DIGITAL TRANSFORMATION IN CONSTRUCTION SECTOR

INSIGHTS FROM BUSINESS STAKEHOLDERS

MAR - APR 2024

SECOND ANNUAL SURVEY

ROBOAUTAL

EMPOWERING FIRMS WITH TECHNOLOGY

INTRODUCTION AND OBJECTIVES

- **Overview:** The construction sector is increasingly adopting digital technologies, aiming to enhance operational efficiencies and competitive advantages. Conducted for 2 consecutive years - 2023 and 2024, the survey illuminates the path forward, shedding light on the nuances of digital adoption within this dynamic industry. Unveiling common themes and subtle differentiations across both years, our preliminary insights offer a glimpse into the technological tapestry, the cultural fabric, and the skills imperative that shape the construction sector's digital trajectory.

- **Survey Goals:** The 2024 survey aims to further understand the adoption patterns, benefits, and challenges of digital technologies within the sector.

- **Presentation Outline:** Overview of key technologies, impact analysis, readiness for digital transformation, and strategic recommendations.

METHODOLOGY

The survey engaged more than 120 participants from across the construction industry, including SMEs and large enterprises. The questions were focused on the extent of digital technology adoption, the impact on operations, and the skills deemed essential for digital transformation.

DEMOGRAPHICS

The survey was able to gather insights from a diverse pool of over 100 construction firms.

The participants represented all levels - top management, team leaders/department managers and individual contributors.

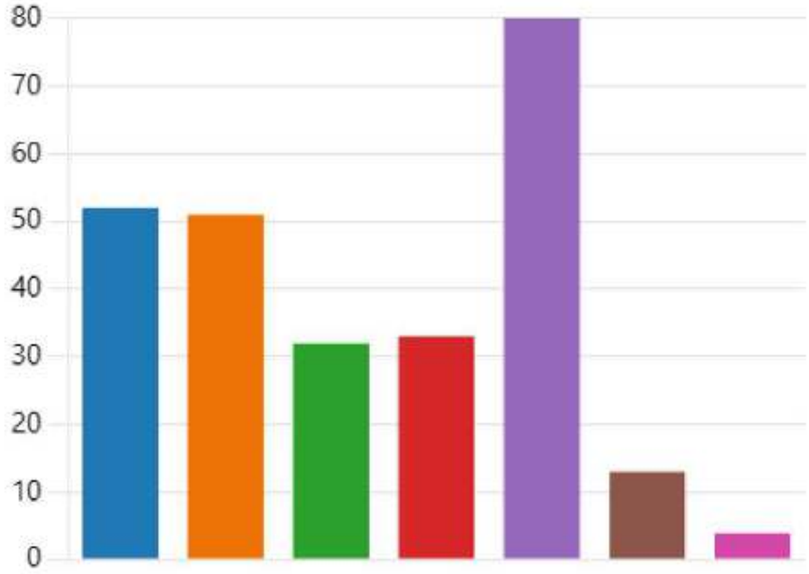
The participants represented various departments including site operation, contract and commercial management, general management.

TECHNOLOGY ADOPTION TRENDS

A significant proportion of respondents reported adopting at least three digital technologies. Building Information Modeling (BIM) and Cloud computing emerged as the most prevalent, with **66.11%** and **43%** adoption rates respectively, facilitating enhanced data accessibility and project management efficiencies.

The majority noted digital technologies' significant impact on project management and operational efficiency. Improved real-time communication between sites and head offices was reported by **38.84%** of respondents, while **58%** noted that progress reporting was the most positively impacted aspect of digital transformation.

Cloud computing	52
Data analytics	51
Internet of Things (IoT)	32
Artificial Intelligence (AI) and M...	33
Building Information Modeling (...	80
All of the above	13
Other (Please specify)	4



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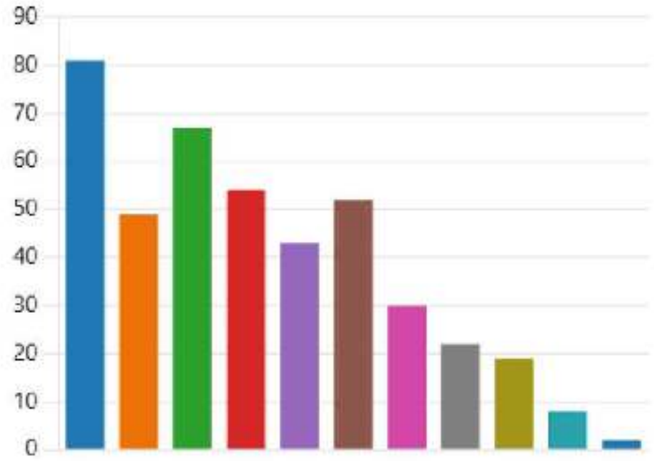
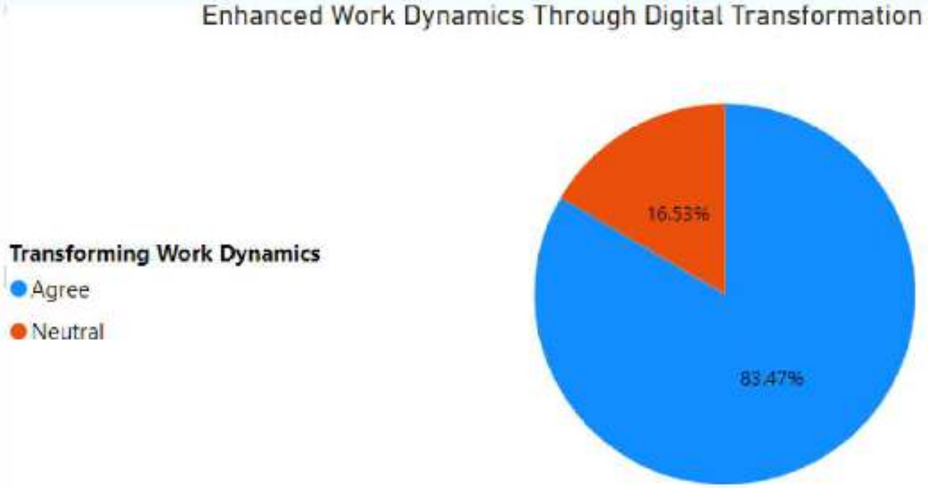
BENEFITS VS. CHALLENGES

- **Key Benefits**: Improved operational efficiency, enhanced project delivery, and better risk management.
- **Key Challenges**: Initial costs, resistance to change, and skill shortages as the main barriers.
- **Data Highlight**: **83.4%**of respondents believe digital technologies could enhance their work dynamics and see it as an opportunity, yet **67%** cite cost as a major barrier to adoption.

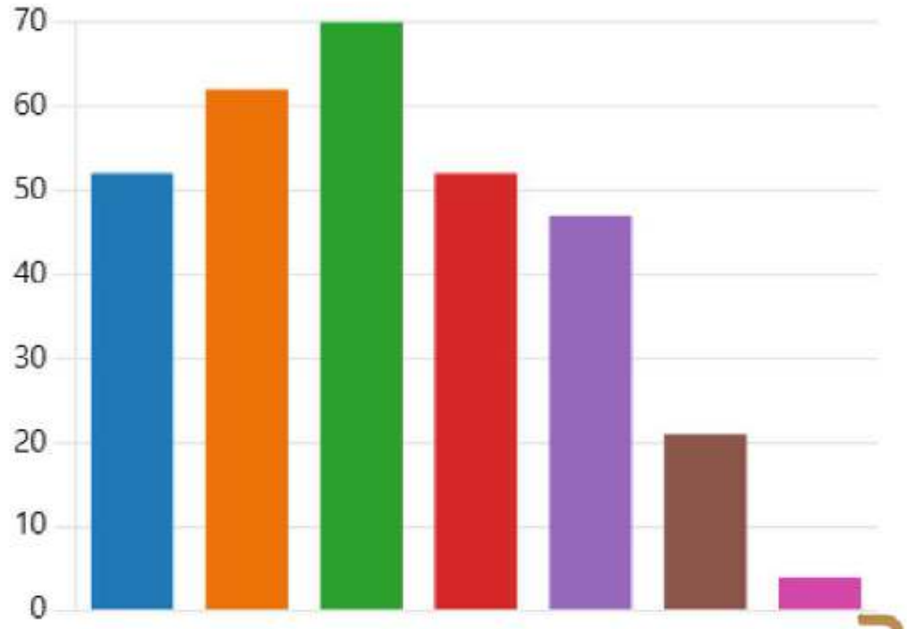




IMPACT ON ORGANIZATIONAL OPERATIONS

- **Operational Impacts:** Digital transformation affects project management, compliance, logistics, and safety management.
- **Cultural and Strategic Alignment:** The success of digital initiatives often hinges on the alignment with organizational culture and strategic business goals.
- **Visual Aid**: Diagram illustrating how digital tools integrate into different operational areas, improving communication and efficiency.

Resource allocation and manag...	52
Productivity analysis	62
Progress reporting	70
Claims and certification	52
Real-time data sharing between...	47
All of the above	21
Other	4



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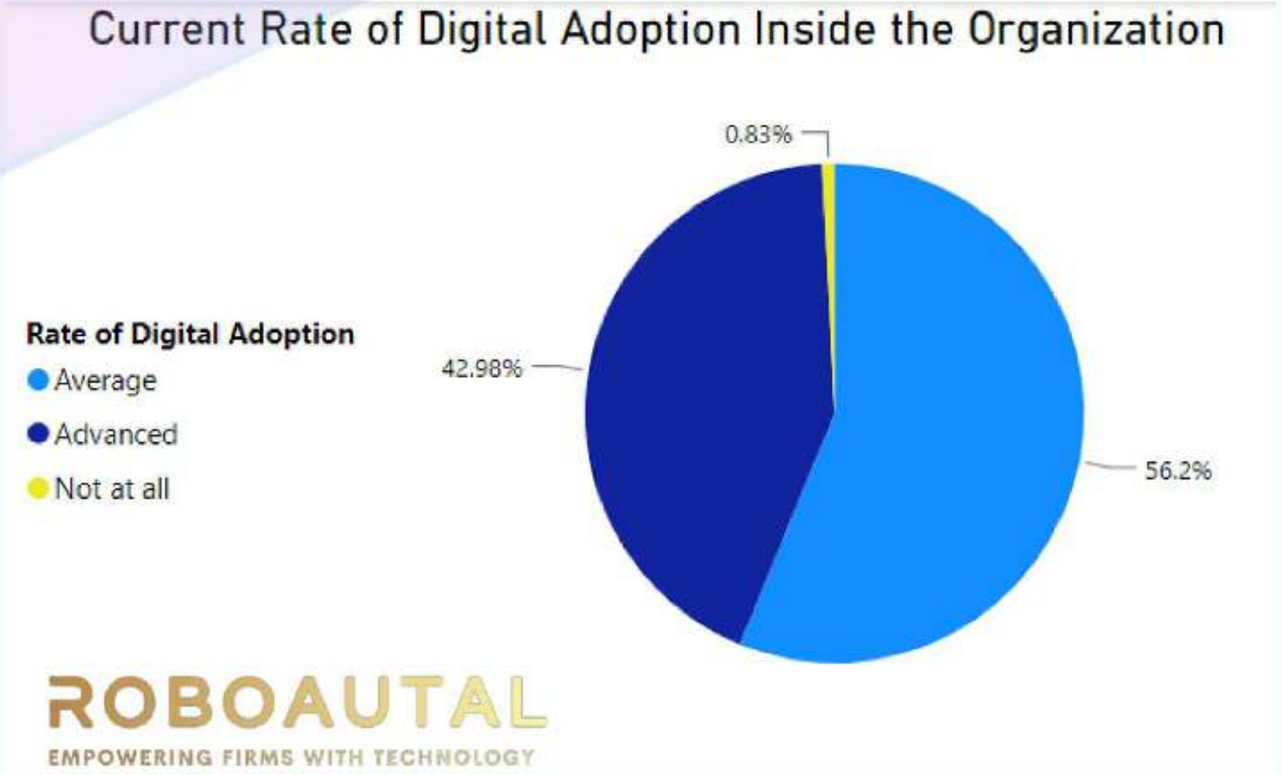
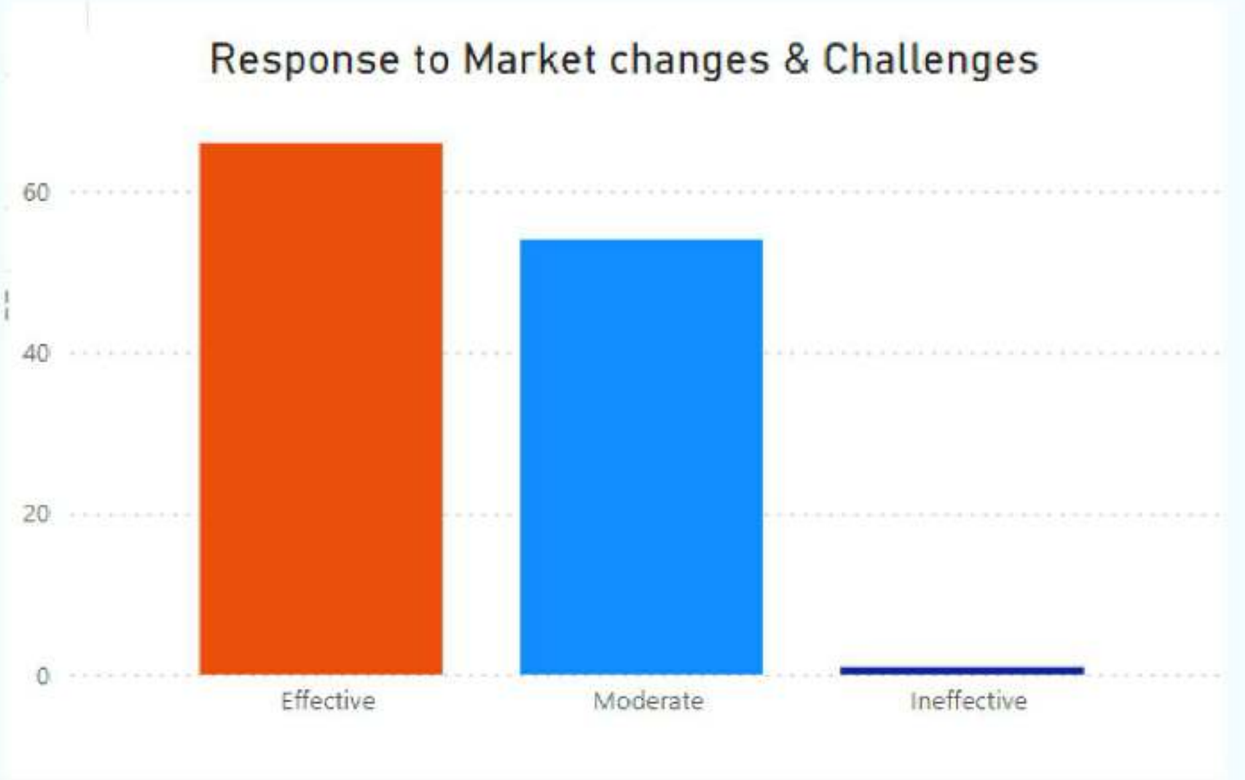
ORGANIZATIONAL READINESS AND AGILITY

- **Readiness Levels:** Organizations with high levels of digital technology adoption report greater readiness to face market changes and challenges.
- **Agility Factors:** Key factors include strong leadership commitment, an innovative culture, and a robust IT infrastructure.





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MARKET TRENDS VS. SURVEY INSIGHTS

ALIGNMENT WITH INDUSTRY EXPECTATIONS

- **Adoption Trends**: The adoption of Data & Analytics, AI, and IoT, as indicated in the survey responses, aligns well with expectations for efficiency and risk management improvements. This suggests that companies are indeed leveraging these technologies to gain a competitive edge.

- **Impact on Operations:** The reported impact across various operational areas (such as project management, logistics, and compliance) supports the prediction that digital transformation leads to more integrated and streamlined operations.

- **Skills and Training:** The emphasis on the need for skills related to digital technologies and the ability to conceptualize the business impact is in line with the industry's recognition of the importance of human capital in realizing the benefits of digital transformation.

MARKET TRENDS VS. SURVEY INSIGHTS

SURPRISING DISCOVERIES

- **Resistance and Adoption Barriers:** While the adoption of digital technologies is progressing, the surveys highlight persistent challenges such as cost constraints and resistance to change. These barriers, although not entirely unexpected, emphasize the practical difficulties in achieving widespread digital transformation, possibly indicating that the pace of adoption may be slower than some industry optimists predict.

- **Cultural Barriers:** The significant mention of organizational culture as both an enabler and a barrier could be somewhat unexpected. It underscores the critical role of cultural factors in the success of digital initiatives, which might not always be at the forefront of discussions about digital transformation.

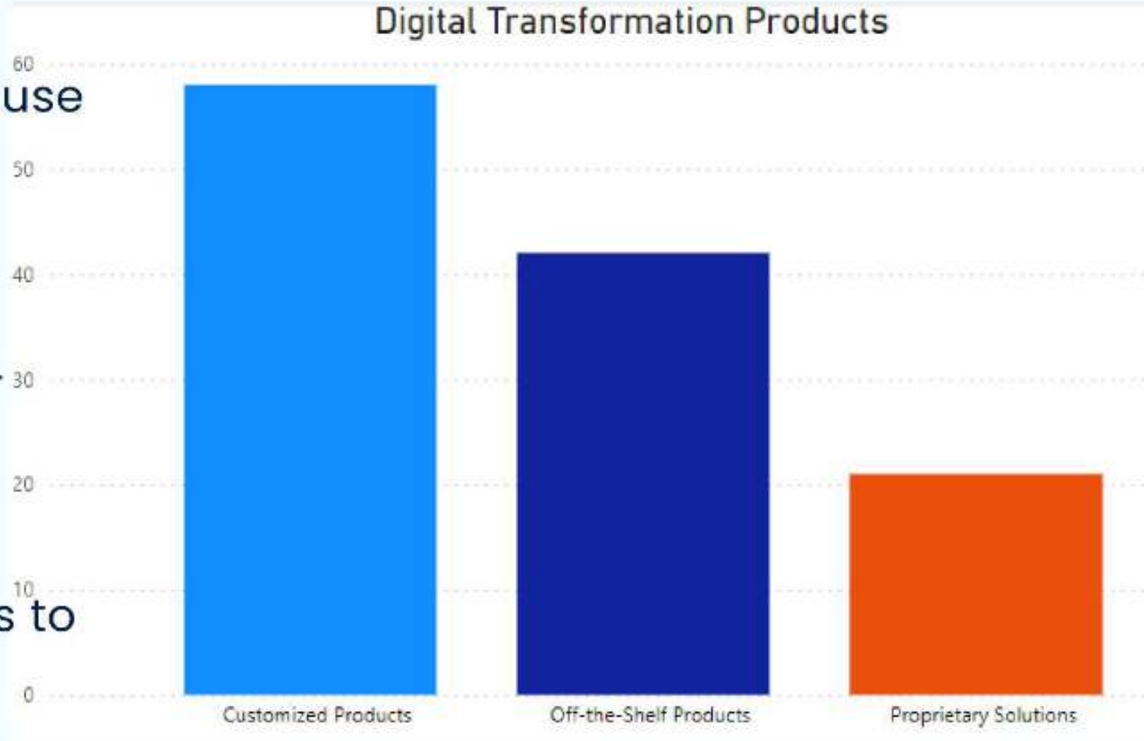
CUSTOMIZATION AND CONTROL IN DIGITAL TRANSFORMATION

- **Key Insight:** The majority of respondents favor "*Customized Solutions*" for their digital transformation, highlighting the need for tailored solutions that fit specific organizational requirements.

- **Emerging Trend:** A significant interest in "*Proprietary Solutions*" of respondents indicates a shift toward in-house development, emphasizing control over data and customization.

- **Future Outlook:** The trend towards customization and proprietary solutions suggests a growing preference for solutions that enhance organizational authority and independence.

- **Recommendation**: SMEs to invest in internal capabilities to develop customized and proprietary solutions, aligning digital tools closely with unique business needs and strategic goals. Low-code no-code platforms and AI enabled tools has reduced the entry barrier for adoption of such capabilities.



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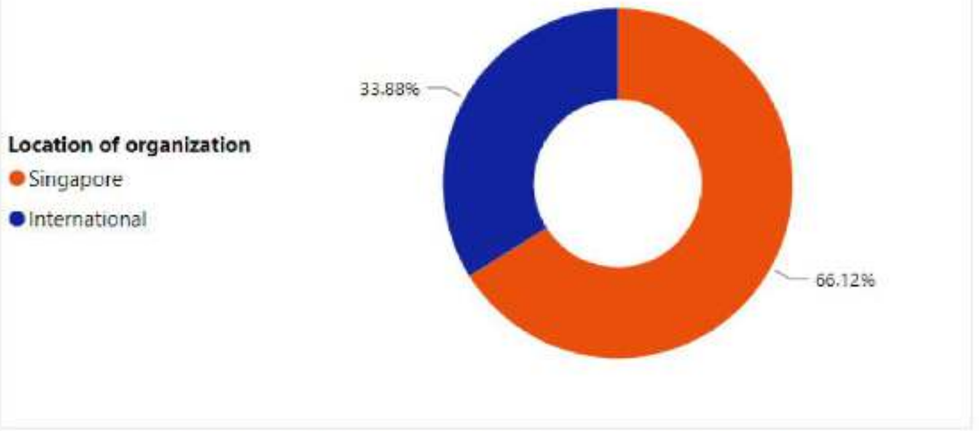
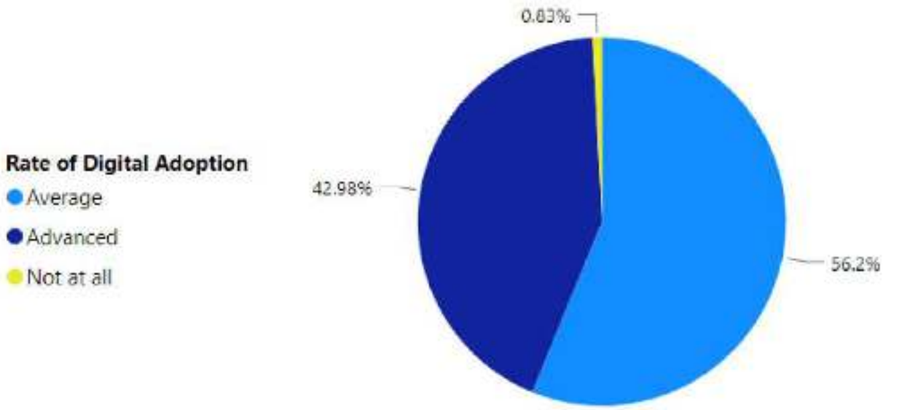
SPECIMEN DATA ANALYTICS

Stage 1: Primary Datasets

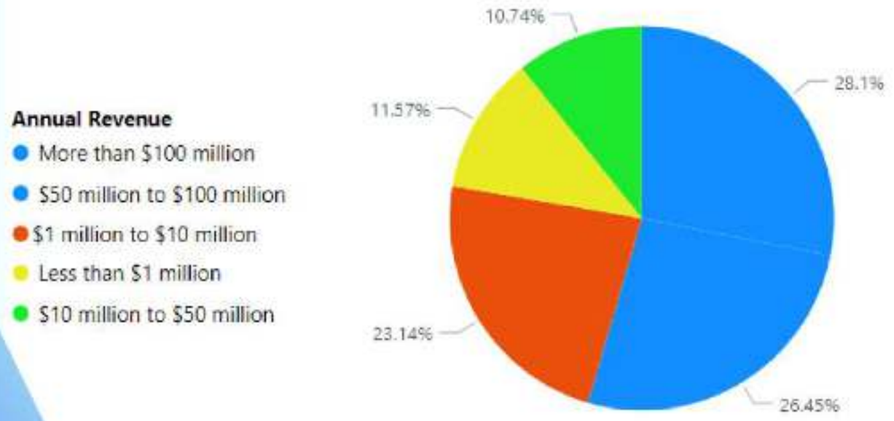
Location of organization



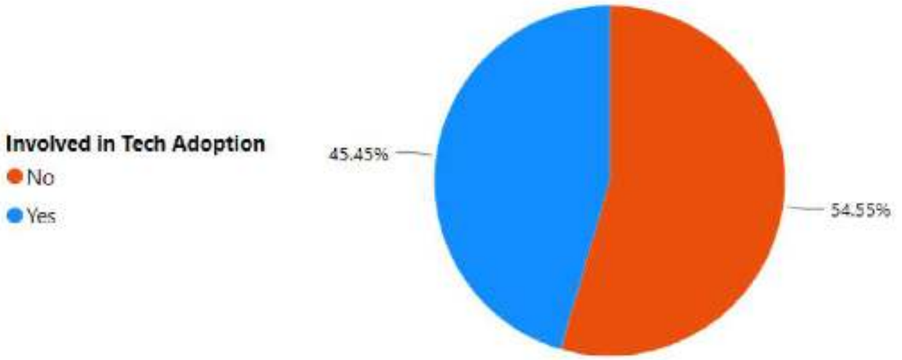
Current Rate of Digital Adoption Inside the Organization



Company Category by Annual Revenue



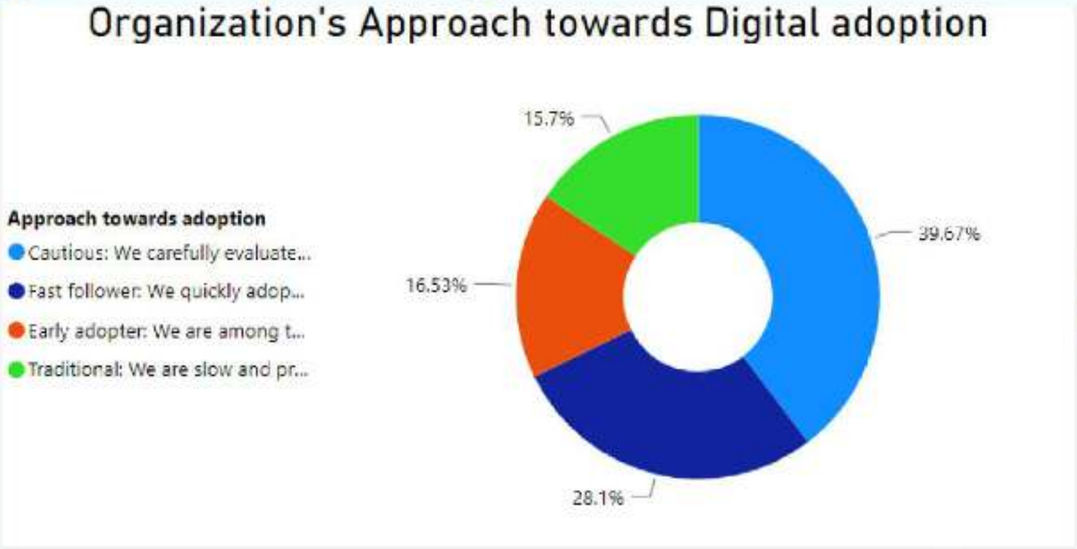
Directly Involved in Tech Adoption



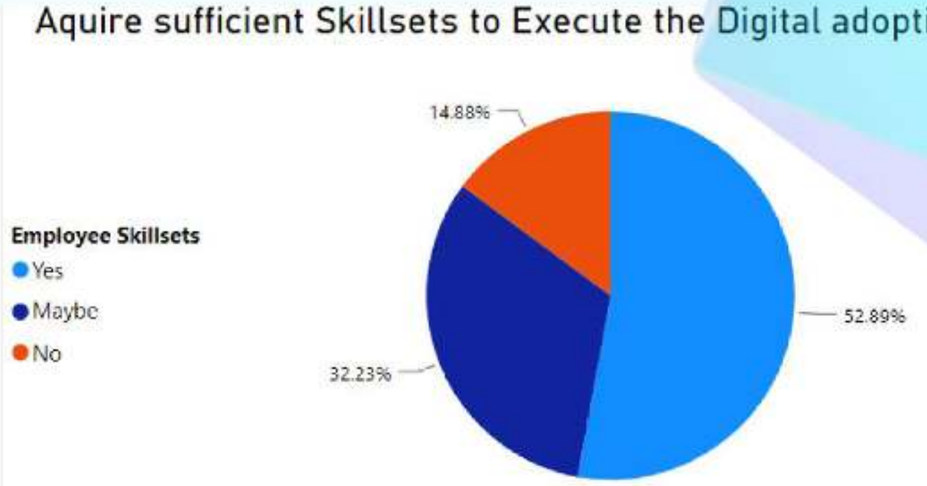
SPECIMEN DATA ANALYTICS

Stage 2: Deeper Insights

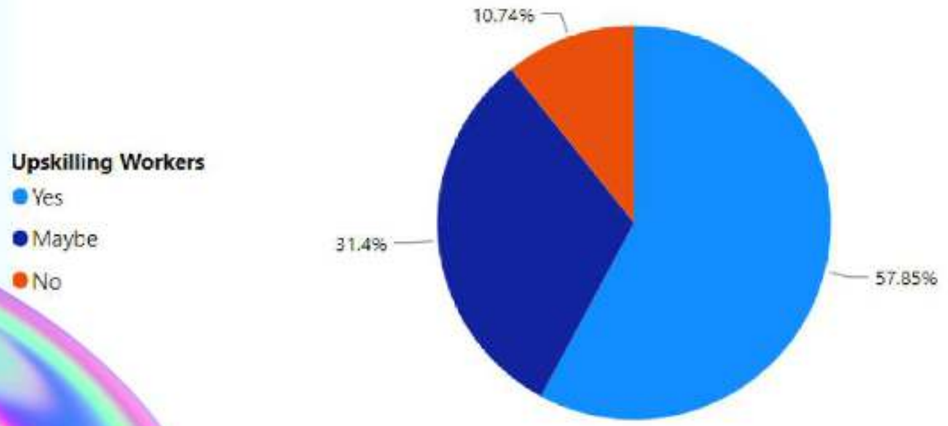
Organization's Approach towards Digital adoption



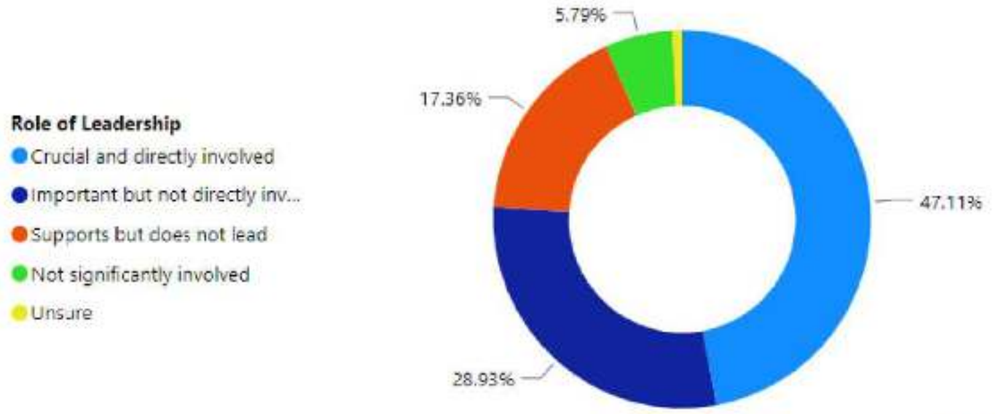
Aquire sufficient Skillsets to Execute the Digital adoption



Organizations Upskill employees with digital trends



Role of Leadership in Organization's Digital Transformation



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Thank You

Thank you to all who contributed to our 2024 survey. Your valuable inputs have been essential in shaping our understanding of digital transformation in the construction sector.

We appreciate the time and effort you have taken to participate and share your insights

We look forward to your continued participation in 2025 survey too.

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About Roboautal

Roboautal: Pioneering Digital Transformation of SMEs in Construction Sector

Our Mission: To revolutionize the construction sector, through digital technology.

What We Offer: Bridging the digital gap, transforming skill sets, and empowering firms towards greater success.

Our Expertise: With over 15 years of commercial and contracts experience in construction, we're uniquely positioned to guide SMEs toward tangible improvements using cutting-edge digital solutions.

Join Us: Let's embark on a transformative journey towards innovation and success in the construction sector.