

Impact of Role Conflict on the Creativity of Software Project Managers in Nepal: Does Area of Specialization Influence their Creativity?

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Abstract

Recognizing role conflict as a multidimensional construct, this study investigates to what extent different dimensions of role conflict impacts creativity of project managers in the context of software development firms in Nepal. A cross-sectional survey research design has been used in this study to assess the relationships between intra-sender, inter-role, intra-role, and cross-functional role conflicts, and the creativity of software project managers. The results of this study show intra-sender conflict has a detrimental effect on creativity of software project managers, whereas cross-functional role conflict has a favorable and significant impact. This study also finds that that area of specialization of project manager doesn't influence how these managers evaluate their levels of creative. Based on findings this study recommends software development companies to enhance positive team culture and facilitate environment of open dialogue allows the project managers to transform their experiences of role conflict into creativity.

Keywords: role conflict, creativity, software industry, project managers

Introduction

Software project managers endure different manifestation of role conflicts due to inconsistent demands, incompatible responsibilities, and multiple expectations from multiple consumers, department directors, different domains of specializations, and team product development protocols applied in software development companies and start-ups (Palomino & Frezatti, 2016; Rovithis et al., 2017). Role conflict emerges among software project managers when there is a simultaneous occurrence of two or more role requirements for them to execute in a software development project (Fisher, 2001; Tang & Chang, 2010).

Moreover, as software companies in Kathmandu Valley use multiple development projects and multi-project management, the creativity of project managers is challenged by the delta specifications and artifacts that arise from each unique project (Ebert & Brinkkemper, 2014; Delisle, 2020). In software development companies and start-ups, software project managers need to modify, evolve, and innovate their software production with creativity and coordinate product development protocol with stakeholder expectations (Shastri et al., 2021). Hence, it is imperative that software project managers deal with various dimensions of role conflict and their

subsequent impact on their creativity levels when balancing product expectations of different project stakeholders in a competitive market (Palomino & Frezatti, 2016).

Additionally, the fast-paced nature of technology changes, require software project managers to adapt quickly with new tools, methodologies, and practices (Tarrant & Sabo, 2010). This constant evolution of work has resulted in uncertainty about roles and responsibilities among project managers as they need continual reassessment of their skills and knowledge. Hence, role conflict arises as new skills are required of a software project manager (Tarrant & Sabo, 2010; Palomino & Frezatti, 2016).

Regarding the effects of role conflict on the creativity among managerial-level employees, a study by Tang and Chang (2010) demonstrates that different manifestations of role conflict have a positive effect on creativity when organizations provide managers with structural opportunities to resolve their emerging role conflict experiences during assignments by channeling those conflicts into creativity. Hence, Tang and Chang (2010) argue that role conflict provides an opportunity for creative thinking to manifest among managerial-level employees, and the multiple dimensions of role conflict generate cognitive

variations in problem-solving through creativity. After all, software project managers need to think outside the box to reconcile with conflicting job demands and explore their creativity skills during the cycles of product development (Tang & Chang, 2010; Shastri et al., 2021). However, in their research, Liu and Gu (2024) indicate that various manifestations of role conflict negatively affect employee creativity.

Creativity is essential for software project managers because it drives innovation and effective problem-solving and enables software developers to approach problems from different angles and create innovative software designs and functionalities that enhance user experience and operational efficiency (Amabile, 2011). Here, Amabile's dynamic componential model of creativity identifies three key components that influence creativity: domain-relevant skills, creativity-relevant skills, and task motivation.

Moreover, the existing research that has examined the relationship between different manifestations and multiple constructs of role conflicts and employee creativity has indicated conflicting, contradictory, and even complex relationships between these variables without conclusive direction (Tang and Chang, 2010; Liu & Gu, 2024). Although existing literature has examined the effects of role conflict on the creativity of employees associated with different managerial roles in diverse professional contexts, there is no research that has examined the effect of different manifestations of role conflict on the creativity levels of software project managers in the context of the Nepalese software industry.

Acknowledging role conflict as a multidimensional construct, this study examines different manifestations of role conflict that either positively or negatively influence the creativity of software project managers in the context of software development companies and start-ups inside the Kathmandu Valley (Tang and Chang, 2010; Sarukesini & Edirisooriya, 2024). Hence, the main purpose of this study is to examine different dimensions of role conflict, such as intra-sender conflict, inter-role conflict, intra-role conflict, and cross-functional role conflict, and their impact on the creativity of software project managers (Donald & Donald, 2001; Mansour & Tremblay, 2016).

In the context of software development companies and start-ups, software project managers have to juggle multiple role expectations from senior managers, team leadership, and stakeholder/consumer communication; hence, understanding how different manifestations of role conflict affect creativity is crucial for software companies for sustaining the organizational culture for innovation and growth (Fisher, 2001; Amabile, 2011). More importantly, understanding the interaction and impact of multiple dimensions of role conflict on the creativity of their software project managers enables software development companies to develop organizational structures that support systems, open channels of communication, leadership, and team collaboration that enhance creativity among project managers necessary for maintaining competitive advantage (Delisle, 2020; Shastri et al., 2021).

Review of Literature

Theoretical review

Regarding theoretical reference, this study derives its foundations from Job Demands–Resources (JD-R) theory; this model explains how different factors associated with and emerging from organizational context impact employee well-being and performance. In the context of software development managers, this model is particularly useful for analyzing how their creativity is influenced by the interplay between job demands, available resources, and various dimensions of role conflict. The Job Demands-Resources (JD-R) theory provides a framework for understanding how role conflict affects the creativity of software project managers in Kathmandu Valley. When software project managers experience role conflict, this, in turn, depletes cognitive resources they need for creative thinking (Demerouti et al., 2001; Tummers & Bakkers, 2021).

Similarly, Amabile's Dynamic Componential Model provides theoretical reference for this study, as this model posits that creativity is influenced by three main components: domain-relevant skills, creativity-relevant processes, and intrinsic task motivation (Amabile, 2011). With reference to Teresa Amabile's dynamic componential model of creativity and innovation, in this study different manifestations of role conflict have been recognized as an organization behavior factor that either adversely or positively

affect employee creativity depending upon the working environment with necessary processes for creativity, skills and competencies of managers, and levels of employee motivation of employees (Amabile, 2011; Amabile & Pratt, 2016).

Amabile's Dynamic Componential Model further elaborates on this by identifying intrinsic motivation, domain-relevant skills, and creativity-relevant processes as essential components for enhancing the creativity of software project managers. As this model suggests, when role conflict is high, it diminishes intrinsic motivation however, if software project managers possess domain-relevant skills and receive supportive environment from the organization their creative thinking unleashes in software development despite role conflicts (Amabile & Pratt, 2016). Hence, both theories emphasis a complex interplay between different role conflict dimensions and creativity outcomes among software project managers.

Empirical review

When it comes to existing research that has examined and evaluated the relationship between role conflict and creativity Suryani et al. (2024), in their study, suggest that employees who are confused by conflicting outcome expectations try to overcome or reduce tension by abandoning creative initiatives. However, role conflicts that generate clashes between employees also have positive impact on employee creativity because they need to resolve these conflicts through creative problem-solving (Suryani et al., 2024). Likewise, in a study Taggar (2002) shows that teams that have difficulties in assigning tasks among team members due to role conflict indirectly distract individual employees and directly hinder the team's ability to perform creatively and solve problems.

According to Ebert and Brinkkemper (2014) software project managers at software companies and start-ups need to supervise the full product lifecycle, from conception to development to launch and beyond, making sure that every phase is in line with strategic objectives. Additionally, software project manager has to deal with the multiple obligations juggling in between highly technical activities, complex consumer expectations and dynamic business realities and these multi-level engagement and expectations gives rise to a variety of role conflicts among software development managers (Ebert & Brinkkemper, 2014).

Moreover, Shastri et al. (2021) indicate that software project managers perform five different activities facilitating, mentoring, negotiating, protecting, and coordinating on an everyday basis and engage with multiple responsibilities such as including team leadership, stakeholder communication, and technical oversight. In their study, Lenaghan and Sengupta (2007) indicate that when individuals engage in multiple roles, it creates positive affect, and a positive affect leads to cognitive variation that stimulates creativity and this argument from enrichment model suggested that opposing pressures from work and roles can enhance creativity levels of individual in an organization.

Besides, Petrou et al. (2019), based on multilevel analyses, indicate that role-based task conflict has an inverted U-shaped link with creativity when employees can't associate themselves with availability of structural job resources in an organization. However, when employees increase their social job resources, the link between task-based role conflict and creativity becomes linear and positive. In a study Petrou et al. (2019) indicate that increasing social job resources like collaboration and team interactions is positively related to employee creativity. Hence, based on Petrou et al. (2019), this study argues that job resources, such as social support from colleagues team members and supervisors significantly reduce role conflict and when employees have access to supportive relationships at work.

Furthermore, in their study, Montani et al. (2020) find that there is a linear and indirect relationship between task related role conflict and employee creativity, as well as to identify mindfulness as a boundary condition shaping the creativity-enhancing effects of role conflict. However, Liu and Gu, (2024) in their study find that results role conflict negatively affects employee creativity in the presence of share-leadership that generates Intra-sender conflict.

Moreover, Tang and Chang (2010) in their study indicate that higher levels of job demand trigger innovative responses and that various dimensions of role conflict influence individuals to become receptive to different viewpoints, be more flexible, and expand their source of information. Hence, Tang and Chang (2010) find a direct and positive link between role conflict and creativity. While significant discussions, debates, and contradictory research



findings are available on different industry contexts (Tang and Chang, 2010; Petrou et al., 2019; Li et al., 2019; Liu and Gu, 2024) there has been no specific research in the context of software project managers with reference to the software development industry.

More importantly, the contrasting findings of Tang and Chang (2010) and Liu and Gu (2024) suggest a specific research gap regarding the relationship between role conflict and employee creativity. Tang and Chang's (2010) study suggests that different manifestations of role conflict nurture creativity; however, Liu and Gu (2024) indicate that various forms of role conflict negatively affect employee creativity. This divergence in results indicates a need for further investigation into how different types of role conflict (intra-role, inter-role, intra-sender, and cross-functional role conflict) impact employee creativity in a professional context. Therefore, this study aims to examine what manifestations of role conflict encourage creativity and others that distract or have a detrimental effect on creativity in the context of software development and management companies and start-ups in the Kathmandu Valley.

Conceptual Framework and Hypothesis

In this study, a conceptual framework has been developed with references to previous studies that have examined the relationship between different dimensions/ manifestations of role conflict such as intra-sender conflict, inter-role conflict, intra-role conflict, and cross-functional role conflict and orientation towards creativity of software project managers. Hence, for conceptualizing the relationship between variables, operational definitions, and hypothesis development, this study has taken references from studies such as Donald and Donald, (2001), Lenagha and Sengupta (2007), Tang and Chang, (2010), Petrou et al. (2019), Montani et al. (2020) and Sarukesini and Edirisooriya (2024).

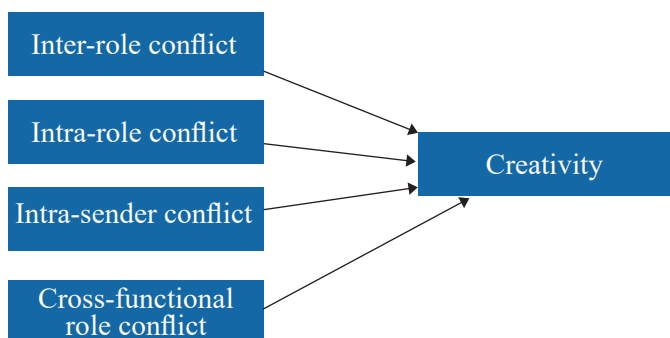


Figure 1: Conceptual framework

In this study (i) intra-sender conflict involves a situation when a software project manager receives conflicting messages or demands from senior executives, department heads, or stakeholders. This type of conflict arises when the sender has multiple priorities that are not well aligned or directed towards software development arrangements (Donald & Donald, 2001; Fisher, 2001).

Similarly, (ii) inter-role conflict arises when a software project manager's responsibilities clash with those of other roles they occupy within an organization, for example, when a software project manager is responsible for both quality assurance and managing the project timeline and budget (Mansour & Tremblay, 2016).

Moreover, (iii) intra-role conflict manifests when there are conflicting expectations within the same role of a software project manager and a software project manager has to assimilate with differing opinions of team members on how tasks need to be executed or when there are ambiguous guidelines regarding software development project deliverables (Rizzo et al., 1970; Mansour & Tremblay, 2016; Liu & Gu, 2024).

Furthermore, (iv) cross-functional role conflict arises when a software project manager interacts with various departments that have different objectives and priorities. Each department has its own set of goals that do not align with the software development team. Hence, there is conflict within the diverse competence team over resource allocation, timelines, and deliverable specifications (Tarrant & Sabo, 2010; Palomino & Frezatti, 2016; Montani et al., 2020).

For this study (v) creativity has been operationalized as the ability to produce novel and useful ideas or solutions within the context of software project management with an emphasis on both originality and practicality (Amabile & Pratt, 2016). With reference to the Amabile model, creativity in this study has been defined as the generation of novel/ appropriate/useful ideas. Hence, the creativity of a software project manager is a function of three components: first, the expertise of software project managers is applied in the domain of his/work, next creative thinking skills that determine how imaginatively and flexibly individuals approach

problems and finally, the intrinsic motivation as an inner passion, interest, and internal desire to resolve problems with creative solutions (Amabile, 2011).

In a study Teodoridis et al. (2019) argues that there are trade-offs associated with specialization for creative performance and this study has also analyzed and hypothesized whether the area of specialization among software project managers significantly influences their perception of creativity, as different domains require distinct skill sets, methodologies, and problem-solving approaches. For instance, a project manager specializing in agile software development prioritizes iterative processes considers creativity as the ability to adapt quickly and innovate within short cycles. Whereas, a software project manager focused on traditional waterfall methodologies perceives creativity as protocols for comprehensive planning and structured execution specialization influences to what extend project managers evaluate their creative (Shastri et al., 2021). Hence, this study assumes that area of specialization of project manager shapes how these managers evaluate their levels of creative.

Hypothesis (H1): *Inter-role conflict positively and significantly affects creativity of software project managers*

Hypothesis (H2): *Intra-role conflict positively and significantly affects creativity of software project managers*

Hypothesis (H3): *Intra-sender role conflict positively and significantly affects creativity of software project managers*

Hypothesis (H4): *Cross-functional role conflict positively and significantly affects creativity of software project managers*

Hypothesis (H5): *Area of specialization significantly generates variations on perception of creativity among software project managers*

Research Methods

In this study, quantitative research methods have been used for systematic investigations focused on quantifying relationships between different variables. In the context of studying the effects of different manifestations of role conflict on creativity among software project managers in Nepal. Besides,

cross-sectional survey design has been applied in this study to gather data with a given time frame from software project managers working in different software companies and startups in the Kathmandu Valley.

Data collection in this study involves dissemination of the online survey questionnaire through different digital platforms to selected participants across various software companies in Nepal. In addition to multiple-choice questions used for collecting demographic information of respondents, questionnaires contain research constructs and items associated with different manifestations of role conflicts, such as intra-sender conflict, inter-role conflict, intra-role conflict, and cross-functional role conflict, and creativity scales. During the data collection process, utmost anonymity and confidentiality have been ensured to encourage honest responses.

In this study, survey instruments related to different manifestations of role conflict have been developed in accordance with Rizzo et al. (1970) and Sarukesini and Edirisooriya (2024), together with Tang & Chang (2010), Petrou et al. (2019), and Donald and Donald (2001). For each different manifestation of role conflict as a subgroup of variable, three research items have been developed, modified, and applied in this study based on existing literature, specifically adopting the research context of the software development industry inside the Kathmandu Valley. Furthermore, as for the creativity variable, this study has adopted Amabile's (1988) creativity model as a reference for developing three research items representing this construct.

Here each research construct reflects three dimensions of the Amabile model as challenges associated with different dimensions and manifestations of role conflicts (Tang & Chang, 2010). More importantly, Cronbach's alpha for survey instruments is 0.794, indicating satisfactory levels of internal consistency reliability. The survey instrument utilized in this study is a Likert scale with a semantic range from 1 = strongly agree to 5 = strongly disagree, and the multiple-choice question has been used to elicit demographic information.

In this study, non-probability sampling technique has been used for intentionally selecting research participants based on specific characteristics,



knowledge, experiences, or criteria relevant for research study. With reference to eighty (80) software companies listed in Tech-Behemoths, a web-based tech magazine LinkedIn a professional networking platform has been used to identify potential respondents through the process of profile optimization.

During profiling educational backgrounds, technical competencies, responsibilities, and networking patterns among professionals were analyzed before selecting them as research participants. Here, this study utilizes advanced search options in LinkedIn to filter profiles based on location (Kathmandu Valley) industry (Information Technology), and job title (Software (Project Manager)). Hence, within purposive sampling method, expert sampling approach has been followed for studying specific group.

After locating specific number of research participants outreach message was crafted to reach out to potential respondents and the Google Forms questionnaire were sent to population 147 potential research participants in this study. However, only 90 of them participated in this survey belonging to only 28 software companies in Kathmandu. Hence the sample size for this study remains at $n=90$ software project manager. Data was collected from June 15 2025 to July 7 2025.

In this study, regarding data analysis descriptive statistics has been used to summarize demographic information and general response of research participants towards dependent and independent variables. Likewise, multi-regression Regression analysis has been applied in this study to determine whether different manifestation of role conflict significantly predicts creativity levels of software project managers. In addition, Analysis of Variance (ANOVA) has been applied in this study to determine whether there are significant differences between the means of area of specialization of software project managers within as independent groups on their perception of creativity. Here, the data was analyzed using as tested using IBM SPSS 21.0.

This study has used only limited statistical analysis due to the relatively small sample size of software project managers who were affected by their tight

work schedules and professional commitments. Here, this study acknowledges the limitations associated with constructed validity, as items to measure variables have been restricted to three self-reported items, as it was necessary to condense questionnaire size for extracting responses from professionals with tight project deadlines.

Data Analysis and Discussion

This section of study covers demographic information on software project managers working in software development companies in Kathmandu, here descriptive statistics examines the response of research participants on different manifestations of role conflict and multi-regress analysis that examine the causal relationship between different dimensions of role conflict and employee creativity.

Demographic profile

This sample size for this study consists of 90 software project managers ($N = 90$), and the selected sample consists of relevant job positions, job specializations, job characteristic and role and responsibilities and work experiences necessary for providing responses on different manifestations of role conflict and on creativity. In this study, software project managers with with at least 1 years of work experience have been selected as research participants.

Table-1: Demographic profile of respondents

Respondent's character	No. of responses	% Approx.
Software Project managers N=90		
Gender		
Male	66	73%
Female	24	27%
Total	N=90	100%
Age (in years)		
25-30	18	20%
30-35	42	47%
35-40 & Above	30	33 %
Total	N=90	100%
Education		
Graduate Studies (Bachelors Level)	43	48%
Post-Graduate (Master's Level)	47	42%
Total	N=90	100%
Monthly Income		
50,000-75,000	34	38%
75,000-100000	42	46%
100000-125000 & Above	14	16%
Total	N=90	100%
Area of Specialization		
Agile Project Manager/Scrum Master	52	57 %
Waterfall framework Manager	14	16%
Project & Program Manager	10	11%
Technical Project Manager	14	16 %
Total	N=90	100%

Note. From the Researcher's Survey (2025)

As the table above indicates, regarding demographic information related to age, in this study most of the software project managers in the age groups of 30–35 and 35–40 & above age group with an aggregate of 80% (n=72) of software project manager belonging to these two age groups. Moreover, with regards area of specialization, 57 % (n=52), of them are Agile Project Manager/Scrum Master. This suggests that software development companies in Kathmandu valley follow patterns, procedures, protocols and principles of agile software development. Besides

as compared to indications of by glassdoor.com that estimates total pay for a software Project Manager is NPR 75,000 per month in the Kathmandu area, with an average salary of NPR 65,000 per month, this study also find that software project manages receive monthly in the range of 50000-100000. More importantly, this study indicates gender disparity in software development sector with majority of software project managers identifying themselves as male (73%, n=66) as compared to female (27%, n=24).



Table-2: Response of software project managers

Different Manifestations of Role Conflict	Mean	Std.dev
Intra-role Conflict		
As a project manager I feel overwhelmed by the conflicting demands and expectations of different stakeholders	3.15	0.64
The responsibilities I have as a software project manager are in direct conflict with each other; it is difficult for me to decide which tasks get priority.	3.24	0.83
I feel stressed because of the pressure of meeting multiple objectives that conflicts with my area of specialization	3.42	0.75
Weighted MEAN	3.27	
Inter-role Conflict		
The expectations from my role as a software project manager conflicts with my technical obligations to the development team	3.12	0.75
I feel overwhelmed by the number of tasks I need to manage simultaneously as project manager	3.13	0.82
As a software project manager, I find it difficult to understand what is expected of me in my role	3.19	0.73
Weighted MEAN	3.14	
Intra-sender role Conflict		
I receive mixed messages from the executive direction of software production department about the importance of quality versus speed in our software development process	4.37	0.67
I am asked to prioritize tasks that seem equally important but are not clearly defined by my executive director	4.45	0.42
I receive conflicting instructions from my executive director regarding project priorities.	4.64	0.63
Weighted MEAN	4.48	
Cross-Functional Role Conflict		
I feel uncertain about my responsibilities when collaborating with other departments.	2.57	0.81
Conflicting priorities between my team and other departments hinder our project progress.	2.42	0.85
I do not get enough support from other departments when facing difficulties in my role.	2.67	0.67
Weighted MEAN	2.55	
Creativity		
I feel that my work environment intrinsically encourages me to be creative	2.88	0.73

I have access to relevant trainings, competence in programming languages and tech-based resources needed to enhance my skills relevant to managing software projects creatively.	2.78	0.86
The processes in my team allow for open communication and brainstorming sessions that foster creativity.	3.36	0.67

Weighted MEAN 3.00

Note. From the Researcher's Survey (2025)

Based on descriptive statistics presented in the above table, this study finds that among four different manifestation of role conflict selected in this study, software project managers have associated mostly with experiences of intra-sender role conflict in their workplace with weighted mean value of 4.48. However, these software managers don't perceive cross-functional role conflict as a source of role conflict when working with a team for finalizing a software project. In addition, software project managers do not perceive cross-functional role

conflict as a significant problem with weighted mean value of 2.55 because they are able to prioritize project completion over the nuances of team dynamics and also manage conflicts that arise from overlapping roles and responsibilities. Besides, the weighted MEAN for creativity is 3.00. Hence, with reference to the Amabile model, this study finds that the creativity level of a software project manager in software development companies are just above the average range.

Analysis of Variance

Table 3: Analysis of variance on creativity based on area of specialization of project managers

	Area of specialization software project managers	Weighted MEAN	F-value	P-value
Creativity	Agile Project Manager/Scrum Master	3.07	7.48	0.263
	Waterfall framework Manager	2.87		
	Project & Program Manager	2.96		
	Technical Project Manager	2.91		

**P value significant at <0.05*

As the data above suggests, ANOVA test indicates that there is no significant relationship between the different roles of software project managers and their perception of creativity. This signifies that creativity perception across various dimensions project management roles do not differ significantly. This finding implies that regardless of area of specialization their overall perception of creativity remains relatively consistent across different roles and responsibility of software project managers. Hence in this study hypothesis-5 has been rejected. Besides the finding of ANOVA test in this study is in contrast to Teodoridis et al. (2019) that there are no trade-offs associated with specialization for creative performance of software project managers

in software development companies located inside Kathmandu Valley.

Multi-Regression Analysis

This study used multiple regression analysis to assess the degree to which a group of predictors selected in this study accounts for the variance in the dependent variable. And the outcomes of a multiple regression analysis have been shown in Table 4. In terms of multicollinearity across variables, all three variables' tolerance values fall within the acceptable range of less than 0.10, and their associated VIF values fall below the crucial threshold of 10. These VIF values are 1.77, 1.67, 1.73, and 1.71 for intra-sender, intra-role, and cross-functional role conflicts, respectively.



Table 4: Model summary

Model	R	R Square	Adjusted R-Square	Std. Error
1	.436	.378	.318	.5412

Note (s). a. Predictors: (Constant): Intra-sender Conflict, Inter-role Conflict, Intra-role Conflict, and Cross-functional role conflict b. Dependent Variable: Creativity

As indicated in the Table 4, the R-squared value is 0.378, indicating that approximately 37.8% of the variance in the dependent variable is explained by the independent variables included in the model. Since R square is $<0.50=0.378$ the combination of different dimensions of role conflict in the workplace results in lower effects of these manifestations on the creativity of software managers. Likewise, a multiple regression analysis in this study analysis causal relationship between different manifestations of role conflict and the creativity of software project managers.

Table 5: Regression analysis for predicting the impact of different manifestations of role conflicts on dependent variable creativity

Model		Unstandardized Coefficients		Standardized Coefficients	T value	P value
		(β)	Std. Error	(β)		
1	(Constant)	2.04	0.146		4.07	0.045*
	Intra-role conflict	0.087	0.089	0.062	0.54	0.063
	Inter-role Conflict	0.079	0.096	0.053	0.43	0.068
	Intra-sender role conflict	-0.144	0.113	-0.217	-1.09	0.037*
	Cross-functional role conflict	0.284	0.119	0.321	2.89	0.011*

Note: $F = 24.012$, *Significant at p value <0.05 level,

Here, as in the Table-5, the results of regression analysis indicate a positive and significant negative relationship between intra-sender role conflict and the creativity of the project manager. Here, the regression coefficient for intra-sender role conflict is -0.144 at a significance value of 0.037. Whereas the regression coefficient for cross-functional role conflict is found to be 0.284 at a significance value of 0.011. As a result, the only hypothesis related to cross-functional role conflict has been accepted in this study at a 95% confidence level. Here, when it comes to the positive impact of role conflicts on the creativity of project managers, only cross-functional role conflict emerges as a particularly significant factor, exerting a considerable negative effect on the dependent variable.

Although intra-role conflict and inter-role conflict also have a positive impact on creativity, due to a

higher p-value, any relationship between these two dimensions of role conflict and employee creativity attributes to random chance, and the relationship these manifestations of role-based conflicts have been mediated by other factors, such as individual characteristics of software project managers, dynamics of the competitive working environment, or the level of support provided by the organization. Here, multi-regression aligns with the findings of Montani et al. (2020) that there is an indirect relationship between different manifestations of role conflict and creativity of employees.

Discussion

The findings of this study indicate a positive and significant impact of cross-functional role conflict on the employee creativity of software project managers. More importantly, this finding also supports the assertion of Job Demands–Resources

(JD-R) theory that high job demands + low resources + high role conflict = decreased creativity, whereas high job demands + adequate resources + moderate role conflict = sustained creativity. Here, positive and significant effects of cross-functional role conflict on the creativity of managers entail that when project managers have access to social job resources such as team support and collaborative tools, despite enduring conflicting priorities in their software projects, the software managers leverage these job resources to find creative solutions (Demerouti et al., 2001). Hence, in line with Petrou et al. (2019), this study argues that the presence of social job resources, like interdepartmental collaboration, regular meetings, and multiteam interactions in organizational settings, are positively related to creativity.

Similarly, the findings of this study suggest, in line with Amabile (2011), when software project managers have relevant skills such as programming languages, domain expertise of software development methodologies like Agile or Waterfall and the intrinsic motivation to complete the project, the cross-functional role conflicts that emerge during the collaborative process for software development don't hamper their creativity (Amabile & Pratt, 2016).

Moreover, this positive influence of cross-functional role conflict indicates that software project managers do not perceive cross-functional role conflict as a significant problem. This study with Shastri et al. (2021) confirms that software project managers perform different functional activities within a project that have differing priorities, goals, or interpretations of their roles within a project without any hamper on their creativity levels. Besides, the findings of this study indicate that software project managers consider cross-functional role conflict a non-issue as it doesn't disrupt workflow, creativity and communication. (Delisle, 2020). This study also suggests that employees from different departments collaborate, they bring unique viewpoints and expertise that challenge conventional thinking, and this clash of ideas stimulates creative problem-solving as team members are encouraged to think outside their usual frameworks (Li et al., 2019).

Moreover, the findings of this study indicate that when project managers perceive intra-sender conflicts, much of their cognitive resources are focused on resolving these conflicts rather than applying cognitive resources for creative problem-solving. Here, the findings of this study, in comparison with the cognitive load theory, postulate that when there is conflict for an individual, the cognitive load becomes larger, hence decreasing working memory capacity, thus impeding creative thinking processes involved in producing creative and innovative outcomes within a software development project (Bannert, 2002). Likewise, this study finds that intra-sender conflicts result into adverse emotional responses such as anxiety or anger, and these feelings eventually deplete a manager's creative cognitive resources (Amabile & Pratt, 2016).

More importantly, the findings of this study are comparable with Tang and Chang (2010) that apart from intra-sender conflict, other manifestations of role conflicts, such as intra-role conflict, inter-role conflict, and cross-functional role conflict, have a positive link with the creativity of project managers. Likewise, aligned with Liu and Gu (2024), this study finds that when the leadership communicates contradictory demands for project managers, this creates confusion for the individuals trying to fulfill those roles; hence there is a decline in their creativity. Moreover, the overall findings of this remain congruent with Montani et al. (2020) that there is a linear and indirect relationship between role conflict and creativity of software project managers.

Conclusion and Implication

The findings of this study indicate that intra-sender conflict, generated through the conflicting demands or expectations issued by a single source, is negatively and significantly associated with the creativity of the software project managers. Here, this study suggests that any time software project managers have to deal with certain conflicting directives or pressures, especially from superiors or major stakeholders, such conflicting expectations from different sources of communication become detrimental to the creative processes and problem-solving ability of software development managers (Donald & Donald, 2001).

More importantly, the Amabile model has acknowledged pressures of cognitive overload



generated by different dimensions of role conflicts as work environment factors that affect creativity, and this model has also indicated that managing work pressures emerging from role conflicts is essential to ensure creative thought and intrinsic motivation among software project managers. Hence, this study recommends that it's necessary for software development companies to reduce the work-related pressures generated by intra-sender conflict to enhance the creativity of software project managers. This study indicates that to reduce intra-sender conflict and enhance the creativity of software development managers in the workplace, it is essential for software development companies and start-ups to establish clear communication channels and nurture an environment where the team involved in software development engages in an open dialogue. Additionally, this study further recommends software development companies enhance the presence of social job resources that encompass interpersonal relationships and social networks within an organization that facilitate collaboration and support among employees.

This study emphasizes that when software project managers feel they can comfortably discuss their challenges with colleagues or seek input from others, they are less likely to experience isolation or confusion regarding their roles. Hence, having supportive supervisors who understand the pressures faced by managers significantly reduce role conflict. Likewise, this study suggests software development companies develop a positive team culture characterized by trust, respect, and mutual support, where team members are more willing to share ideas openly and engage in constructive discussions about potential solutions to problems without feeling threatened by differing opinions.

As cross-functional role conflict occurs due to ambiguity in the role when individuals from different functional areas share certain responsibilities, this study has a positive and significant relationship with creativity among software project managers. This finding entails, from the perspective of software project managers, cross-functional role conflict generating possibilities for open communications and collaborations necessary for diverse views to converge for creative problem solutions. Hence, software development companies in the Kathmandu Valley need to realize that diversity in itself spurs

creative thinking in software project managers when they draw on varied experiences and knowledge bases to solve complex problems (Amabile, 2011).

Moreover, intra-sender role conflict occurs when an individual receives conflicting messages or expectations from a single source, leading to confusion and stress. This study further recommends that shared leadership can effectively reduce this type of conflict by nurturing open communication and collaboration among team members, allowing for a more collective approach to decision-making and responsibility. task-oriented vertical leader behavior By distributing leadership roles and encouraging input from various team members, this study suggests that shared leadership creates an environment where expectations are clarified and aligned, thus minimizing the chances of conflicting directives from a single leader.

As a limitation, this study acknowledges that the sample size ($n = 90$) is relatively small to determine the external validity, and the sample included only 28 software companies situated in the Kathmandu Valley. As a result, this study fleshes out that future studies can improve representativeness and external validity by increasing the sample size, which includes both national and international software development and tech companies. Secondly, the cross-sectional research design used in this study restricts the ability to draw causal inferences between role conflict and creativity.

As a result, future studies are necessary to further validate the relationships between factors with the use of longitudinal or mixed-method approaches. Despite conceptual discussion on indirect and mediated relationships, the empirical model in this study fails to explicitly test potential mediators or moderators, variables such as organizational support, intrinsic motivation, mindfulness, or leadership style, which are important in explaining the relationship between role conflict and creativity.

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