

Impact of Real Time Information Update (Exchange) on the Organizational Culture

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Abstract— This study examines the effects of internal crowdsourcing (IC) on the development of an innovation culture within the educational sector in Pakistan. With a focus on addressing the paucity of empirical research in this context, a partial least squares-structural equation modeling (PLS-SEM) approach is employed using data collected from educational institutions in Pakistan. By investigating the relationship between IC initiatives and the development of an innovation culture, this study contributes to understanding the factors that promote a strong and effective organizational culture in educational settings. The findings from this research are particularly valuable for educational administrators and leaders who seek to revitalize their institutions and foster an innovation-driven culture. The study confirms the importance of IC initiatives in educational organizations, providing empirical evidence to support their role in promoting an innovation culture. These insights have practical implications for educational institutions in Pakistan as they strive to enhance their competitiveness and adapt to rapidly evolving educational landscapes. In summary, this study highlights the significance of IC in shaping the innovation culture within the educational sector in Pakistan. The findings offer actionable recommendations for educational leaders and contribute to the limited empirical literature in this specific context, thus supporting the cultivation of innovative educational environments in Pakistan.

Keywords— Competitive advantage, Innovation culture, Internal crowdsourcing, organizational culture, and organizational transformation.

I. INTRODUCTION

In today's rapidly evolving educational landscape, fostering an innovation culture has become a critical factor for educational institutions seeking to adapt and thrive in an increasingly dynamic and competitive environment. An innovation culture enables educational organizations to embrace change, foster creativity, and drive continuous improvement in teaching and learning. However, understanding the factors that contribute to the development of an innovation culture within the educational sector remains a significant challenge.

Through internal crowdsourcing (IC) projects, educational institutions may be able to foster a culture of creativity. In order to create novel solutions, enhance procedures, and promote cultural change within an educational organisation, IC entails utilising the collective intelligence and ideas of students, instructors, and administrators. However, further research is needed to determine how much IC activities, specifically in the context of Pakistan, aid in the growth of an innovation culture in the educational sector.

In this study, we aim to address this research gap by investigating the impact of IC initiatives on the development of an innovation culture within educational institutions in Pakistan. Specifically, we explore the influence of IC initiatives on the dimensions and factors of an innovation culture framework, drawing inspiration from existing literature on innovation culture in educational settings.

To achieve our research objectives, we analyze and compare data obtained from a diverse range of educational institutions in Pakistan. These institutions represent various educational levels and settings, including schools, colleges, and universities, thereby providing a comprehensive understanding of the effects of IC initiatives on the

development of an innovation culture in the educational sector.

The structure of this paper is as follows: First, we review the existing literature on innovation culture within educational organizations, highlighting the significance of IC initiatives and the characteristics of internal crowdsourcing in the educational context. We then formulate hypotheses based on our theoretical framework, outlining the expected relationships between IC initiatives and the various dimensions of an innovation culture.

Next, we describe the research methodology employed, which includes data collection through surveys or interviews with students, teachers, and administrators. We analyze the collected data using appropriate statistical techniques to test our hypotheses and draw conclusions.

In subsequent sections, we present our findings, discuss their implications, and address any limitations encountered during the study. We also provide recommendations for educational leaders and policymakers aiming to cultivate an innovation culture within educational institutions in Pakistan.

By exploring the impact of IC initiatives on the development of an innovation culture in the educational sector, this research aims to contribute valuable insights to educational administrators, policymakers, and researchers seeking to enhance innovation practices in Pakistani educational institutions.

II. THEORETICAL BACKGROUND

In this section, we provide a theoretical foundation for our study by reviewing relevant literature on innovation culture within the educational sector and the role of internal crowdsourcing. We explore key concepts, frameworks, and prior research that inform our understanding of the

relationships between internal crowdsourcing initiatives, innovation culture, and organizational outcomes in educational institutions.

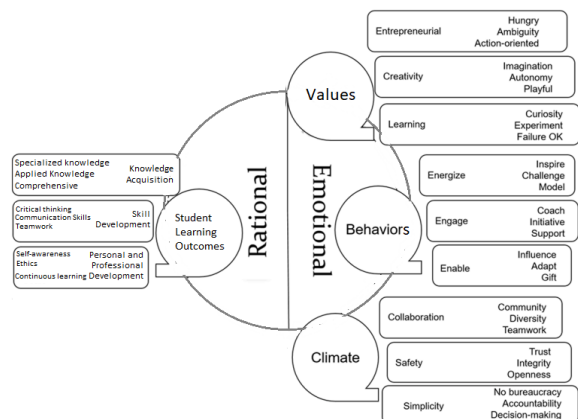


Fig. 1. Conceptual framework components of the innovation culture selected. Notes: This figure is adapted from Rao & Weintraub (2013).

Innovation Culture

Innovation culture refers to the values, beliefs, norms, and behaviors that support and foster innovation within an educational institution. It creates an environment that encourages creativity, risk-taking, collaboration, and continuous improvement. Several key determinants contribute to the development of an innovation culture in educational organizations.

Determinants of an Innovation Culture

For this research, we define an innovation culture in a multidimensional context, encompassing various components that contribute to a culture of innovation within educational organizations. To determine which components of an innovation culture are directly influenced by the implementation of an internal crowdsourcing (IC) initiative, we adopted Rao & Weintraub's (2013) framework as a reference. This choice was based on our extensive literature review and the factors identified in their framework that align with our research objectives.

We specifically selected three emotional blocks (values, behaviors, and climate) and one rational block (student learning outcome) from Rao & Weintraub's conceptual framework. Additionally, we introduced a moderating variable, communication, and collaboration among staff, to examine its influence on the relationship between IC and the dimensions of the innovation culture. IC itself serves as the independent variable in our study. This selection was made considering that an innovative culture relies on a foundation of six basic components, as depicted in Figure 1.

The six blocks of an innovation culture framework are further divided into a total of 18 factors, with three factors per block. Each factor is then subdivided into three items, resulting in a total of 54 items that were measured on a Likert scale. As we move from these abstract building blocks towards more concrete elements, the measurement and manageability of the innovation culture improve. For example, within the values block, we have the entrepreneurial factor,

which can be further divided into hungry, ambiguity, and action-oriented sub-factors.

According to Rao & Weintraub (2013), "the building blocks are dynamically linked. For example, the values of the organization have an impact on people's behaviors, on the climate of the workplace, and on how success is defined and measured." While educational organizations have traditionally focused on student learning outcomes to foster innovation, they have often overlooked people-oriented dimensions such as values, behaviors, and the working environment. These dimensions, being less tangible, are more challenging to manage but play a crucial role in cultivating an innovation culture.

Crowdsourcing

Crowdsourcing is a participatory approach that involves harnessing the collective intelligence, skills, and ideas of a large group of individuals to solve problems, generate ideas, and drive innovation. It has gained significant attention across various sectors, including education, as a means to tap into the diverse perspectives and expertise of a crowd.

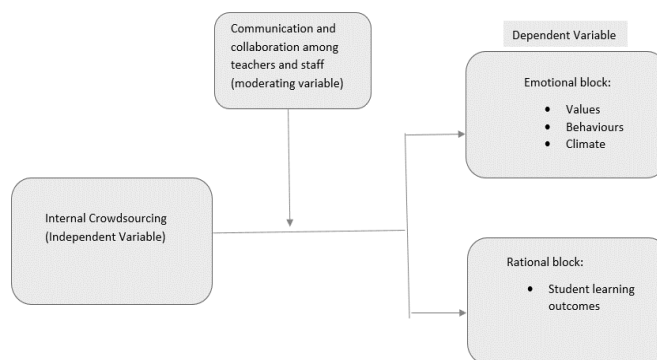


Fig. 2. Structural Model of the innovation culture

Internal Crowdsourcing

Internal crowdsourcing specifically focuses on utilizing the knowledge and insights of individuals within an organization, such as students, teachers, and administrators, to address challenges and drive innovation. It involves soliciting ideas, feedback, and solutions from internal stakeholders and leveraging their collective wisdom to improve practices and foster a culture of innovation within the organization.

Internal crowdsourcing offers several benefits for educational institutions, including increased engagement and motivation, access to a wider range of ideas, and the opportunity to empower individuals within the organization. By tapping into the expertise and creativity of internal stakeholders, educational institutions can enhance their innovation culture and drive positive change.

III. HYPOTHESES DEVELOPMENT

Innovation culture and internal crowdsourcing

For an organization to effectively navigate the challenges of today's educational sector, fostering an innovation culture becomes crucial. Educational institutions recognize that innovation and continuous improvement are key drivers of success and enhanced student learning outcomes (King &

Wright, 2007). The ability to create and sustain an innovation culture rests on various factors, including leadership support, organizational structures, and climate (Rao & Weintraub, 2013).

Internal crowdsourcing (IC) initiatives have emerged as a powerful approach to harness the collective intelligence and ideas of individuals within an organization, including students, teachers, and administrators. IC enables educational institutions to tap into the diverse perspectives, knowledge, and creativity of their stakeholders, fostering an environment conducive to innovation and continuous improvement.

Based on these insights, we propose the following hypotheses:

H1: Internal crowdsourcing initiatives have a positive influence on the values block of the innovation culture framework within educational organizations.

H2: Internal crowdsourcing initiatives have a positive influence on the behaviors block of the innovation culture framework within educational organizations.

Implementing internal crowdsourcing (IC) initiatives will have a positive impact on the development of organizational values that embrace innovation and foster an innovative mindset. Furthermore, IC initiatives will encourage behaviors such as collaboration, experimentation, and proactive problem-solving, thereby making a significant contribution to cultivating an innovation culture within educational organizations.

H3: Internal crowdsourcing initiatives have a positive influence on the climate block of the innovation culture framework.

H4: Internal crowdsourcing initiatives have a positive influence on student learning outcomes within educational organizations.

H5: The impact of internal crowdsourcing initiatives on the values block is greater than on the behaviors and climate blocks of the innovation culture framework within educational organizations.

H6: The impact of internal crowdsourcing initiatives on the emotional blocks (values, behaviors, and climate) is greater than on student learning outcomes within educational organizations.

Internal crowdsourcing (IC) initiatives play a crucial role in creating a climate of openness, trust, and psychological safety within educational organizations. This climate supports idea sharing, feedback, and a supportive environment for innovation. Additionally, IC initiatives promote engagement, collaboration, and the generation of innovative ideas, leading to improved student learning experiences and outcomes.

Furthermore, IC initiatives have a significant impact on shaping the values of the organization, which in turn influence behaviors and contribute to the overall climate of innovation. By fostering an innovation culture through IC initiatives, educational organizations can cultivate a shared set of values that embrace creativity, risk-taking, and continuous improvement.

It is important to note that IC initiatives primarily influence the emotional aspects of the innovation culture, including values, behaviors, and the overall climate. However,

they also have a secondary effect on student learning outcomes. This highlights the interconnectedness between the emotional aspects of an innovation culture and the ultimate goal of enhancing student learning experiences and outcomes.

In our study, we aim to comprehensively examine the relationship between internal crowdsourcing initiatives, the dimensions of the innovation culture framework, and their impact on student learning outcomes within educational organizations. By incorporating the moderating variable of communication and collaboration among staff, we recognize that the effectiveness of IC initiatives may vary depending on the level of communication and collaboration within the educational organization. This underscores the importance of fostering effective communication and collaboration as essential factors in successfully implementing internal crowdsourcing initiatives and developing a thriving innovation culture.

IV. METHOD

Data & Sample

For this study, a sample of educational institutions within Pakistan was selected based on their implementation of at least one internal crowdsourcing (IC) initiative. These institutions were chosen to represent a diverse range of educational levels, including schools, colleges, and universities, across different regions in Pakistan. By focusing on institutions that had implemented IC initiatives, we aimed to investigate the influence of these initiatives on the dimensions of the innovation culture framework.

To empirically test the influence of IC initiatives on the innovation culture framework, we designed a questionnaire based on Rao & Weintraub's (2013) innovation culture framework. The questionnaire aimed to capture the perceptions of participants regarding the influence of IC initiatives on specific elements, factors, and dimensions of the innovation culture framework. The questionnaire utilized a Likert-type response scale with five degrees of influence, ranging from 1 (without influence) to 5 (very positive influence).

The questionnaire consisted of 54 items, corresponding to the 18 factors and six dimensions of the innovation culture framework. Participants were asked to rate the influence of each IC initiative on these elements using the provided response scale.

The data collection process involved distributing the questionnaire to participants within the selected educational institutions. Participants were typically individuals who were involved in the implementation or management of IC initiatives within their respective organizations, such as administrators, department heads, or designated IC project leaders. Participants were assured of the confidentiality and anonymity of their responses.

By collecting data from educational institutions that had implemented IC initiatives and using a questionnaire specifically designed to measure the influence of these initiatives on the innovation culture framework, we aimed to obtain insights into the direct influence of each IC initiative on

the elements, factors, and dimensions of the innovation culture framework. The analysis of the collected data will provide valuable insights into the impact of IC initiatives on the innovation culture within educational organizations in Pakistan.

Data Analysis: The exploratory approach

In our data analysis, we focused on examining the influence of internal crowdsourcing (IC) initiatives, the dimensions of Rao & Weintraub's (2013) innovative culture framework, and the student learning outcome (SLO) dimension. Additionally, we considered the moderating variable of communication and collaboration among staff.

To determine the 18 factors within the framework, we conducted 18 exploratory factor analyses using the maximum-likelihood method. Each factor consisted of three elements, as depicted in the framework illustrated in Figure 1.

Given the small sample sizes obtained for our study, we employed SmartPLS version 3.2.8 to test the six hypotheses. This software is suitable for structural equation modeling in cases where sample sizes are relatively small (Fornell & Bookstein, 1982). The sample sizes in our study met the recommendations provided by Barclay, Higgins, & Thompson (1995) regarding the sample sizes associated with structural path coefficients. Furthermore, SmartPLS allowed for the consideration of the non-compliance of multivariate normality in the data.

In our analysis, we employed a reflective-reflective type model. This approach considers the relationships between latent constructs and their indicators as reflective, assuming that the constructs cause the indicators to reflect the construct's underlying meaning or concept.

By adopting an exploratory approach in our data analysis, we aimed to uncover the underlying factors within the innovation culture framework, assess the influence of IC initiatives and examine the moderating effect of communication and collaboration among staff. The use of SmartPLS allowed us to analyze our relatively small sample sizes effectively and test the proposed hypotheses.

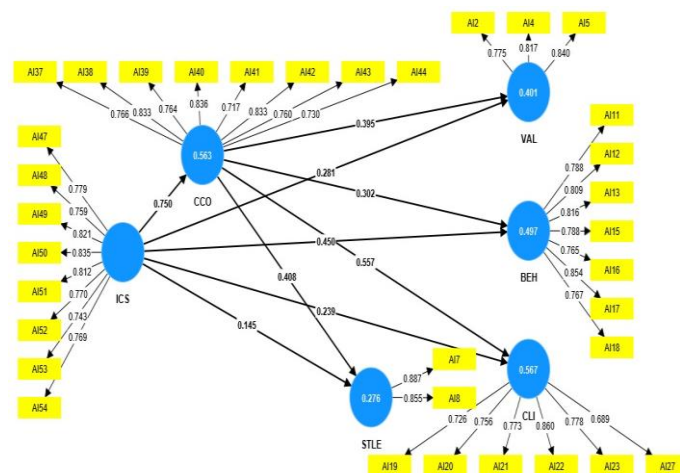


Fig. 3. PLS system result. Notes: ICS= Internal Crowdsourcing, CCO= Communication & Collaboration among staff, VAL= Values, BEH= Behaviors, CLI= Climate, STLE= Student Learning Outcome.

V. RESULTS

Assessment of the measurement model

To ensure that our research model consistently measured the first-order constructs of the innovative culture framework, including values, behaviors, climate, student learning outcome, communication and collaboration, and internal crowdsourcing, we assessed convergent and discriminant validity, as shown in Table 1 & 2.

TABLE I. Construct reliability and validity

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
BEH	0.905	0.925	0.638
CCO	0.908	0.926	0.610
CLI	0.857	0.894	0.586
ICS	0.912	0.928	0.618
STLE	0.682	0.863	0.758
VAL	0.740	0.852	0.658

TABLE II. Discriminant validity of constructs

	BEH	CCO	CLI	ICS	STLE	VAL
BEH	0.798					
CCO	0.663	0.781				
CLI	0.739	0.713	0.765			
ICS	0.580	0.654	0.649	0.786		
STLE	0.731	0.736	0.616	0.704	0.870	
VAL	0.740	0.744	0.569	0.658	0.689	0.811

Convergent validity was evaluated by examining the Composite Reliability (CR) level, which assesses the internal consistency of indicators within a given construct. According to Nunnally (1967), a CR value greater than 0.7 is considered satisfactory. In our study, all first-order constructs from our model met this requirement, with composite reliability values exceeding the threshold further supporting the reliability of the constructs (see Table 1). Additionally, Cronbach's alpha reliability coefficients, which indicate internal consistency, were ranged from 0.682 to 0.912. While most constructs exhibited satisfactory reliability suggesting that the items within each construct consistently measure the underlying concept they represent, it is important to note that the Cronbach's alpha for the (STLE) construct was below the conventional threshold of 0.7. This suggests a lower level of internal consistency for the items within the STLE construct, which may require further examination.

Convergent validity, which assesses the extent to which the indicators within a construct are related to each other, was evaluated using the Average Variance Extracted (AVE). AVE values greater than 0.5 indicate satisfactory convergent validity. In our study, all constructs met this criterion, with AVE values ranging from 0.586 to 0.758. This suggests that the indicators within each construct share a substantial amount of common variance.

In addition to assessing convergent validity and composite reliability, discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT) as suggested by Hair et al. (2013). The HTMT compares the correlations between different constructs to determine if discriminant validity exists. If the HTMT value is less than 1, it indicates that there is sufficient discriminant validity.

In our study, the HTMT values between almost all pairs of latent variables demonstrated discriminant validity, as they were below 1, as shown in table 2. Although some values were close to the maximum threshold, this can be attributed to the reflective-reflective measurement model with repeated indicators used in our study (Hair et al., 2013). This observation further supports the distinctiveness of the latent variables in our proposed model (see Table 2).

Additionally, the correlation matrix between the latent variables was examined to ensure discriminant validity. According to Fornell and Larcker (1981), for discriminant validity, each element on the main diagonal of the correlation matrix should be greater than the elements in its corresponding row and column. In our proposed model, the correlation matrix demonstrated this pattern, confirming the discriminant validity of the latent variables.

Assessment of the structural model

The table provided presents the results of the assessment of the structural model. It includes the correlations between the latent variables, descriptive statistics and regression analysis.

TABLE III. Correlations matrix

	BEH	CCO	CLI	ICS	STLE	VAL
BEH	1.000	0.639	0.590	0.676	0.455	0.603
CCO	0.639	1.000	0.736	0.750	0.516	0.606
CLI	0.590	0.736	1.000	0.657	0.494	0.494
ICS	0.676	0.750	0.657	1.000	0.451	0.577
STLE	0.455	0.516	0.494	0.451	1.000	0.586
VAL	0.603	0.606	0.494	0.577	0.586	1.000

The correlation matrix displays the correlations between the latent variables in the model. The values range from -1 to 1. A correlation of 1 indicates a perfect positive relationship, 0 indicates no relationship, and -1 indicates a perfect negative relationship. For example, the correlation between BEH (Behaviour) and CCO (Communication and Collaboration) is 0.639, indicating a moderate positive relationship between these variables. From the matrix, we can observe that BEH (Behaviour) has moderate positive correlations with CCO (Communication and Collaboration), CLI (Climate), ICS (Internal Crowdsourcing), and VAL (Value). CCO has strong positive correlations with CLI, ICS, and VAL. CLI has moderate positive correlations with CCO, ICS, and VAL. ICS has moderate positive correlations with BEH, CCO, CLI, and VAL. STLE has moderate positive correlations with BEH and VAL. VAL has moderate positive correlations with BEH, CCO, CLI, ICS, and STLE (see Table 3). These correlations provide insights into the interrelationships between the latent variables and indicate the degree of association between them in the research model.

TABLE IV. Descriptive Analysis

	Mean	Median	Observed min	Observed max
BEH	0.000	0.183	-3.519	1.679
CCO	0.000	0.072	-3.574	1.939
CLI	0.000	0.113	-4.036	1.770
ICS	0.000	0.050	-3.555	1.802
STLE	0.000	0.362	-3.367	1.605
VAL	0.000	0.102	-3.944	1.450

The descriptive statistics section provides information about the mean, median, observed minimum, and observed maximum for each latent variable. These values describe the central tendency and range of the data. For example, the mean value of BEH is 0.000, with an observed minimum of -3.519 and an observed maximum of 1.679 (see Table 4).

TABLE V: R-square values. Notes: R-square=Regression

	R-square	R-square adjusted
BEH	0.497	0.486
CCO	0.563	0.558
CLI	0.567	0.557
STLE	0.276	0.260
VAL	0.401	0.389

The R-square values in the table represent the proportion of variance in the dependent variables that can be explained by the independent variables in the structural model (see Table 5). For instance, BEH (Behaviour) has an R-square of 0.497, indicating that approximately 49.7% of the variance in BEH can be accounted for by the independent variables. Similarly, CCO (Communication and Collaboration) has an R-square of 0.563, implying that around 56.3% of the variance in CCO can be explained by the independent variables. CLI (Climate) and VAL (Value) have R-square values of 0.567 and 0.401, respectively, indicating that approximately 56.7% and 40.1% of the variance in CLI and VAL can be explained by the independent variables. STLE (Student Learning Outcome) has an R-square of 0.276, suggesting that about 27.6% of the variance in STLE can be accounted for by the independent variables. These values demonstrate the degree to which the independent variables contribute to explaining the variability in the dependent variables, with higher values indicating a stronger relationship between the variables.

Summary of results

Based on the analysis of the results, it can be concluded that several of the hypotheses were supported. Hypotheses H1, H2, and H3, which stated that internal crowdsourcing (IC) initiatives have a positive influence on the values, behaviors, and climate blocks of the innovation culture framework within educational organizations, were supported. The findings indicate that IC initiatives contribute to the development of an innovation culture by shaping organizational values, promoting desired behaviors, and creating a favorable climate for innovation.

Additionally, hypothesis H6, which proposed that the impact of IC initiatives on the emotional blocks (values, behaviors, and climate) is greater than on student learning outcomes within educational organizations, was supported. This suggests that IC initiatives have a more pronounced effect on the emotional aspects of the innovation culture framework compared to their impact on student learning outcomes.

However, hypothesis H5, which suggested that the impact of IC initiatives on the values block is greater than on the behaviors and climate blocks, was not fully supported by the results. While IC initiatives did have a positive influence on all three blocks of the emotional part of the model, the

difference in impact between the values block and the other blocks was not significant.

Furthermore, hypothesis H4, which proposed a positive influence of IC initiatives on student learning outcomes, can be considered partially rejected. The results indicated that the impact of IC initiatives on student learning outcomes was relatively weaker compared to the other variables included in the model.

Overall, the findings provide insights into the relationship between IC initiatives and the dimensions of the innovation culture framework within educational organizations. The results support the importance of fostering an innovation culture through IC initiatives, but also highlight the need for further attention to the specific impact on student learning outcomes. The results of the measurement and structural model we assessed did not result in the rejection of our model. We determined it is an adequate model to measure and analyze IC initiatives in large organizations. As a result, our model remains the same regardless of the type of organization in which it is applied. We can affirm that the model we designed to measure the influence of IC on innovation culture is valid for any type of organization.

VI. DISCUSSION AND CONCLUSIONS

Implications for Theory and Practice

The findings of this study have important implications for both theory and practice. From a theoretical perspective, the study contributes to the existing literature by examining the influence of internal crowdsourcing initiatives on the development of an innovation culture within the educational sector in Pakistan. By incorporating the dimensions of values, behaviors, and climate, as well as student learning outcomes, the study provides a comprehensive understanding of the relationship between IC initiatives and the innovation culture framework. The findings support the notion that IC initiatives have a positive impact on the development of an innovation culture, emphasizing the importance of organizational values, desired behaviors, and a supportive climate for fostering innovation.

From a practical standpoint, the study offers valuable insights for educational organizations in Pakistan. The results highlight the significance of implementing IC initiatives as a means to cultivate an innovation culture and drive educational excellence. By promoting values that embrace innovation, encouraging collaborative behaviors, and creating a climate of openness and trust, educational institutions can create an environment conducive to innovation and enhance student learning outcomes. The findings emphasize the need for educational leaders and policymakers to recognize the role of IC initiatives in shaping organizational culture and to invest in initiatives that foster innovation within educational settings.

Conclusions, Limitations, and Directions for Future Research

In conclusion, this study investigated the influence of internal crowdsourcing initiatives on the development of an innovation culture within educational organizations in Pakistan. The findings support the hypotheses that IC initiatives have a positive impact on the values, behaviors, and

climate blocks of the innovation culture framework. However, the impact on student learning outcomes was relatively weaker compared to the other variables. The results suggest the need for a balanced focus on both emotional and rational aspects of the innovation culture framework to drive educational excellence.

While this study provides valuable insights, it is not without limitations. The study was limited to a specific context within the educational sector in Pakistan, which may limit the generalizability of the findings to other contexts. The use of self-report measures and cross-sectional data also introduces potential biases and limitations in capturing the long-term effects of IC initiatives. Future research could overcome these limitations by conducting longitudinal studies in diverse educational settings and incorporating objective measures of student learning outcomes.

Furthermore, future research could explore the mechanisms through which IC initiatives influence the different dimensions of the innovation culture framework. This could include investigating the role of organizational communication, leadership styles, and employee engagement in mediating the relationship between IC initiatives and the development of an innovation culture.

Overall, this study contributes to the understanding of the relationship between IC initiatives and the development of an innovation culture in educational organizations. The findings have practical implications for educational leaders and policymakers in fostering an innovation culture and improving student learning outcomes. Further research in this area can continue to enrich our understanding of how IC initiatives can drive innovation and educational excellence in diverse educational contexts.

TABLE A1

Descriptive results of the influence of the internal crowdsourcing initiatives in the development of an innovation culture.

Code	Statement associated with each item
A1	In the desire to explore opportunities and to create new things
A2	In the possibility of admitting different interpretations when pursuing new opportunities (tolerance for ambiguity)
A3	In avoiding analysis paralysis when we identify new opportunities by exhibiting a bias toward action
A4	In encouraging new ways of thinking and solutions from diverse perspectives
A5	In providing the freedom to pursue new opportunities
V6	In being spontaneous and not afraid to laugh at ourselves
V7	At asking questions in the pursuit of the unknown
V8	In constantly experimenting in our innovation efforts
V9	In not being afraid to fail, and to treat failure as a learning opportunity
A10	In the way our leaders inspire us with a vision for the future and articulation of opportunities for the organization

- A11 In the way our leaders challenge us to think and act entrepreneurially
- A12 In the way our leaders model the right innovation behaviors for others to follow
- A13 In which our leaders devote time to coach and provide feedback about our innovation efforts
- A14 In our organization, people at all levels proactively take initiative to innovate
- A15 In which our leaders provide support to project team members during both success and failures
- A16 In which our leaders use appropriate influence strategies to help us navigate around organizational obstacles
- A17 In which our leaders are able to modify and change the course of action when needed
- A18 In which our leaders persist in following opportunities even in the face of adversity
- A19 In creating a community that speaks a common language about innovation
- A20 To appreciate, respect, and leverage the differences that exist within our community
- A21 In working better as a team to capture opportunities
- A22 In being more consistent in actually doing the things that we say we value
- A23 To be able to question decisions and actions that are inconsistent with our values
- A24 To be able to freely voice our opinions, even about unconventional or controversial ideas
- A25 In minimizing rules, policies, bureaucracy, and rigidity to simplify our workplace
- A26 In which people take responsibility for their own actions and avoid blaming others
- A27 In which people know exactly how to get started and move initiatives through the organization
- A28 In having committed leaders who are willing to be champions of innovation
- A29 In having access to innovation experts who can support our projects
- A30 In identifying and developing internal talent to succeed in our innovation projects
- A31 Having the right recruiting and hiring systems in place to support a culture of innovation
- A32 In having good collaboration tools to support our innovation efforts
- A33 In leveraging our relationships with suppliers and vendors to pursue innovation
- A34 In giving people dedicated time to pursue new opportunities
- A35 In having dedicated finances to pursue new opportunities.
- A36 In having dedicated physical and or/ virtual space to pursue new opportunities
- A37 In systematically generate ideas from a vast and diverse set of sources
- A38 In methodically filtering and refining ideas to identify the most promising opportunities
- A39 In selecting opportunities based on a clearly articulated risk portfolio
- A40 In moving promising opportunities quickly into prototyping
- A41 In having effective feedback loops between our organization and the voice of the customer
- A42 In stopping quickly projects based on predefined failure criteria
- A43 In having processes tailored to the flexible and context-based rather than control-and bureaucracy-based
- A44 In going quickly to market with the most promising opportunities
- A45 In allocating rapidly resources to scale initiatives that show market promise
- A46 In which our customers think of us as an innovative organization
- A47 In that our innovation performance is much better than other firms in our industry
- A48 In that our innovation efforts have led us to better financial performance than others in our industry
- A49 In treating innovation as a long-term strategy rather than a short-term fix
- A50 In having a deliberate, comprehensive and disciplined approach to innovation
- A51 In that our innovation projects have helped our organization develop new capabilities that we did not have three years ago
- A52 In that I am satisfied with my level of participation in our innovation initiatives
- A53 In stretching and building deliberately our people's competencies by their participation in new initiatives
- A54 In rewarding people for participating in potentially risky opportunities, irrespective of the outcome

APPENDIX

See Table A1

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