

Analytical Study of Various Measures of Successful Innovation Management in IT Companies: -With Reference to Various IT Companies Located in Maharashtra State

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Abstract:

Knowledge Management (KM) catalyzes boosting organizational performance, encouraging innovation, and facilitating sustainable practices. This study employs a literature review-based approach to aggregate conclusions from key research on Knowledge Management practices, challenges, and impacts across diverse organizational contexts. The paper explores the influence of cultural dimensions on Knowledge Management, its role in innovation performance, and emerging trends such as Green Knowledge Management and digital transformation. Key findings reveal the importance of tailoring Knowledge Management frameworks to cultural and industrial settings, integrating Knowledge Management with sustainability goals, and the potential for technological advancements to enhance Knowledge Management practices. The research ends by offering suggestions for further studies to fill the gaps in KM implementation, digital integration, and sustainability.

Keywords- Digital transformation, knowledge management, green knowledge management, sustainability

Introduction

In today's increasingly competitive global business landscape, innovation has emerged as a key differentiator, enabling companies to gain a competitive edge in the market. As innovation is perceived from diverse angles, effective innovation management can have a profound impact on an organization, influencing various aspects of its operations.

Literature Review

New Research Streams which are relatively focusing on practices of innovation in a particular industry contexts is thus emerging (Kuester et al., 2013), and latest contributions include analysis of innovation patterns (e.g., Chang et al., 2012) and success factors (Kuester et al., 2013) also exploration of in detailed innovation practices in various service sectors which include experiential services(Zomerdijk and Voss, 2011) and non profit services (Barczack, Kahn, and Moss, 2006). Scholars have recently concentrated on identifying the characteristics of businesses that drive innovation and the factors that facilitate it (Fernandes et al., 2015; Ferreira et al., 2015; Hwang, 2004; Lemon and Sahota, 2004; Tidd and Bessant, 2009). Despite the growing body of research on innovation management, there is a notable lack of consensus on the metrics that define successful innovation management. This paper aims to contribute to the innovation management literature by exploring and addressing these metrics.

Objectives

To analyze various measures of successful Innovation management in IT companies

Research Methodology

The pertinent data for the paper was gathered from IT company employees located in Maharashtra State using a standardised questionnaire. 300 sample respondents were taken from different Maharashtra State districts by applying random sampling technique. The constructs utilised in the study are validated using exploratory factor analysis (EFA). 5-point Likert scale (responses ranging from totally disagree (1) to totally agree (5)) measured the opinion of respondents regarding measures of successful innovation management in IT companies of Maharashtra State.

Data Analysis

Bartlett's Test and KMO
Kaiser-Meyer-Olkin Sampling Adequacy Measure, 548
The approximate Chi-Square value for Bartlett's Test of Sphericity is 615,583 df 105 Sig.,000

| | Im pro ved _P ro d u c t i v i t y | R e d u c e d _C o s t | In c r e a s e d _C o m p e t i t i v e n e s s | Im p r o v e d _B r a n d _R e c o g n i t i o n | Im p r o v e d _V a l u e | N e w _P a r t n e r s h i p _R e l a t i o n s h i p | In c r e a s e d _T u r n o v e r | Im p r o v e d _M a r k e t _S h a r e | E c o n o m i c _V a l u e _A d d i t i o n _S t a f f | In c r e a s e d _N e w _I d e a s | Im p r o v e d _Q u a l i t y _I d e a s | E f f i c i e n t _I d e a _I m p l e m e n t a t i o n | Im p r o v e d _R e s u l t _S u c c e s s | Im p r o v e d _R a n d _D | Im p r o v e d _C o m p e t i t i v e n e s s |
|--|---|--|---|--|--|--|--|---|---|---|--|---|---|---|--|
| Im p r o v e d _P r o d u c t i v i t y | ,8357 | - | - | ,090 | - | ,044 | ,068 | ,009 | -,190 | ,057 | - | ,084 | -,099 | ,158 | ,055 |
| Red u c e d _C o s t | -,057 | ,783 | - | -,028 | - | ,145 | -,166 | -,208 | ,089 | -,016 | ,066 | ,002 | -,048 | -,165 | -,090 |
| In c r e a s e d _C o m p e t i t i v e n e s s | -,054 | - | -,885 | -,175 | - | ,067 | ,021 | -,080 | ,006 | -,119 | -,016 | -,039 | ,034 | -,061 | -,020 |
| Im p r o v e d _B r a n d _R e c o g n i t i o n | ,090 | - | - | ,801 | ,049 | ,013 | -,181 | ,047 | ,038 | -,157 | ,006 | ,017 | ,043 | ,072 | ,045 |
| Im p r o v e d _V a l u e | -,072 | -,026 | -,026 | ,049 | ,837 | -,186 | ,029 | ,063 | ,113 | ,012 | -,141 | ,014 | ,089 | ,010 | ,051 |
| N e w _P a r t n e r s h i p _R e l a t i o n s h i p | ,044 | ,145 | ,067 | ,013 | - | ,794 | -,125 | -,094 | ,040 | -,016 | -,076 | -,141 | ,081 | -,009 | -,029 |

| | | | | | | | | | | | | | | | |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Increased_Turnover | ,068 | -,166 | ,021 | -,181 | -,029 | -,125 | ,827 | ,149 | ,002 | ,067 | -,084 | -,038 | ,018 | ,065 | ,010 |
| Improved_Market_Share | ,009 | -,208 | -,080 | ,047 | ,063 | -,094 | ,149 | ,782 | -,092 | ,175 | -,058 | -,078 | ,046 | ,112 | -,094 |
| Economic_Value_Addition_Staff | -,190 | ,089 | ,006 | ,038 | ,113 | ,040 | ,002 | -,605 | -,092 | -,197 | -,014 | -,034 | ,217 | ,014 | -,142 |
| Increased_New_Ideas | ,057 | -,016 | -,119 | -,157 | ,012 | -,016 | ,067 | ,175 | -,197 | ,694 | -,121 | ,070 | ,027 | -,041 | -,082 |
| Improved_Quality_Ideas | -,032 | ,066 | -,016 | ,006 | -,141 | -,076 | -,084 | -,058 | -,014 | -,121 | ,826 | -,163 | ,003 | -,095 | ,116 |
| Efficient_Idea_Implementation | ,084 | ,002 | -,039 | ,017 | ,014 | -,141 | -,038 | -,078 | -,034 | ,070 | -,163 | ,702 | -,259 | ,015 | -,092 |
| Improved_Resultant_Success | -,099 | -,048 | ,034 | ,043 | ,089 | ,081 | ,018 | ,046 | ,217 | ,027 | ,003 | -,259 | ,621 | -,125 | ,036 |

| | | | | | | | | | | | | | | | |
|---------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Improved_RandD | ,158 | -,165 | -,061 | ,072 | ,010 | -,009 | ,065 | ,112 | ,014 | -,041 | -,095 | ,015 | -,125 | ,754 | -,197 |
| Increased_Customer_Satisfaction | ,055 | -,090 | -,020 | ,045 | ,051 | -,029 | ,010 | -,094 | -,142 | -,082 | ,116 | -,092 | ,036 | -,197 | ,758 |
| Improved_Productivity | ,459 ^a | -,070 | -,063 | ,110 | -,086 | ,054 | ,082 | ,012 | -,267 | ,075 | -,038 | ,110 | -,137 | ,199 | ,070 |
| Reduced_Cost | -,070 | ,493 ^a | -,021 | -,035 | -,029 | ,184 | -,020 | -,265 | ,129 | -,021 | ,082 | ,002 | -,068 | -,215 | -,116 |
| Increased_Competitiveness | -,063 | -,021 | ,595 ^a | -,208 | -,030 | ,080 | ,024 | -,096 | ,008 | -,151 | -,019 | -,049 | ,045 | -,074 | -,025 |
| Improved_Brand_Recognition | ,110 | -,030 | -,208 | ,576 ^a | ,060 | ,017 | -,022 | ,060 | ,054 | -,021 | ,007 | ,022 | ,061 | ,092 | ,058 |
| Improved_Value | -,086 | -,029 | -,030 | ,060 | ,576 ^a | -,022 | -,035 | ,078 | ,158 | ,015 | -,170 | ,018 | ,124 | ,012 | ,064 |
| New_Partnership_Relationship | ,054 | ,184 | ,080 | ,017 | -,228 | ,554 ^a | -,155 | -,119 | ,058 | -,021 | -,094 | -,188 | ,115 | -,012 | -,037 |

| | | | | | | | | | | | | | | | | |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------------------|--------------------|-------------------|-------------------|--------------------|-------------------|-------|-------|-------|
| Increased_Turnover | ,082 | - | ,024 | -,223 | - | -,035 | -,155 | ,507 ^a | ,185 | ,003 | ,089 | - | -,050 | ,025 | ,082 | ,012 |
| Improved_Market_Share | ,012 | - | -,096 | ,060 | ,078 | -,119 | ,185 | ,421 ^a | -,134 | ,238 | -,073 | - | -,105 | ,067 | ,145 | -,122 |
| Economic_Value_Addition_Staff | -,267 | ,12 | ,008 | ,054 | ,158 | ,058 | ,003 | -,134 | -,569 ^a | -,305 | -,019 | - | -,053 | ,354 | ,021 | -,210 |
| Increased_New_Ideas | ,075 | - | -,151 | -,211 | ,015 | -,021 | ,089 | ,238 | -,305 | ,591 ^a | -,160 | - | ,100 | ,041 | -,056 | -,114 |
| Improved_Quality_Ideas | -,038 | ,082 | -,019 | ,007 | -,170 | ,094 | -,101 | ,073 | -,019 | -,160 | ,541 ^a | -,214 | ,004 | -,121 | -,147 | |
| Efficient_Idea_Implementation | ,110 | ,002 | -,049 | ,022 | ,018 | -,188 | -,050 | ,105 | -,053 | ,100 | -,214 | -,566 ^a | -,391 | ,021 | -,126 | |
| Improved_Resultant_Success | -,137 | -,068 | ,045 | ,061 | ,124 | ,115 | ,025 | ,067 | ,354 | ,041 | ,004 | -,391 | ,571 ^a | -,182 | ,053 | |

| | | | | | | | | | | | | | | | |
|---------------------------------|------|--------|--------|------|------|--------|------|--------|-------|--------|--------|-------|-------|---------------------|--------|
| Improved_RandD | ,199 | - ,215 | - ,074 | ,092 | ,012 | - ,012 | ,082 | ,145 | ,021 | - ,056 | - ,121 | ,021 | -,182 | ,540 ^a | - ,261 |
| Increased_Customer_Satisfaction | ,070 | - ,116 | - ,025 | ,058 | ,064 | - ,037 | ,012 | - ,122 | -,210 | - ,114 | ,147 | -,126 | ,053 | - ,261 ^a | ,586 |

a. Measures of sampling Adequacy(MSA)

Communalities

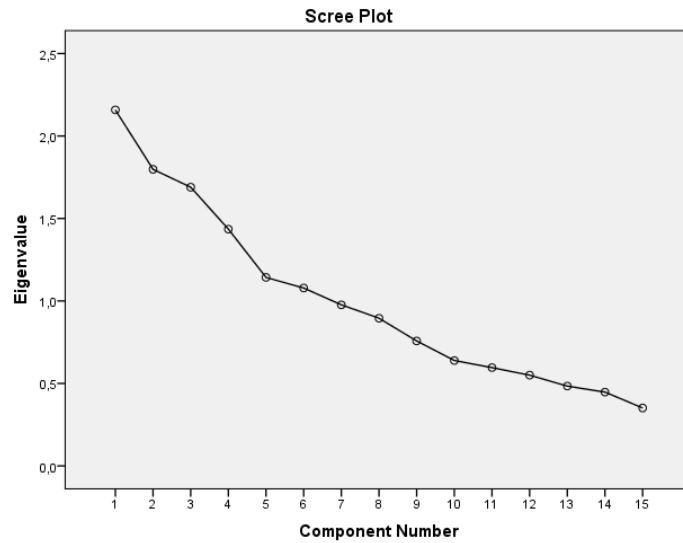
| | Initial | Extraction |
|---------------------------------|---------|------------|
| Improved_Productivity | 1,000 | ,623 |
| Reduced_Cost | 1,000 | ,600 |
| Increased_Competitiveness | 1,000 | ,550 |
| Improved_Brand_Recognition | 1,000 | ,628 |
| Improved_Value | 1,000 | ,384 |
| New_Partnership_Relationship | 1,000 | ,656 |
| Increased_Turnover | 1,000 | ,570 |
| Improved_Market_Share | 1,000 | ,726 |
| Economic_Value_Addition_Staff | 1,000 | ,688 |
| Increased_New_Ideas | 1,000 | ,677 |
| Improved_Quality_Ideas | 1,000 | ,613 |
| Efficient_Idea_Implementation | 1,000 | ,573 |
| Improved_Resultant_Success | 1,000 | ,723 |
| Improved_RandD | 1,000 | ,630 |
| Increased_Customer_Satisfaction | 1,000 | ,663 |

Extraction Method: Principal Component Analysis.

Explanation of Total Variance

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2,158 | 14,388 | 14,388 | 2,158 | 14,388 | 14,388 | 1,915 | 12,768 | 12,768 |
| 2 | 1,798 | 11,987 | 26,376 | 1,798 | 11,987 | 26,376 | 1,645 | 10,967 | 23,735 |
| 3 | 1,690 | 11,264 | 37,639 | 1,690 | 11,264 | 37,639 | 1,556 | 10,375 | 34,110 |
| 4 | 1,435 | 9,570 | 47,209 | 1,435 | 9,570 | 47,209 | 1,414 | 9,424 | 43,534 |
| 5 | 1,143 | 7,619 | 54,828 | 1,143 | 7,619 | 54,828 | 1,393 | 9,284 | 52,818 |
| 6 | 1,078 | 7,190 | 62,018 | 1,078 | 7,190 | 62,018 | 1,380 | 9,200 | 62,018 |
| 7 | ,977 | 6,510 | 68,528 | | | | | | |
| 8 | ,895 | 5,969 | 74,497 | | | | | | |
| 9 | ,757 | 5,050 | 79,547 | | | | | | |
| 10 | ,639 | 4,260 | 83,807 | | | | | | |
| 11 | ,596 | 3,973 | 87,780 | | | | | | |
| 12 | ,550 | 3,668 | 91,448 | | | | | | |
| 13 | ,484 | 3,226 | 94,675 | | | | | | |
| 14 | ,447 | 2,983 | 97,658 | | | | | | |
| 15 | ,351 | 2,342 | 100,000 | | | | | | |

Extraction Method: Principal Component Analysis.



Component Matrix^a

| | Components | | | | | |
|---------------------------------|------------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Improved_Productivity | -,259 | -,036 | -,416 | ,211 | ,252 | ,522 |
| Reduced_Cost | ,240 | ,509 | ,179 | -,131 | ,481 | -,060 |
| Increased_Competitiveness | -,252 | ,142 | ,423 | -,026 | ,321 | ,428 |
| Improved_Brand_Recognition | -,233 | -,203 | ,531 | -,376 | ,330 | ,005 |
| Improved_Value | ,204 | -,519 | ,107 | ,240 | ,046 | ,042 |
| New_Partnership_Relationship | ,242 | -,425 | ,238 | ,513 | -,044 | -,308 |
| Increased_Turnover | ,208 | -,322 | ,425 | -,183 | ,370 | -,269 |
| Improved_Market_Share | ,051 | ,359 | -,168 | ,541 | ,503 | -,146 |
| Economic_Value_Addition_Staff | -,709 | ,143 | ,058 | ,399 | -,038 | ,004 |
| Increased_New_Ideas | -,553 | ,007 | ,524 | -,002 | -,251 | ,184 |
| Improved_Quality_Ideas | ,207 | -,315 | ,385 | ,409 | -,075 | ,387 |
| Efficient_Idea_Implementation | ,584 | ,131 | ,228 | ,362 | ,002 | ,178 |
| Improved_Resultant_Success | ,693 | ,252 | -,034 | -,178 | -,092 | ,370 |
| Improved_RandD | ,267 | ,484 | ,417 | -,046 | -,383 | ,031 |
| Increased_Customer_Satisfaction | -,160 | ,598 | ,304 | ,306 | -,131 | -,276 |

Extraction Method: Principal Component Analysis.

a. 6 components extracted.

Rotated Component Matrix^a

| | Components | | | | | |
|---------------------------------|------------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Improved_Productivity | -,057 | -,032 | -,523 | -,473 | ,301 | ,173 |
| Reduced_Cost | ,307 | -,280 | ,197 | ,275 | ,195 | ,525 |
| Increased_Competitiveness | -,034 | -,014 | ,017 | ,098 | ,727 | ,102 |
| Improved_Brand_Recognition | -,134 | -,066 | -,055 | ,619 | ,444 | -,152 |
| Improved_Value | ,026 | ,550 | -,230 | ,134 | -,062 | -,078 |
| New_Partnership_Relationship | -,157 | ,709 | ,075 | ,187 | -,281 | ,095 |
| Increased_Turnover | ,064 | ,203 | -,057 | ,720 | ,028 | ,047 |
| Improved_Market_Share | -,098 | ,060 | -,014 | -,133 | -,030 | ,833 |
| Economic_Value_Addition_Staff | -,708 | -,018 | ,103 | -,299 | ,267 | ,123 |
| Increased_New_Ideas | -,437 | ,039 | ,306 | ,005 | ,518 | -,352 |
| Improved_Quality_Ideas | ,121 | ,699 | ,031 | -,070 | ,311 | -,085 |
| Efficient_Idea_Implementation | ,459 | ,461 | ,265 | -,082 | ,047 | ,265 |
| Improved_Resultant_Success | ,828 | ,007 | ,130 | -,139 | ,027 | ,001 |
| Improved_RandD | ,295 | -,025 | ,722 | -,051 | ,110 | -,081 |
| Increased_Customer_Satisfaction | -,264 | -,089 | ,682 | -,098 | ,056 | ,328 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 12 iterations.

Component Transformation Matrix

| Component | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------|-------|-------|-------|-------|-------|-------|
| 1 | ,851 | ,327 | ,112 | ,134 | -,342 | ,149 |
| 2 | ,161 | -,549 | ,593 | -,296 | ,154 | ,458 |
| 3 | -,060 | ,345 | ,559 | ,531 | ,518 | -,121 |
| 4 | -,312 | ,672 | ,120 | -,437 | -,050 | ,494 |
| 5 | ,030 | -,096 | -,484 | ,443 | ,296 | ,687 |

| | | | | | | |
|---|------|------|-------|-------|------|-------|
| 6 | ,386 | ,113 | -,274 | -,475 | ,708 | -,192 |
|---|------|------|-------|-------|------|-------|

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Exploratory Factor analysis is applied of collected data of 300 respondents for reducing the variables to few factors. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = .548) is greater than the rule of thumb 0.50 and Bartlett's test of sphericity is significant, which means that the included items in the scale do have correlation with each other. Thus factor analysis is found to be an approximate technique for construct validity. The variables which has loadings of less than 0.50 were excluded and dimensions with eigenvalues of more than 1 were retained.

Results and Discussion

For the present study 15 variables were analyzed to determine the employees' perception about measures of innovation management in IT companies. Principal component analysis varimax rotation was employed for extracting the factors for data reduction in factor analysis; extracting

only those factors having eigenvalues greater than 1. Six extracted components explained 62.018% variance of the data. So these six components will explain the combination of all the variables. As illustrated in the scree plot above, the maximum number of extractable factors is clearly indicated. The scree plot exhibits a steep downward slope initially, followed by a gradual levelling off into a nearly horizontal line. The inflection point, where the curve begins to straighten, suggests the optimal number of factors to extract. As shown in the scree plot, six factors meet this criterion.

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