



AI-Enabled Benefits Dependency Mapping framework for Enhancing Program Value Realization

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ABSTRACT

This study examines how Artificial Intelligence supports the program benefits dependency mapping, governance and the value realization. The literature review shows the effective program management depends on continuous value tracking, strong governance and managing uncertainty. Findings from surveys and interviews shows that traditional mapping methods are too static for the AI driven programs and are generally unable to detect the changing relationships. AI helps to improve decision making by giving real time insights, predictive analysis and better visibility of interdependencies. Though, there are still some challenges. The challenges include data quality problems, lack of transparency and limited integration with the governance framework. This study also shows that there is a strong need for dynamic mapping systems, strong governance models and human oversight. A combined approach of AI capabilities with structured governance can help to improve the decision making, accountability and long-term value in the organizations.

1. INTRODUCTION

Artificial Intelligence (AI) is changing programme management especially how organisations can recognise and assess the benefits [1]. In a complicated programme, the advantages are not linear, but they are generally interlinked, evolving and are influenced by continuous feedback in the transforming environment [2]. The conventional benefits of dependency mapping depend generally on static models and most of the times the dynamic nature does not get captured. Due to this, the organizations strive to track the value that leads to ineffectiveness, decision making delay and loss of value [3]-[6].

The integration of Artificial Intelligence (AI) in programme management has multiple analytical abilities that focuses on latent relationships between different initiatives and can predict the upcoming benefits and adapt to uncertainty [7]-

[10]. AI improves insight but it has also introduced several challenges related to governance, accountability and the strategic objectives [11]. At the same time, without a structured framework, AI-based insights can be underutilised or misinterpreted. It restricts their contribution towards giving value [12].

This research will focus on developing AI-driven benefits dependency that will map the approach associated with Project Management Institute's CPMAl framework. Its main aim is to close the gap between evolved technological capabilities and governance practices if AI analytics are integrated with the principles of value governance [13]. The research will offer a transparent and adaptive mechanism for balancing the advantages in a complicated programme. This approach assists in organisations for making informed decisions,

maximising the usage of resources and assuring that the value increases in a technology environment.

1.1 Research objectives

The research objectives are as follows:

RO 1: To determine the weaknesses of conventional benefits dependency mapping in AI-powered programs.

RO 2: To investigate the use of AI tools to improve benefits interdependency analysis.

RO 3: To suggest a CPMI-conform governance model of artificial intelligence-supported value mapping.

The Research questions this study seeks to analyse are as follows:

RQ 1: What is the effect of AI to make benefit dependencies in complex programs more visible?

RQ 2: Where are AI-generated benefits insights the most valuable at CPMI lifecycle stages?

RQ 3: What are the ways to make sure that AI-enabled benefits mapping can be used responsibly in terms of governance structures?

2. LITERATURE REVIEW

The Literature review explores the themes of the already existing research on programme benefits management, AI driven decision making, value governance and uncertainty in the digital ventures in the market [14]-[20]. This chapter synthesizes main themes to acknowledge how different organisations can achieve value while balancing risks and complications in the technology based programmes.

2.1 Importance of Programme Benefits Management and Value Realisation

The Programme Benefits Management (PBM) has a crucial role to play delivering the organisational initiative effectively. As per [21], this value realisation is not just a one-time result but a continuous process positioning the programme objectives with the strategic goals. The framework of PBM focuses on recognising, Tracking and maximising the advantages via the product lifecycle [22]-[25]. This study focuses on efficient governance structures, stakeholder engagement and necessity of performance monitoring to ensure the benefits are achieved. The value realization further relies on blending financial and non-financial metrics for the long term organizational success [26]-[30].

2.2 Integration of AI-driven Decision Support in the

Programme Management

As per [4], the integration of AI in programme management has improved the decision making capabilities. As per [31][32], AI-driven decision support systems enhance the effectiveness of AI by assessing large data, recognising patterns and offering predictive insights. It allows programme managers to make right data-driven calls [33]. The study focuses on the importance of machine learning and analytics in assessing risks, allocating resources and optimising the system via performance [34]-[38]. [5] sheds light on challenges on quality of data, model transparency, and importance of human oversight.

As per [40], although AI supports decision making, it needs to complement human judgment instead of completely replacing it. At the same time the ethical and contextual accuracy should be maintained.

2.3 The value governance in Digital Transformation Initiatives

As per [41]-[45] the digital transformation has been redefined as the traditional governance framework that needs organizations to rely on adaptive approaches. As per [46], the value governance is crucial for aligning the digital initiative with business goals. The risks need to be managed that are aligned with the technologies like cloud computing, big data and Internet of Things (IoT) [47]. The structure of governance needs to evolve from a compliance driven model assisting in flexibility and quicker decision making. The leadership and organisational culture are the main components of an efficient governance. It is based on collaborative approach and accountability [48][49]. As per [4], the regulations and cybersecurity are important in assuring that the digital transformation initiatives deliver value and maintain trust and security.

2.4 Significance of Value Uncertainty at AI-driven programmes

As per [3], uncertainty in AI-driven frameworks in the important domains like financial forecasting and autonomous systems need to go through basic challenges [50]-[55]. As per [3], focus has been given on how Artificial intelligence (AI) enhances predictive accuracy and the results of dependency relies on a solid validation and insecurity [56]-[60]. The methodological issues like bias in data, sample sizes or changes in dataset can completely undermine the performance of the model.

Certain techniques like cross validation and the bootstrap methods are crucial but have their own set of restrictions. It is necessary for the evolved strategies of verification [61]. [4] demonstrates that integrating AI and uncertainty aware models improve trust and decision making reliability. It has re-established the need for effective frameworks merging accuracy, validation and proper interpretation [62].

2.5 Overall synthesis of the themes

The literature sheds light on efficient programme management during digitisation relies on value realisation, AI based decision making, effective governance and managing uncertainties [63]-[68]. The programme Benefits Management assures the alignment of these initiatives with the strategic tools that will provide a long term value [69]. The studies have focused on an integrated approach where governance, technology and evaluative measures can work together for achieving trust and sustainability in an organisation [70].

2.6 Theoretical framework

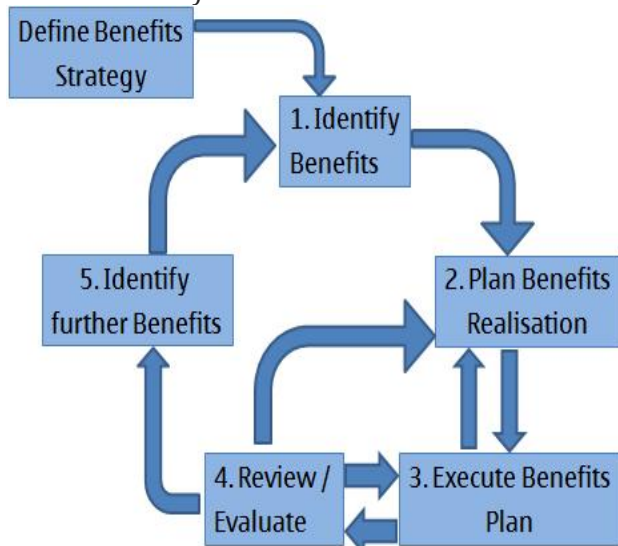


Figure 1: Benefits Management theory
(Source: Expert programme Management 2022)

The Benefits Management theory framework emphasizes on assuring planned initiatives deliver proper value by aligning the projects and organisational abilities with the strategic objectives. It focuses on monitoring, evaluation and benefits of optimisation throughout the lifecycle of the programme [71]-[75].

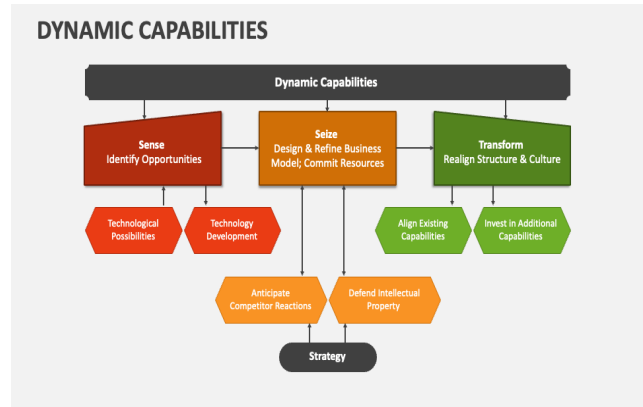


Figure 2: Dynamic capabilities framework
(Source: Collide, 2022)

The Dynamic capabilities theory framework illustrates how organizations adapt and figure out the resources in an evolving environment. It sheds light on the significance of opportunities and changing operations constantly [76]-[80].

Altogether, these theories are associated with the study since it offers a foundation to acknowledge how the organizations can achieve value realization and adapt to the uncertainty in an AI driven transformation landscape.

2.7 Research gap

The existing research strongly emphasises on the growth of AI in programme management and value realization. However, it also revealed a gap in integrating AI based insights with the structured governance frameworks. AI can create adaptive and predictive insights but these are not associated with the formal processes of governance. This leads to inconsistencies in the decision making. The restricted attention aligns with the AI-driven benefits that map the standard frameworks like CPMAI. A significant gap is present in integration of AI-based benefits mapping with formal governance frameworks. It raises questions regarding accountability and reliability of decisions leading to inefficient programme results.

3. RESEARCH METHODS

3.1 Research Design

This research uses a mixed method approach. It combines quantitative methods and qualitative methods. This design is suitable for the study because it helps to understand the AI enabled PMI-CPMAI from different viewpoints. The quantitative data includes numbers and statistics. This helps to

provide measurable results. The qualitative data includes opinions and experiences of the participants. It helps to provide deep understanding.

The study focuses on the response of the participants and use of Artificial Intelligence based benefits dependency mapping in programs. It also examines the governance practices and the process of decision making. The use of both quantitative data and qualitative data helps to improve the accuracy and the reliability of the research findings.

3.2 Data Collection

The data was collected by using mainly three methods. It includes surveys, interviews and reviewing the literature. The survey method helps to collect the numerical data about how effectively the Artificial Intelligence tools are used in the benefit mapping. The semi structured interview allows the participants to share their experience and opinions in detail. It followed a general set of questions but it also allowed participants to share more if they wanted to.

It also reviews some important literature and documents about the benefit maps, value registers and program performance. It also uses secondary sources aligned with the research objectives. These multiple sources are selected because they give accurate information and real experience. The use of both types of data helps in cross checking the data. It increases the reliability of the study (VandeVusse, Mueller & Karcher, 2022).



Figure 3: Research Method
(Source: Paperguide, 2021)

3.3 Sample

The sample size for the survey is 30 participants.

This sample includes program managers, portfolio leaders and business owners. These individuals are selected because they are directly connected to the decision making process and program governance. The 3 participants were selected for the interview. The participants were from the organisations that use Artificial Intelligence powered systems that are involved in the digital transformation initiatives. This makes sure that the collected data is relevant to the research. A purposive sampling method is used. The participants are selected based on their knowledge and the experience in the relevant field.

3.4 Data Analysis Technique

The collected data is analysed by using a thematic analysis process. Thematic analysis involves identifying the patterns and themes in the data. The responses will be reviewed carefully for the qualitative data. It helps to find common ideas that are related to the Artificial Intelligence assisted benefit mapping, governance challenges and the main decision making points. The survey data was analysed to identify the trends and the relationships.

3.5 Ethical Considerations

Ethical considerations are very important in this research to make sure that the participants are comfortable and they are treated fairly. Informed consent was taken from all the participants. The participants were informed about the purpose of the research, what they will be asked to and how their data will be used. They have the right to withdraw at any time if they did not feel comfortable (Alhabsi, 2024). The confidentiality and the privacy was maintained. Personal information like names, jobs and organisational details not shared without permission. The data is protected. All data is securely stored. The data is only used for academic purposes. The research avoids any bias. The questions are designed very carefully to make sure that those are respectful.

4. DATA ANALYSIS

4.1 Graphical Representation

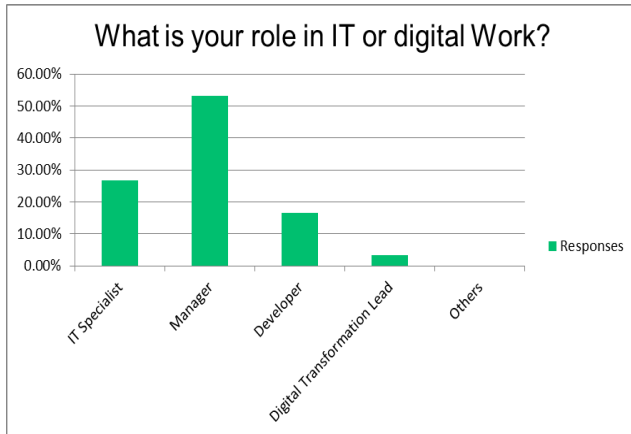


Figure 4: Employee Role

To the question “What is your role in IT or Digital Work:”, 25% respondents voted for IT Specialist, more than 50% voted for manager, nearly 20% voted for developer and 5% voted for digital transformation lead.

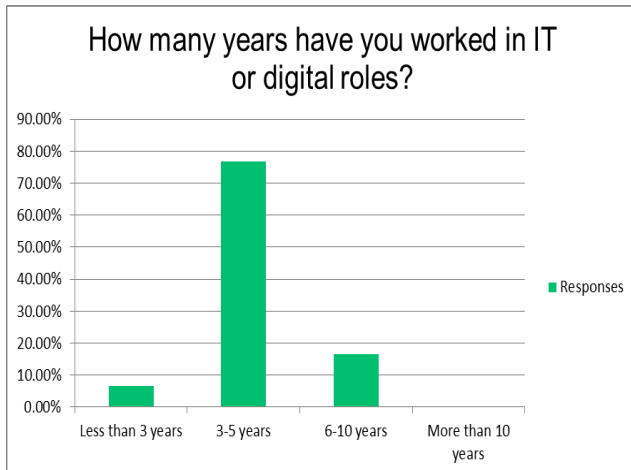


Figure 5: Work Experience Years

To the question, “How many years have you worked in IT or digital roles?”, 5% responded with less than three years, more 75% voted for 3-5 years, and 18% voted for 6-10 years.

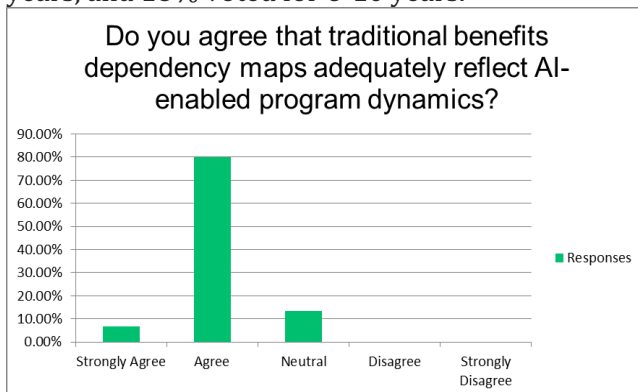


Figure 6: Traditional Dependency

To the question, “Do you agree that traditional

benefits dependency maps adequately reflect AI-enabled programme dynamics?”, less than 10% strongly agreed, 80% agreed and nearly 10% were neutral.

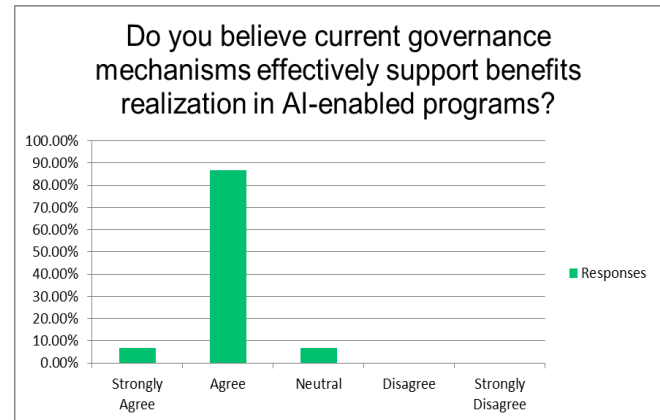


Figure 7: Governance Mechanism

To the question “Do you believe current governance mechanisms effectively support benefit realization in AI-enabled programmes?” Less than 10% strongly agreed, 85% respondents agree and 5% remained neutral.

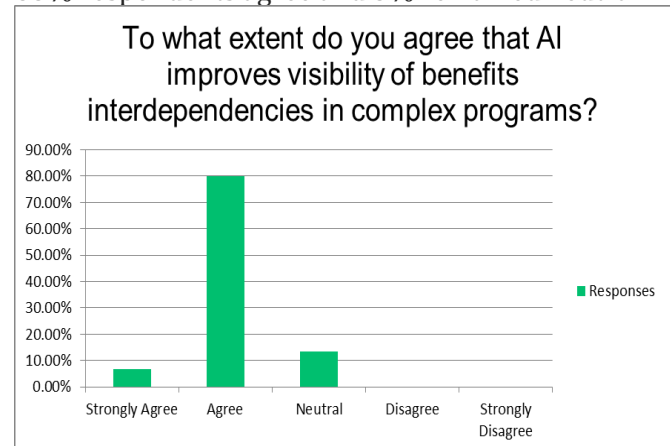


Figure 8: AI benefits

To the question, “To what extent do you agree that AI improves visibility of benefits interdependencies in complex programmes?” 5% strongly agreed, 80% agreed and more than 10% remained neutral.

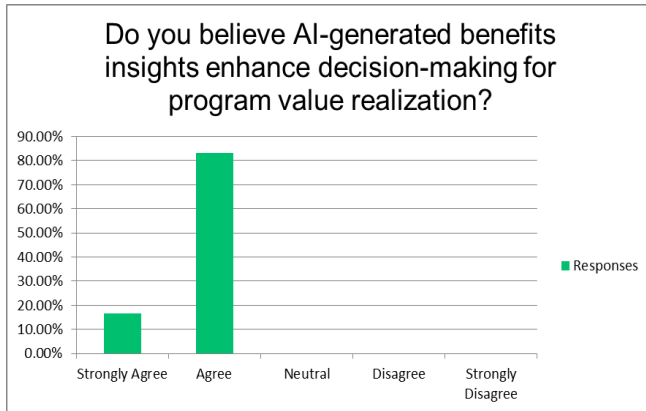


Figure 9: AI-Generated Benefits

To the question “Do you believe AI-generated benefits insights enhance decision making programmes for value realisation?”, more than 15% strongly agreed and more than 80% agreed.

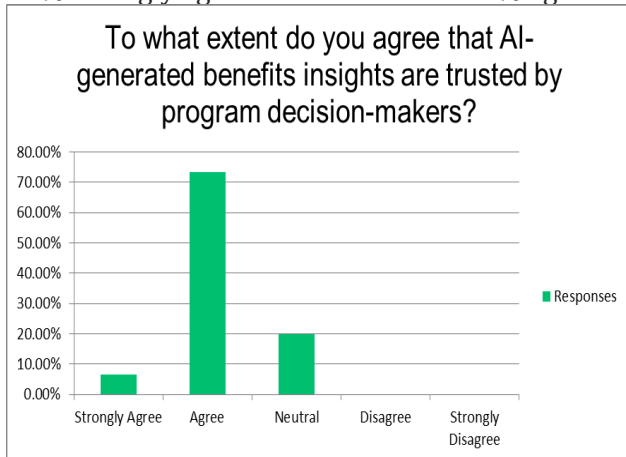


Figure 10: AI-Generated Benefits

To the question, “To what extent do you agree that AI-generated benefits insights are trusted by the programme decision makers?” 5% strongly agreed, nearly 75% agreed and 20% remained neutral.

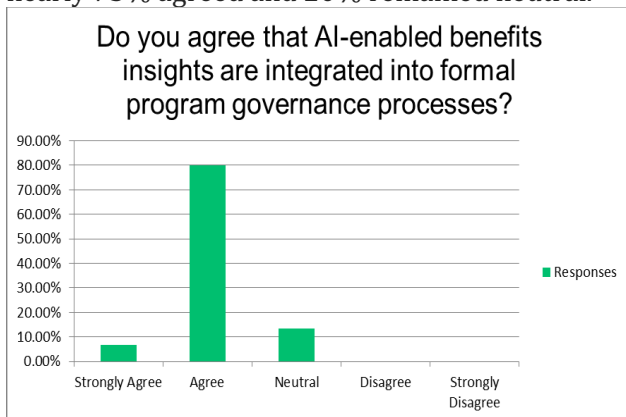


Figure 11: AI-Generated Benefits

To the question, “Do you agree that AI-enabled benefits insights are integrated into formal programme governance processes?” 5% strongly agreed, 80% agreed and more than 10% remained neutral.

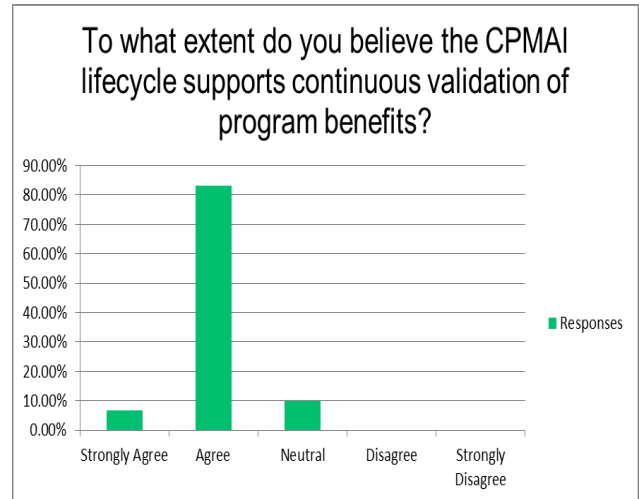


Figure 12: CPMAI Lifecycle

To the question, “To what extent do you believe that the CPMAI lifecycle supports a continuous validation of programme benefits?”, 5% strongly agreed, 80% agreed and 10% remained neutral.



Figure 13: AI-Enabled Programs

To the question, “Do you agree that your organisation effectively manages benefits uncertainty in AI-driven programmes?” 5% strongly agreed, 90% agree and less than 5% remain neutral.

4.2 Interview Transcription

Questions	Respondent 1	Respondent 2	Respondent 3
How are benefits	It is developed manually	It is created based on	It is built utilising a

dependency maps currently developed and governed in your AI-enabled programs	with the help for static frameworks. Further, it is governed via periodic reviews.	the pain points of stakeholders and monitored through conventional governance	predefined template. However, it has limited integration with the Artificial Intelligence insights.
What challenges do you face when using traditional benefits mapping approaches in AI initiatives?	Mainly, the static models fail to capture the transformative AI-driven programme changes	The absence of flexibility and real time updates restricts accuracy in decision making.	It makes it difficult to align the massive benefits with the mapping structures and multiple processes.
How do AI tools influence decisions related to benefits realization and value governance?	AI offers predictive insights on enhancing accuracy related to the advantages	It improves data based governance but it needs human oversight and validation.	It assists in real-time analysis and allows us to take faster and more valuable decisions.
At which CPMAI lifecycle stages do AI-generated benefits insights add the most value, and why?	I will go with planning stage since it allows to identify the dependencies and forecast potential advantages at an early stage	It is the execution stage, since it assists in real time monitoring and the adaptive decision making procedures.	It is the evaluation stage. In this stage, the performance analysis and benefits realization can track the accuracy.
What governance practices are needed to ensure responsible and effective use of AI in benefits dependency mapping?	A clear framework of accountability and ethical guidelines for AI usage is necessary.	A strong data governance, transparency and monitoring is needed.	Its integration with formal governance models and a regular validation of Artificial Intelligence outputs are needed.

5. DATA ANALYSIS RESULTS

5.1 Survey Analysis

5.1.1 Profile of respondents and their experience

The data states that 50% of the respondents are managers in the IT industry followed by developers approximately 20% and IT specialists nearly 25%. A small proportion of less than 5% is in the job role of digital transformation leads. This states that the responses are mostly shaped by individuals who work in the decision-making and programme oversight. It adds validation for the governance frameworks and insights. 75% respondents nearly have an experience of 2-5 years stating that most of them have a moderate experience and they understand conventional and the upcoming digital practices.

5.1.2 Perspective of Traditional Benefits Mapping

Although the AI-driven programmes have complications, 80% respondents agreed that the conventional benefits rely on if the maps are

accurate and less than 10% agree to the statement. This states that there is a genuine acceptance of the existing methods but there are limitations. Respondents may depend only on the traditional frameworks although the models may not capture the changes in the dynamic AI-driven sector.

5.1.3 Role of effective governance in AI-driven programmes

A significant percentage of 85% agreed that the present governance mechanisms assist in benefit realization. The low level of strong agreement states that there is partial efficiency instead of excellence. A situation appears where the governance structures exist but it cannot be optimized for AI integration based on the changing complications of programmes.

5.1.4 AI's role in improving visibility in decision-making

The survey found assisting AI's role in enhancing the programme results. Nearly 80% respondents agree that AI improves visibility of interdependence benefits. Over 95% believe that

AI driven insights enhance decision making. This emphasises AI's significance in assessing complications and allowing for data-driven decisions. A tiny percentage strongly agree demonstrating full dependency on AI is yet to develop.

5.1.5 Importance of trust and integration of AI in governance

Mostly 75% trust AI driven results, 20% are neutral and 80% agree that AI insights have been integrated into the process of governance. However, the strong alignment demonstrates that this integration is at a surface level. It is well-aligned with the research gap related to the poor alignment between AI tools and the formal governance networks.

5.1.6 CPMAI lifecycle and management of uncertainty

The results have demonstrated that 80% believe that CPMAI lifecycle assists in validation and recognition of project management frameworks. Over 90% respondents agree that the organizations can effectively manage uncertainty benefits and it reflects confidence in the current practices. So, management of uncertainty isn't completely solid, but it is changing in an evolving environment of AI.

The analysis reveals a constant pattern of respondents agreeing with the efficiency of current systems, but they do not have a strong agreement in every aspect. This demonstrates a gap in the integration and adaptation of AI. Artificial intelligence is generally recognised as a valuable integration, but its full adaptation is still incomplete.

5.2 Interview Analysis

The interview reveals multiple main themes related to benefits dependency, mapping integration of AI and governance in the AI based programmes.

5.2.1 Restrictions of traditional benefits mapping

The interview respondents highlighted that the existing benefits dependencies are static and manually developed. Due to this, the system lacks flexibility and it is governed via a traditional mechanism like periodic reviews. Its inability to capture a dynamic and evolving nature makes it difficult to associate with the evolving benefits with fixed structures.

5.2.2 Existing challenges in AI-driven

environments

A strong theme emerged based on poor adaptability and real time responsiveness in the conventional approaches. The respondents focus on challenges like restricted flexibility, lack of real time updates and difficulty to manage the complicated interdependencies. The issues lower accuracy and efficiency of decision making especially in environments where AI moulds the programme results.

5.2.3 AI's role in improving decision making

The respondents understand that AI enhances decision making via predictive insights, real time analytics and data based governance. The AI tools allow us to make quick and better decisions, making it at par with the benefits of realisation. A shared concern exists that AI cannot exist independently since human oversight and validation are crucial for reliability.

5.2.4 Value in CPMAI Lifecycle stages

The responses state that AI based benefits add value in multiple stages of the CPMAI lifecycle. One of the respondents focused on the planning stage for recognising early dependencies but another respondent emphasized on the execution stage for real time monitoring. The third respondent emphasised on the evaluation stage for tracking performances. It states that AI contributes to the lifecycle instead of confining itself to a single phase.

5.2.5 The requirement for a solid governance framework

Governance is an important theme, and respondents focus on the need for an accountable and ethical guideline, transparency and continuous monitoring. By integrating AI into the formal governance structure, outputs of validation are crucial for its responsible usage.

The interview analysis sheds light on the transition from a static and traditional system to an AI driven and adaptive governance framework focusing on an integrated and ethical approach for benefits mapping.

6. FINDINGS

This section evaluates how Artificial Intelligence impacts dependent mapping, governance structures and value realization. It highlights gaps, opportunities, practical implications for AI-driven programme management.

6.1 Limitations of traditional benefits dependency

mapping the AI based programmes

The findings from survey and interview state that the traditional benefits dependency mapping approach is not enough to address the expansive nature of AI-driven programmes. Both survey and interview data shed light on the static nature of traditional frameworks. Nearly 80% respondents agreed that the conventional mapping methods are usable but a poor percentage of string agreement states that limited confidence in its efficiency [81]-[85].

The interview responses are well aligned with the restriction since it focuses on the existing mapping techniques that are mostly manual and governed through reviews instead of constant updates. The static structure has failed to capture the changing interdependencies in the AI based programmes. The outcome shifts due to learning algorithms, and real-time data inputs. The respondents have pointed out that the traditional models are incapable of accommodating the transforming pathways. It results in the misalignment and misinterpretation between planners and actual value realization [86]-[88].

The literature review of [2] focuses on programme benefits management and its influence on a constant evolving process associated with strategic goals. The absence of real time adaptability lowers decision making accuracy. The respondents discussed challenges like difficulty in managing complicated interdependencies and the inability to reflect on AI based challenges instantly. The restriction is more crucial for the environments where the advantages are not determined but it comes up repeatedly [89].

6.2 AI's role in improving benefits interdependency analysis and decision making

The findings state that Artificial intelligence plays an important role in enhancing visibility, accuracy and efficiency of benefits interdependency. As per survey results, more than 80% respondents agreed that AI improves visibility of benefit interdependency and more than 95% believed that AI based insights enhance decision making capabilities for value realization [90]-[96].

The interview data highlights that AI has allowed for predictive and real time insights. The respondents focused on how AI allows to recognise latent patterns, predict benefits and assist in quick decisions [97]. Further, AI enables a continuous

monitoring system making it reliable for the complicated and evolving programme environment.

The findings are well aligned with the literature of [98], stating that the AI based decision support systems improve efficiency of programmes via data analysis, pattern identification and predictive capabilities. The capabilities explicitly assess the restrictions based on traditional mapping approaches via dynamic and responsive mechanisms [99]-[105].

The findings from primary data unraveled significant challenges. For instance, trucks in AI based insights is still moderate since 75% expressed their confidence and 20% were neutral. Although AI is valued, there is a question mark on its reliance [106]-[113]. A main theme comes up from surveys and interviews that is the need of human oversight. The respondents have focused on AI needs to assist and not replace human judgment. Concern exists related to data quality, model transparency and the accuracy of contexts as important factors impacting the efficiency of AI [114].

These findings also demonstrate that AI contributed value in different stages of the CPMAI lifecycle. Most of the respondents recognised the planning stage for early reliance recognition but others focused on execution for real-time monitoring and its measurement for performance tracking [115]. It states that the AI's influence is not restricted to a single phase, but it spreads across the entire programme lifecycle.

6.3 Requirement for CPMAI based governance models that are responsible for the AI driven value mapping

The findings have highlighted the need for a strong governance framework model that is well aligned with CPMAI. It assures the responsible and effective utilization of AI in the benefits mapping. The survey stated that nearly 85% respondents believe in the existing governance mechanisms assisting in benefit realization [116]-[122]. However, a low percentage of respondents strongly agreed that the systems are not fully optimized for AI integration.

Next important insight from the survey is that 80% respondents agreed that AI insights are merged into governance processes [123]-[130]. However, this integration is superficial, and it is not

implemented on a deeper level. This is well aligned with the research gap stating AI insights exist, but it isn't associated with the governance structures [131].

The interview findings focused on this issue by stating the lack of an accountable framework, poor transparency and insufficient validation mechanisms. The respondents discussed the significance of ethical guidelines and data governance for responsibly using the AI [132]. The elements exist in segregation, and these aren't integrated in a systematic way.

The findings are well aligned with the literature of [10][133], stating the shift from compliance driven governance to a flexible framework in digital transformation. The organizations are trying for a transition, but they are still struggling to adapt to the governance models for accommodating the AI-based complications. More than 90% respondents believe that the organisations have managed the uncertainty in an efficient way but as per [5], uncertainty in AI systems is complicated due to its issues like algorithm bias, and dataset shifts [134]. The CPMAI lifecycle uses a critical framework that addresses all of these challenges. The survey results have demonstrated that 80% respondents believe that CPMAI assists in the continuous validation programme benefits. However, findings state that the potential isn't utilised fully especially for integrating AI based insights into governance procedures [135]. The main need recognised in all the data sources is the requirement for governance models that can merge the capabilities of AI with structured validation and ethical considerations. This involved validation of AI outputs, its alignment with strategic objectives and its integration in different stages of life cycle [136].

The findings have clearly highlighted the requirement for a CPMAI based governance framework model that can close the gap between AI based insights and formal governance procedures. This will assure a responsible, transparent and effective value-mapping that shapes the programme results and reduces risks of AI adoption.

• Limitations

The study has offered effective insights on the AI driven benefits of dependency mapping. Multiple limitations need to be understood. The sample size

is very small involving 30 survey respondents and only 3 interview participants. The participants were chosen based on their relevance and experience but a large sample could have made the findings more generic. The study was based on a purposive sampling method that introduced selection bias.

The respondents were individuals based in programme management and governance. This signifies that the perspective of stakeholders such as technical developers, end-users and executives weren't presented fully. This limited the comprehensiveness of findings.

The next restriction is based on the self-reported nature of the data. As per survey and interview responses, the perceptions and experiences of respondents have been highlighted that rely on the organization's culture. There may be a chance of response bias in the areas of governance efficiency and trust in the AI based systems

It faced limitations in the scope of integration. The main themes like benefits management, AI decision support, value governance and uncertainty have been explored but it limited the select sources. Further, it relied only on the primary data and did not focus on secondary data like industry reports, and case studies that could have consolidated the theoretical grounding of this research.

The research has captured data from a single point of time. The AI driven programmes are dynamic and it transforms continuously so it is assumed that the longitudinal study could have offered an in-depth insight on the benefits mapping and governance practices transformation over a period of time. Further, in the study, technical validation and application of AI models haven't been included. The findings are aligned with perceptions and conceptual understanding instead of real time system testing and evaluation of performance. Last, if more time and resources were valuable, this study could have been expensed by improving the sample size that involved multiple industries. Real world case studies could have offered a solid actionable insight.

• Recommendations

The recommendations based on the literature review and the research findings.

• *Dynamic and AI supported mapping systems*

The organization should move itself from static benefit dependency mapping to the dynamic, AI

supported mapping systems. The findings of this study shows that the traditional methods are unable to detect the changing interdependencies in the programmes driven by Artificial Intelligence. This leads to the mismatch in the value realization. This matches with the literature review that emphasises the benefit management as a continuous process rather than a onetime activity. So, organisations should develop and adopt real time dashboards and update the mapping tools regularly that are powered by the Artificial Intelligence tools.

- *AI as a decision making tool*

Artificial Intelligence should be integrated as a supporting tool in decision making. Literature review and the research findings shows the concern about the quality of data, bias and transparency. Organisations should make sure that human oversight is there in all the critical decisions. It can only be supported by AI insights to improve trust and reliability.

- *Structured governance framework*

There is a strong need for a developed structured governance framework aligned with the AI capabilities and CPMAO lifecycle stages. The findings show that the current governance integration is superficial and it lacks accountability and validation mechanisms. The organisations should formalise the process for validating AI results and link them with the strategic objectives and apply them into planning, execution and the evaluation stages.

- *Strengthening the data governance and ethical standards*

The organization should strengthen its data governance and the ethical standards. The literature shows that there are some risks like bias and uncertainty of AI tools. Clear policies on data quality, transparency and ethical use of AI should be implemented to make sure the decision making process is accurate and responsible.

6. CONCLUSION

This study shows that the AI has a strong capability to improve the programme benefits management particularly in enhancing the decision making, visibility and the real time monitoring. Though, traditional approaches and governance systems are not completely capable of managing the dynamic nature of AI driven programmes. The findings show a gap between the capabilities of AI

and the integration of it into structured government frameworks. The literature review and findings shows the importance of adaptive governance and careful management of uncertain situations..

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