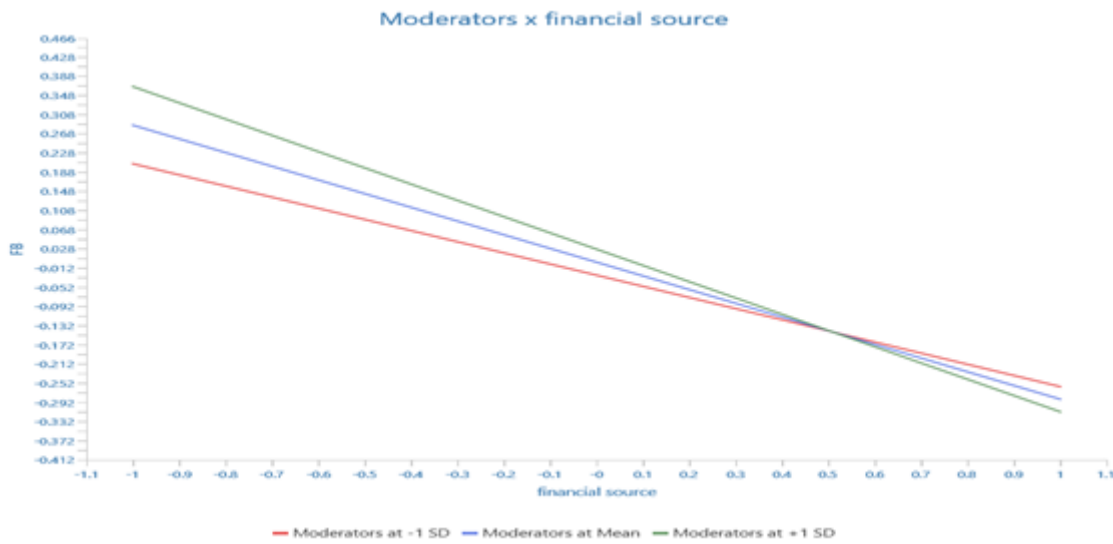
As shown in the Figure. the line is almost parallel for low Age, the effect of Savings on financial behaviour is not much stronger in comparison to moderator. This shows that there is either very weak or no moderation effect of age on financial behaviour.



Source 18 Author's primary Data Result

As shown in the Figure. the line is downward for Age, the influence of financial sources on financial behaviour is not much stronger in comparison to moderator. Below mention table is significant f-square value in SB to Fb.

The hypothesis testing conducted in the Central region of Chhattisgarh State explored the relationship between external factors and financial behaviour. Using beta values as indicators, the analysis revealed statistically significant associations across all tested dimensions. Specifically, financial behaviour showed a negative association with income sources, while positive associations were observed with the availability of financial resources, savings habits, and consumption patterns. These findings led to the acceptance of all alternative hypotheses, indicating that each examined variable plays a meaningful role in shaping financial behaviour within the studied region.



Source 19 Author's primary Data Result



**Discussion**

The financial behaviour of indigenous tribal communities plays a crucial role in decisive their socio-economic resilience and long-term sustainability. This study underscores four critical dimensions—**access to financial services, income sources, savings habits, and consumption patterns**—as foundational to understanding how tribal individuals manage resources and plan for future needs.

By examining these behavioural dimensions through a multi-group moderation lens, the study reveals nuanced variations across tribal subgroups, suggesting that financial behaviour is not monolithic but contextually embedded. These insights are crucial for tailoring sustainable development policies that respect cultural diversity while promoting economic empowerment.

**Conclusion and Suggestions**

This bibliometric and behavioural analysis highlights that **financial behaviour is both a determinant and a reflection of sustainable development** among indigenous tribal communities. The interplay between financial access, income stability, saving discipline, and consumption choices offers a inclusive framework for empathetic economic agency within these populations.

#### Recommendations:

1. **Improve Financial Accessibility:** Expand outreach of banking and insurance services in tribal regions through mobile units, digital platforms, and culturally sensitive financial literacy programs.
2. **Diversify Income Opportunities:** Support livelihood diversification through skill development, market linkages, and cooperative models that respect traditional knowledge systems.
3. **Promote Savings Culture:** Encourage community-based savings groups and microfinance initiatives that align with tribal values and seasonal income cycles.
4. **Monitor Consumption Trends:** Implement participatory budgeting and expenditure tracking tools to help individuals and households make informed spending decisions.
5. **Policy Integration:** Embed financial behaviour insights into tribal welfare schemes, ensuring that interventions are data-driven, inclusive, and adaptable to local contexts.

In conclusion, fostering sustainable financial behaviour is not merely an economic imperative but a pathway to **dignified, inclusive, and culturally rooted development** for tribal communities.

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