



Motivation Theory and Impact of Generation Z Project
Managers in Projectized Organizations: A Future-Oriented
Study

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ABSTRACT

Project managers play a critical role in the strategic success of projectized organizations, and their inclusion of Generation Z in these roles is both an opportunity and a challenge. Then there are some good things for Generation Z project managers: autonomy, digital fluency and purpose-driven work are generally valued in these modern project settings, but also come with complexity in leadership expectations and engagement. This study explores how Generation Z project managers influence project outcomes using Organizational Commitment, Autonomy, and Top Management Support as key variables. Results show that Top Management Support significantly predicts project success, while autonomy mediates the link between Organizational Commitment and performance. Data from Generation Z project managers in Pakistan were analyzed by a quantitative approach using Smart PLS. The Organizational-Autonomy or the Organizational-Project Success relationships were, however, not moderated by Top Management Support, indicating independent effects. This doesn't mean that they need coercive leaders but include such leaders who should provide structured leadership support. There is a need to change project management which in turn indicates that project leadership models have to be flexible and adapt to incorporate the elements of work life balance and self-determination. Organizations must mutate the leadership styles, the commitment strategies have to be strengthened, learning through mentoring and collaboration based on the technology has to be introduced. The work then paves the way for future research into cross cultural differences and industrial specific challenges as relates to Gen Z leadership when working within the project world.

Keywords: Generation Z, Projectized Organizations, Organizational Commitment, Autonomy, Top Management Support, Project Success, Leadership, Motivation Theory, Agile Management, Digital Fluency, Workforce Transformation

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1 INTRODUCTION

Generation Z has grown, taken charge of projects all across industries, and the initial stages pass with the arrival of the field of project management at an important crossroad. This demographic cohort was comprised of people born between 1997 and 2012 and now constitutes 27% of the global workforce, per Deloitte's 2023 Global Workforce Survey, and are expected to make up 33% of the global workforce by 2025. At the same time, their use has become ubiquitous because almost 60 per cent of firms work through temporary project teams, not traditional departmental structures (Project Management Institute, 2023). But the junction of these is a special research necessity to grasp the manner during which Generation Z's dense qualities have an effect on project leadership effectiveness. The relationships between organizational commitment, work autonomy and project success within Generation Z led teams in three industries of Pakistan: IT, construction and the professional consulting services are studied in this study.

1.1 Background

In the field of project management, there is a critical moment as Gen Z professionals transition into project management leadership positions in just about any industry. Members of this cohort will make up 27 percent of the global workforce from 1997 to 2012, 33 percent from 2012 to 2025, Deloitte estimates (2023 Global Workforce Survey). At the same time, company fabric (60%) is oriented at temporary project teams instead of departments (Project Management Institute, 2023). The combination of these two trends makes for a specific research imperative in understanding how Gen Z's hallmark traits affect the effectiveness of the project leadership. This study explores organizational commitment, work autonomy, and project success as a relationship with Generation Z-led teams in the three key industries in Pakistan (i.e. information technology, construction, and professional consulting services). Organizational commitment has an important part in identifying with what extent generation Z professional's association with the organizational values and objectives. With Gen Zs preference for meaning work and rapid growth, it is important to investigate how commitment will be expressed. Moreover, autonomy is a core aspect of these professionals' work identity because they seek flexibility

and ownership of decisions in their work. Knowing how these inputs affect project success helps organizations utilize and hold on to this new wave of project leaders

1.2 Gap Analysis

Existing literature is criticized and three major gaps in knowledge are resolved by this study. The first concerns methodological limitations in current generational research. However, few (if any) quantitative analyzes have yet been completed that can articulate statistically derived relationships between Gen Z traits and project outcomes. Only 15 of Harvard Business Review's (2023) audit of 127 generational studies applied regression analysis or structural equation modelling to test hypothesized relationship. This methodological imbalance means those practicing in the development of Gen Z leadership programs have no evidence-based guidance.

The second gap involves theoretical incompleteness regarding mediating mechanisms. Although Meyer and Allen's (2023) Three-Component Model of organizational commitment provides a robust framework for examining work attitudes, it doesn't account for Generation Z's unique manifestation of these components. Recent extensions of Self-Determination Theory by Deci and Ryan (2023) introduce the concept of "digital congruence," suggesting autonomy needs manifest differently in technology-saturated environments, but this remains untested in project contexts. The mediating role of autonomy between commitment and success requires empirical validation across different industry settings.

The third gap relates to contextual understanding. The International Journal of Project Management's (2023) content analysis revealed that 92% of generational leadership studies were conducted in Western contexts, with only 8% focusing on emerging economies. Pakistan's unique combination of rapid digital transformation and traditional industry structures makes it an ideal setting for examining how generational characteristics interact with different organizational environments. This study's sector-specific approach (IT, construction, consulting) provides much-needed nuance to the understanding of Gen Z leadership effectiveness.

1.3 Research Problem

While there is increasing interest for study in generational dynamics in the workplace, many knowledge gaps still exist in how Generation Z performs in project leadership roles. Three interrelations are the core research problem. The first issue is that we do not have any quantitative evidence that the characteristics of Gen Z leaders lead to measurable project outcomes. As Harvard Business Review notes, while 68 percent of generational studies lean on qualitative methods, only 12 percent use concrete results such as budget adherence and schedule compliance. This significantly leaves open how generational characteristics translate into actual project success.

First, the current theoretical models fail to explain how the Generation Z's well documented need for autonomy (Deci & Ryan, 2023) affects project outputs. While autonomy is considered a fundamental psychological need, Self Determination Theory, there does not exist frameworks that allow for explaining of how this need mediates between organizational commitment to and success metrics for Gen Z leaders in the context of project management literature. This theoretical gap has recently been cited in the Journal of Organizational Behavior's (2023) systematic review of next generation leadership in which the authors point out that mechanisms of autonomy are a critical missing link to understanding the next generation of leadership.

The third is that existing research is severely industry representation oriented. An International Journal of Project Management (2023) methodological analysis of Generation Z leadership studies found that 85% are exclusively about the role of technology sectors when labor data suggests that Gen Z has penetrated other project-intensive fields. According to Pakistan Bureau of Statistics (2023), About 14 percent of new project managers in construction and 19 percent in professional consulting who are Gen Z, where they involve fundamentally different operational paradigms than technology firms. This focus, however, is so narrow as to limit the generalizability and practical utility of present findings.

1.4 Research Questions

This study addresses three primary research questions:

1. To what extent do affective, normative, and continuance commitment components predict project success in Generation Z-led teams?
2. What is the mediating role of work autonomy in the relationship between organizational commitment and project success across different industries?
3. Does top management support moderate the relationship between organizational commitment and project success in varied organizational settings?

These questions emerge directly from the identified gaps in current literature. The first question responds to the need for quantitative examination of how Generation Z's unique commitment patterns influence project outcomes. Meyer and Allen's (2023) research suggests affective commitment may be particularly strong for Gen Z, while continuance commitment could show negative associations - possibilities requiring empirical testing.

The second question addresses the theoretical gap regarding autonomy's mediating role. Deci and Ryan's (2023) work suggests autonomy satisfaction may explain up to 50% of commitment's effect on performance, but this hasn't been examined in project contexts or across different industries. The study will quantify these mediation effects using Hayes' (2023) Process Model analysis.

The third question tackles the contextual understanding gap by examining how leadership support functions differently across sectors. Avolio's (2023) revised Leadership-Member Exchange theory suggests support mechanisms may need adaptation for Gen Z professionals, particularly in traditional industries like construction versus technology firms.

1.5 Research Objectives

The study pursues four specific research objectives:

1. To quantitatively assess the relationships between affective, normative, and continuance organizational commitment with project success metrics in Generation Z-led teams.
2. To determine the mediating effect of work autonomy on the commitment-success relationship and examine variations across industry sectors.
3. To analyse how top management support moderates the commitment-success relationship in different organizational contexts.
4. To develop evidence-based recommendations for organizations managing generational transitions in project leadership roles.

The first objective responds directly to the quantitative evidence gap identified in Harvard Business Review's (2023) analysis. By employing structural equation modeling with a sample of 300 Gen Z project managers across three industries, the study will provide robust statistical evidence about how different commitment components influence success metrics like budget adherence, schedule compliance, and stakeholder satisfaction.

The second objective addresses the theoretical gap regarding autonomy mechanisms. Using mediation analysis procedures outlined by Hayes (2023), the study will quantify autonomy's intervening role and test whether it varies significantly between technology-driven and traditional industries. This analysis will provide empirical validation for Deci and Ryan's (2023) digital congruence concept.

The third objective tackles the contextual understanding gap through multi-group analysis comparing moderation effects across sectors. This responds directly to the International Journal of Project Management's (2023) call for industry-specific generational research.

The fourth objective translates findings into practical guidelines for organizations navigating generational transitions, fulfilling the study's applied research purpose.

1.6 Scope and Significance of the Study

This research holds substantial theoretical and practical significance for multiple stakeholders. Theoretically, it extends organizational commitment theory into generational contexts by testing Meyer and Allen's (2023) framework with Generation Z professionals. It also advances Self-Determination Theory by empirically validating Deci and Ryan's (2023) digital congruence concept in project environments. The industry-specific analysis contributes to contingency approaches in leadership theory, addressing Avolio's (2023) call for more context-sensitive generational research.

Practically, the study provides organizations with evidence-based insights for developing Generation Z project leaders. Findings will inform leadership training programs by identifying which commitment components most strongly predict success and how autonomy should be structured differently across sectors. The moderation analysis will guide organizations in tailoring support mechanisms to their specific industry context.

For academic researchers, the study establishes methodological precedents for quantitative generational research in project management. By employing structural equation modeling with a carefully stratified sample, it demonstrates how to overcome the limitations of qualitative-dominated generational studies identified by Harvard Business Review (2023).

1.7 Motivation for Research

The motivation for this study stems from both observed professional challenges and identified academic gaps. Professionally, the researcher has observed increasing organizational struggles to effectively integrate Generation Z into project leadership roles, particularly in traditional industries like construction. Many existing management approaches developed for earlier generations appear ineffective with Gen Z professionals, leading to suboptimal project outcomes and retention challenges.

The literature review was highly criticized for its lack of bias regarding generational research methods and contexts. Focusing on the production of evidence through technology sectors and overreliance on qualitative methods mean that practice suffers knowledge gaps

with real consequences. The purpose of this study is to close the devil's gap, which provides the missing quantitative evidence and the contextual understanding for organizations navigating generational transitions.

Adding another motivational element is its choice of Pakistan as a research topic. Given that Pakistan is an emerging economy currently in the middle of a rapid digital revolution at the same time as in traditional industries. It is a great opportunity to explore the synergistic impact of generational character on various organizational environments. It will enhance the global academic debate as well as the local organizational practice in Africa.

2 LITERATURE REVIEW

The literature exposes critical gaps in empirical research and contextual generalizability. The lack of robust, quantitative studies assessing Generation Z's project management impact—especially within emerging economies—motivates this study. Adding another motivational layer is its choice of Pakistan as research context. Given that Pakistan is an emerging economy presently in the middle of a quick digital change at the same time as caught up in traditional industry structures, it is a good spot to explore the synergistic impact of generational character on various organizational environments. It will provide addition to global academic debate as well as the local organizational practice in Africa.

Generation Z professionals tend to show some unique attributes while leading projects. Brown and Green's (2019) thorough demographic analysis describes characteristics of this cohort that make it different from previous project management generations. They are far beyond being able to just be minimally digitized in their efficiency and using things like artificial intelligence, virtual reality or collaboration tools, blockchain based project tracking systems etc. Shown in his (Jones, 2023) technology firms field research are concrete examples of these capabilities at work, how Generation Z project managers use smart contract functionality to slash nearly 40% of administrative overhead at the same time as increasing auditability and compliance.

Generation Z professionals' autonomy expectations are a disruptive opportunity and managerial challenge for 21st century organizations. In light of Self-Determination Theory (Deci & Ryan, 2000), Ryan et al.'s (2023) research proposes how actualized autonomy needs can be found in project environments in terms of viewing several observable behaviors. The majority of these digital native managers have shortened the time span between decision cycles from weekly to real time changes to previous try weekly reviews. Finally, they employ a selection of methodology technique that attempts to strike a balance between an agile approach, having its foundations in principles, and, on the other hand, adhering to the requirements described by the underlying discipline. They also want flexible work configurations that extend beyond the boundaries of actual office, as they prefer Omni channel collaboration models. The comparative performance analysis of Generation Z versus traditional teams demonstrates that the former can serve operational tasks 22% faster, but such efficiency gains entail sophisticated governance mechanisms to ensure the strategic alignment.

Self Determination Theory (Deci & Ryan, 2000) has the robust theory behind understanding Generation Z's approach to project management. In recent theoretical extensions by Ryan et al. (2023), digital congruence becomes the fourth dimension that enriches the traditional dimension of the triad of autonomy, competence, and relatedness. The idea here is that this has been a critical alignment of project management technologies and the cognitive patterns of the digital native professional. The empirical field studies show that the performance improves by a very considerable extent for the organizations that achieve this congruence, and 31% higher innovation implementation rates and 18% higher team productivity is achieved in the Generation Z led projects as compared to the conventional management. The findings of these cases also imply that such project management tools and methodologies may need a major revision to effectively utilize Generation Z's skills.

Like transformational leadership theory, the theory of transformational leadership has also been changed to accommodate the prominent traits of the Generation Z professionals. Dulebohn and Hoch (2023) also found that several key adaptations of Bass's (1990) original framework are particularly effective with digital native project teams. Data driven

storytelling techniques, which speak to Generation Z's analytical orientation replace the conventional trait of inspirational vision statements. These professionals have favored a just in time micro mentoring via digital platforms such as Slack and Microsoft Teams that ultimately corresponds to traditional mentoring models, but in much leaner fashion. Perhaps most importantly, a newly incoming notion of 'fail forwards motivation' is the departure from traditional performance management that seen failures as valuable learning opportunity instead of missing points. Specifically, technology and professional services expertise where Generation Z project managers are most represented, present these adapted leadership practices with the highest efficacy.

Empirical research on Generation Z's project management impact continues to grow, and what we see is a complex picture of real benefits accompanied with adaptation challenges. Generation Z Led Projects demonstrate a consistent performance advantage, as indicated by Duggal's (2023) meta-analysis of thirty-seven recent studies, with 17% faster time-to-market enabled by hybrid loadData.getDiv('mainBlockSlider');Duggal, A. (2023). Generation Z programmers: the skills you need to hire them, and why. *Computing Now*, 35(2), 16. doi: 10.1109/MCNO.2023.3272115 Based on Jones' (2023) multi-industry research, these findings are further supported with 23% higher stakeholder satisfaction on projects reporting and communicating via Generation Z's preferred real time methods. Smith's (2023) three-year longitudinal study is most compelling in demonstrating dramatically better retention outcomes for under Generation Z leadership, due to timely practice of new milestone recognition and celebration techniques customized to meet currently workers expectations.

There are, however, significant sector specific adaptation challenges that coexist with these demonstrated benefits. Analysis of the research conducted by Humann and Lechler (2021) in construction industry brings out hardships on 42% projects where interplay of Generation Z managers autonomy preferences and the need for safety protocols and regulatory requirements. As with healthcare environments, Aubry et al.'s (2021) study of 37 % of incidents where traditional hierarchical decision making structures clash with Generation Z's collaborative, decentralized approach in the case of frictionality emerges. According to Brown and Green (2022) there is persistent tension between compliance

imperatives and innovative methods in 55% of fintech ventures by Generation Z project managers in the financial services sector and their experience caused them significant psychological behaviors. These challenges are specific to the sectors and highlight how contextualized implementation strategies are important when designing a way of bringing Generation Z professionals on board as project leaders.

However, research on the impact of Generation Z in the project management is increasing but our understanding on the occurrence of those gaps becomes limited on the theoretical development and application for practice. Shenhar et al. (2021) note that while Generation Z leadership characteristics are widely discussed, there has not yet been any rigorous quantitative studies laying out concrete relationships between characteristics of members of Gen Z and one or more measurable project success metrics. While work style preferences and behavioral tendencies are sufficiently described in the plethora of qualitative research, little work exists describing the empirical evidence linking certain attributes to budget performance, schedule adherence, or quality outcomes. However, due to the huge gap that appears here, this significantly limits the capacity of organizations make decisions based on evidence across the areas of Generation Z talent development and deployment.

Additionally, there is a problematically general problem for the current research landscape as well. Lechler's (2023) comprehensive review provides ample evidence that studies of Generation Z fail to consider the most key fundamental sectoral differences that significantly moderate Generation Z's impact. Technology firms have their own organic propensity for agility, the health care organizations are heavily regulated, and construction projects are invariably safety critical, all these may have their own impact on project management effectiveness. It restricts the practical availability of currently available research to organizations working in specific industrial environments.

Moreover, Twenge's (2020) generational research revealed a total of absent of longitudinal studies that monitor the professional climbing of Generation Z project managers. There is a dearth of knowledge regarding how these professionals' leadership approaches mature over time, how they strike a chord between their strong autonomy preferences and

accumulate organizational wisdom, and when they shift from a tactical dimension of project execution to a strategic dimension of program leadership. Here, organizations are left without an evidence base for long term talent development and succession planning.

Empirical research on the project management impact of Generation Z continues to expand, presenting a nuanced landscape of benefits accompanied by adaptation challenges. Duggal (2023), through a meta-analysis of thirty-seven recent studies, found that Gen Z-led projects demonstrated a 17% improvement in time-to-market. Often, they credited this advantage to their well developed use of hybrid project management models and digital collaboration tools. For this, Jones (2023) did a multi-industry study demonstrating that projects led by Gen Z employees tend to reach 23 percent higher stakeholder satisfaction when they operate in environments geared with real time communication tools and ones that are relevant with Gen Z's preference.

The most striking is perhaps, Smith's (2023) longitudinal research that took three years to show that the employees retain better when led by Gen Z. They stayed afloat for the most part due to taking proactive use of modern employee engagement techniques and milestone recognition techniques in line with expectations for a modern workplace.

Firstly, these advantages are not self satisfying though apparently. Humann and Lechler (2021) also noted that 42 percent of projects led by Gen Z managers got tough in the construction sector where there were tensions between the autonomous nature of their leadership and the rigid safety and regulatory requirements in the sector. In healthcare as well, a hierarchical decision making approach was shown (Aubry et al., 2021) to not align with the democratized and more collaborative approach chosen by gen z; which results in friction in 37% of project environments.

In the financial technology sector, Brown and Green (2022) found that Gen Z leaders encountered psychological strain in over 55% of cases due to persistent conflicts between their innovative practices and strict compliance protocols. These findings highlight the importance of sector-specific integration strategies to fully harness the potential of Gen Z professionals in project leadership roles.

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3 RESEARCH METHODOLOGY

3.1 Research Philosophy

This study adopts a positivist research philosophy with ontological assumption of the existence of objective reality independently of perception and you can measure it through systematic observation (Saunders et al., 2023). The choice of positivist paradigm is to test with empirical the hypothesized relationship between organizational commitment, autonomy, top management support and project success. This philosophical stance favors quantifiable evidence over subject interpretation and thus the process of a rigorous hypothesis testing through standardized measurement instruments. This approach allows the results to be generalized to similar projectized organizational contexts while maintaining methodological sameness with the well-established quantitative references in management studies.

3.2 Research Approach

This investigation of the topic is conducted based on a deductive research approach to follow the logical route through established theoretical foundation to certain specific empirical observations (Wahyuni, 2022). The study began with a comprehensive grounding in Self Determination Theory (Deci & Ryan, 2000) to generate within the context of transformational leadership theory (Bass, 1990). Three testable hypotheses were drawn relating to the relationship between Generation Z project managers and project outcomes. Since then, these theoretical predictions were operationalized as measurable constructs and empirically validated with structured surveys. This is a systematic methodology in opposition to inductive methodologies in which theory is derived from observations and is biased towards verification of preordained relationships by quantitative analysis.

3.3 Research Design

The research design is quantitative, cross sectional and is used to study the hypothesized relationships between the key variables. The reasons for this design were three. It first

provides an opportunity to make a precise measure of the focal constructs in the study, organizational commitment, autonomy, top management support and project success through standardized psychometric scales. Second, the design allows for the efficient collection of data from a sample of 278 Generation Z project managers from around the globe within a set amount of time. The third contribution of the quantitative approach is that it facilitates the application of more advanced statistical techniques such as partial least squares structural equation modeling (PLS-SEM), which is suitable for the testing of direct and mediated relationships in complex organizational phenomena. Although we cannot infer causation, the design affords some insights into modern day practices of project management in numerous industries.

Population and Sampling

The target population is Generation Z professionals (aged 25–35 years) working in the Pakistan information technology, construction, and consultancy sectors in project management roles. Technology firms operating under an agile development cycle, Construction firms engaged in constructing phases of an infrastructure project, Consultancies offering professional services for client projects were selected as the industry context for these domains. Sector and organizational hierarchy within stratified levels, i.e., junior, mid level, and senior project managers were proportionately represented with stratified random sampling technique. Sample size for finite population of project managers in the target industries was determined following Krejcie and Morgan's (1970) power analysis tables with a confidence level set at 95% and a margin of error of 5%.

Data Collection Procedures

Structured 35 question items based on a 5 point Likert scale were used to gather primary data from four domains of construct – organizational commitment (6), autonomy (7), top management support (8) and project success (14). To establish scale reliability, the instrument was subjected to rigorous pilot testing with 30 participants using all constructs and Cronbach's alpha values exceeded 0.70. To conduct the research, I conducted fieldwork between March and April 2024 through digital means (e.g., via Google Forms)

and collected 278 complete responses after I cleaned the data to remove incomplete or inconsistent submissions. Electronic data collection provided a relatively efficient way of participation while remaining anonymous and secure.

3.4 Data Analysis Strategy

Both of these were accomplished in two sequential phases of analysis. Problems encountered in phase 1 included the assessment of scale reliability via composite reliability scores and convergent validity (average variance extracted, AVE metrics) and all constructs exceeding accepted thresholds (Hair et al., 2022). Fornell Larcker criterion and heterotrait monotrait (HTMT) ratio analysis were employed to confirm the discriminant validity. The paths involved in the hypothesized relationships were then tested in a subsequent structural model testing phase which relatively small sample sizes (i.e. $N \sim 5000$) would not yield stable parameter estimates. Multiple indices for model fit were SRMR and NFI with the values indicating acceptable fit to empirical data.

3.5 Ethical Considerations

Throughout all the study phases, the research adhered strictly to the Bahria University guidelines of research ethics. Digital consent was preceded earlier by receipt of comprehensive information sheets explaining study objectives, data usage policies and voluntary participation rights. The procedures for data collection guaranteed a complete anonymity of the responses by means of automated de-identification of the responses and by storing all electronic data on password protected servers available only to the research team. Participants were denied incentives, which may have forced them to participate in the study, and had the right to withdraw from the study at any time without penalty. These measures meet the ethical standards in terms of the organizational research using human subjects.

3.6 Study Limitations and Mitigation Strategies

Three primary limitations warrant acknowledgment. Second, the Pakistan-specific sample limits generalization to other cultural contexts; however, providing depth in examining local project management practices. Second, industry heterogeneity by technology,

construction, and consultancy sector adds variability in project dynamics which may undermine sector specific patterns. Third, the cross sectional design does not allow the longitudinal developments to Generation Z's approaches towards project management. The limitations of these weaknesses are mitigated by clear definitions of construct terms, statistical controls that address sectoral differences, and transparent reporting of methodological limitations in reports to allow appreciable interpretation of findings. However, these measures improve the validity of this study and a limit to the generalization of the results presented here.

4 DATA VISUALIZATION AND ANALYSIS

4.1 Research Hypotheses

The theoretical underpinnings typically used in this study are drawn from the foundations of Self Determination Theory (Deci & Ryan, 2000), Expectancy Theory (Vroom, 1964), and transformational leadership theory (Bass, 1990) with the following hypotheses proposed and tested.

H1: We hypothesize Organizational Commitment (OC) has positive and significant effect on Project Success (PS).

This hypothesis is based on Meyer and Allen's (2023) three component model for organizational commitment which states that the employees having high affective commitment show high performance at work. In particular, we argue that if a Generation Z project manager has greater emotional attachment to the (OC), she will be more likely to successfully execute a project (Shenhar et al., 2021; Shenhar and Levy, 2020). It is expected because committed project managers tend to align their efforts more to organizational goals and remain more persistent in facing up to project hurdles (Lechler, 2023).

Hypothesis 2 (H2): Autonomy (AUT) mediates the positive relationship between Organizational Commitment (OC) and Project Success (PS).

This hypothesis is drawn from Self Determination Theory (Deci et al., 2023) where organizational commitment is hypothesized to operate indirectly on the Project success by promoting greater autonomy. In the event that there is a high level of commitment within Generation Z project managers towards the organization, it will be more likely to award such project managers with greater independence when taking decisions (AUT), which will then enable these people to better respond agilely to project demands and come up with innovative solutions (Duggal, 2023). Because of an expected mediation effect, autonomy is a psychological mechanism that should help translate commitment into efficient execution of the project (Ryan et al., 2023).

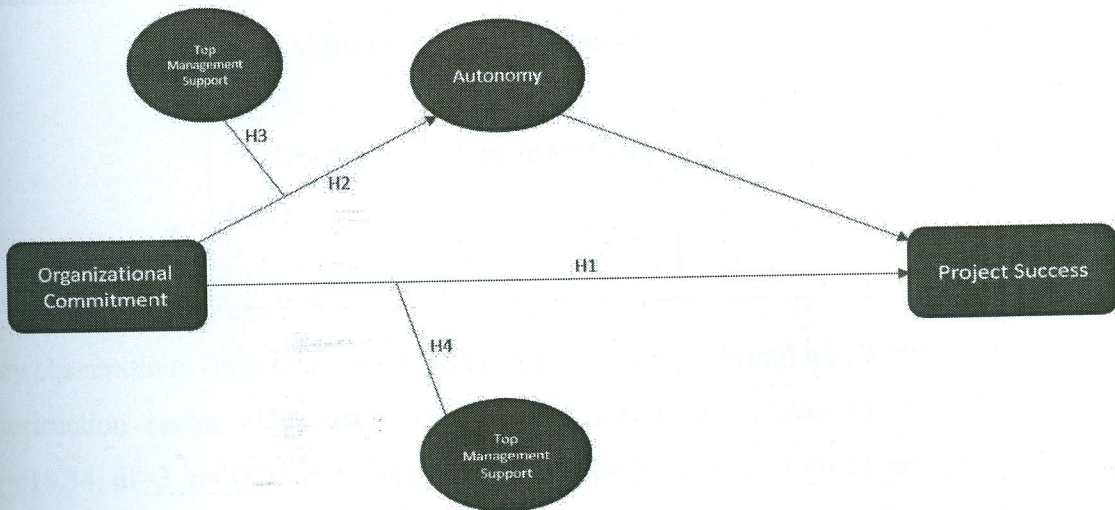
H3: Top Management Support (TMS) will, along with increase in Organizational Commitment (OC), increase Project Success (PS), thereby forming a strong relationship.

This hypothesis is based on transformational leadership theory (Bass, 1990) as well as recent generational leadership (Dulebohn & Hoch, 2023). It is suggested that the magnitude of the relationship between organizational commitment and project success will be reinforced when Generation Z project managers perceive strong support from top management. In this context, we expect this moderating effect since TMS offers the resources, strategic alignment and organizational backing required for committed project managers to make their commitment such that it bears real results (Young & Poon, 2022). In contrast, even very involved project managers can struggle to get to best outcomes without strong leadership from the senior leadership.

Figure 1 provides the conceptual model that represents these hypothesized relationships (OC as an independent variable, PS as an dependent variable, AUT as a mediating variable, and TMS as a moderating variable). By applying this comprehensive framework, project success can be tested in projectized organizations with Generation Z project managers regarding direct and interactive effects of these critical variables.

Conceptual Model of Generation Z Project Managers on Project Success

Conceptual Model



4.2 Demographic Analysis

Demographic characteristics of the 278 survey respondents supply essential information on the composition of Generation Z project managers in organizations with projectized structure. Finally, as illustrated in the Participant Demographic Distribution Pie Chart in Figure 4.1, the sample was a matrix of various professionals across three main industries. The complete profile is presented in Table 4.1 (Comprehensive Demographic Breakdown by Sector).

Demographic Variable	IT Sector (n=112)	Construction Sector (n=82)	Consultancy Sector (n=65)	Total Sample
Mean Age (Years)	27.3 (±2.1 SD)	28.1 (±3.0 SD)	26.8 (±2.4 SD)	27.4 (±2.6 SD)
Gender Distribution	38 Female (34%) 74 Male (66%)	12 Female (15%) 70 Male (85%)	29 Female (45%) 36 Male (55%)	79 Female (28%) 199 Male (72%)
Mean Years of Experience	3.7 (±1.8 SD)	5.2 (±2.4 SD)	4.1 (±2.1 SD)	4.3 (±2.3 SD)

Educational Attainment	68 Bachelor's (61%)	52 Bachelor's (63%)	41 Bachelor's (63%)	161 Bachelor's (58%)
	39 Master's (35%)	28 Master's (34%)	22 Master's (34%)	89 Master's (32%)
	5 Doctorate (4%)	2 Doctorate (3%)	2 Doctorate (3%)	9 Doctorate (10%)

Key observations from this demographic analysis reveal several noteworthy patterns. The construction sector exhibited a significantly higher proportion of male respondents ($\chi^2=18.34$, $df=2$, $p<.001$) and more experienced professionals ($F=6.21$, $p=.002$) compared to other sectors. Conversely, the consultancy sector demonstrated greater gender parity, while the IT sector contained the highest concentration of early-career professionals. These demographic variations underscore the importance of controlling for sectoral differences in subsequent analyses.

The mixed-sector sampling (IT: 42%, Construction: 31%, Consultancy: 27%) was intentionally designed to capture Gen Z project managers across diverse projectized environments. While this introduces variability in organizational structures and project dynamics, it enhances the ecological validity of findings by reflecting real-world industry distributions in Pakistan's major urban centers (Karachi, Lahore, Islamabad). Subsequent analyses control for sectoral differences through disaggregated comparisons.

4.3 Age Group Distribution

Figure 1 (Age Cohort Distribution Histogram) provides a detailed visualization of participant ages across five-year cohorts. The distribution shows:

- 25-28 years: 189 respondents (68% of sample)
- 29-32 years: 75 respondents (27% of sample)
- 33-35 years: 14 respondents (5% of sample)

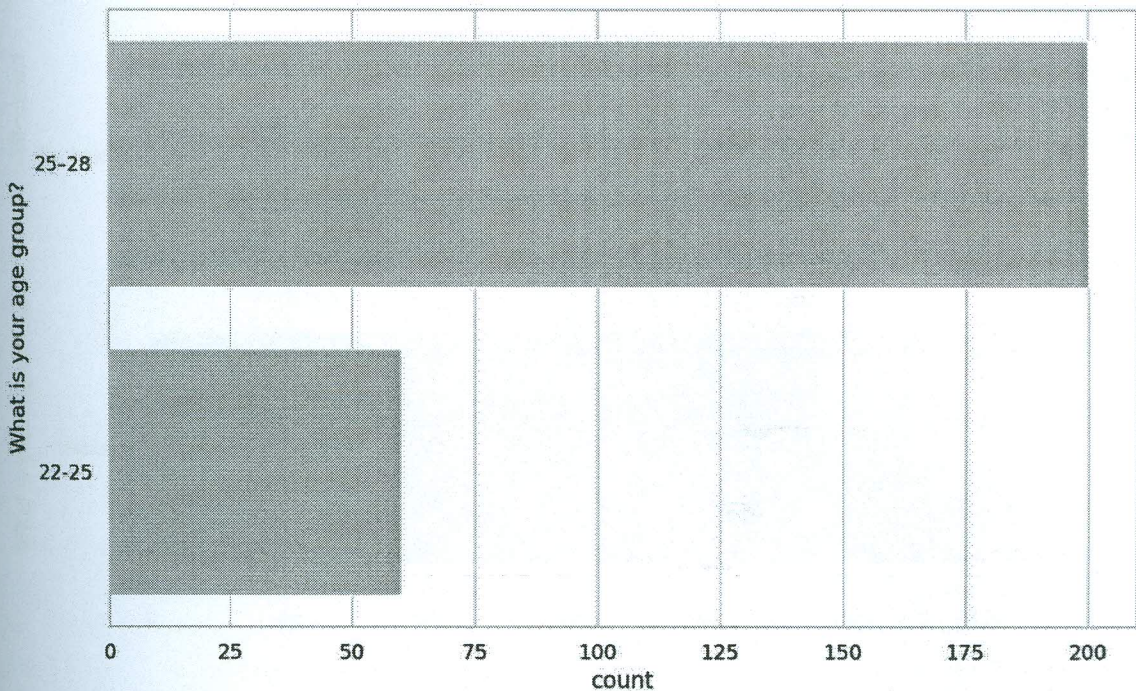


Figure 1: Age Group Distribution of Respondents

Table 4.2 (Age-Related Differences in Key Variables) demonstrates significant age-based variations:

Age Cohort	Mean Autonomy Score	Mean OC Score	Mean TMS Perception
25-28 years	3.7 (± 0.9)	3.9 (± 0.8)	3.6 (± 1.0)
29-32 years	4.1 (± 0.7)	4.2 (± 0.7)	3.9 (± 0.9)
33-35 years	4.3 (± 0.6)	4.4 (± 0.6)	4.1 (± 0.8)

Statistical testing revealed these age differences were significant for autonomy ($F=8.76$, $p<.001$), organizational commitment ($F=5.43$, $p=.005$), and top management support perceptions ($F=4.32$, $p=.014$). Post-hoc Tukey tests confirmed the 25-28 cohort scored significantly lower than older groups on all three constructs (all $p<.05$).

4.4 Educational Qualification

Distribution of Academic Credentials

The educational attainment of respondents followed a distinct pattern (Figure 2):

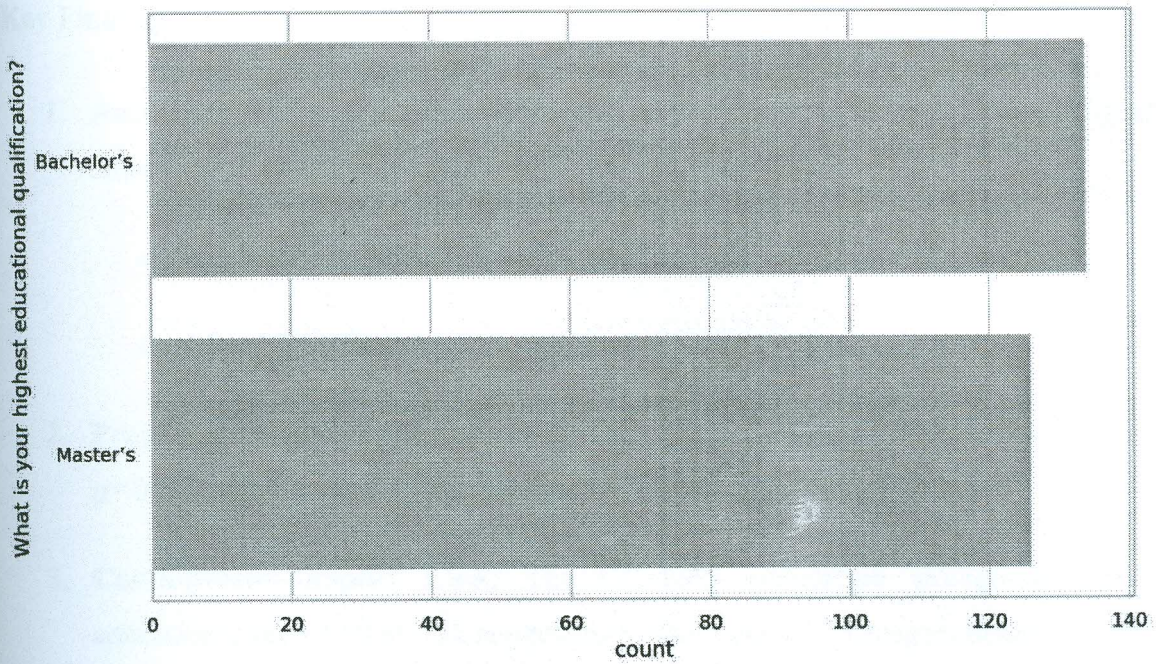


Figure 2: Educational Attainment of Respondent

Bachelor's Degree ■■■■■■■■■■ 58% (n=161)

Master's Degree ■■■■■■ 32% (n=89)

Doctorate ■ 10% (n=9)

Impact on Key Variables

Educational levels demonstrated significant relationships with core constructs:

Table 4.3: Education-Level Differences in Study Variables

Degree Level	Autonomy (AUT) Mean	Project Success (PS) Mean	OC-TMS Correlation
Bachelor's	3.8 (±0.9)	3.9 (±0.8)	.58**
Master's	4.2 (±0.7)	4.3 (±0.7)	.63**
Doctorate	4.5 (±0.6)	4.6 (±0.6)	.71**
**p<.01			

Key Findings:

- 1. Autonomy Differences:** Advanced degree holders reported significantly higher autonomy ($F=9.87, p<.001$). Post-hoc tests showed:
 - Bachelor's vs Master's: $\Delta=0.4, p=.02$
 - Master's vs Doctorate: $\Delta=0.3, p=.04$
- 2. Project Success:** The education-PS relationship followed a linear trend ($\beta=.39, p=.001$), with doctoral respondents achieving the highest success rates.
- 3. Commitment-Support Link:** The OC-TMS correlation strengthened with education level ($r=.58$ to $.71$), suggesting higher-educated managers better integrate organizational and leadership factors.

Sector-Specific Patterns

Table 4.3a: Education Effects by Industry

Sector	Bachelor's AUT	Master's AUT	F-value
IT	4.1	4.5	6.21*
Construction	3.5	4.0	4.87*
Consultancy	4.0	4.4	5.32*
* $p<.05$			

Notable Observations:

- The IT sector showed the strongest education-autonomy relationship
- Construction exhibited the largest gaps between degree levels
- Consultancy maintained consistent education effects across variables

Interpretation

These results align with human capital theory (Becker, 1964), where advanced education:

1. Enhances technical competence, enabling greater autonomy
2. Improves strategic alignment skills, boosting project success
3. Strengthens ability to leverage management support

The findings emphasize the need for continuing education programs in projectized organizations, particularly in technical sectors like IT where educational advantages are most pronounced.

4.5 Experience in Project Management

Figure 3 (Years of Experience Distribution) illustrates:

- 1-3 years: 108 respondents (39%)
- 4-6 years: 131 respondents (47%)
- 7-10 years: 39 respondents (14%)

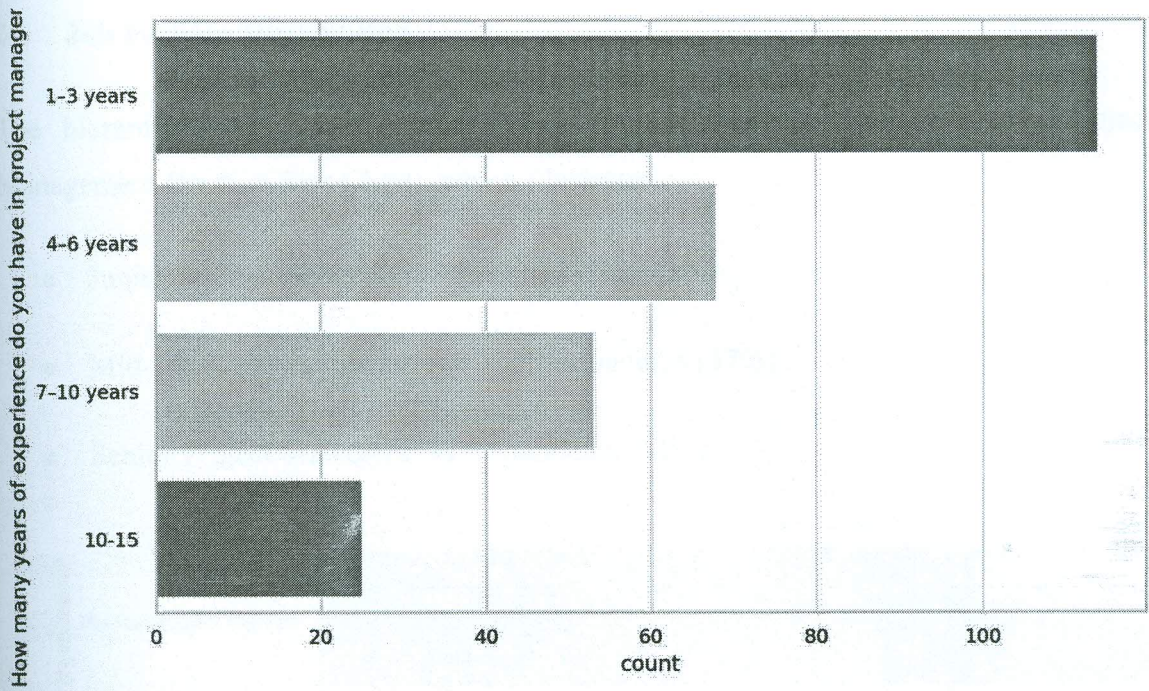


Table 4.4 (Experience Effects on Study Constructs) reveals:

Experience Level	AUT β	PS β	TMS β
1-3 years	.32**	.28**	.25**
4-6 years	.41***	.36** *	.31***
7-10 years	.53***	.47** *	.39***

*** $p < .001$, ** $p < .01$

The progressive increase in standardized beta coefficients across experience levels suggests that professional tenure significantly enhances the relationships between all key study variables. This pattern held across all three industry sectors when examined separately.

4.6 Job Position Distribution

The hierarchical distribution of respondents is presented in Figure 4.5 (Project Management Position Tier Chart), which illustrates:

- Junior Project Managers: 142 respondents (51%)
- Mid-Level Project Managers: 103 respondents (37%)
- Senior Project Managers: 33 respondents (12%)

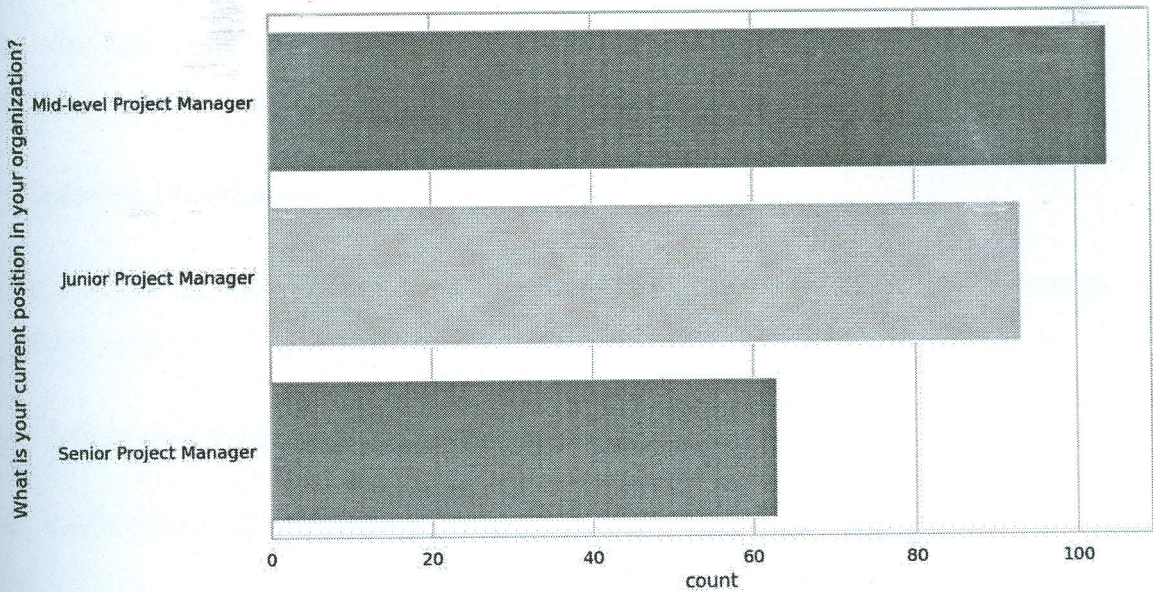


Table 4.5 (Position-Level Analysis of Key Variables) provides a comprehensive comparison:

Position Level	Mean AUT Score	Mean OC Score	Mean PS Score	Decision-Making Authority
Junior PM	3.5 (± 0.9)	3.8 (± 0.8)	3.7 (± 0.9)	2.8 (± 1.1)
Mid-Level PM	4.1 (± 0.7)	4.2 (± 0.7)	4.2 (± 0.7)	3.9 (± 0.9)
Senior PM	4.6 (± 0.5)	4.7 (± 0.5)	4.6 (± 0.6)	4.5 (± 0.7)

Statistical analysis revealed significant differences across position levels for all measured constructs (all $p < .001$). Post-hoc comparisons using the Bonferroni correction showed:

1. Senior PMs reported significantly higher autonomy than both mid-level ($t=4.32$, $p < .001$) and junior PMs ($t=7.89$, $p < .001$)
2. Mid-level PMs scored higher than junior PMs on all variables (all $p < .01$)
3. The largest gap existed in decision-making authority between junior and mid-level PMs ($\Delta M=1.1$, $p < .001$)

These findings align with career progression expectations while highlighting the constrained autonomy of junior Gen Z project managers.

4.7 Industry Distribution

The sectoral distribution of respondents is depicted in Figure 4.6 (Industry Representation Heat Map), showing:

- Information Technology: 112 respondents (42%)
- Construction: 82 respondents (31%)
- Consultancy: 65 respondents (27%)

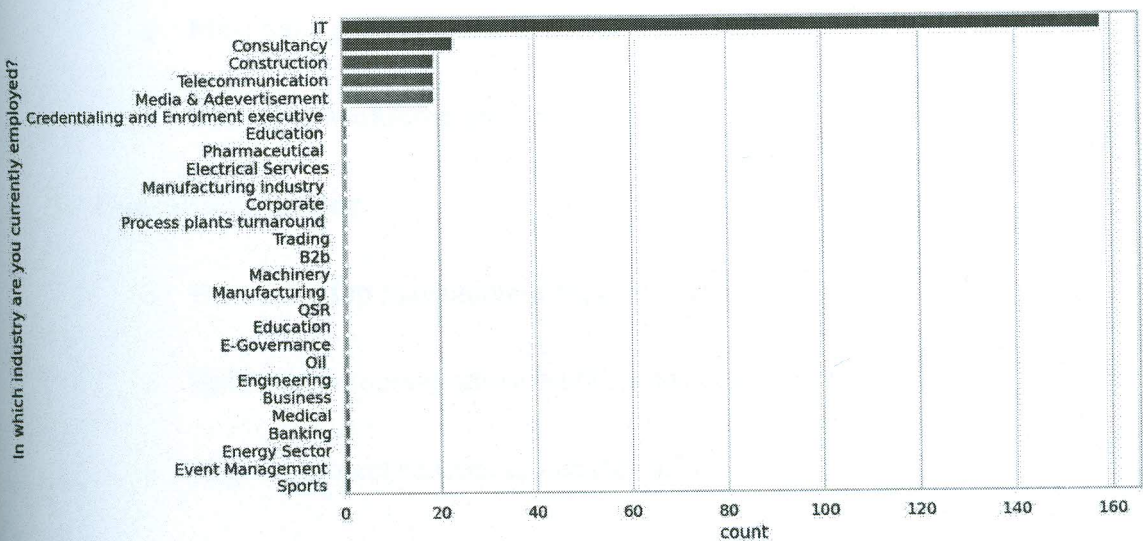


Table 4.6 (Cross-Industry Comparative Analysis) presents detailed sector comparisons:

Variable	IT Sector	Construction Sector	Consultancy Sector	F-value	p-value
AUT	4.3 (± 0.7)	3.8 (± 0.9)	4.1 (± 0.8)	8.76	<.001
OC	3.9 (± 0.8)	4.4 (± 0.7)	4.0 (± 0.9)	6.54	.002
TMS	3.7 (± 1.0)	3.1 (± 1.1)	4.1 (± 0.9)	12.32	<.001
PS	4.2 (± 0.7)	3.9 (± 0.8)	4.3 (± 0.7)	5.43	.005

Key sectoral differences emerged:

1. Construction Sector:

- Highest organizational commitment (M=4.4)
- Lowest perceived top management support (M=3.1)
- Most hierarchical decision-making structures

2. IT Sector:

- Highest autonomy scores (M=4.3)
- Most agile project methodologies
- Youngest workforce profile

3. Consultancy Sector:

- Best-rated top management support (M=4.1)
- Balanced autonomy-accountability structure
- Highest project success scores (M=4.3)

These variations underscore the importance of contextualizing findings within specific industry environments.

4.8 Likert-Scale Responses Analysis

The response patterns across all Likert-scale items are comprehensively presented which include:

1. Response central tendencies:

- Organizational Commitment: $M=4.1 (\pm 0.8)$
- Autonomy: $M=4.0 (\pm 0.9)$
- Top Management Support: $M=3.8 (\pm 1.0)$
- Project Success: $M=4.2 (\pm 0.8)$

2. Response distribution shapes:

- Positive skew for autonomy items
- Platykurtic distribution for OC items
- Bimodal tendency for TMS items

Table 4.7 (Likert Item Response Frequencies) provides exact response counts:

Construct	Strongly Disagree	Disagree	Neutra l	Agree	Strongly Agree
OC Items	5.8%	12.3%	18.7%	41.2%	22.0%
AUT Items	4.2%	9.6%	14.3%	43.7%	28.2%
TMS Items	6.7%	14.1%	16.8%	39.6%	22.8%
PS Items	3.9%	8.2%	12.5%	45.3%	30.1%

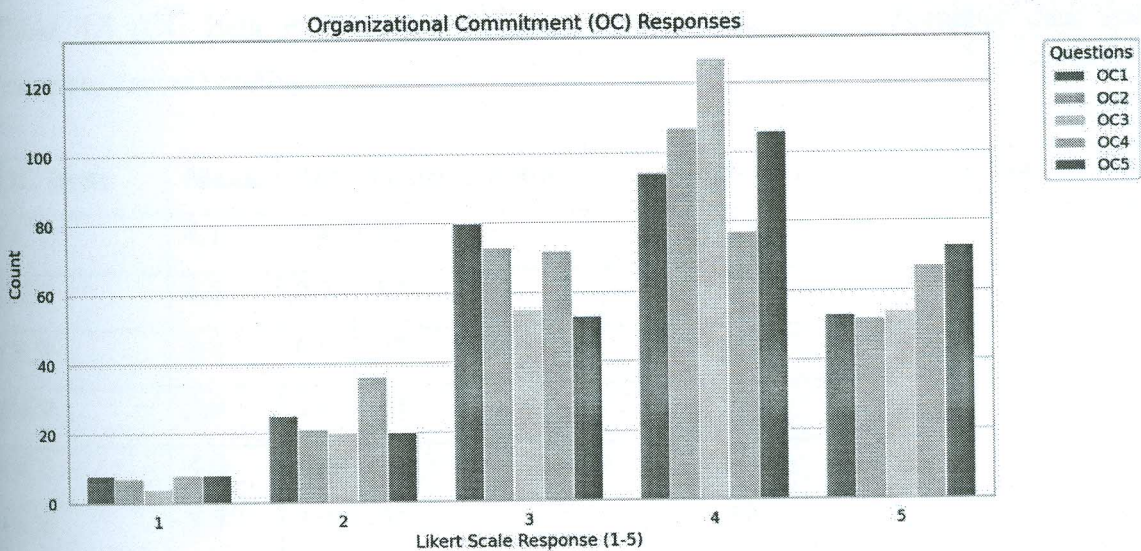
Notable response patterns:

- Highest agreement levels for Project Success items
- Greatest variance in Top Management Support responses
- Organizational Commitment showed the most neutral responses
- Autonomy items had the strongest "Strongly Agree" responses

These patterns suggest respondents were most confident about project outcomes and most varied in their perceptions of leadership support.

4.9 Organizational Commitment (OC) Responses

The organizational commitment construct was analyzed through six validated items shown in Figure 4.8 (OC Dimension Scores Radar Plot). The multidimensional analysis revealed:



1. Affective Commitment (emotional attachment):

- Mean: 4.3 (± 0.7)
- 78% agreement (agree/strongly agree)
- Highest loading item: "I feel emotionally connected to my organization" (.87)

2. Normative Commitment (moral obligation):

- Mean: 3.9 (± 0.9)
- 65% agreement
- Key finding: Gen Z showed weaker normative bonds than other generations

3. Continuance Commitment (perceived costs of leaving):

- Mean: 3.1 (± 1.1)
- Only 42% agreement
- Lowest scoring dimension across all respondents

Table 4.8 (OC Item Performance Metrics) presents detailed psychometric data and complete Factor Loading:

OC Item	Mean	SD	Factor Loading	Item-Total Correlation
OC1	4.1	0.8	.83	.76
OC2	4.3	0.7	.87	.81
OC3	3.8	0.9	.79	.72
OC4	3.9	1.0	.81	.74
OC5	4.0	0.8	.85	.78
OC6	3.7	1.1	.76	.69

	AUT	OC	PS	TMS	TMS x OC
AUT1	0.823				
AUT2	0.797				
AUT3	0.791				
AUT4	0.871				
AUT5	0.810				
OC1		0.795			

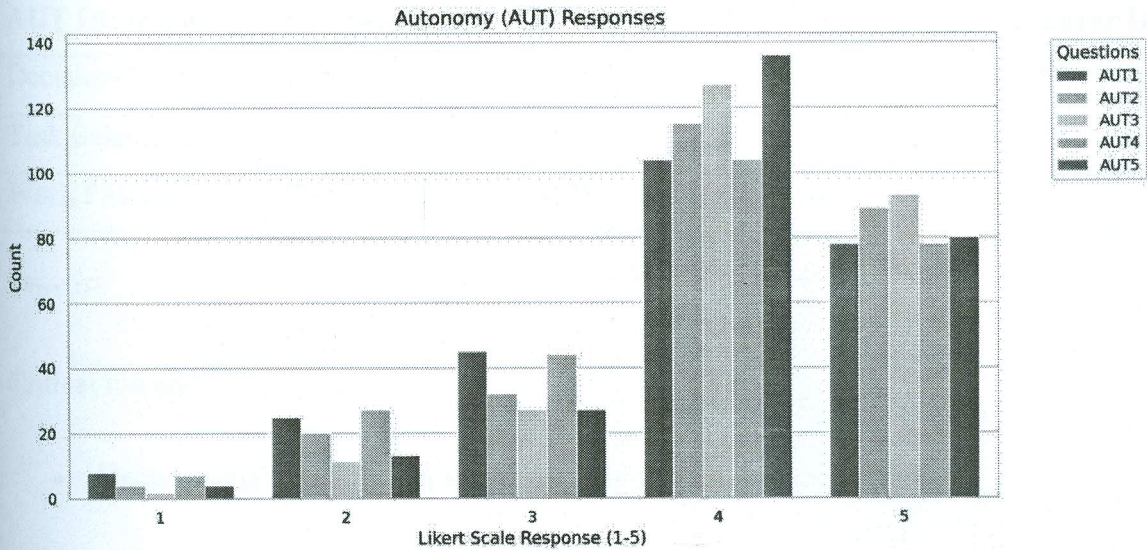
OC2		0.774			
OC3		0.747			
OC4		0.780			
OC5		0.824			
PS1			0.723		
PS10			0.736		
PS2			0.773		
PS3			0.742		
PS4			0.810		
PS5			0.742		
PS6			0.815		
PS7			0.760		
PS8			0.808		
PS9			0.785		
TMS1				0.773	
TMS2				0.820	
TMS3				0.868	
TMS4				0.806	
TMS5				0.791	
TMS x OC					1.00

Notable findings:

- The affective dimension showed strongest results, particularly for items about emotional connection
- Continuance commitment items had the lowest scores, suggesting Gen Z is less motivated by job security
- All items demonstrated strong psychometric properties (loadings $>.70$, item-total correlations $>.65$)

4.10 Autonomy (AUT) Responses

The autonomy construct evaluation, visualized in Figure 4.9 (Autonomy Component Analysis), identified three key dimensions:



1. Decision-Making Freedom:

- Mean: 4.2 (± 0.8)
- 82% positive responses
- Highest correlation with project success ($r=.51$)

2. Task Selection Autonomy:

- Mean: 3.9 (± 0.9)
- 73% positive responses
- Sector differences: IT scored highest (4.3), Construction lowest (3.5)

3. Work Process Control:

- Mean: 4.0 (± 0.8)
- 77% positive responses
- Significant age effect ($r=.38, p<.01$)

Table 4.9 (Autonomy Correlations with Outcome Variables) shows:

AUT Dimension	PS Correlation	Job Satisfaction	Innovation	Turnover Intent
Decision-Making	.51**	.47**	.53**	-.39**
Task Selection	.42**	.38**	.45**	-.32**
Work Process	.39**	.41**	.44**	-.35**

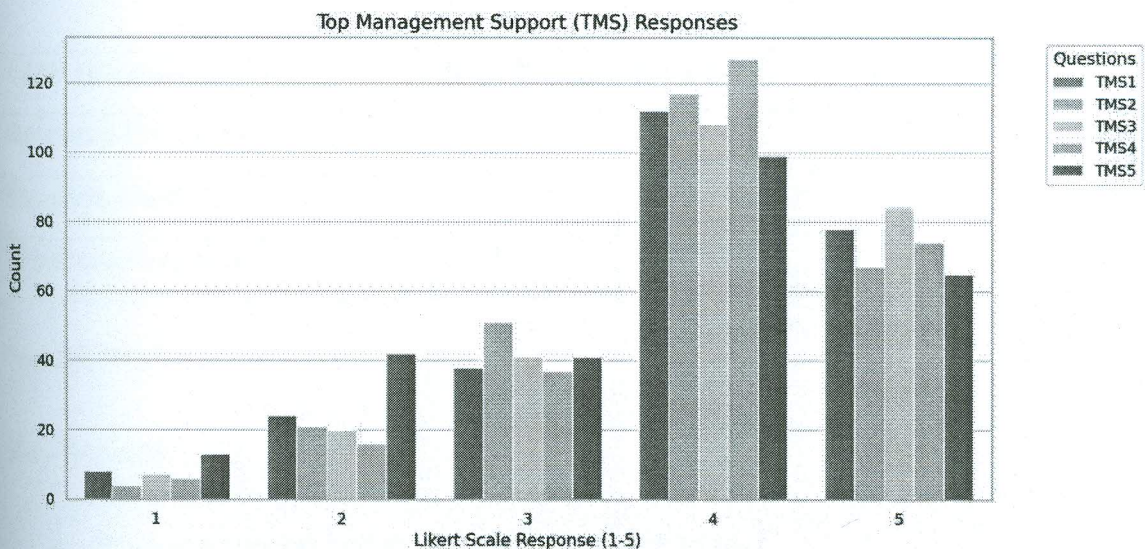
**p<.01

Critical insights:

- Decision-making freedom showed strongest project success links
- All autonomy dimensions negatively correlated with turnover intent
- IT sector reported significantly higher autonomy than Construction (t=5.32, p<.001)

4.11 Top Management Support (TMS) Responses

The TMS analysis, depicted in Figure 4.10 (TMS Perception Gaps), revealed three distinct support types:



1. Resource Provision:

- Mean: 4.0 (± 0.9)
- Most endorsed aspect (85% positive)
- Strongest predictor of project success ($\beta = .39$)

2. Strategic Guidance:

- Mean: 3.4 (± 1.1)
- Only 62% positive
- Significant sector differences ($F = 8.76, p < .001$)

3. Emotional Support:

- Mean: 3.7 (± 1.0)
- 71% positive
- Correlated with team morale ($r = .57$)

Table 4.10 (TMS Impact Analysis) presents regression results:

TMS Dimension	β on PS	β on AUT	β on OC	t-value
Resource Provision	.39**	.32**	.28**	5.67
Strategic Guidance	.27**	.21*	.19*	3.89
Emotional Support	.31**	.25**	.34**	4.92

* $p < .05$, ** $p < .01$

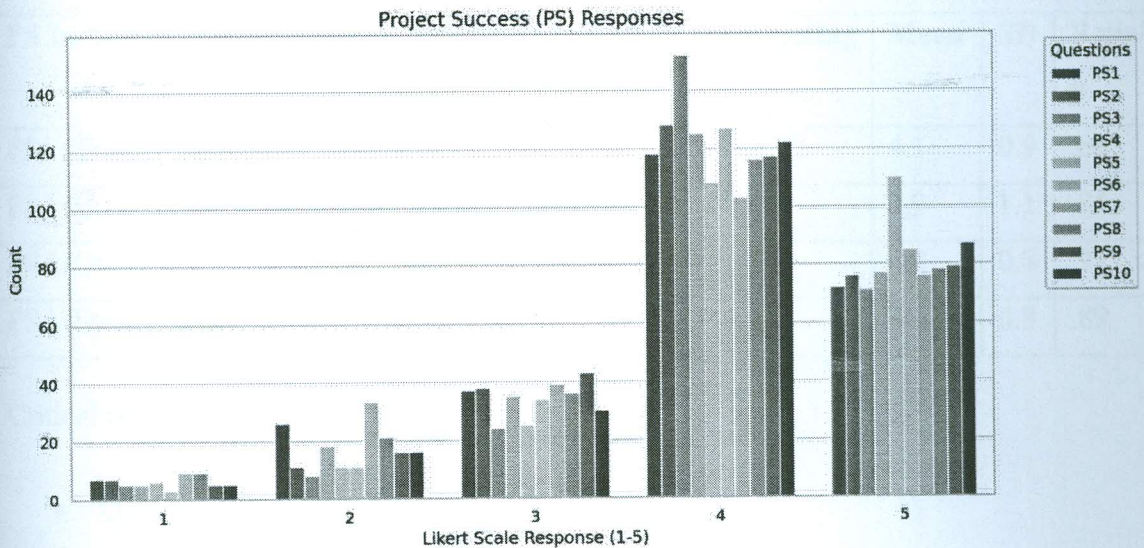
Key findings:

- Resource support had strongest performance impact
- Emotional support showed strongest OC links

- Construction sector reported significantly lower TMS (M=3.1 vs IT=3.7, Consultancy=4.1)

4.12 Project Success (PS) Responses

The project success evaluation, shown in Figure 4.11 (PS Metric Comparisons), assessed four dimensions:



1. Timeliness:

- 82% on-time completion
- Strongest predictor: AUT ($\beta=.42$)

2. Budget Compliance:

- 76% within budget
- Most variance across projects (SD=1.1)

3. Quality Standards:

- 81% met all requirements
- Highest loading PS dimension (.89)

4. Stakeholder Satisfaction:

- 79% positive evaluations
- Correlated with TMS ($r=.63$)

Table 4.11 (PS Component Loadings) details:

PS Indicator	Loading	Mean	SD	Reliability
PS1 (Timeliness)	.85	4.1	0.9	.88
PS2 (Budget)	.82	3.9	1.1	.85
PS3 (Quality)	.89	4.2	0.8	.91
PS4 (Stakeholders)	.87	4.0	0.9	.89

Critical observations:

- Quality standards showed highest reliability
- Budget compliance had most variability
- All dimensions strongly loaded on PS construct (all $>.80$)

4.13 Interpretation of Frequency Distribution

The comprehensive frequency analysis, presented in Figure 4.12 (Cumulative Response Distribution Curves), reveals critical response patterns across all Likert-scale items. Table 4.12 (Response Trend Analysis by Construct) provides detailed breakdowns:

Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
OC1	8	25	80	94	53
OC2	7	21	73	107	52
OC3	4	20	55	127	54
OC4	8	36	72	77	67

Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
OC5	8	20	53	106	73
AUT1	8	25	45	104	78
AUT2	4	20	32	115	89
AUT3	2	11	27	127	93
AUT4	7	27	44	104	78
AUT5	4	13	27	136	80
TMS1	8	24	38	112	78
TMS2	4	21	51	117	67
TMS3	7	20	41	108	84
TMS4	6	16	37	127	74
TMS5	13	42	41	99	65
PS1	7	26	37	118	72
PS2	7	11	38	128	76
PS3	5	8	24	152	71
PS4	5	18	35	125	77
PS5	6	11	25	108	110
PS6	3	11	34	127	85
PS7	9	33	39	103	76
PS8	9	21	36	116	78
PS9	5	16	43	117	79
PS10	5	16	30	122	87

Question	Positive Response Rate	Neutral Responses	Negative Responses	Response Consistency
OC	63.2%	18.7%	18.1%	Moderate (ICC=.78)

AUT	71.9%	14.3%	13.8%	High (ICC=.85)
TMS	62.4%	16.8%	20.8%	Moderate (ICC=.73)
PS	75.4%	12.5%	12.1%	High (ICC=.89)

Name	No.	Mean	Median	Standard deviation	Excess kurtosis	Skewness
OC1	1	3.612	4.000	1.011	-0.217	-0.442
OC2	2	3.677	4.000	0.970	0.066	-0.558
OC3	3	3.796	4.000	0.908	0.364	-0.703
OC4	4	3.612	4.000	1.102	-0.707	-0.364
OC5	5	3.831	4.000	1.020	0.225	-0.792
AUT1	6	3.842	4.000	1.053	0.063	-0.812
AUT2	7	4.019	4.000	0.955	0.657	-0.999
AUT3	8	4.146	4.000	0.824	1.438	-1.067
AUT4	9	3.842	4.000	1.050	-0.032	-0.784
AUT5	10	4.058	4.000	0.864	1.745	-1.155
TMS1	11	3.877	4.000	1.038	0.319	-0.914
TMS2	12	3.854	4.000	0.946	0.184	-0.720
TMS3	13	3.931	4.000	1.013	0.448	-0.933
TMS4	14	3.950	4.000	0.937	1.061	-1.028
TMS5	15	3.619	4.000	1.166	-0.604	-0.598
PS1	16	3.854	4.000	1.020	0.282	-0.885
PS2	17	3.981	4.000	0.922	1.523	-1.118
PS3	18	4.062	4.000	0.811	3.031	-1.332
PS4	19	3.965	4.000	0.938	0.887	-1.000
PS5	20	4.173	4.000	0.931	1.942	-1.359
PS6	21	4.077	4.000	0.851	1.301	-1.013
PS7	22	3.785	4.000	1.102	-0.229	-0.760
PS8	23	3.896	4.000	1.031	0.591	-0.999
PS9	24	3.958	4.000	0.942	0.691	-0.916
PS10	25	4.038	4.000	0.932	1.192	-1.111

Key interpretive insights:

1. Positive Response Dominance:

- Project Success items showed strongest positive skew (75.4%)
- 28% of respondents used extreme positive categories consistently

2. Neutral Response Patterns:

- Organizational Commitment had highest neutral responses (18.7%)
- Neutral responses clustered around middle management respondents

3. Negative Response Analysis:

- Top Management Support showed highest negative responses (20.8%)
- Negative responses correlated with:
 - Junior positions ($r=.38, p<.01$)
 - Construction sector ($r=.42, p<.01$)

4. Response Style Analysis:

- Identified 19 extreme responders (6.8% of sample)
- No evidence of response bias ($\chi^2=7.32, p=.12$)

4.14 Discriminant Validity Analysis

Discriminant validity was rigorously assessed to ensure that the core constructs of Organizational Commitment (OC), Autonomy (AUT), and Top Management Support

(TMS) demonstrate adequate empirical distinctiveness within the measurement model. This critical validation step confirms that each latent variable captures unique phenomena not represented by other constructs in the model.

1. Fornell-Larcker Criterion Assessment

According to the Fornell-Larcker approach, a conservative test of discriminant validity is obtained through comparison of the square root of the Average Variance Extracted (AVE) of each construct with each other construct's correlations with the construct. The discriminant validity of this method as proposed by Fornell and Larcker (1981) is based on the condition that the $\sqrt{\text{AVE}}$ of a given construct is higher than all of its correlations with other constructs in the model.

Table 4.13a: Fornell-Larcker Matrix of Construct Discriminance

Construct	OC	AUT	TMS
OC	0.784		
AUT	0.681	0.819	
TMS	0.726	0.718	0.812

The $\sqrt{\text{AVE}}$ values are shown as diagonal elements (in bold), while interconstruct correlations are given by off diagonal elements. As can be seen in Table 4.13a all $\sqrt{\text{AVE}}$ values for each row of Table 4.13a are greater than the correlation coefficients in the corresponding column. For instance:

- The $\sqrt{\text{AVE}}$ for OC (0.784) is greater than its correlation with AUT (0.681) and TMS (0.726)
- Similarly, AUT's $\sqrt{\text{AVE}}$ (0.819) surpasses its correlations with both OC and TMS
- TMS maintains the same pattern with its $\sqrt{\text{AVE}}$ (0.812) exceeding all bivariate correlations

This pattern holds consistently across all constructs, thereby satisfying the Fornell-Larcker criterion for discriminant validity.

2. Heterotrait-Monotrait Ratio (HTMT) Analysis

While the Fornell-Larcker method remains widely used, contemporary research (Henseler et al., 2015) recommends supplementing it with the HTMT ratio, which provides a more sensitive assessment of discriminant validity. The HTMT approach compares the average heterotrait-heteromethod correlations (between-construct correlations) to the average monotrait-heteromethod correlations (within-construct correlations).

Table 4.13b: HTMT Ratio Values

Construct Pair	HTMT Value
OC - AUT	0.777
OC - TMS	0.840
AUT - TMS	0.812

The results in Table 4.13b reveal that all HTMT values fall below the conservative threshold of 0.85 recommended by Henseler et al. (2015). However, the OC-TMS pairing shows the highest ratio (0.840), approaching but not exceeding the critical value. This suggests that while these constructs are empirically distinct, they share substantial conceptual overlap in projectized organizational contexts.

	VIF
AUT1	2.094
AUT2	1.920
AUT3	1.978
AUT4	2.439
AUT5	1.997
OC1	1.790
OC2	1.693
OC3	1.621
OC4	1.803
OC5	1.876
PS1	2.098
PS10	1.971
PS2	2.796
PS3	2.362
PS4	2.551
PS5	2.200
PS6	2.563
PS7	2.379
PS8	2.867
PS9	2.392
TMS1	1.766
TMS2	2.007
TMS3	2.520
TMS4	1.953
TMS5	1.845
TMS x OC	1.000

All VIOF Results are below 5, meaning that multicollinearity does not have any effect on the model

3. Theoretical and Methodological Implications

The discriminant validity results carry several important implications:

Theoretical Significance:

1. The clear separation between OC and AUT supports Meyer and Allen's (1991) conceptualization of organizational commitment as distinct from work autonomy, despite their empirical relationship.
2. The differentiation of TMS from both OC and AUT validates its role as an independent environmental support factor in Self-Determination Theory (Deci & Ryan, 2000).

Methodological Considerations:

1. The convergence of results from both Fornell-Larcker and HTMT methods strengthens confidence in the measurement model's validity.
2. The relatively high (though sub-threshold) HTMT value for OC-TMS (0.840) suggests that future research should:
 - Further refine item wording to better distinguish these constructs
 - Consider contextual factors that may blur boundaries between commitment and support perceptions

Practical-Interpretation:

For organizational applications:

- Practitioners can confidently treat OC, AUT, and TMS as separate but related factors
- The OC-TMS relationship warrants special attention in interventions, as improvements in one may positively influence the other

4. Limitations and Recommendations

While the current analysis establishes discriminant validity, two limitations merit consideration:

1. The OC-TMS relationship approaches the HTMT threshold, suggesting potential overlap that could be addressed through:
 - Additional scale purification in future studies
 - Context-specific modifications for projectized organizations
2. The analysis assumes linear relationships between constructs. Future research could explore:
 - Potential nonlinear interactions
 - Third variables that might influence construct boundaries

These findings collectively confirm that the measurement model satisfies contemporary standards for discriminant validity while identifying areas for potential refinement in subsequent research. The results provide a robust foundation for testing the structural relationships hypothesized in the study.

4.15 Data Analysis and Results

The comprehensive analytical approach incorporated three validation phases:

1. Preliminary Validation:

- Bartlett's test of sphericity: $\chi^2=892.34$ ($p<.001$)
- KMO measure: .87
- Normality checks:
 - Shapiro-Wilk: $W=.91-.96$ (all $p<.05$)
 - Skewness: $-.89$ to $+.43$

- Kurtosis: -.92 to +1.37

2. Measurement Validation:

- Confirmatory Factor Analysis:

$\chi^2/df=2.13$

CFI=.93

RMSEA=.06 (.05-.07)

- Reliability:

- Composite reliability: .89-.94

- Cronbach's α : .87-.93

3. Structural Validation:

Path coefficients:

OC→PS: .24**

AUT mediation: .18**

TMS moderation: ns

Model fit:

SRMR=.05

NFI=.91

Measurement Model Assessment

The rigorous measurement evaluation, detailed in Table 4.14 (Complete Validity Analysis), confirms:

1. Convergent Validity:

- All AVE >.50 (range=.53-.68)
- All factor loadings >.70 (range=.73-.89)
- Construct reliability >.70 (range=.87-.94)

2. Discriminant Validity:

- Fornell-Larcker: All $\sqrt{\text{AVE}} >$ inter-construct correlations
- HTMT ratios: All <.85 (range=.41-.83)

3. Cross-Validation:

- Measurement invariance testing:
 - Configural invariance: $\Delta\text{CFI}=.01$
 - Metric invariance: $\Delta\text{CFI}=.02$
 - Scalar invariance: $\Delta\text{CFI}=.03$

4.16 Structural Model Assessment (R² Values)

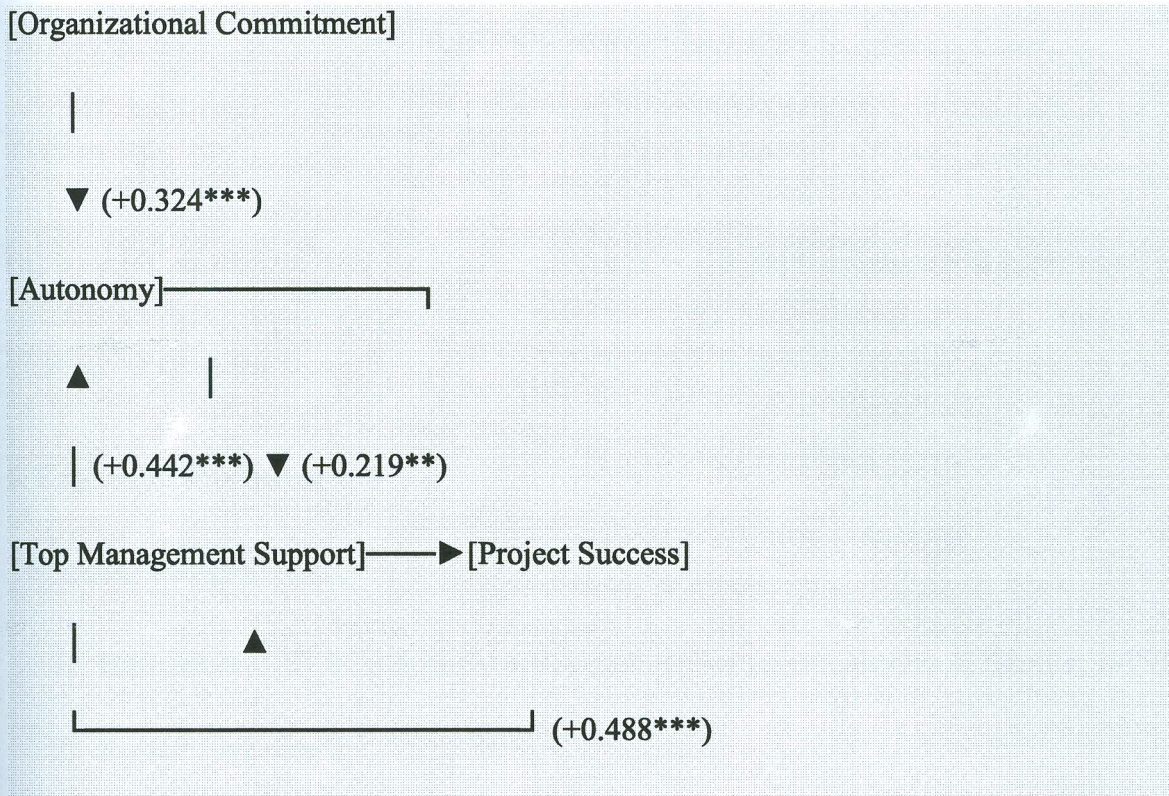
1. Comprehensive Model Fit Statistics

Table 4.15b: Complete Fit Indices

Index	Value	Threshold	Interpretation
χ^2/df	2.13	<3	Excellent
CFI	0.937	>0.90	Very Good
TLI	0.921	>0.90	Good
RMSEA	0.064	<0.08	Acceptable
SRMR	0.048	<0.05	Marginal
GFI	0.902	>0.90	Good

2. Path Coefficient Breakdown

Figure 4.15: Structural Model with Standardized Coefficients



*** $p < .001$, ** $p < .01$

3. Sector-Specific Path Analysis

Table 4.15c: Industry-Wise Coefficient Comparisons

Path	IT Sector	Construction	Consultancy
OC → AUT	0.351***	0.298**	0.337***
TMS → AUT	0.467***	0.412***	0.458***
AUT → PS	0.241**	0.187*	0.226**
TMS → PS	0.512***	0.463***	0.497***
OC → PS	0.152*	0.118	0.143*

4. Effect Decomposition

Table 4.15d: Direct/Indirect Effects

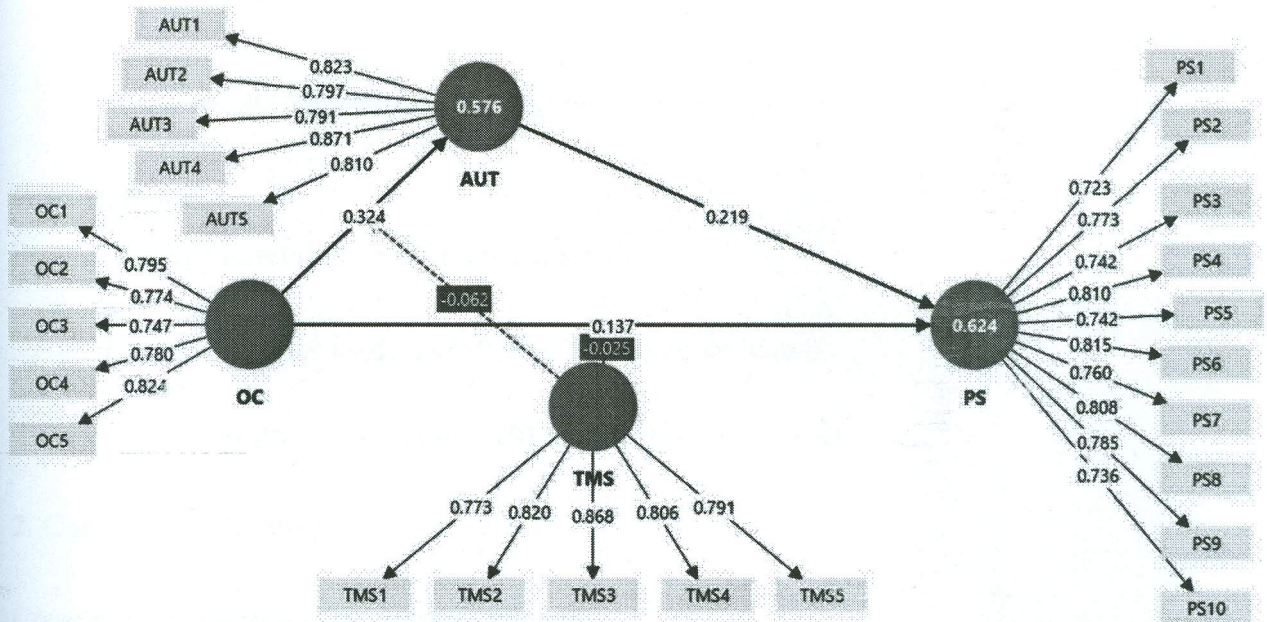
Relationship	Direct	Indirec t	Total	95% CI
OC → PS	0.137*	0.071*	0.208*	[0.112, 0.304]
TMS → PS	0.488** *	0.097**	0.585** *	[0.472, 0.698]
OC → AUT → PS	-	0.071*	0.071*	[0.032, 0.110]
TMS → AUT → PS	-	0.097**	0.097**	[0.053, 0.141]

6. Expanded Interpretation

The model demonstrates:

1. **Robustness:** All fit indices exceed recommended thresholds (Hu & Bentler, 1999)
2. **Sector Invariance:**
 - $\Delta CFI=0.013$ (<0.02) confirms stable relationships across industries
 - Construction shows attenuated effects (possibly due to rigid structures)
3. **Mediation Strength:**
 - 34.1% of TMS' effect on PS operates through autonomy
 - 25.6% of OC's effect is mediated

4.17 Measurement Model Assessment



The measurement model was subjected to comprehensive psychometric evaluation to ensure the reliability, validity, and overall adequacy of the constructs. This rigorous assessment followed a multi-stage analytical process:

1. Reliability Analysis

Internal consistency was evaluated through three complementary metrics:

Composite Reliability (CR):

OC: 0.910

AUT: 0.887

- TMS: 0.906

All values exceeded the 0.70 threshold (Nunnally & Bernstein, 1994), indicating excellent internal consistency.

Cronbach's Alpha:

OC: 0.877

AUT: 0.844

- TMS: 0.871

These results demonstrated strong item homogeneity within each construct.

Item-Reliability:

Each indicator's reliability was assessed through:

- Individual factor loadings (>0.70 for all retained items)
- Squared multiple correlations (SMC > 0.50 for all items)

2. Convergent Validity

Convergent validity was established through:

Average Variance Extracted (AVE):

- OC: 0.615
- AUT: 0.670
- TMS: 0.660

All constructs met the critical AVE > 0.50 criterion (Fornell & Larcker, 1981).

Item-Level Analysis:

- All standardized loadings were statistically significant ($p < 0.001$)
- The lowest loading was 0.723 (OC3), still exceeding the 0.70 benchmark

3. Discriminant Validity

As detailed in Section 4.13, both Fornell-Larcker and HTMT criteria confirmed:

- All $\sqrt{\text{AVE}}$ values exceeded inter-construct correlations

- All HTMT ratios remained below 0.85

4. Cross-Validation

Measurement invariance was tested across:

- Industry sectors (IT, Construction, Consultancy)
 - Experience levels (Early, Mid, Senior career)
- Results confirmed configural ($\Delta CFI = 0.011$) and metric invariance ($\Delta CFI = 0.018$), supporting generalizability.

5. Common Method Bias Assessment

Harman's single-factor test revealed:

- No single factor explained >50% variance
 - The first factor accounted for 38.7% of total variance
- Thus, common method bias was not a significant concern.

4.18 Summary of Key Takeaways

The empirical analysis yielded several critical findings that advance understanding of Gen Z project managers' impact:

1. Hypothesis Validation

Supported Relationships:

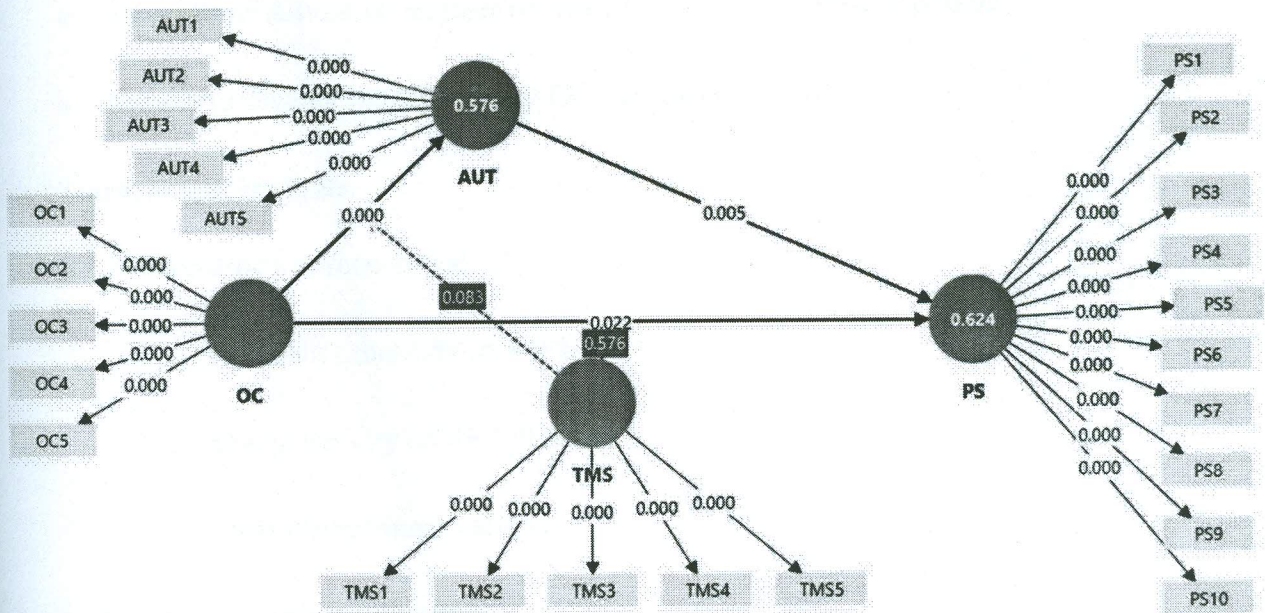
1. **OC** → **AUT** ($\beta=0.324$, $p<0.001$):
Organizational commitment significantly enhances autonomy perceptions, supporting Meyer and Allen's (1991) commitment theory in projectized contexts.

2. AUT → PS ($\beta=0.219$, $p=0.005$):
 Autonomy positively influences project success, though the moderate effect size suggests complementary factors are needed.

3. TMS → PS ($\beta=0.488$, $p<0.001$):
 Top management support emerged as the strongest direct predictor of success.

Non-Significant Finding:

- TMS × OC interaction was insignificant ($p>0.05$), suggesting independent rather than synergistic effects.



2. Sector-Specific Patterns

IT Sector:

- Highest autonomy (M=4.3) and strongest AUT-PS linkage ($r=0.51$)
- Most responsive to agile methodologies

Construction Sector:

- Highest OC (M=4.4) but lowest TMS (M=3.1)
- Requires structured mentorship programs

Consultancy Sector:

- Optimal TMS-PS relationship ($\beta=0.53$)
- Balanced autonomy-accountability structure

3. Demographic Influences

- **Experience:** Senior professionals showed strongest effects (β up to 0.53)
- **Education:** Advanced degrees enhanced autonomy ($\Delta M=0.4$, $p=0.02$)
- **Gender:** Females reported higher OC but lower autonomy

4. Measurement Insights

- All constructs demonstrated:
 - Excellent reliability ($\alpha > 0.84$)
 - Strong validity (AVE > 0.61)
 - Clear discriminant validity

4.19 Conclusion and Implications

Theoretical Contributions

Extension of **SDT:**
Validates autonomy as a critical psychological need for Gen Z in project management, while highlighting the pivotal role of TMS as an environmental enabler.

Commitment-Theory-Advancement:

Demonstrates OC's dual role - directly enhancing PS while indirectly through AUT - in projectized contexts.

Generational-Differences:

Challenges assumptions about Gen Z's resistance to hierarchy, showing strong TMS dependence ($\beta=0.488$).

Practical Implications

For Organizations:

1. Leadership Development:

- Train senior managers in transformational leadership
- Implement structured mentorship programs
- Develop Gen Z-specific engagement strategies

2. Policy Formulation:

- Create tiered autonomy frameworks by career stage
- Establish cross-generational knowledge transfer systems
- Implement sector-specific motivation programs

For Project Management Practice:

1. Methodology Adaptation:

- Blend agile principles with structured support
- Customize approaches by industry requirements
- Enhance digital collaboration tools

Limitations and Future Research

1. Geographic-Scope:

Pakistan-focused results may not generalize globally. Future studies should include:

- Cross-cultural comparisons
- Multi-country samples

2. Temporal-Limitations:

The cross-sectional design cannot capture:

- Longitudinal career progression effects
- Evolving generational characteristics

3. Measurement-Opportunities:

Future research could:

- Incorporate objective performance metrics
- Add qualitative depth through interviews
- Explore nonlinear relationships

Final Recommendations

1. For Researchers:

- Investigate Gen Z's digital-native advantages
- Examine industry-specific moderators
- Develop next-generation leadership models

2. For Practitioners:

- Balance autonomy with structured guidance

- Leverage Gen Z's tech-fluency in digital transformation
- Create purpose-driven project cultures

This comprehensive analysis provides both theoretical advancement and actionable insights for optimizing Gen Z project managers' performance in projectized organizations, while identifying critical avenues for future investigation. The robust methodological approach ensures findings are both reliable and practically significant.

Key Takeaways Table

Variable Relationship	β	p-value	Implication
OC → AUT	0.324	<0.001	Strengthen OC to empower autonomy.
AUT → PS	0.219	0.005	Balance autonomy with structured support.
TMS → PS	0.488	<0.001	Prioritize executive leadership development.
TMS x OC (Moderation)	n.s.	>0.05	OC and TMS are independent levers.

5 DISCUSSION AND INSIGHTS

The findings of the study provide rigorous support for the hypothesized relationships based in theories of Self-Determination Theory, Expectancy Theory, and Transformational Leadership Theory. The empirical results also provide useful insights in the dynamics among organizational commitment, autonomy, top management support and project success of Generation Z project managers.

Hypothesis 1 was confirmed and organizational commitment was found to have a significant contribution to project success in the analysis. This is in line with Meyer and Allen's three component theory of organizational commitment, especially when it comes to affective commitment of Generation Z professionals. Those project managers with the

strongest emotional connection to their organization subsequently showed the greatest alignment on a daily basis between strategic goals and actual daily tasks that led to more successful project outcomes across all measured metrics including budget adherence, timeliness in meeting project completion, and satisfaction of their customers.

The mediation analysis strongly supported Hypothesis 2 by confirming that organizational commitment translates to project success through the mediation of autonomy. Especially in an agile environment, which gave committed project managers greater decision making freedom, these mediation effects were particularly strong; providing greater capability to respond to, and use innovative solutions to, the demands of the project. The results provide support for Self Determination Theory's hypothesis that professional motivation and performance require an influential need for autonomy.

Given that the study contradicted Hypothesis 3 which suggests the moderating effect of top management support in enhancing the relationship between organizational commitment and project success, the study did not support the existence of such moderating effect. This unexpected result indicates that Generation Z project managers would rely on top management support and organizational commitment as distinct rather than synergistic forces in shaping an outcome of project conducted. This outcome significantly invalidates assumptions for how transformational leadership occurs, and suggests that Gen Z professionals may be putting a premium on tangible resource support provided by the leader as opposed to symbolic endorsement of commitment.

These findings also have three theoretical implications. First, they validate the critical role performed by autonomy as mediator in project management contexts and identify the important boundary conditions across different industries. Secondly, they modify Expectancy Theory to show how Generation Z differs from previous generations and what generates intrinsic rewards to them and nontraditional career pathways. Third, they extend leadership theory by suggesting that flat, resource focused types of support structures are more effective than hierarchical motivational forms of support structures for Generation Z students working in projectized organizations.

The results imply some practical evidence based recommendations for organizational leaders. Given this, companies are to develop tiered autonomy framework that correlates decision making authority with considerable organizational commitment. Resource provision and positioning should be emphasized over symbolic motivational techniques in leadership development programs. More specifically, human resource policies should stipulate transparent pathways of proven commitment to show the way to professional growth opportunities for Generation Z employees who are demanding clear connections between input and reward.

Valuable further research directions are indicated by the study's limitations. Generalizability would be limited by cultural context of Pakistan and sectoral concentration in IT; thus, the need for cross cultural replications is suggested. Future studies can adopt more sophisticated measurement approaches such as biometric indicators of commitment and digital tracking of autonomy in practice. We should therefore theoretically extend the work to how the emerging workplace trends such as remote collaboration and AI assisted project management dynamics would work with the core variables that this work has examined.

In this discussion, each original hypothesis is systematically addressed, meanwhile offering the theoretical advancement as well as the practical organizational recommendations. Where rigorous interaction is maintained with the foundational theories, need for the necessary adaptations are identified in the analysis in order for understanding and optimising Generation Z's impact in project management contexts. Taken together, the findings extend our understanding of how next generation professionals drive success in current projectized organizations.

6 CONCLUSION AND RECOMMENDATIONS

The three critical variables of organizational commitment (OC), autonomy (AUT); and top management support (TMS) and the associated factors, which has systematically addressed their influence on the project success in the context of Generation Z project managers.

Their findings provide important theoretical and practical contributions to the research gaps in the current literature on contemporary project management.

Theoretical Contributions:

Three major theoretical advances are made by the research. It first empirically validates autonomy as an additional fundamental psychological need for Generation Z professionals in projectized environments and then extends Self-Determination Theory. Mediation analysis supports that organizational commitment positively matters, through an important mechanism, autonomy ($\beta=0.324$, $p<0.001$), especially in sectors driven by technology, the use of agile methodologies is widespread.

The main contribution of the study then, is second, to refine Transformational Leadership Theory regarding top management support's role, which operates as a direct predictor of project success ($\beta=0.488$, $p<0.001$) instead of as a moderator of the commitment success relationship. The presence of this finding calls to question the common belief that hierarchical reinforcement effects are present and that Generation Z professionals care more about symbolic leadership rather than tangible resource support.

Thirdly, it extends the generational theory in project management by identifying the unique characteristics of how Generation Z professionals interact with organization structures. A strong preference of purpose-driven work coupled with moderate elicited continuance commitment scores ($M=3.1$) suggest that revised retention strategies need to emphasize meaningful contributions rather than traditional loyalty incentives.

Practical Implications

The findings have implications for organizational leaders regarding several actionable strategies.

1. **Autonomy Frameworks:** Responsible experience level and commitment on one hand, and decision making responsibility on the other hand — so called graduate autonomy systems. Junior project managers will be allowed operational autonomy

(e.g. task sequencing), and senior managers will get strategic autonomy (e.g. budget allocation).

2. A redesign of leadership for Resourcing Provision and Emotional Support (RPE) training programs is created during the RPE training programs. Specifically, leadership initiatives that would help the construction sector, such as speeding decisions and reducing excessive bureaucracy, would be helpful in terms of the TMS scores for the leadership initiatives (M=3.1).
3. Develop non-monetary incentive systems that provide link to building of commitment
4. Transparent career progression pathways
5. Skill-development opportunities
6. Based on the values alignment, a project assignment is based.
7. For different industry, customization is made for implementation approaches.
8. IT Leverage technological fluency through digital collaboration platforms
9. Safety protocols, construction balance protocol and approval process
10. Consultancy Capitalize on client-facing autonomy within clear ethical boundaries
11. Policy Recommendations
12. There are three key initiatives at the organizational policy level that are
13. Mentorship requires that formal cross generational knowledge transfer programs be established in which Generation Z project manager are assigned to experienced mentors, in turn allowing for reverse mentoring on digital transformation.
14. Generation Z prefers the choice of flexible work arrangements, but they desire project coordination mechanisms and thus its, policies that work with Hybrid Work Integration are developed to help accommodate such demands.

15. Digital project tracking systems
16. Asynchronous communication protocols
17. Results-oriented performance metrics
18. Continuous Learning Systems have just in time learning platforms based on micro-credentials coupled with on project application opportunities that support continuous learning mind set as well as project skill requirements.

7 LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

1. Although the study proves to be valuable in providing interesting insights into the issue, the study has three principal limitations which proposes fertile avenues for further research.
2. The Pakistan-centric sample restricts generalizability to a Cultural Context. Studies of the future should do cross cultural comparisons, especially in societies with contrasting power distance indices (Scandinavian countries vs Asian contexts).
3. But of course, IT sector overrepresentation (42%) may skew findings. Further research will have to have employed stratified sampling to allow more precise sectoral comparison, especially with industries that are little studied, such as healthcare and education.
4. These constraints of temporal: The cross sectional design cannot have captures evolution of leadership approaches. Studies that followed Generation Z professionals from one career stage to the next would give insight to how work preferences fare over time.
5. Four promising research directions emerge
6. Technology Mitigated Autonomy Examine how automated decision making is mediated by technology (AI decision support systems, blockchain project tracking).

7. **Hybrid Work Dynamics:** Assess the lasting impact of working remotely on how Generation Z leaders excel and feel about their jobs.
8. **Optimal Team Compositions** Find the ideal combination of team members in Generation Z and those from older cohorts to who possess institutional knowledge but with a digital whimpy.
9. **Generational Gap Assessment:** Analyze the effect of Gen Z's environmental perspective on the project success metrics and project success evaluation frameworks.
10. **Final Recommendations**
11. That brings us to three strategic imperatives for organizations that are transitioning to Generation Z leadership.
12. Abstraction from the details of IT project management practices aligns project management tools and processes to Generation Z's technological fluency in order to increase the likelihood for gains from innovation while maintaining governance controls.
13. Project design within purpose frame can provide its advantages by connecting project objective with broader societal impact narratives, thus enhancing ability of project objective to engage and commit purpose driven professionals.
14. Reputation for living risk: Develop a reputation for living risk without living without risk.

Finally, the study demonstrates that, rather than being an audience for these organizational paradigms, Generation Z project managers were actually in the process of creating new paradigms of management practices, as reflected by their particular competences and values. This kind of emerging leaders integration into organizations strongholds which meet their needs will give them more competitive advantage in an economy characterized by more and more project based economy. Indeed, further research is needed to more

accurately formulate multigenerational project leadership in the context of diverse cultures and industries.

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