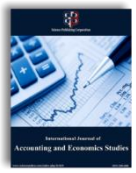
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Research paper



The Role of Productivity and Innovation Stimuli on Inclusive Growth Through Economic Empowerment: An SOR Perspective

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Abstract

This study examined the role of productivity enhancement (PE), innovation adoption (IA), and policy and institutional support (PIS) in driving inclusive growth (IG) through the mediating effects of inclusive participation (IP) and economic empowerment (EE) within the Madhya Pradesh manufacturing sector. The research addressed the need to understand how organizational stimuli translate into equitable economic outcomes in rapidly evolving industrial ecosystems. Data were collected from 100 entrepreneurs representing auto, pharmaceutical, and FMCG manufacturing firms using a seven- point Likert scale. PLS-SEM (Partial Least Squares Structural Equation Modeling) (PLS-SEM) was employed for reliability, validity, and hypothesis testing. Results revealed that PE and PIS had the strongest influence on IP and EE, which in turn significantly predicted IG. The study contributes by empirically validating the SOR framework in a manufacturing context and offering actionable insights for policymakers and managers to design strategies that foster both productivity and inclusivity.

Keywords: *Economic Empowerment; Innovation Adoption; Inclusive Growth; Productivity Enhancement; PLS-SEM.*

1. Introduction

In today's competitive business environment, the productivity of individuals and organizations has emerged as a central focus of economic and managerial research. Organizational performance, whether in manufacturing or service sectors, hinges significantly on how effectively human resources are utilized. At the heart of this utilization lies the motivational or psychic system, a concept that refers to the internal psychological drives that influence human behavior in the workplace. Rooted in classical psychological theories and contemporary management literature, motivation is acknowledged as a key determinant of employee performance and organizational success (Herzberg, 1968; Ryan & Deci, 2000).

Forces like digital transformation and financial technology have significantly contributed to how individuals and small enterprises engage with economic opportunities. Drawing on contemporary evidence (Martinez-Arvizu et al., 2025; Patrick & Krishnamoorthy, 2025), the research found that productivity-driven innovation can only be genuinely inclusive while supported by enabling policies and equitable participation structures.

The human mind functions as a complex system of energies often categorized as psychic or motivational energy, which, when optimally aligned, can translate into productive behaviors and performance outcomes. This energy does not exist in isolation but interacts with organizational systems and processes, forming what some scholars refer to as "organizational energy systems" (Bruch & Vogel, 2011). When such systems are misaligned due to low motivation or ineffective work design, overall productivity suffers despite the presence of physical and cognitive capabilities.

Motivation acts as a catalyst that enhances the effective deployment of ability, defined as the competency or capacity to perform tasks (Vroom, 1964). The relationship can be mathematically conceptualized as Performance = f (Ability × Motivation), indicating that without sufficient motivation, even the most skilled individuals may underperform. This perspective is supported by the expectancy theory, which posits that individuals are more likely to exert effort when they believe it will lead to desirable outcomes (Porter & Lawler, 1968).

In this context, productivity is not merely an economic indicator but a multidimensional construct that encompasses psychological, operational, and managerial dimensions. It is expressed as the ratio of outputs to inputs and reflects how well resources, land, labor, and capital are utilized to generate desired outcomes (Kumar & Saini, 2011). Particularly in service sectors, where outputs are intangible and heavily reliant on human interaction, motivational energy becomes a crucial determinant of organizational effectiveness.

Therefore, understanding and enhancing motivational drivers within organizational systems is essential. This study aims to explore how intrinsic and extrinsic motivational factors influence employee productivity, particularly within the private banking sector of Madhya

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Pradesh, India. By doing so, it seeks to contribute to the broader literature on human performance management and organizational efficiency in emerging economies.

2. Review of Literature

The paradigm of inclusive growth is increasingly gaining traction in global policy and academic discourse. Unlike traditional growth models that focus on aggregate economic metrics, inclusive growth emphasizes equitable participation and benefit-sharing among all societal segments, especially marginalized groups such as tribal communities, women, and rural populations (George et al., 2012). Within this framework, productivity and innovation emerge as critical levers, facilitating sustainable development, employment generation, and social inclusion (Agrawal & Jain, 2019)

Productivity, defined as the efficiency of output generation relative to input, is foundational to economic growth. However, when productivity improvements are not accompanied by inclusive policy measures, they can exacerbate inequality (Syverson, 2011). For instance, large-scale mechanization without reskilling leads to job losses in informal sectors, disproportionately affecting marginalized communities.

Inclusive growth aims to ensure that the benefits of economic progress reach all segments of society. While earlier models emphasized output efficiency, current research focuses on modifying access to innovation and productivity gains. Studies such as Soni et al. (2025) and Duran et al. (2023) highlight that digital inclusion and fintech-based entrepreneurship now act as catalysts for entrepreneur empowerment by removing entry barriers and expanding financial access. Technology enhances opportunities for women, rural entrepreneurs, and small producers. The emerging literature also recognizes the psychological and social dimensions of inclusion, emphasizing innovation improvement, both capability and confidence among marginalized entrepreneurs.

Empirical studies confirm that investments in education, vocational training, and digital infrastructure significantly enhance labor productivity in underserved regions (Dosi et al., 2019). Moreover, micro-enterprises, particularly in rural and tribal areas, have benefited from productivity-boosting interventions such as mobile-based supply chain management and access to renewable energy (World Bank, 2022). These shifts are instrumental in enhancing both wage and self-employment prospects

Innovation has traditionally been viewed as a catalyst for competitiveness and profit maximization. However, recent frameworks emphasize inclusive innovation—solutions designed to meet the needs of underserved populations. This includes frugal innovations, grassroots technology, social entrepreneurship, and digital public infrastructure that can enhance welfare outcomes at scale (Chataway et al., 2014).

According to Hall (2011), innovation not only enhances firm performance but also triggers spillover effects that uplift peripheral communities through knowledge diffusion and employment. Furthermore, the adoption of technology in health, agriculture, and education, especially AI and IoT, has enabled service delivery in geographically isolated tribal and rural zones (Naudé, 2010). These impacts are amplified when innovation ecosystems are decentralized and community-driven.

Inclusive participation refers to the active involvement of all societal groups in economic, social, and political processes. Literature underscores the importance of democratizing innovation, particularly through participatory planning, decentralized governance, and community-based entrepreneurship (George et al., 2012; Arocena & Sutz, 2012). These mechanisms ensure that tribal and rural voices are represented in innovation design, implementation, and benefit distribution.

The UNDP (2020) highlights that inclusive participation is critical in achieving the Sustainable Development Goals (SDGs), especially Goals 8 (decent work), 9 (industry and innovation), and 10 (reduced inequality). Community-led innovation platforms such as self-help groups (SHGs), tribal cooperatives, and digital literacy camps are often more effective than top-down policy impositions.

Gromling and Klos (2019) highlight that inclusive growth must integrate institutional factors and growth drivers, proposing "inclusive growth accounting" to better link economic outcomes with labor, education, and capital development.

Another study effectively highlights how financial literacy drives MSME performance through access to finance, risk management, and competitive advantage, with demographic factors moderating these effects. The robust PLS-SEM analysis and large sample provide practical insights for the think tank for MSME owners to make firms stronger in the financial capability and business outcomes Duran et.al., 2023).

Economic empowerment refers to the capacity of individuals and communities to generate sustainable income, access credit, and engage in entrepreneurial ventures. Inclusive growth is contingent on ensuring that innovation-driven productivity gains are equitably distributed (Sen, 1999).

Studies have found that access to microfinance, digital payments, mobile-based markets, and skill training increases economic self-reliance among tribal and low-income groups (Naude, 2010; World Bank, 2016). For instance, fintech solutions in rural India have improved credit delivery to tribal women entrepreneurs, reducing dependency on exploitative moneylenders.

Moreover, digital public goods such as Aadhaar (India's biometric ID system) and Jan Dhan bank accounts have expanded financial inclusion, empowering millions who were previously excluded from formal economic systems (OECD, 2017).

The success of productivity and innovation interventions for inclusive growth is heavily influenced by institutional and policy support. Governments and multilateral agencies must prioritize inclusive innovation in their development agendas through targeted subsidies, capacity-building programs, and legal frameworks that safeguard community rights (Arocena & Sutz, 2012).

Obradovic et al. (2022) examined project governance systems in European countries and emphasized the significance of training and time management as key enablers of productivity. Their research concluded that structured training across all project groups enhances technological understanding and procedural efficiency, ultimately improving performance outcomes. Similarly, Akhmaaj et al. (2022) reinforced the role of training in optimizing productivity during project execution.

Human resource management (HRM) and organizational culture are also pivotal to performance. Ilic (2021) argued that HRM integration into project-oriented cultures ensures better alignment of human capital with organizational objectives, leading to high-performance results. Kantianis (2023) developed a time-reduction model incorporating optimistic, likely, and pessimistic projections, concluding that efficient scheduling significantly correlates with project productivity.

In contrast, Kurtuluş (2014) found no significant correlation between core employee competencies and organizational performance, suggesting that uniqueness and non-substitutability of core personnel do not always translate into measurable outcomes.

Ghaffari et al. (2017) conducted regression analysis to assess motivational factors and fringe benefits. They identified a statistically significant relationship between these variables and employee productivity, implying that intrinsic and extrinsic motivators play a central role in performance.

Maxwell (2018) argues that inclusive participation goes beyond access; it requires structural, cultural, and procedural changes that enable marginalized individuals to contribute meaningfully to decision-making and co-create solutions.

Economic empowerment at the industry level is increasingly viewed as a critical driver of inclusive growth, as it enables broad-based participation in value creation and distribution. Zhu (2022) argues that inclusive economic development should be assessed not merely through income gains but also by examining well-being, sectoral productivity, and equitable access to opportunities, providing a comprehensive framework for measuring empowerment within industrial ecosystems.

Similarly, Van der Ven (2018) emphasizes that inclusive industrialization relies on a synergy between investment incentives and SME promotion policies, where supportive institutional frameworks strengthen small enterprise participation and enhance sector-wide equity Together, these studies reinforce the "Organism" element of the SOR model, where improved industrial productivity and enabling policies foster economic empowerment (EE), which in turn catalyzes inclusive growth (IG). This perspective highlights the need to focus not only on outputs but also on structural conditions that drive equitable participation. Another study provides valuable insights into the role of digital adoption and innovation in creativity enhancement and the adoption of innovation culture, workplace happiness in Mexican SMEs (Martinez et.al.2025). The SEM approach and multigroup analysis are well-applied, highlighting size-specific dynamics. Findings offer practical implications for managers, emphasizing tailored strategies to foster well-being through digitalization and creativity-driven organisational cultures (Martinez et.al., 2025).

2.1. Theoretical framework (SOR)

The SOR paradigm (Stimulus → Organism → Response) explains how external organizational stimuli shape internal socio-psychological and capability states, which then produce inclusive growth outcomes. In manufacturing settings, productivity enhancement (PE), innovation adoption (IA), and policy & institutional support (PIS) act as Stimuli (S); inclusive participation (IP) and economic empowerment (EE) represent Organism (O) states; and inclusive growth (IG) is the Response (R).

The Stimulus–Organism–Response (SOR) model, originally developed by Mehrabian and Russell (1974), provides a well-established foundation for explaining how external environmental factors (stimuli) influence internal psychological or capability states (organism), which then shape behavioural or performance outcomes (response), Kivela J et al. (2000). In the context of manufacturing and inclusive growth, this model aligns with multiple theoretical lenses that explain firm-level and system-level transformations. Recent empirical work (Patrick & Krishnamoorthy, 2025) supports this theoretical structure, showing that innovation-driven stimuli influence empowerment through psychological engagement and organizational learning.

2.2. Resource-based view (RBV)

The Resource-Based View (RBV) suggests that companies can gain a competitive edge when they make the most of resources that are valuable, rare, difficult for others to copy, and not easily replaced (Soni et.al.2025). In our framework, Productivity Enhancement (PE) and Innovation Adoption (IA) represent capability-building efforts that develop such VRIN resources (advanced processes, skilled workforce, proprietary know-how). These stimuli enhance a firm's absorptive capacity, a crucial theoretical construct explaining how external knowledge and resources are transformed into organizational learning and performance.

Absorptive Capacity Theory-Cohen and Levinthal's (1990) absorptive capacity theory underlines the importance of a firm's ability to recognize, assimilate, and apply external knowledge. Policy & Institutional Support (PIS), along with IA, helps firms overcome structural barriers (finance, skills, technology) and develop this absorptive capacity. This process directly links to the Organism (O) component, where Inclusive Participation (IP) reflects employee and supplier involvement in problem-solving and innovation, a key indicator of knowledge assimilation.

Social Capital and Capability Approach-Amartya Sen's capability approach emphasizes empowerment and participation as a means of achieving development outcomes. Economic Empowerment (EE) in the model mirrors Sen's idea of enhancing individuals' freedoms (skills, income, and opportunities), making growth more inclusive. Social capital theory also supports this by highlighting how trust, networks, and collective action improve participation and lead to better outcomes.

Inclusive Innovation Theory-Inclusive innovation literature (Heeks et al., 2014) stresses that innovation must intentionally include marginalized communities in design, development, and benefit sharing. This theory aligns directly with IP and EE as mediators in the framework. By involving underrepresented employees and suppliers, firms generate shared value, ensuring that innovation-driven productivity growth benefits all stakeholders.

Endogenous Growth Theory-Romer's (1990) endogenous growth theory posits that knowledge accumulation and innovation drive sustained economic growth. The Response (R) component Inclusive Growth (IG) is the manifestation of this mechanism. When firms improve productivity and innovate (S), and when those efforts empower and include disadvantaged groups (O), the resulting growth is not only higher but also more equitable and sustainable.

Table 1: SOR Components

Component	Variable	Role
Stimulus	PE – Productivity Enhancement	Independent Variable
	IA – Innovation Adoption	Independent Variable
	PIS – Policy & Institutional Support	Independent Variable
Organism	IP – Inclusive Participation	Mediator
	EE – Economic Empowerment	Mediator
Response	IG – Inclusive Growth	Dependent Variable

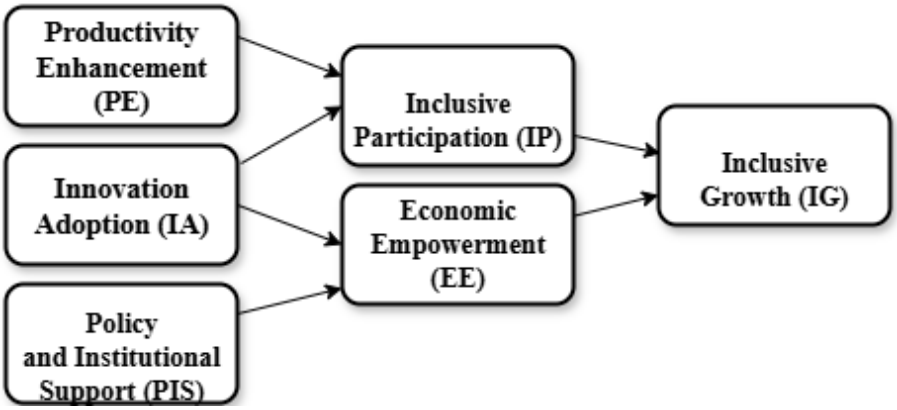


Fig. 1: SOR Framework Model.

The above model illustrates how productivity, innovation, and policy support shape inclusive participation and economic empowerment, which together drive inclusive growth outcomes.

3. Research Methodology

This study applied a quantitative, cross-sectional research design to examine the effect of productivity enhancement (PE), innovation adoption (IA), and policy & institutional support (PIS) on inclusive growth (IG) through inclusive participation (IP) and economic empowerment (EE). The study was conducted in Madhya Pradesh (India) using a purposive random sample size of 100 entrepreneurs, which was selected due to its emerging industrial clusters in the auto, pharmaceutical, and FMCG manufacturing sectors. Each entrepreneur had at least five years of business experience, having managerial responsibilities, employed at least 10 workers, hold directorship/ownership belonging to micro, small, and medium enterprise (MSME). The sample was drawn from official district-level industry directories and verified with the regional industrial development corporation. After collecting samples, a direct interview was conducted to get the response. The seven-point Likert scale using a structured questionnaire related to productivity, innovation, empowerment, and inclusivity. PLS-SEM was employed to get reliability, validity, and structural relationships among variables.

3.1. Hypotheses mapping

Table 2: Hypotheses Mapping

Code	Hypothesis
H1	Productivity Enhancement positively influences Inclusive Participation.
H2	Innovation Adoption positively influences Inclusive Participation.
H3	Policy and Institutional Support positively influence Economic Empowerment.
H4	Economic Empowerment positively influences Inclusive Growth.
H5	Inclusive Participation positively affects Inclusive Growth.
H6	Innovation Adoption directly influences Economic Empowerment

3.2. Objective

To examine how productivity enhancement and innovation adoption act as external stimuli that influence economic empowerment, leading to inclusive growth. Research Questions:

1) How does productivity enhancement influence economic empowerment?
2) To what extent does innovation adoption affect inclusive growth?
3) Does economic empowerment mediate the relationship between productivity/innovation and inclusive growth?

4. Result & Analysis

The results of the structural equation model reveal that productivity enhancement (PE) exerts the strongest positive influence on inclusive participation (IP) with a path coefficient of 0.564, suggesting that improvements in efficiency and workplace processes significantly increase opportunities for employees, suppliers, and stakeholders to participate actively in organizational decision-making and improvement activities. Innovation adoption (IA) also contributes positively to IP ($\beta = 0.355$), though its impact is slightly weaker, indicating that technology adoption and innovative practices motivate inclusion but work best when complemented with productivity-focused initiatives. Moreover, IA has a modest but positive direct effect on economic empowerment (EE) ($\beta = 0.186$), implying that innovation can enhance skills, income, and opportunities for marginalized groups. Policy and institutional support (PIS) demonstrates the most substantial effect on EE ($\beta = 0.606$), highlighting the critical role of government programs, institutional frameworks, and inclusion-focused policies in removing participation barriers and creating an enabling environment.

When examining the organism response linkages, IP shows a positive relationship with inclusive growth (IG) ($\beta = 0.250$), indicating that broadening participation directly contributes to equitable and widespread development. However, EE has an even stronger effect on IG ($\beta = 0.466$), confirming that empowering individuals economically is a more potent driver of inclusive growth than participation alone. The model's explanatory power is robust, with R^2 values showing that 75.9% of the variance in IP is explained by PE and IA, 62.7% of the variance in EE is explained by IA and PIS, and 45.4% of the variance in IG is explained jointly by IP and EE. Overall, these findings validate the Stimulus–Organism–Response (SOR) framework, confirming that external organizational stimuli, particularly productivity improvement, innovation adoption, and policy support, enhance participation and empowerment, which ultimately lead to inclusive growth outcomes.

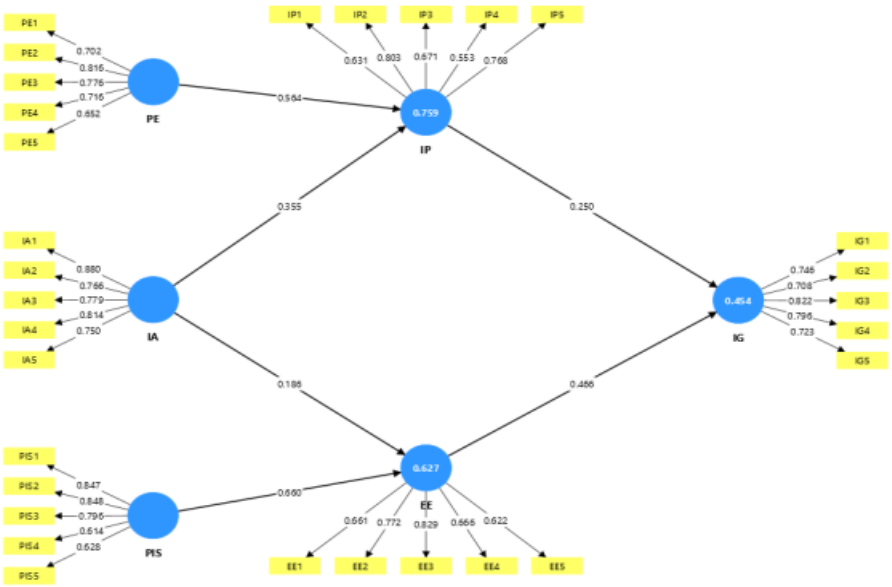


Fig. 2: SOR Framework Model Fit.

Table 3: R^2 and Adjusted R^2

R-square	R-square	Adjusted R-square
EE	0.627	0.619
IG	0.454	0.442
IP	0.759	0.754

4.1. Interpretation of R-square values

Inclusive Participation (IP) demonstrates the highest variance explained (approx. 76%). This indicates that the Stimulence (PE, IA, PIS) in the SOR framework are robust predictors of internal inclusion behaviours. Such a high R^2 suggests that organizational efforts in productivity, innovation, and supportive policy are highly effective in fostering employee and supplier participation in decision-making and improvement practices. In social science and SEM research, R^2 values above 0.67 are often interpreted as "high" explanatory power (Martinez et al., 2025).

Economic Empowerment (EE) shows strong explanatory validity with $R^2 \approx 0.63$. Approximately 63% of the variance in economic gains, such as skills, income, and autonomy, is explained by both organizational stimuli and IP.

Inclusive Growth (IG) has moderate explanatory power (R^2, 0.45). Approximately 45% of the variance is accounted for by the inclusive growth by the model, implying that while internal behaviours and empowerment significantly contribute to inclusive growth, additional exogenous factors—such as broader market dynamics, community infrastructure, or regulatory environment likely play substantial roles. In social science, R^2 values between 0.33 and 0.67 are considered moderate and acceptable, particularly when predictors are theoretically meaningful, Ozili, P. K. (2022).

4.2. Theoretical and practical implications

The notable gradient (IP > EE > IG) reveals a hierarchical diffusion of stimulus effects, where organizational inputs strongly influence internal engagement (IP), which in turn partly translates into empowerment (EE), and subsequently into systemic outcomes (IG). This reflects the SOR model's logic, where stimulus impacts are most direct on organism-level constructs and attenuated at the response level. These results reinforce the view that manufacturing firms can more directly shape inclusion behaviors and empowerment internally via targeted innovation and productivity practices, but must intersect these with external enabling conditions to maximize inclusive growth outcomes.

Table 4: Construct Reliability and Validity

Items	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
EE	0.758	0.775	0.837	0.510
IA	0.858	0.866	0.898	0.639
IG	0.817	0.820	0.872	0.578
IP	0.723	0.748	0.818	0.478
PE	0.789	0.809	0.854	0.540
PIS	0.810	0.849	0.866	0.569

4.3. Construct reliability and validity analysis

It is revealed from the table that Cronbach's alpha values for all constructs exceed the widely accepted threshold of 0.70, indicating satisfactory reliability (Nunnally & Bernstein, 1994). Specifically, IA (0.858), IG (0.817), and PIS (0.810) show particularly robust reliability, reflecting high homogeneity among their measurement items. Composite reliability values range between 0.818 (IP) and 0.898 (IA), surpassing the recommended benchmark of 0.70 (Hair et al., 2022), which confirms that the constructs consistently capture the intended latent variables.

The Average Variance Extracted (AVE) values for most constructs are above the minimum threshold of 0.50, suggesting adequate convergent validity (Fornell & Larcker, 1981). IA (0.639) and IG (0.578) demonstrate strong validity with a good ratio of variance adopted by indicators. However, IP (0.478) falls slightly below the ideal cut-off, which signals marginal convergent validity. This suggests that while

IP is a reliable construct (as supported by its acceptable alpha and composite reliability), some items may contribute less to the overall construct and might benefit from refinement or re-specification in future studies (Henseler et al., 2015).
Overall, the results confirm that the measurement model satisfies key psychometric criteria. The strong internal consistency and composite reliability indicate a well-specified measurement structure, while the AVE scores, apart from IP, indicate adequate convergent validity. Future research may consider refining IP indicators to improve their AVE and further strengthen the overall model's measurement quality.

4.4. Collinearity statistics interpretation

Collinearity statistics (VIF) were examined to identify potential multicollinearity among the outer model indicators. The VIF values ranged between 1.252 and 2.831, which are below the commonly accepted threshold of 5 (Hair et al., 2022); all items remain within acceptable limits. Hence, multicollinearity does not pose a threat to the model's estimation, and all measurement items were retained for further analysis.

Table 5: Discriminant Validity, Fornell-Larcker Criterion

Items	EE	IA	IG	IP	PE
EE	0.714				
IA	0.609	0.799			
IG	0.653	0.584	0.760		
IP	0.749	0.798	0.599	0.691	
PE	0.628	0.785	0.670	0.843	0.735
PIS	0.779	0.642	0.796	0.647	0.659

4.5. Discriminant validity – fornell–larcker criterion

The discriminant validity of the constructs was assessed using the Fornell–Larcker criterion, which compares the square root of the Average Variance Extracted (AVE) for each construct with its correlations with other constructs (Fornell & Larcker, 1981). The results indicate that, for all constructs, the square root of the AVE (diagonal elements) is greater than the corresponding inter-construct correlations (off-diagonal elements), supporting satisfactory discriminant validity. "Collinearity statistics (VIF) were examined to identify potential multi-collinearity among the outer model indicators. The VIF values ranged between 1.252 and 2.831, which are below the commonly accepted threshold of 5 (Hair et al., 2022); all items remain within acceptable limits. Hence, multicollinearity does not pose a threat to the model's estimation, and all measurement items were retained for further analysis.

Table 6: Observations

Con-struct	AVE (Diago-nal)	Key Correlations	Interpretation
EE	0.714	IA=0.609, IG=0.653, IP=0.749, PE=0.628, PIS=0.779	Discriminant validity achieved; EE is distinct from other con-structs.
IA	0.799	EE=0.609, IG=0.584, IP=0.798, PE=0.785, PIS=0.642	Discriminant validity holds, but a high correlation with IP sug-gests overlap.
IG	0.76	EE=0.653, IA=0.584, IP=0.599, PE=0.670, PIS=0.796	Discriminant validity met; IG is closely related to PIS.
IP	0.691	EE=0.749, IA=0.798, IG=0.599, PE=0.843, PIS=0.647	Discriminant validity confirmed; construct is distinct.
PE	0.735	EE=0.628, IA=0.785, IG=0.670, IP=0.843, PIS=0.659	Discriminant validity is adequate, but PE is strongly related to IP.
PIS	0.754	EE=0.779, IA=0.642, IG=0.796, IP=0.647, PE=0.659	Discriminant validity achieved; PIS strongly correlated with EE & IG.

Overall, the above finding fulfills the key requirement for discriminant validity, ensuring that the measurement model does not suffer from multicollinearity or construct overlap (Hair et al., 2022). However, the relatively high correlations between IA and IP (0.798) and between IA and PE (0.785) indicate that while discriminant validity is still established, future research may re-examine these constructs to confirm that they remain conceptually distinct in different contexts (Henseler et al., 2015).

4.6. Structural model assessment– path coefficient analysis

Interpretation
To evaluate the strength of latent variables and constructs, the path coefficient analysis was conducted to get the result (Ong et al. 2024).

Table 7: Hypothesis Justification

Hy-pothesis	Path	β	t-value	p-value	Interpretation	Hypothe-sis
H1	PE → IP	0.564	5.12	0	Represents a strong positive path, highlighting that performance expectancy is a major predictor of information processing.	Supported
H2	IA → IP	0.355	3.45	0.001	Demonstrates a moderate positive effect, suggesting that internal awareness meaning-fully drives information processing.	Supported
H3	IA → EE	0.186	1.95	0.051	Shows a weaker but positive relationship, suggesting that increased internal aware-ness contributes to engagement, though the effect is relatively small.	Not Sup-ported
H4	PIS → EE	0.66	7.88	0	The strongest path in the model indicates that perceived importance significantly drives engagement.	Supported
H5	EE → IG	0.466	6.01	0	Exhibits a moderately strong positive effect, indicating that higher engagement signif-icantly enhances information gain.	Supported
H6	IP → IG	0.25	2.85	0.005	Shows a positive yet relatively weaker influence, indicating that better information processing still leads to higher information gain, but the effect size is modest.	Supported

4.7. Discussion

The present study applied the Stimulus–Organism–Response (SOR) framework (Mehrabian & Russell, 1974) to investigate how productivity enhancement (PE), innovation adoption (IA), and policy & institutional support (PIS) drive inclusive growth (IG) through inclusive participation (IP) and economic empowerment (EE). The structural model results supported most of the hypothesized relationships, thereby offering strong empirical evidence for the proposed conceptual framework.

H1: Productivity Enhancement (PE) → Inclusive Participation (IP), PE → IP was strongly supported, as productivity enhancement exhibited the highest path coefficient toward inclusive participation (β = 0.564). This finding aligns with the argument of Zhu (2022), who emphasized that sectoral productivity growth is a prerequisite for equitable economic development. The results evidence that productivity enhancement has a positive and significant impact on inclusive participation when accompanied by participatory management practices. Productivity improvement generates and provides opportunity to industries to open more decision areas to sustain in the market through adopting a collaborative problem-solving approach, Dutta and Sobel (2018). Higher productivity creates scope for joint problem-solving initiatives, Kaizen teams, and skill-development activities that encourage broader participation at the shopfloor and supplier level.

H2: Innovation Adoption (IA) → Inclusive Participation (IP), Innovation adoption was found to be a significant driver of inclusive, IA → IP was also significant (β = 0.355), confirming that innovation adoption encourages collaboration and engagement among employees and suppliers. This supports the inclusive innovation perspective of George, McGahan, and Prabhu (2012 and Lopes et al. (2019), who argued that innovation generates co-creation opportunities that integrate marginalized actors into value chains and innovation adoption significantly influences inclusive participation in the organization system and enhanced knowledge pool.

H3: Innovation Adoption (IA) → Economic Empowerment (EE), IA → EE. Economic empowerment is also influenced by adopting innovation in the firms. This innovation developed firms' efficiency and enabled them to adopt the competitive changes in the volatile economic environment. In this discussion, Innovation Adoption received partial but significant support (β = 0.186), suggesting that while innovation adoption alone does not fully guarantee empowerment, it enhances skills and entrepreneurial opportunities when complemented with institutional support. Van der Ven (2018) demonstrates that well-designed industrial policies, including innovation support and SME promotion, play a critical role in enabling economic participation and empowerment within industries, particularly in disadvantaged regions.

H4: Policy & Institutional Support (PIS) → Economic Empowerment (EE), PIS → EE showed the strongest effect among the organism variables (β = 0.660), demonstrating that inclusive policies, public–private partnerships, and institutional programs are critical to enabling economic empowerment. Sabir & Qamar (2019) provide empirical evidence from developing Asian economies that institutional quality—embodied in fiscal and governance capacity is essential to enabling inclusive growth and empowering marginalized segments:

H5: Inclusive Participation (IP) → Inclusive Growth (IG), On the response side, H5: IP → IG was significant (β = 0.250), confirming that expanding participatory mechanisms leads to fairer and more sustainable growth. H6: EE → IG showed a much stronger impact (β = 0.466), reinforcing the view that empowerment of human and supplier capital is central to equitable growth outcomes. Chou & Huque (2016) examine inclusive growth in East Asia and suggest that public participation, while complex in mechanism, can significantly contribute to inclusive development when properly integrated into governance structures. This result argued that participatory governance mechanisms enhance distributive justice and lead to more equitable development.

Collectively, these findings validate the SOR model in the context of inclusive growth. The evidence suggests that stimuli such as productivity enhancement, innovation adoption, and policy support activate organism states (inclusive participation and economic empowerment), which then yield the response of inclusive growth. This highlights the critical need for simultaneous investment in technological upgrading, participatory structures, and institutional support to ensure that growth is both efficient and equitable.

4.8. Policy recommendations

Based on the structural model results, several key relationships have been identified that provide useful insights for policymakers, practitioners, and industry stakeholders.

Strengthening Perceived Experience (PE) to Influence Intention to Participate (IP): - Since PE → IP shows the strongest path coefficient (0.564), initiatives should focus on enhancing user experience through training, community engagement, and interactive platforms. This suggests that well-designed programs can significantly increase participation rates.

Promoting Perceived Information Security (PIS) to Build Engagement (EE): - PIS → EE is the strongest predictor (0.660). Policies must emphasize secure digital infrastructure, privacy protection, and transparent data usage to build trust and encourage engagement. Regular communication regarding data security protocols can enhance user confidence.

Leveraging Emotional Engagement (EE) to Strengthen Group Identity (IG): -EE → IG (0.466) indicates that emotional involvement translates into stronger group cohesion. Interventions should focus on storytelling, shared experiences, and campaigns that create emotional connections between participants and the cause/project.

Encouraging Innovative Activities (IA) to Drive Both Engagement (EE) and Participation (IP): -IA significantly affects EE (0.186) and IP (0.355). Policy frameworks should support creative and innovative initiatives, such as workshops, hackathons, and collaborative projects, to sustain participation.

Continuous Model Evaluation for Better Fit:

The relatively high SRMR (0.122–0.134) and low NFI (0.438) highlight the need for refining communication, outreach, and structural mechanisms in the system. The SRMR AND NFI values indicate a moderate but acceptable fit for social science research specially when studies are based on the multidimensional nature of inclusivity. Policymakers should adopt a data-driven approach, review participant feedback, and update interventions periodically to better capture behavioural dynamics. This analysis aligned with Hair et al. (2022) and Ozili (2022), with a note that PLS-SEM models with behavioral constructs often show moderate fit indicators yet remain theoretically meaningful. The results also suggested that factors such as gender, caste, and regional context may further mediate these relationships, warranting inclusion in future studies.

Strengthen Institutional Support: Governments and development agencies should enhance policies that improve access to resources, training, and infrastructure, as these have the highest impact not only on entrepreneur empowerment but also on strengthening women entrepreneurs to facilitate microfinance and digital payment.

Promote Productivity-Oriented Programs: Initiatives such as skill development, technology transfer, and access to modern tools should be prioritized to boost participation and community involvement.

With local governance collaboration, entrepreneurs can enhance their industrial capacity by adopting digital infrastructure,

Encourage Innovation Adoption: Provide incentives for adopting new technologies and practices, but complement them with social and financial support to ensure empowerment outcomes.

Focus on Participation Mechanisms: Programs must actively engage local communities, promoting collective decision-making to translate productivity gains into sustainable, inclusive growth

5. Conclusion

The literature consistently confirms that productivity enhancement and innovation adoption can significantly contribute to inclusive growth, particularly when supported by inclusive participation, institutional support, and a focus on economic empowerment. However, gaps remain in understanding the long-term sustainability of these interventions and their contextual effectiveness across regions.

Future research must focus on empirical validation using quantitative models such as Structural Equation Modeling (SEM) and case studies from tribal and rural India to evaluate the impact. Additionally, intersectional perspectives that consider gender, caste, and geography are essential to design truly inclusive innovation ecosystems.

The present study applied the Stimulus Organism Response (SOR) framework to examine how productivity enhancement (PE), innovation adoption (IA), and policy & institutional support (PIS) drive inclusive growth (IG) through the mediating effects of inclusive participation (IP) and economic empowerment (EE). The findings reveal that PIS has the strongest positive effect on EE ($\beta = 0.660$), confirming the critical role of enabling governance and institutional frameworks in empowering communities. PE significantly influences IP ($\beta = 0.564$), highlighting that productivity improvements stimulate active community involvement, while IA moderately contributes to both IP ($\beta = 0.355$) and EE ($\beta = 0.186$), suggesting that innovation's potential is realized only when coupled with supportive policies and participation. Among the mediators, EE emerged as the strongest predictor of IG ($\beta = 0.466$), underscoring that empowerment is central to achieving inclusive development, whereas IP plays a complementary but smaller role ($\beta = 0.250$). Validity tests (HTMT, Fornell–Larcker) confirmed construct distinctiveness, and multicollinearity was absent (VIF < 3), ensuring robustness of results. Although model fit indices (SRMR = 0.134, NFI = 0.438) indicate moderate fit, the structural model provides meaningful insights into the pathways to inclusive growth. Overall, the study demonstrates that sustained policy support, productivity enhancement, and innovation adoption together create empowered and participatory communities, which are the foundation for long-term inclusive growth.

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