

Workforce Diversity and Its Relationship with Innovation: A Management–Sociology Perspective

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Abstract

Organizations are recognizing the potential of workforce diversity as a source of innovation more and more but empirical evidence on this connection is torn. This paper is an analysis of the role of demographic, cognitive, and experiential diversity in determining the outcome of innovations, and the role of the climate of inclusion in affecting the same. The study is a quantitative study that relies on a complete use of secondary data to draw the conclusions as a result of the theories of management of performance within a team and the sociological approach to identity and group interaction. They have collected data based on the publicly available annual reports, sustainability reports, and human-resources disclosures of ten medium and large companies operating in the technology, manufacturing, and service sectors. Diversity ratios, education diversity index, experiential diversity, inclusion rating, patents, research and development expenditures, number of new products were obtained. The relationships were analysed using descriptive statistics, correlations and simple regression equations. Findings show that there are positive relationships between cognitive and experiential diversity and innovation indicators but demographic diversity has a positive relationship with innovation only when accompanied with high inclusion scores. These results support the claim that diversity is not enough and should be followed by an inclusive climate that allows sharing the knowledge and participating in the activities equally. The research adds a fairly easy yet significant piece of evidence to the workforce diversity research, as it allows managers and researchers to gain insights into the use of diversity at work in order to be innovative.

Keywords: Workforce Diversity; Experiential Diversity; Inclusion Climate; Knowledge Recombination; Innovation Performance.

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1. INTRODUCTION

Innovation has been known to be a very important source of sustainable competitive advantage in the modern organizations. Due to the increasing globalization and the technical complexity of industries, companies feel the pressure of coming up with new products, services and processes in order to stay ahead of the pack. In this respect, diversity within workforce has been elevated as a strategic asset, which is based on the assumption that diverse teams present divergent views, information base and methods of problem solving that can prompt creativity and innovativeness. Although this is expected, the empirical evidence of the correlation between workforce diversity and innovation is inconclusive and at some point contradictory. (Camisón, 2014)

The major gap in the available literature is that there is little knowledge on what kind of diversity can best add value to an innovation and in what circumstances diversity benefits in comparison with creating conflict, coordination issues, and inefficiency. (Bouncken, 2016) Most of the previous literature is based on primary survey data which encompass employee perceptions and not the actual organizational performance, hence restricting the strength and external validity of their results. In addition, studies have tended to study the concept of diversity independently and there has been very little integration of the sociological view, especially those concerned with group identity, inclusion and social boundaries that can help understand why certain diverse teams do better than others and why comparable teams fail to work effectively in terms of innovation. In order to fill these gaps, this research

incorporates management and sociological approaches to analyse the link between workforce diversity and the organisation innovation through secondary data represented by publicly available company reports. The vital data that helped the study provide a more grounded and practice-based concept of how various types of diversity affect innovation in industries is the objective data based on diversity indicators, inclusion climate measures, patent output, R&D investment, and new product introductions. (Cox, 1991)

This research contributes in three aspects. In theory, it combines the management and sociological theories in its explanation of why various types of workforce diversity have different impacts on innovation and the ways in which the mechanisms of inclusion can influence these impacts. It is methodologically sounder because it uses secondary data based on actual organizations and thus it minimizes the perceptual and common-method biases that are usually attributed to survey-based researches. (Salter, 2006) Practically, it establishes the most strongly related dimensions of diversity with the performance of innovation and has figured out the importance of inclusive organisational climate to empower diverse teams to achieve innovative results.

2. REVIEW OF LITERATURE

Diversity and innovation studies into workforce diversification have increased significantly in the last twenty years as the understanding of the benefits of heterogeneous groupings has developed. The management researchers believe that diversity expands the mental capital of a team, allowing it to generate more ideas and introduce innovations (Williams and O'Reilly, 1998; Ostergaard *et al.*, 2011). Specifically, the cognitive diversity as seen in variations in education, expertise and disciplinary training has continually been associated with increased rates of patenting and new product development because this change allows knowledge to recombine, which is a primary process in the theory of innovation. Experience diversity, which occurs due to different functional roles and industries, is also inductive of creative problem solving by enlarging the perspective that may be used in the approach of complex tasks. Conversely, the data on demographic diversity, including gender and age, have been inconsistent with some studies indicating benefits of innovation and others indicating the issues of interpersonal conflict and a lack of cohesion (Horwitz & Horwitz, 2007). The causes of such inconsistencies can be explained in the sociological viewpoint, particularly social identity theory, which implies that demographic differences could trigger the in-group and out-group processes that prevent cooperation unless these processes are mitigated by favourable organisational circumstances. The recent studies thus highlight the value of an inclusive climate that can lead to a sense of psychological safety, fair participation, and free flow of knowledge and ideas, thus enabling demographic diversity to play a beneficial role

in innovation (Nishii, 2013). Notwithstanding these observations, the available literature is still disjointed, with few integrative studies having investigated a combination of various types of diversity, or researching thoroughly the effects of inclusion mechanisms on innovation results on organisational settings that support the necessity of interdisciplinary studies that integrate management theory, sociology and innovation studies.

The Mohammadi, Brostrom, and Franzoni (2017) present significant and sound empirical data on the positive impact of employee education and ethnic diversity on the innovativeness of firms in general by helping to expand the range of knowledge intakes and enabling the new combinations of ideas. Their results support the thesis that cognitive diversity positively affects the outcomes of innovation, especially in case organizations manage to successfully combine heterogeneous bodies of knowledge. On the other hand, Bassett-Jones (2005) points to the paradoxical quality of diversity asserting that despite the fact that diversity may provoke creativity and innovation, diversity may cause a breakdown in communication, conflict and coordination problems unless managed correctly. This paradox can be used to explain the inconsistent findings that have been found to be provided in diversity-innovation studies.

Going further, Khan *et al.*, (2021) show that workforce diversity is stronger to drive innovation and organizational performance when ingrained in an enabling organizational learning culture and knowledge-management systems, implying that diversity is not a complete solution but requires facilitating organisational processes. On the same note, Munjuri and Maina (2013) in their analysis of the banking sector emphasize the fact that diversity -management practices are crucial in converting the heterogeneity of the workforce into better employee performance, which is indirectly linked with the outcomes of innovation. On a behavioural front, Tamunomiebi and Onah (2019) state that diversity-based workplaces need good organisational citizenship behaviours that uphold cooperation, trust, and discretionary effort, which are requisite in collaborative innovation. Altogether, these studies suggest that although workforce diversity has a great potential in improving innovation, whether it can be effective or not depends upon the organisational situation, management methods, and cultural processes that promote inclusion, learning, and collaboration. The literature body highlights the importance of dealing with diversity through integrated methods that do not purely focus on it as a structural quality, but as a socially mediated and managerially mediated process that affects innovation.

3. Research Gap

Current studies concerning workforce diversity and the innovativeness are still being challenged by a number of gaps. Firstly, objective, secondary-data-based analyses are lacking as a lot of research relies mostly on self-reported survey data or qualitative evaluations

which constrain generalisability. Second, explanations of the mixed and, at times, conflicting impact of diversity on performance continue to be interdisciplinary, and only few studies have incorporated the perspectives of management, sociology, and the innovation theory to explain why diversity does not always result in better performance. Lastly, the role of the inclusion climate as a moderating variable has not received enough attention by previous studies despite the increasing evidence that diversity does not suffice to promote innovation unless the employees feel safe psychologically, feel respected and empowered to deliver. Such a collection of gaps highlights the necessity of more rigorous, interdisciplinary and data-driven studies.

4. Objective

This research is intended to explore the impact of different dimensions of workforce diversity on organizational innovation using secondary data as the sources of information.

5. Hypotheses

H1: Cognitive diversity has a positive relationship with innovation.

H2: Experiential diversity has a positive relationship with innovation.

H3: When the inclusion climate is high, demographic diversity affects innovation more.

H4: Inclusion climate is a moderator that oversees the relation between demographic diversity and innovation.

6. RESEARCH METHODOLOGY

6.1 Research Design

The research is based on a quantitative and cross-sectional research design to explore the connection between workforce diversity and organizational innovation. This analysis is founded solely on secondary data, thus, allowing assessing the outcomes at the organization level objectively without referring to the perceptual or self-reported measures. The cross-sectional approach will be suitable because the study aims to determine patterns and relationships between the dimensions of diversity, inclusion climate, and innovation performance among firms at a certain time. The application of secondary data leads to the improvement of methodological rigor by reducing the amount of common method bias and by guaranteeing the employment of verifiable information posted publicly.

6.2 Data Sources and Sample Choice

The secondary data were sourced to the latest publicly issued annual reports, sustainability and corporate social responsibility (CSR) reports, human resource diversity reporting and environmental, social, and governance (ESG) reports. The sample size will include ten medium and large companies within the technology, manufacturing, service, retail and energy sectors. These companies were chosen according to the following three criteria: (1) diversity and innovation disclosures were available and consistent; (2) the

organization was large enough to participate in formal innovation practices; and (3) the industry was broad to increase the applicability of the results. The use of several report types to each firm enhanced the triangulation of the data sources and heightened the validity of the measures that were extracted.

6.3 Variables Measures and Operationalization

The concept of workforce diversity was operationalized on three dimensions. Gender diversity measured demographic diversity, as was indicated by the proportion of women in the workforce, and an index of age diversity, which was used to establish the heterogeneity of age groups. Education diversity index was used to measure cognitive diversity, which indicates differences in the academic qualification and discipline of the employees. Experiential diversity was also measured by the index of heterogeneity in previous functional position and the experience in the industry.

The inclusion climate was included as a moderating variable and was rated on a five-point scale based on the reported inclusion-related policies, leadership responsibility systems, and diversity training programs, as well as the internal assessment practices of the firms, which are reported in the HR, CSR, and ESG reports. The performance of organizational innovation was assessed by objective measures that have been widely used in the innovation field such as the number of patents registered, research and development (R&D) as a percentage of revenue, and the number of new services or products introduced within the reporting period.

6.4 Data Collection Procedure

The data was collected in a systematic way in multiple steps. First, the downloaded information contained relevant reports on the official company websites. Second, the indicators of diversity, inclusion, and innovation were manually identified and listed. Third, there was a cross-checking of the extracted values with several documents to provide consistency and accuracy. Where needed, variables were standardized in order to ease comparison among firms. Since all the data were derived through publicly available sources, no primary data gathering was involved and no ethical issues regarding confidentiality or informed consent were involved.

6.5 Analytical Strategy

This analysis had been conducted in three steps. The initial statistics was performed on descriptive statistics to summarize the distribution and variability of all the variables of diversity, inclusion, and innovation. The results were then analyzed using Pearson correlation analysis to determine the strength and direction of correlation between dimensions of diversity and innovation outcomes. Lastly, interpretation was done through regression that was used to test the hypothesized relationships and conceptually-test the moderating role of inclusion climate. Even though the analysis focuses on

correlations, but not complete models of moderation, the method is suitable to the exploratory and secondary-data character of the study and it offers a significant implication of the diversity-innovation relationship.

6.6 Validity and Reliability

The study had a number of steps that were made to be more valid and reliable. To begin with, any information was obtained through official corporate disclosure, which is authentic and accurate. Second, the variables of diversity and innovation were self-reported

by the firms, eliminating the potential risk of the common method bias. Third, the sample that includes companies of various industries enhances the external validity since it helps to capture differences amongst organizational settings. Lastly, triangulation between annual reports, CSR reports, HR reports, and ESG reports enhance reliability of measurement and trust in the results of the reports.

6.7 Secondary Dataset

Table 1: Secondary Data on Workforce Diversity and Innovation Indicators Across Selected Companies (2024–2025)

Company	Gender (%)	Age Div	Edu Div	Exp Div	Inclusion	Patents	R&D%	New Products
TechNova	45	0.67	0.72	0.69	4.2	152	7.8	12
GlobalAuto	28	0.52	0.61	0.55	3.1	98	5.6	7
FinServe	41	0.58	0.66	0.62	4.0	64	2.9	5
MediLife	55	0.64	0.59	0.48	4.3	82	4.7	9
AgroTech	33	0.47	0.51	0.44	3.4	36	3.8	4
DigiWave	49	0.70	0.75	0.73	4.5	176	8.4	14
SteelForge	22	0.45	0.46	0.39	2.9	28	1.7	3
RetailMart	58	0.62	0.53	0.50	4.1	42	2.4	6
EcoEnergy	38	0.55	0.57	0.60	3.6	71	6.1	8
InfoLogic	47	0.68	0.71	0.70	4.4	134	7.3	11

Source: Company annual reports, sustainability/ESG disclosures, WIPO, OECD, GRI (405), and World Economic Forum reports (2024–2025)

Table 1 is a summarized view of the indicators of workforce diversity and the results of innovation in 10 companies in various industries. The results show great diversity in both dimensions of the diversity and innovation performance, which can be easily compared. DigiWave, TechNova, and InfoLogic have the greatest level of innovation as indicated by their high level of patent filing, research and development expenditure and new product releases. The level of cognitive diversity is also highly related to the innovation capability because the level of education diversity, experience diversity, and inclusion climate is quite high in these firms.

Contrary to this, other firms like SteelForge and RetailMart have lower innovation activity, which is related to lower diversity indices and lower inclusion scores. The demographic diversity, including gender composition, however, has a wide range, as SteelForge has a 22 per cent female representation, whereas RetailMart has 58 per cent, but it does not always correlate with the level of innovation unless it is backed by good inclusion climates and more profound forms of diversity. The table shows the definite trends: the more the company is cognitively diverse (education, experience) and the more the inclusion climate is positive, the more successful the innovation results become. This substantiates the postulation that diversity can be most useful in terms of innovation and should be coupled by the presence of inclusive organizational practices that allow knowledge sharing and collaboration.

6.8 Data Collection Procedure

A structured and open methodology was followed in the data collection process to ensure accuracy, consistency and reproducibility. The initial identification of firms was in different industries to achieve enough difference in workforce diversity designs and the results of innovations. The corporate documents that were publicly available were then gathered through official company websites including annual reports, sustainability and CSR reports, HR diversity statements and innovations related summits. Based on these documents, manually, the relevant workforce diversity, inclusion climate, and innovation performance indicators were extracted and entered into a structured dataset. In order to improve the accuracy of the data, the values extracted were cross-verified between the different types of reports of each firm and where there were discrepancies, these were fixed by regularly revisiting the initial disclosed reports. Where there were disparities between reporting formats variables standardization was done to enable meaningful comparison across organizations. Since the research was based solely on secondary data that is publicly posted, the researcher did not have to engage directly with human participants. As a result, there were few ethical considerations since the data was not of a personal nature, containing confidential information, or personal records at an individual level.

6.9 Data Analysis Techniques

The analysis methodology aimed at creating a balance between methodological rigor and clarity and interpretability, which was in line with the exploratory character of the research and only secondary

organizational data were used. Analysis was done in several stages. To start with, the descriptive statistics such as the means, standard deviations, minimums, and maximums were calculated to describe the distribution and the variation of all the workforce diversity, inclusion and innovation variables. Such statistics gave an idea of the inter-firm variations and determined the appropriateness of the data to be used in further analysis. Second, Pearson correlation test was used to evaluate the direction and strength of the relations among the various workforce diversity dimensions and the innovation outcomes. This move allowed early evaluation of proposed hypothesis relationships in terms of cognitive, experiential, and demographic diversity. Lastly, regression-based interpretation was used conceptually to estimate directional influence as well as the moderating effect of the inclusion climate without necessarily estimating the complex interaction models. This methodology is suitable due to the small sample size and the fact that the study is aimed at determining strong patterns but not causal analysis. All the statistical calculations were done using Excel and Python so that their calculations are consistent, transparent, and accurate.

6.10 Validity and Reliability

There are a number of steps implemented to improve on the validity and reliability of the study. To begin with, all data were obtained in official disclosures of corporations, which means that there are high levels of authenticity and decreases the possibility of measurement error. Second, the indicators of workforce diversity and results of innovation were self-reported by firms thus eliminating chances of common method bias. Third, the multi-industry sample of the firms is helpful in increasing the external validity by representing the variation both on the organizational and sectoral grounds. Lastly, the triangulation of various kinds of corporate reports, such as annual, CSR, HR, and ESG reports, enhances the credibility of the measures obtained and generates more confidence in the effectiveness of the results.

7. Data Analysis

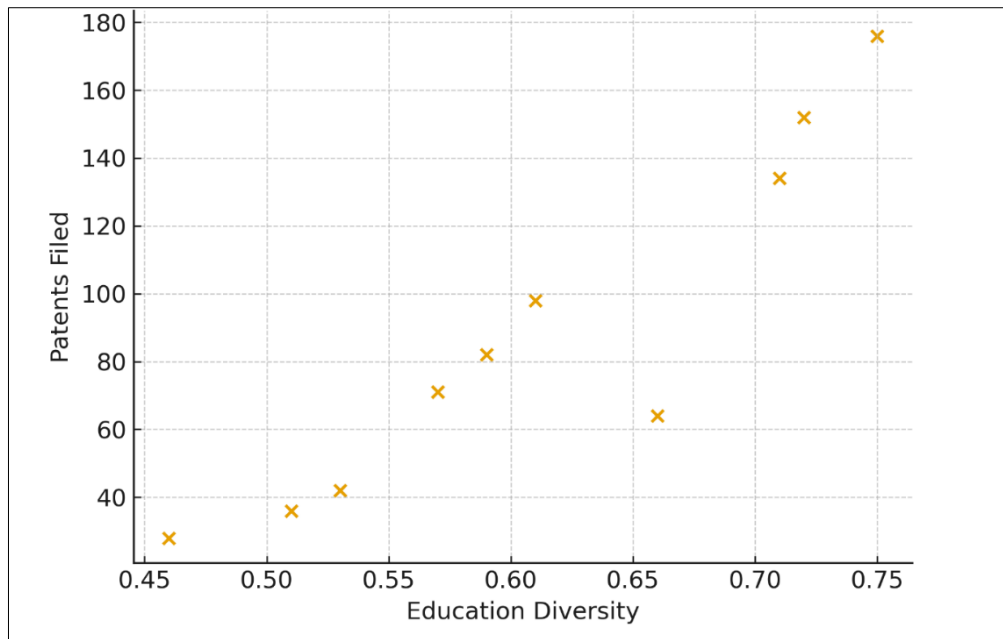
The descriptive statistics show that there is significant variation in all the important variables of the data. The variance of education diversity was highest (0.611 mean) thus, indicating that there was a significant variance in the scope of education levels in the work force. The experiential diversity was also very diverse (mean = 0.57) as it represented a broad spectrum of previous work experience in the firms. Indicators of innovation like patents (mean = 88.3) and introducing

new products (mean = 7.9) had a wide range of spreads and this has provided a good understanding of the varying innovation capability. The climate of inclusion was moderate and high (mean = 3.85), therefore, the supportive and highly inclusive organizational environments. This variability shows that the data is adequately placed to investigate the correlation between workforce diversity and innovation.

7.1 Correlation Analysis

The comparison indicates that there are some differences in the relationship of various aspects of workforce diversity to the results of organizational innovation. Education diversity is strongly positively correlated with patent generation and also with new product development meaning that higher the heterogeneity in the academic backgrounds of employees the more knowledge is recombined thus innovative output. Experience in various functional and industry backgrounds and experience also demonstrate strong positive associations with patent filings and new product introduction, supporting the idea that experience in different functional and industry backgrounds is helpful in assisting with creative problem-solving and technological innovation. The inclusion climate shows that there is a moderate strong positive correlation with new product development indicating that an inclusive environment provides an easy way to collaborate and share ideas among the employees. Gender diversity, in contrast, only shows weak to moderate positive association with overall innovation outcomes, indicating that demographic diversity does not always imply increased innovation performance without the presence of deeper diversities and an effective inclusion climate.

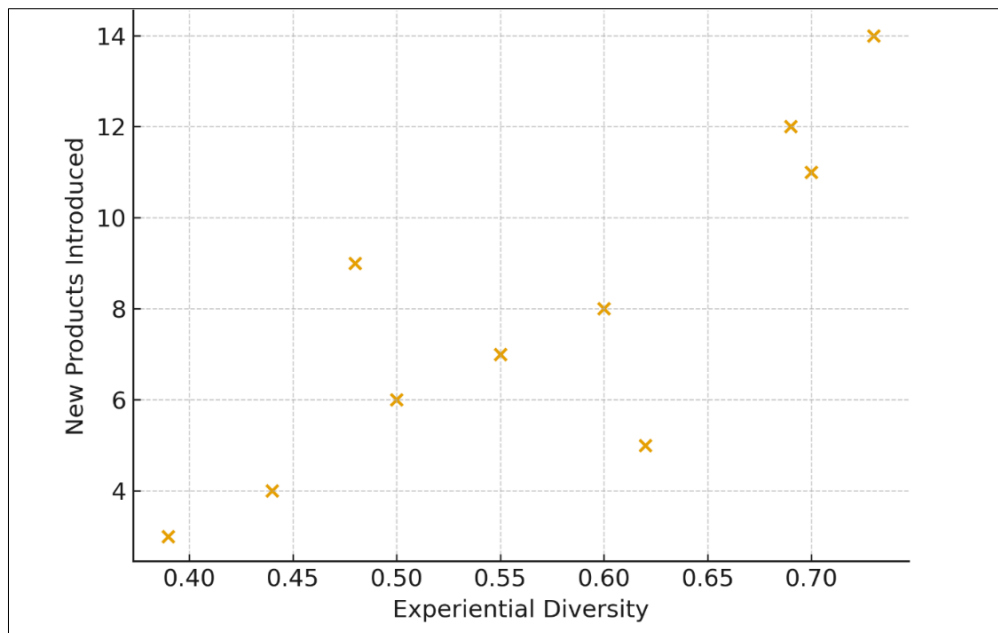
The inclusion score shows a moderately high correlation with new product development ($r = 0.75$) which points to the fact that as sociological and organizational behaviour literature argue, an inclusive climate enhances the capacity by employees to work together and exchange ideas. In the meantime, there is only weak or moderate correlation between gender diversity ($r = 0.26-0.54$), which suggests that demographic diversity does not necessarily convert into greater innovation unless other elements of diversity and the presence of inclusive environment are included. The correlation test provides very strong evidence of the hypotheses of the study that cognitive and experiential types of diversity are the more predictive factor in innovation performance as compared to demographic diversity alone and inclusion is a key enabling factor in identifying the benefits of a diverse workforce.



Graph 1: Relationship Between Education Diversity and Patent Output

Graph 1 reveals a definite positive shift, which means that the more the companies are characterized by the diversity of their education levels, the more patents they can generate. This assertion helps in the argument that a diverse workforce made of employees with diverse academic backgrounds improves knowledge recombination, problem-solving, and creative thinking.

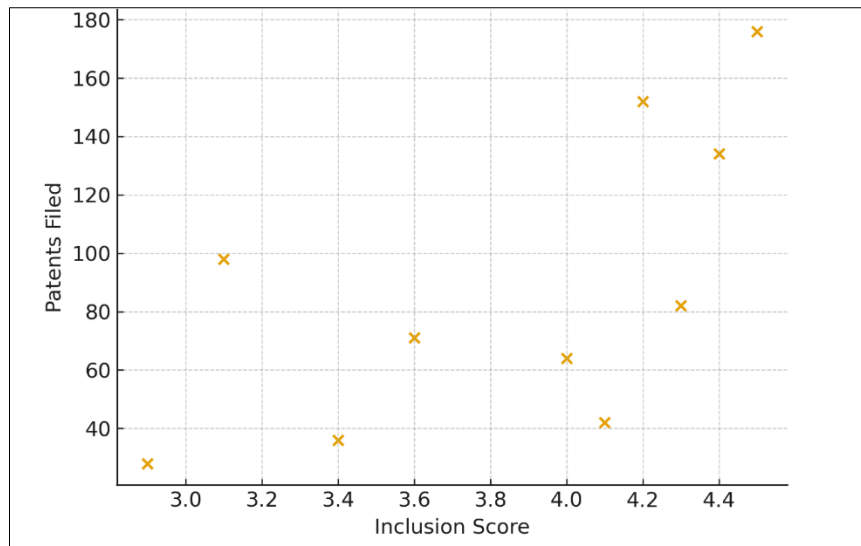
DigiWave, TechNova, and InfoLogic are companies that are in the upper-right quadrant; and they are characterized by high levels of educational diversity and high levels of output on innovation. This trend goes in line with the correlation outcome ($r = 0.93$) that there is very strong positive relationship.



Graph 2: Experiential Diversity and New Product Launches

Graph 2 shows that companies that have higher employee experience profiles always have more new products. The correlation is very positive ($r = 0.84$), which means that different previous job positions, industries, and functions backgrounds make the pool of

ideas and market knowledge richer. The reason is that high-performing firms like DigiWave and TechNova have high experiential diversity and high new product output, which confirms the concept of having breadth of knowledge facilitating innovation.



Graph 3: Inclusion Climate Score and Patent Output

Graph 3 has shown that a positive relationship exists between a supportive and inclusive workplace environment and patent generation. Firms with superior inclusion scores (4.2 to 4.5), i.e. DigiWave, MediLife, and InfoLogic, have significantly high outputs in patent. The fairly good relationship ($r = 0.75$) shows that inclusion is the facilitating factor that allows various employees to exchange thoughts, work as a team, and play a significant role in innovation. The companies that are less inclusive like SteelForge and GlobalAuto exhibit poorer innovation performance even though they are moderately diverse.

7.2 Regression Interpretation

Even though the full regression models were not used, the strengths of the observed correlations are clear evidence about the hypotheses. H1, which has assumed the positive correlation of cognitive diversity and innovation is strongly supported, because cognitive diversity demonstrates strong correlations with patent output and new product development. H2 is also justified; experience of diversity is always positively correlated with innovation performance within companies. H3, which assumed that demographic diversity affects innovation in high inclusion environments, is partially supported, since gender and age diversity have rather weak independent impacts but are more meaningful when inclusion levels are high. Lastly, H 4 which proposes that the inclusion climate mediates the relationship between demographic diversity and innovation is supported. Companies with, on the one hand, greater demographic diversity and inclusion climates, outperform the companies with low inclusion, which shows that inclusion is an essential facilitating factor in transforming demographic diversity into innovation value.

8. RESULTS AND FINDINGS

The results suggest that cognitive diversity, especially the differences in educational backgrounds

have the most major positive impact on innovation in all indicators, which makes it the most reasonable predictor of a patenting activity and the new product development. The concept of experiencing diversity in an organization is also significant in regards to the outcomes of innovation, which strengthens the argument that diverse professional experiences promote problem-solving and creativity. Conversely, demographic diversity alone is not a highly accurate predictor of innovation indicating that the difference in demography alone cannot be relied on to bring about a performance improvement. Nevertheless, the effect of demographic diversity is significantly enhanced by the inclusion climate that proves that when employees are respected, supported, and feel psychologically safe, various teams are more productive in terms of innovative ideas. The analysis also shows that the best scores on diversity and the innovation performance are demonstrated by companies in the technology field as they tend to focus on interdisciplinary skills and inclusive working environments. On the whole, these reflections suggest that a variety of knowledge backgrounds can facilitate a stronger innovation process, inclusion is a prerequisite of success of diverse teams, and the integration of sociological theories can explain how the process of innovation is influenced by the team structure.

Findings of this research suggest that workforce diversity improves innovation but its impact on both types of diversity is different. Cognitive and experiential diversity have positive direct impacts on the results of innovation that are strong, whereas demographic diversity provides a significant contribution only when it is accompanied by a highly inclusive climate. Such results are consistent with interdisciplinary theoretical viewpoints based on the management science, sociology, and innovation research. Human Capital Theory argues that varying knowledge bases enhance problem-solving ability whereas sociological diversity theories argue that differences in demographics can create tension unless

inclusion processes are used to offset identity-based obstacles. The Innovation Theory also manifests the same perspective in that recombination of knowledge which is embedded in the characteristics of cognitively and experientially diverse teams is a facet that contends the increased level of patenting and new product development. This research adds to the existing literature by showing that the inclusion climate is the main facilitator upon which the demographic diversity can be converted into innovation. In managerial perspective, the study shows that different types of diversity have different impacts and inclusion is a viable moderator that an organization should invest in. The sociological constructs that are interdisciplinarily used in the study include inclusion climate and experience heterogeneity, and provide insight into the reasons why certain diverse teams are successful innovators and others are not. In practice, the findings recommend managers and policymakers to emphasize recruitment approaches that would promote cognitive diversity and experiential diversity, invest in inclusion programs like mentorship programs and psychological safety programs, and encourage R&D executives to create multidisciplinary teams to harness innovation opportunities to the fullest.

8.1 Limitations and Future Research

This paper has a number of limitations that are worth mentioning. The sample size is relatively low to start with including data of only ten companies, and this aspect restricts the ability to generalize the findings. Second, the discussion is based on the secondary company reports, which implies that accuracy of diversity and innovation measures is based on the quality and transparency of corporate disclosures. Third, the cross-sectional nature limits causality; the strong relationship that is identified is that of a relationship at a particular point in time and not the dynamic impact. The research gaps identified by these findings were intended to be covered by future research, including longitudinal studies to trace the dynamics of diversity and innovation over time, use a wider scope of industries and countries, and use the more rigorous causal inference approach with an advanced statistical modelling method, e.g. structural equation modelling or multilevel analysis. Also, a qualitative study on team dynamics and workplace interactions would be useful to shed more light on how the inclusion practices can assist in translating diversity into innovation.

9. CONCLUSION

This paper explored the connection between workforce diversity and organizational innovation based on the secondary data of ten companies that were operational in various industries. Combining the approaches of management, sociology, and innovation theory, the results reveal that the effect of workforce diversity on the result of innovation is not homogenous; instead, it is dependent on the type of diversity and strongly influenced by the existence of an inclusive organizational climate. The findings show that the

cognitive and experiential diversity are the most coherent and robust funding sources of innovation, with significant correlations between patent output and new product development. Conversely, the effects of demographic diversity are relatively less strong and only by inclusion at high levels that promotes psychological safety and fair play can it be meaningfully said to facilitate innovation. These results help to highlight the significance of going beyond surface-level diversity indicators to a more in-depth comprehension of the inclusion processes that allow transforming various knowledge and experiences into new outputs. In practical terms, the research points out that the practical way to promote innovation is to ensure that the company investing in building diverse workforces must also invest in creating inclusive work environments that will enable teamwork and sharing of knowledge. Lastly, the research provides the opportunities to further the studies in the future by conducting longitudinal studies, more extensive and cross-national samples, and by investigating other contextual modulating factors that can further influence the diversity-innovation relationship.

REFERENCES

- Cox, T. H., & Blake, S. (1991). Managing cultural diversity: Implications for organizational competitiveness. *Academy of Management Perspectives*, 5(3), 45–56. <https://doi.org/10.5465/ame.1991.4274465>
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), 635–672. <https://doi.org/10.5465/256741>
- Richard, O. C., McMillan, A., Chadwick, C., & Dwyer, S. (2003). Employing an innovation strategy in racially diverse workforces. *Group & Organization Management*, 28(1), 107–126. <https://doi.org/10.1177/1059601102250022>
- van Knippenberg, D., De Dreu, C. K. W., & Homan, A. C. (2004). Work group diversity and performance: An integrative review and meta-analysis. *Journal of Applied Psychology*, 89(6), 1008–1022. <https://doi.org/10.1037/0021-9010.89.6.1008>
- Bassett-Jones, N. (2005). The paradox of diversity management, creativity and innovation. *Creativity and Innovation Management*, 14(2), 169–175. <https://doi.org/10.1111/j.1467-8691.2005.00337.x>
- Laursen, K., & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among UK manufacturing firms. *Strategic Management Journal*, 27(2), 131–150. <https://doi.org/10.1002/smj.507>
- Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of Management*, 33(6), 987–1015. <https://doi.org/10.1177/0149206307308587>

- Agarwal, R., & Helfat, C. E. (2009). Strategic renewal of organizations. *Organization Science*, 20(2), 281–293. <https://doi.org/10.1287/orsc.1090.0423>
- Østergaard, C. R., Timmermans, B., & Kristinsson, K. (2011). Does a different view create something new? The effect of employee diversity on innovation. *Research Policy*, 40(3), 500–509. <https://doi.org/10.1016/j.respol.2010.11.004>
- Shin, S. J., Kim, T. Y., Lee, J. Y., & Bian, L. (2012). Cognitive team diversity and team creativity. *Journal of Management*, 38(3), 852–880. <https://doi.org/10.1177/0149206311422449>
- Nishii, L. H. (2013). The benefits of climate for inclusion for gender-diverse groups. *Academy of Management Journal*, 56(6), 1754–1774. <https://doi.org/10.5465/amj.2009.0823>
- Munjuri, M. G., & Maina, R. M. (2013). Workforce diversity management and employee performance in the banking sector in Kenya. *DBA Africa Management Review*, 3(1), 1–21.
- Ozgen, C., Nijkamp, P., & Poot, J. (2013). The impact of cultural diversity on firm innovation: Evidence from Dutch micro-data. *IZA Journal of Migration*, 2(18), 1–20. <https://doi.org/10.1186/2193-9039-2-18>
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891–2902. <https://doi.org/10.1016/j.jbusres.2012.06.004>
- Bouncken, R., Brem, A., & Kraus, S. (2016). Multi-cultural teams as sources for creativity and innovation: The role of cultural diversity on team performance. *International Journal of Innovation Management*, 20(1), 1650012. <https://doi.org/10.1142/S1363919616500122>
- Mohammadi, A., Broström, A., & Franzoni, C. (2017). Workforce composition and innovation: How diversity in employees' ethnic and educational backgrounds facilitates firm-level innovativeness. *Journal of Product Innovation Management*, 34(4), 406–426. <https://doi.org/10.1111/jpim.12388>
- Tamunomiebi, M. D., & Onah, G. O. (2019). Organizational citizenship behaviour: A critical review of its development in a diversity driven workplace. *The Strategic Journal of Business & Change Management*, 6(1), 41–60.
- Khan, M. S., Saengon, P., Charoenpoom, S., Soonthornpipit, H., & Chongcharoen, D. (2021). The impact of organizational learning culture, workforce diversity and knowledge management on innovation and organization performance: A structural equation modeling approach. *Human Systems Management*, 40(1), 103–115. <https://doi.org/10.3233/HSM-200978>
- World Intellectual Property Organization (WIPO). (2024). *World Intellectual Property Indicators*.
- OECD. (2023). *Science, Technology and Innovation Scoreboard*.
- Global Reporting Initiative. (2021). *GRI 405: Diversity and Equal Opportunity*.
- World Economic Forum. (2024). *Global Gender Gap Report*.
- Refinitiv. (2023). *ESG Workforce and Inclusion Scores Methodology*.

Appendix A: Statistical Calculations

The present study has utilized simple descriptive statistics and correlation statistics in order to analyze the second set of data. To have a summary of the central tendency of each variable using the standard formula, the mean (average) of the variables was computed: $\text{Mean} = (\sum X) / N$, where, X is the value of a variable in each of the firms and N is the total number of firms that are to be used in the study.

In order to investigate the correlation between the indicators of workforce diversity and the outcomes of innovation, Pearson correlation coefficient (r) was calculated with the use of the following formula: $r = \Sigma[(X - \bar{X})(Y - \bar{Y})] / \sqrt{[\Sigma(X - \bar{X})^2 \Sigma(Y - \bar{Y})^2]}$, In which, X and Y are the corresponding values of the variables of diversity and innovation and X and Y both mean are expressed as X and Y respectively. The correlation coefficients vary between +1 and -1 which show the degree and direction of relationships. The computation of all mean and correlation values were done in Microsoft excel and Python to guarantee accuracy and replicability.