

The Impact of Product Creativity on the Dimensions of Broad Scope, Timeliness, Aggregation, and Integration in the Use of Management Accounting System Information

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ABSTRACT

The present study aimed to investigate the effect of product creativity on the dimensions of broad scope, timeliness, aggregation, and integration in the use of management accounting system information among managers of small and medium-sized enterprises in Mashhad. This applied study was conducted using a descriptive-survey research design. The statistical population consisted of managers of small and medium-sized companies in Mashhad, Iran, totaling 1,560 individuals, from which 384 participants were selected based on Morgan's table using convenience sampling. Data were collected through a standardized questionnaire adapted from previous studies, including 18 items measuring product creativity, broad scope of information, timeliness, aggregation, and integration of management accounting system information. The questionnaire employed a five-point Likert scale ranging from completely disagree to completely agree. Data analysis was performed using Structural Equation Modeling (SEM) with Smart PLS 3 software. Reliability and validity of the constructs were confirmed through Cronbach's alpha, composite reliability, convergent validity, and discriminant validity indices. The results of structural equation modeling demonstrated that product creativity had a positive and statistically significant effect on all four dimensions of management accounting system information usage. Specifically, product creativity significantly affected broad scope information ($\beta=0.576$, $t=16.530$, $p<0.05$), timeliness of information ($\beta=0.531$, $t=14.252$, $p<0.05$), information aggregation ($\beta=0.575$, $t=17.383$, $p<0.05$), and information integration ($\beta=0.523$, $t=17.457$, $p<0.05$). In addition, the coefficient of determination values indicated moderate explanatory power for the endogenous variables, with R^2 values of 0.332 for broad scope information, 0.282 for timeliness, 0.331 for aggregation, and 0.273 for integration. The overall model fit indices, including GOF and SRMR, confirmed the acceptable fit and predictive quality of the proposed structural model. The findings indicate that effective utilization of management accounting system information significantly enhances product creativity in organizations.

Keywords: Management accounting system information, broad scope information, timeliness, aggregation, integration, product creativity.

1. Introduction

In today's highly competitive and technology-driven business environment, organizations are increasingly required to develop innovative products and services in order to maintain sustainable competitive advantage and respond effectively to rapidly changing market demands. The acceleration of technological advancements, globalization of markets, and intensification of competition have transformed innovation and creativity into strategic necessities for organizational survival and growth. Among different dimensions of innovation, product creativity has emerged as one of the most important determinants of organizational success because it enables firms to introduce unique products, improve customer satisfaction, and enhance market performance. Product creativity refers to the ability of organizations to generate novel, useful, and valuable ideas that can be transformed into innovative products or services. Organizations with higher levels of product creativity are generally more capable of adapting to environmental changes, satisfying customer expectations, and strengthening their market position (Flecher & Griffith, 2020).

The growing importance of product creativity has directed the attention of researchers and practitioners toward organizational factors that facilitate or hinder innovative performance. One of the most influential organizational mechanisms in this regard is the management accounting system (MAS). Management accounting systems provide managers with financial and non-financial information required for planning, decision-making, performance evaluation, and strategic control. In contemporary organizations, management accounting systems are no longer limited to traditional accounting functions; rather, they have become strategic tools for supporting managerial decision-making and organizational innovation (Afifa & Saleh, 2022). The effectiveness of these systems depends largely on the quality, scope, timeliness, aggregation, and integration of the information they provide to managers. Consequently, organizations that utilize management accounting information effectively are more capable of identifying opportunities, managing uncertainty, and encouraging innovative behaviors within the organization.

The role of information in modern organizations has become increasingly critical in the post-COVID-19 business environment, where firms face unprecedented levels of uncertainty and complexity. Effective information management enables organizations to adapt quickly to

environmental disruptions and improve strategic responsiveness. Barnes emphasized that information systems have become essential infrastructures for organizational resilience and sustainable business development in dynamic environments (Barnes, 2020). In this context, management accounting information systems contribute significantly to organizational agility by providing managers with accurate and timely information that supports strategic and operational decisions. As firms operate in highly uncertain and rapidly evolving environments, the ability to access and process reliable information has become directly associated with innovation capacity and organizational creativity.

The broad scope of information is considered one of the key dimensions of management accounting systems. Broad scope information refers to the comprehensiveness and diversity of information provided to managers regarding internal and external organizational environments. Such information includes financial and non-financial data, market trends, customer preferences, technological developments, and competitor analysis. Access to broad scope information enhances managers' ability to evaluate organizational conditions comprehensively and make strategic decisions based on a holistic understanding of the business environment (Bozich & Dimoski, 2019). In organizations characterized by innovation-oriented cultures, broad scope information can improve product creativity by helping managers identify emerging market opportunities and anticipate environmental changes more effectively.

Another important dimension of management accounting information systems is timeliness. Timely information refers to the extent to which information is available to managers at the appropriate time for effective decision-making. In dynamic and uncertain environments, delayed information may reduce organizational responsiveness and weaken innovation performance. Timely information enables managers to react rapidly to market changes, emerging technologies, and customer demands, thereby facilitating faster and more effective innovation processes (Zhao, 2014). Organizations that provide managers with timely accounting information are more capable of minimizing uncertainty and improving strategic flexibility, which in turn strengthens product creativity and innovation performance.

Aggregation is also considered a critical characteristic of management accounting systems. Aggregated information allows managers to combine and summarize data from various organizational units and operational activities to obtain a comprehensive overview of organizational

performance. Aggregation facilitates strategic analysis and coordination among departments by reducing information complexity and improving managerial understanding of organizational processes. According to Bozich and Dimoski, aggregated accounting information improves managerial effectiveness and enhances strategic decision-making by presenting concise and integrated reports (Bozich & Dimoski, 2019). In the context of product creativity, aggregated information enables managers to identify patterns, evaluate organizational capabilities, and allocate resources more effectively toward innovative activities.

Integration represents another essential dimension of management accounting information systems. Integrated information systems ensure coordination and consistency among different organizational departments and functions. Information integration reduces inconsistencies and communication barriers while enhancing collaboration across organizational units. Abrenti et al. argued that management control systems and leadership styles significantly influence organizational coordination and strategic alignment (Abrenti et al., 2010). In innovation-oriented organizations, integrated information systems support product creativity by facilitating knowledge sharing, improving cross-functional collaboration, and ensuring that all organizational units work toward common strategic goals. Consequently, information integration contributes to improved innovation efficiency and organizational adaptability.

In addition to management accounting systems, leadership characteristics play a substantial role in promoting organizational creativity and innovation. Leadership styles influence how managers use organizational information and guide employees toward innovative behaviors. Transformational leadership, in particular, has received considerable attention in management research because of its positive impact on organizational innovation and performance. Transformational leaders inspire employees, encourage intellectual stimulation, and create supportive environments for creativity and change. Yen et al. demonstrated that transformational leadership positively affects firm performance through the mediating roles of innovation capacity and management accounting system usage (Yen et al., 2025). This finding highlights the interconnected relationship between leadership behaviors, information systems, and organizational innovation.

Similarly, digital leadership capabilities and organizational agility have become increasingly important in

the context of digital transformation and innovation management. Shoukat et al. found that digital leadership capability and knowledge management capability significantly foster digital transformation through organizational agility (Shoukat et al., 2025). Their findings suggest that effective leadership and information management systems jointly contribute to organizational adaptability and innovation capacity. As organizations increasingly rely on digital technologies and information systems, management accounting systems become crucial tools for supporting innovative product development and strategic decision-making processes.

Project success and organizational innovation are also strongly associated with transformational leadership, knowledge sharing, and managerial support. Ramasamy and Kee argued that transformational leadership and organizational support mechanisms significantly enhance project success and innovation outcomes (Ramasamy & Kee, 2025). Their study emphasized that managers who encourage collaboration, training, and knowledge sharing create organizational environments conducive to creativity and innovative performance. These findings reinforce the importance of integrating leadership practices with effective information systems to strengthen organizational innovation capabilities.

Environmental sustainability and green innovation have also become major concerns for modern organizations. Research has shown that transformational leadership and management accounting practices contribute significantly to green creativity and environmental performance. Srivastava et al. reported that green transformational leadership positively influences green creativity through green organizational culture and green mindfulness (Srivastava et al., 2024). Likewise, Hanif et al. demonstrated that environmental management accounting practices and green transformational leadership positively affect corporate environmental performance through green process innovation (Hanif et al., 2023). These studies indicate that management accounting systems can support not only financial performance but also broader organizational innovation objectives, including environmental sustainability and creative product development.

Managerial characteristics such as risk-taking tendency and leadership style also influence the utilization of management accounting information. Zhao emphasized that managers' risk preferences significantly affect their use of accounting information in decision-making processes (Zhao, 2014). Managers with higher risk-taking tendencies are

generally more willing to utilize comprehensive and strategic information for innovation-related decisions. In a similar vein, Mahoudi found that CEO managerial risk-taking positively influences product innovation and management accounting system utilization (Mahoudi, 2023). These findings suggest that managerial attitudes and behavioral tendencies shape how organizations employ accounting information to support creativity and innovation.

Corporate governance mechanisms and managerial power further influence organizational risk-taking and strategic decision-making. Panahi et al. reported that CEO power significantly affects managerial risk-taking behavior, while independent boards and institutional ownership moderate this relationship (Panahi et al., 2023). These governance mechanisms can indirectly influence organizational creativity by shaping managerial decisions regarding innovation investment and information utilization. Strong governance structures may encourage more effective use of management accounting systems while reducing excessive risk-taking behaviors that could negatively affect organizational performance.

Leadership styles in accounting and financial management contexts also contribute to organizational innovation and information usage. Farrokh and Jahanshad found that managers' narcissistic traits significantly affect the selection of leadership styles in accounting environments (Farrokh & Jahanshad, 2022). Leadership styles influence how managers interpret accounting information, communicate strategic goals, and motivate employees toward innovation-oriented behaviors. Therefore, understanding the interaction between leadership styles and management accounting systems is essential for explaining organizational creativity and innovation outcomes.

Despite the growing body of literature on management accounting systems, leadership, and innovation, limited research has specifically examined the relationship between product creativity and the dimensions of management accounting information usage, including broad scope information, timeliness, aggregation, and integration. Existing studies have largely focused on leadership styles, environmental accounting practices, or strategic decision-making processes, while relatively little attention has been devoted to understanding how product creativity itself influences the utilization of management accounting information systems. Moreover, the majority of prior studies have been conducted in developed economies, leaving a contextual gap regarding emerging markets and small- and medium-sized enterprises.

Given the strategic importance of innovation and management accounting information systems in enhancing organizational competitiveness, investigating the relationship between product creativity and the dimensions of management accounting information usage can provide valuable theoretical and practical insights. Understanding how product creativity affects managers' use of broad scope, timely, aggregated, and integrated information can help organizations design more effective accounting systems and innovation strategies. Furthermore, such knowledge may assist managers in improving decision-making quality, fostering organizational creativity, and strengthening sustainable competitive advantage in dynamic business environments. Therefore, the present study aims to investigate the effect of product creativity on the dimensions of broad scope information, timeliness, aggregation, and integration in the use of management accounting system information.

2. Methods and Materials

The present study is applied in terms of purpose and descriptive-survey in terms of data collection method. The statistical population of this study consisted of all managers of small and medium-sized enterprises (SMEs) in Mashhad, totaling 1,560 individuals. Based on Morgan's table, the sample size was determined to be 384 participants, selected through non-probability convenience sampling. Therefore, the data collection instrument used in this study was a questionnaire. The questionnaire was adapted from the study by Afifa and Saleh (2022) and consisted of 18 items, including 3 items for product creativity, 4 items for broad scope information, 4 items for timeliness, 4 items for aggregation, and 3 items for integration. All questionnaire items were measured using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Structural Equation Modeling (SEM) and Smart PLS 3 software were employed to examine the conceptual model and research hypotheses. This method is considered one of the most appropriate analytical techniques for studies involving complex relationships among variables, small sample sizes, and non-normal data distributions (Hair et al., 2017). SEM consists of two components: the measurement model and the structural model. To assess content and face validity, the questionnaire was reviewed by five experts in management, accounting, and research methodology, and their suggested modifications were incorporated. Construct validity was examined using confirmatory factor analysis and convergent

validity. Reliability was confirmed using Cronbach’s alpha coefficient and composite reliability (CR). The reliability coefficients for each variable are presented in Table 1. Since

all reliability coefficients exceeded 0.70, the reliability of the constructs was confirmed.

Table 1

Cronbach’s Alpha and Composite Reliability Coefficients

Variable	Cronbach’s Alpha	Composite Reliability (CR)
Timeliness	0.819	0.880
Aggregation	0.838	0.892
Product Creativity	0.725	0.818
Broad Scope Information	0.822	0.882
Integration	0.776	0.868

3. Findings and Results

Among the respondents, the majority were male, accounting for 68.5% of the participants, while the remainder were female. In terms of educational level, 7.8% held a diploma, 15.6% an associate degree, 13.3% a bachelor’s degree, 41.4% a master’s degree, and 21.9% a doctoral degree. Regarding age distribution, 7.8% were under 20 years old, 22.4% were between 20 and 30 years old, 14.6% were between 31 and 40 years old, 34.9% were between 41 and 50 years old, and 20.3% were over 51 years old. In terms of work experience, 6.3% had less than 5 years of experience, 22.4% had between 5 and 10 years, 24.7% had between 10 and 15 years, 31% had between 15 and 20 years, and 15.6% had more than 20 years of work experience.

In the fitted measurement model (Figure 2), the factor loadings of all questionnaire items were significant at the 95% confidence level and exceeded 0.40. Therefore, none of the questionnaire items were removed, and all 18 items were included in the final analysis. Since the factor loadings of all items were acceptable and the AVE and CR indices of the constructs were within the desirable range, the validity of the items was confirmed. An AVE value of at least 0.50 indicates sufficient convergent validity, meaning that a latent variable can explain, on average, more than half of the variance of its indicators. The AVE values of the model constructs are presented in Table 2. Based on the Average Variance Extracted index, all constructs had AVE values greater than 0.50; therefore, the convergent validity of the measurement model was confirmed.

Table 2

Convergent Validity Results

Variable	Average Variance Extracted (AVE)
Timeliness	0.648
Aggregation	0.674
Product Creativity	0.602
Broad Scope Information	0.651
Integration	0.690

Furthermore, according to the Fornell–Larcker criterion, a construct should share more variance with its own indicators than with other latent constructs. Statistically, the AVE of each latent variable must be greater than the squared correlation between that variable and other latent variables.

Alternatively, the square root of the AVE for each latent variable should exceed its correlations with other variables. The values on the main diagonal represent the square roots of the AVE for each construct.

Table 3

Discriminant Validity Based on the Fornell–Larcker Criterion

Variable	Timeliness	Aggregation	Product Creativity	Broad Scope Information	Integration
Timeliness	0.805				
Aggregation	0.745	0.821			
Product Creativity	0.531	0.575	0.776		
Broad Scope Information	0.608	0.663	0.576	0.807	
Integration	0.688	0.777	0.523	0.631	0.831

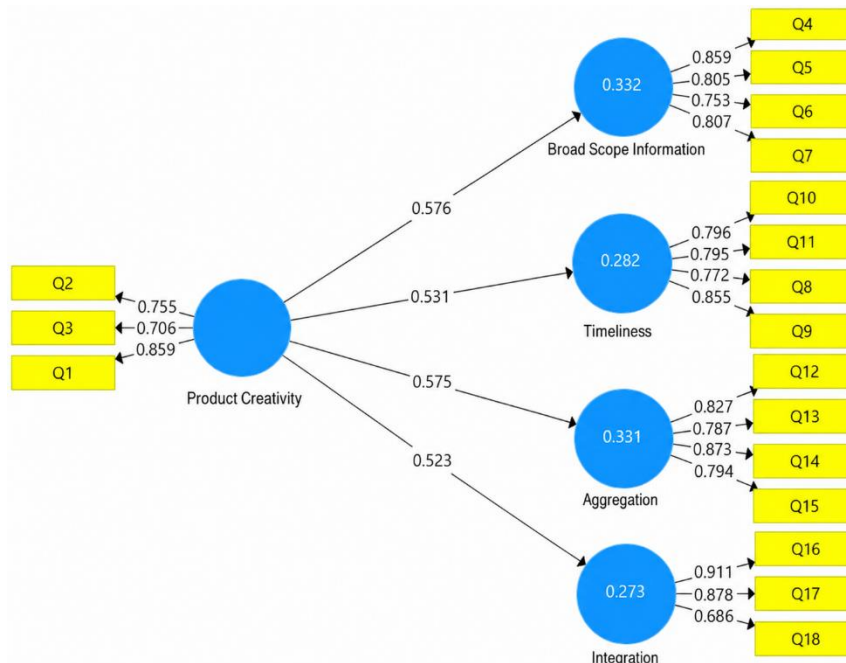
As shown in the table above, the square root of the AVE for each construct was greater than its correlations with other constructs, indicating that the discriminant validity of the measurement model was confirmed.

The conceptual model and research hypotheses were examined using Smart PLS 3 software and Structural Equation Modeling. Figure 1 presents the structural path coefficients, which indicate the magnitude of the effect of each variable on another variable. These path coefficients represent standardized beta coefficients in linear regression. The magnitude of these coefficients indicates the strength of the relationships, and the establishment of indirect relationships reduces the magnitude of the beta coefficients. The yellow rectangles represent the questionnaire items, and the values along the paths indicate factor loadings. The

values inside the ellipses represent the coefficient of determination (R^2), which indicates the percentage of variance in a dependent variable explained by the independent variables. Higher values indicate stronger explanatory power of the independent variables. According to Figure 1, the explanatory power for the endogenous variables of broad scope information, timeliness, aggregation, and integration were estimated at 0.332, 0.282, 0.331, and 0.273, respectively. Overall, these values indicate moderate explanatory power of the model for different dimensions of the management accounting information system. Although a substantial portion of the variance in these variables was explained by the model, the existence of other external or independent variables influencing these dimensions remains possible.

Figure 1

Structural Path Coefficients

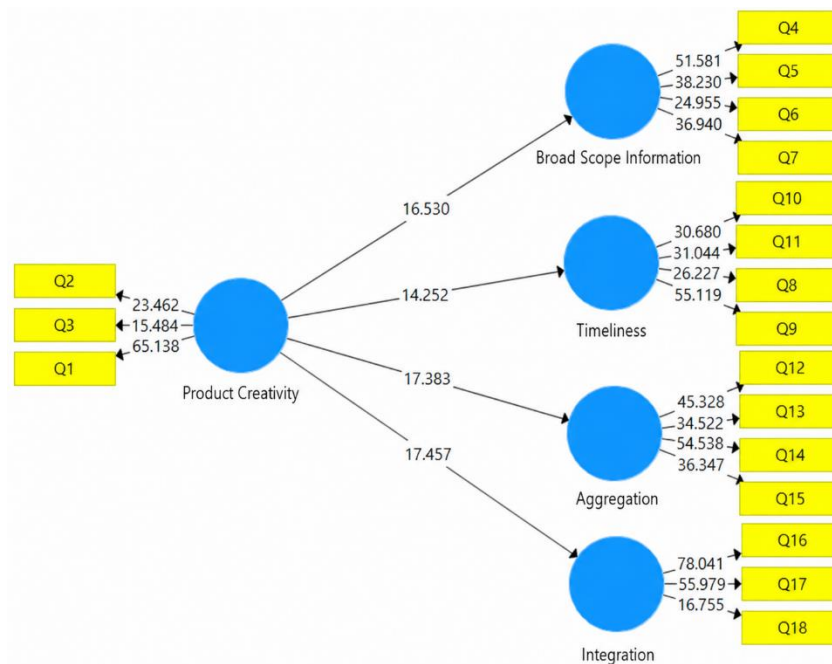


According to Figures 1 and 2, the research model is presented in terms of absolute structural path coefficients and t-statistics significance values, respectively. Considering the researcher’s error level, which is commonly set at 0.05 by default, the significance of the effects was

assessed. At this stage, if the absolute value of the t-statistic exceeded 1.96, the relationship was considered statistically significant. Otherwise, the effect was considered too weak to be statistically meaningful.

Figure 2

Significance of Path Coefficients (t-statistics)



To evaluate the fit of the measurement model and the internal consistency of the items, indicators such as Cronbach’s alpha, composite reliability, and Average Variance Extracted were examined, the results of which are presented in Tables 1 and 2. In PLS software, measurement model quality is assessed using the CV Com index. This index evaluates the quality of the reflective measurement model using the blindfolding (BF) procedure and predicts

observable variables through the measurement of latent variable values. Positive values of this index indicate that the model possesses adequate quality. The average of this index reflects the overall quality of the model. The shared communality values are presented in Table 4. Since all values were positive, the structural model quality was evaluated as acceptable.

Table 4

Communality Values

Variable	Q ²
Timeliness	0.364
Aggregation	0.413
Product Creativity	0.226
Broad Scope Information	0.385
Integration	0.401

In PLS software, the Goodness-of-Fit (GOF) index is used for the overall evaluation of the structural model. This index is calculated by taking the square root of the product

of the average communality and the average R² values of endogenous constructs. Values of 0.01, 0.25, and 0.36 are considered weak, moderate, and strong GOF values,

respectively. The average coefficient of determination was 0.304, and the average communality value was 0.357. One of the more recent model fit indices is the Standardized Root Mean Square Residual (SRMR). Values below 0.10, or more strictly below 0.08, are considered desirable. Based on the Smart PLS output, the SRMR value was reported as 0.082,

indicating an acceptable overall model fit. The results of the standardized path coefficients and significance coefficients (t-statistics) shown in Figures 2 and 3 indicate that the relationships among the variables were significant according to the research hypotheses, as presented in Table 5.

Table 5

Summary of Hypothesis Testing

No.	Hypotheses	Path Coefficient	t-statistic	Confidence Level	Result
1	Product Creativity → Broad Scope Information	0.576	16.530	95%	Confirmed
2	Product Creativity → Timeliness	0.531	14.252	95%	Confirmed
3	Product Creativity → Aggregation	0.575	17.383	95%	Confirmed
4	Product Creativity → Integration	0.523	17.457	95%	Confirmed

4. Discussion and Conclusion

The present study investigated the effect of product creativity on the dimensions of broad scope information, timeliness, aggregation, and integration in the use of management accounting system information among managers of small and medium-sized enterprises. The findings demonstrated that product creativity had a positive and statistically significant effect on all four dimensions of management accounting information usage. Specifically, product creativity significantly influenced broad scope information, timeliness, aggregation, and integration. These findings indicate that organizations with higher levels of product creativity tend to utilize management accounting information more comprehensively, promptly, systematically, and cohesively in managerial decision-making processes. The results highlight the critical role of product creativity as a strategic driver that enhances the effectiveness of management accounting systems and strengthens organizational decision-making capabilities.

One of the major findings of this study was the significant positive effect of product creativity on broad scope information usage. This finding suggests that organizations engaged in creative and innovative product development require wider and more diverse sources of information to support managerial decisions. Product creativity often involves exploring new market opportunities, understanding changing customer preferences, and adapting to technological developments. Consequently, managers involved in creative product development tend to rely on broader information systems that provide financial and non-financial data related to internal and external organizational

environments. This finding is consistent with the argument proposed by Bozich and Dimoski, who emphasized that broad information usage improves strategic managerial decision-making and organizational adaptability (Bozich & Dimoski, 2019). Similarly, Barnes argued that organizations operating in uncertain and dynamic environments increasingly depend on comprehensive information systems to improve strategic responsiveness and innovation performance (Barnes, 2020).

The positive relationship between product creativity and broad scope information can also be explained through innovation theory and strategic management perspectives. Organizations pursuing innovation-oriented strategies need access to extensive environmental information in order to identify market trends, customer expectations, competitor behaviors, and technological opportunities. Product creativity encourages managers to seek information beyond traditional accounting reports and incorporate strategic, operational, and market-based information into decision-making processes. This interpretation aligns with the findings of Flecher and Griffith, who demonstrated that technology adoption and innovative activities significantly contribute to product innovation and strategic competitiveness (Flecher & Griffith, 2020). Therefore, the present findings reinforce the notion that creative organizations are more dependent on broad and diversified information systems to sustain innovation and competitive advantage.

Another important finding of this study was the significant positive effect of product creativity on the timeliness of management accounting information usage. Timeliness is particularly important in dynamic and

competitive business environments because delayed information may reduce the effectiveness of managerial decisions and limit organizational responsiveness. The findings indicate that organizations emphasizing product creativity require timely access to information in order to support rapid innovation processes, respond effectively to market changes, and exploit emerging opportunities. Managers involved in creative product development often operate under conditions of uncertainty and high competition, making timely information crucial for strategic and operational decision-making.

This finding is strongly supported by Zhao's study, which highlighted the importance of accounting information usage in reducing uncertainty and improving managerial responsiveness in risk-oriented decision-making environments (Zhao, 2014). Creative organizations frequently face uncertain market conditions and technological changes; therefore, timely information becomes essential for improving flexibility and innovation speed. In addition, Afifa and Saleh emphasized that management accounting systems significantly support strategic decision-making by providing relevant and timely information to managers (Afifa & Saleh, 2022). The present study extends these findings by demonstrating that product creativity itself increases organizational dependence on timely information systems.

The positive relationship between product creativity and timeliness may also be interpreted through organizational agility theory. Organizations that prioritize creativity and innovation must react quickly to environmental changes and evolving customer demands. Timely accounting information allows managers to evaluate organizational performance continuously, monitor innovation outcomes, and adjust strategic actions rapidly. This interpretation is consistent with the findings of Shoukat et al., who reported that digital leadership capability and organizational agility significantly contribute to digital transformation and innovation processes (Shoukat et al., 2025). In this regard, timely information acts as a critical mechanism that enables organizations to maintain agility and sustain innovative performance.

The findings also revealed a significant positive effect of product creativity on information aggregation. Aggregation refers to the ability of management accounting systems to summarize and combine information from different organizational functions and operational activities. This finding indicates that organizations pursuing creative product development require integrated and summarized information to facilitate strategic analysis and innovation-

oriented decision-making. Product creativity involves coordination among multiple organizational departments, including marketing, production, finance, and research and development. Consequently, managers need aggregated information that provides a comprehensive overview of organizational activities and performance.

This finding aligns with the work of Abrenti et al., who emphasized the importance of management control systems and coordinated information structures in improving organizational effectiveness and strategic alignment (Abrenti et al., 2010). Aggregated information reduces complexity and enables managers to analyze organizational trends and opportunities more effectively. Similarly, Yen et al. found that innovation capacity and management accounting system usage mediate the relationship between transformational leadership and organizational performance (Yen et al., 2025). The present study supports this perspective by suggesting that creative organizations rely heavily on aggregated information systems to support innovation processes and strategic planning.

The relationship between product creativity and aggregation may also be understood through knowledge integration theory. Innovation and product creativity require organizations to integrate knowledge and information from different functional areas in order to generate valuable ideas and develop innovative products. Aggregated accounting information supports this process by consolidating organizational data into understandable and actionable reports. Managers can therefore evaluate organizational strengths and weaknesses more effectively and allocate resources efficiently toward creative activities. This process ultimately enhances innovation performance and organizational competitiveness.

Another significant finding of the study was the positive effect of product creativity on information integration. Information integration refers to the coordination and consistency of information across organizational units and departments. This result indicates that creative organizations require highly integrated information systems to facilitate communication, collaboration, and alignment among different organizational functions. Product creativity is typically a cross-functional process that depends on collaboration between marketing, accounting, operations, and innovation departments. Therefore, integrated information systems play a critical role in ensuring that organizational members share consistent and reliable information during product development processes.

This finding is consistent with previous studies emphasizing the role of integrated information systems in organizational innovation and performance improvement. Afifa and Saleh argued that management accounting systems support strategic coordination and organizational decision-making by integrating financial and operational information (Afifa & Saleh, 2022). Likewise, Ramasamy and Kee emphasized that organizational support, transformational leadership, and knowledge sharing significantly enhance project success and innovation outcomes (Ramasamy & Kee, 2025). Integrated information systems facilitate knowledge sharing and organizational coordination, which are essential for successful innovation and creative product development.

The positive effect of product creativity on information integration may also be explained through organizational learning theory. Creative organizations continuously generate and exchange knowledge across organizational boundaries in order to improve innovation capabilities. Integrated information systems facilitate this learning process by ensuring that information flows efficiently among departments and decision-makers. Such integration reduces communication barriers, minimizes information inconsistencies, and improves collaborative problem-solving. Consequently, organizations become more capable of developing innovative products and responding effectively to environmental changes.

The findings of this study further highlight the broader relationship between leadership, innovation, and management accounting systems. Previous studies have demonstrated that leadership styles significantly influence innovation and information usage within organizations. Farrokh and Jahanshad found that managerial personality characteristics affect leadership styles and accounting-related decision-making processes (Farrokh & Jahanshad, 2022). Similarly, Srivastava et al. demonstrated that transformational leadership positively influences green creativity through organizational culture and mindfulness mechanisms (Srivastava et al., 2024). Hanif et al. also reported that environmental management accounting practices and transformational leadership positively affect innovation and organizational performance (Hanif et al., 2023). The present findings complement these studies by emphasizing that product creativity itself can strengthen the utilization of management accounting information systems across multiple dimensions.

Additionally, managerial risk-taking behavior appears to be closely associated with the effective use of management

accounting information systems in creative organizations. Mahoudi reported that managerial risk-taking positively affects product innovation and the use of management accounting systems (Mahoudi, 2023). Similarly, Panahi et al. found that CEO power and governance structures significantly influence organizational risk-taking behavior (Panahi et al., 2023). Creative organizations often operate under uncertain conditions and require managers to make strategic decisions involving considerable risk. In such situations, comprehensive and integrated management accounting information becomes essential for reducing uncertainty and supporting innovation-oriented decisions. Therefore, the present findings reinforce the argument that creative organizations are more likely to rely on sophisticated management accounting systems to support strategic innovation processes.

Overall, the results of the present study indicate that product creativity acts as a significant organizational driver that enhances the use of broad scope, timely, aggregated, and integrated management accounting information. The findings contribute to the literature by demonstrating that creativity and innovation are not only outcomes of effective information systems but also important factors influencing the way organizations utilize management accounting information. This study extends previous research by integrating perspectives from innovation management, leadership theory, and management accounting systems into a comprehensive framework explaining the relationship between product creativity and information system usage.

One of the limitations of the present study was that the statistical population was limited to managers of small and medium-sized enterprises in Mashhad, which may restrict the generalizability of the findings to other industries, regions, or organizational contexts. In addition, the study relied on self-reported questionnaire data, which may increase the possibility of common method bias and subjective responses. The cross-sectional nature of the study also limits the ability to establish causal relationships among the variables. Furthermore, other organizational and environmental variables that may influence management accounting information usage, such as organizational culture, technological capability, and competitive intensity, were not examined in the current study.

Future studies are recommended to examine the relationship between product creativity and management accounting information systems in different industries and cultural contexts in order to improve the generalizability of the findings. Researchers may also investigate the mediating

or moderating roles of variables such as organizational learning, digital transformation, technological innovation, and leadership styles in this relationship. Longitudinal studies could provide deeper insights into how management accounting information systems and product creativity evolve over time. In addition, future research may compare large organizations with small and medium-sized enterprises to identify differences in information system usage and innovation behaviors.

From a practical perspective, organizations should invest in advanced management accounting information systems that provide broad scope, timely, aggregated, and integrated information to support innovation and creative product development. Managers should encourage cross-functional collaboration and establish effective communication channels among organizational departments to strengthen information integration and knowledge sharing. Organizations are also advised to provide training programs that improve managers' analytical and strategic decision-making skills related to management accounting information usage. Finally, fostering an innovation-oriented organizational culture and encouraging creative thinking among employees can significantly improve organizational adaptability, competitiveness, and long-term performance.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were considered.

References

- Abrenti, J., Jones, P., & Clarck, M. (2010). Management Control Systems and Leadership Styles. *Journal of Management Studies*, 47(5), 867-890.
- Afifa, M., & Saleh, S. (2022). Management Accounting Systems and Strategic Decision-Making. *Accounting review*, 97(6), 151-177.
- Barnes, S. J. (2020). Information Management Research and Practice in the Post-COVID-19 World. *International Journal of Information Management*, 55, 102175.
- Bozich, A., & Dimoski, R. (2019). Information Use in Management Accounting. *European Accounting Review*, 28(3), 421-448.
- Farrokh, S., & Jahanshad, A. (2022). Managers' Narcissism and Selection of Leadership Styles in Accounting. *Financial Accounting and Auditing Research*, 14(56), 221-242.
- Flecher, D., & Griffith, J. (2020). Technology Adoption and Product Innovation. *Journal of Business Research*, 112, 234-245.
- Hanif, S., Ahmed, A., & Younas, N. (2023). Examining the Impact of Environmental Management Accounting Practices and Green Transformational Leadership on Corporate Environmental Performance: The Mediating Role of Green Process Innovation. *Journal of Cleaner Production*, 414, 45-60.
- Mahoudi, A. (2023). Examining the Effect of CEO Managerial Risk-Taking in the Management Accounting System. Fourteenth International Conference on Management Research and Humanities in Iran, Tehran.
- Panahi, M., Fotovat Karimi, R., & Ghandehari, H. (2023). CEO Power and Risk-Taking with the Moderating Role of Independent Board of Directors, CEO Compensation, and Institutional Ownership. *New Research Approaches in Management and Accounting*, 7(27), 12-23.
- Ramasamy, V., & Kee, D. M. H. (2025). Enhancing Project Success through Transformational Leadership, Top Management Support and Training and Development and Knowledge Sharing. *Asian Education and Development Studies*, 14(4), 832-855.
- Shoukat, I. K., Muhammad, I. A., Khan, M. A., & Kakar, A. (2025). Does Digital Leadership Capability, Knowledge Management Capability, and Organizational Agility Foster Digital Transformation in China? A Time-Lagged Survey-Based Assessment in Digital Transformation Projects. *Journal of Engineering and Technology Management*, 76, 12-29.
- Srivastava, S., Pathak, D., Soni, S., & Dixit, A. (2024). Does Green Transformational Leadership Reinforce Green Creativity? The Mediating Roles of Green Organizational Culture and Green Mindfulness. *Journal of Organizational Change Management*, 37.
- Yen, T., Chau, T., & Pham, Q. T. (2025). Transformational Leadership and Firm Performance: The Mediating Roles of

Innovation Capacity and Management Accounting Systems Usage. *Sustainable Futures*, 10, 1-11.

Zhao, H. (2014). Risk Preferences and Accounting Information Use. *Management Accounting Research*, 25(2), 110-125.