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Moderating role of Organizational Culture between adoption of Agile Project Management Methodology and Project Success

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Abstract

Purpose of this research is to investigate the moderating role of organizational culture between adoption of agile project management methodology and project success, as well as impact of agile project management methodology on project success. The data for this study has been collected from Telecommunication Services Provider Industry of Pakistan. Total sample size of 197 professionals was recorded. A questionnaire was distributed among the participants via hard copy and internet survey websites. Using collected data, we tested the effect of agile project management methodology on project success and further examined the moderating effect of organizational support between agile project management methodology and project success. The examination included Pearson's correlation coefficient as well as regression using IBM SPSS Statistics Version 20. Results indicated that project management methodology has a strong correlation with project success and this correlation is not moderated by organizational support. The research findings have practical implications both in organization and project manager's perspectives. Our research was limited to specific geographic area due to time and cost constraints. Future researchers may opt to conduct the study in other geographic areas of Pakistan and different industry including additional and different moderating variables.

Keywords: Project Management Methodologies, Agile, Iterative, Project Success, Organizational Support, Telecom Industry

1. Introduction

Worldwide, There has been an intense debate to define / redefine theory of project management for complex and uncertain project situations (Koskela & Howell, 2002) argued that traditional theory of project management is outdated especially in managing uncertainty and rapidly changing project environment. Projects that are complex in nature, uncertain and time-constrained therefore traditional project management methodology can be inappropriate and potentially unfavorable (T. Williams, 2005). Companies are facing many challenges and changes in process to adopt Agile Project Management Methodology (Pace, 2019). Transformation in organizational culture is one of them. With substantial increase in research on project management methodologies and its effect on project success it was found that traditional project management methodology was not giving optimal results in certain scenarios (Dybå & Dingsøyr, 2008) therefore researchers and practitioners started looking for alternative methods for project implementation. Earlier Agile Project Management methodology was developed as an alternative to Traditional Project Management methodology as it offers less risk, more visibility, increased business value, more adaptability, faster delivery and reduced costs (Canty, 2015) also Stakeholders' feedback has been given extra value in agile project management methodology which proved to be beneficial (Highsmith, 2003). Project efficiency/success is measured as performance of the project management methodology (Serrador & Pinto, 2015) against the time, cost and quality constraints (triple constraints) of the project. The direct effect of agile project management methodology on project success remain implicit and is not directly addressed in the most focused and concerted way in the available literature yet. To explore this an empirical study on effect of agile project management methodology and its effect on Project Success with moderating role of Organizational culture.

The present study adds value to theory and practice in multiple ways. First, it evaluates the direct relationship between agile project management methodology and project success. Second, it investigates the moderating role of organizational culture in the relationship between agile project management methodology and project success. By using a structural equation modeling (SEM) technique for agile project management methodology, we will test and validate that organizational culture can work together for project success. This study will be a value addition in literature and help policy makers in organizations in adopting correct project management methodology to increase project success rate.

Researchers (Bloch, Blumberg, & Laartz, 2012) found that project failure can be so disastrous for a company that it may threaten the existence of the company. These alarming situations put scholars and practitioners in search of solutions to the cater the problem of project failure and to produce consistent project success. This outlines the underlying issue driving this study further research is needed to examine the relationship between successful delivery and project management methodology (Garland, 2009; Joslin & Müller, 2016; Pinto, 2014; Turner & Keegan, 2001; ul Musawir, Abd-Karim, & Mohd-Danuri, 2020).

Considerable attention have been given to agile project management methodology during the last 02 decades (Dybå & Dingsøyr, 2008) researchers recommended that organizations are required to be more agile, more adaptable to changes to achieve more success (Sherehiy, Karwowski, & Layer, 2007). Historical models and studies on project management methodology were mainly focused on project governance and its role in project decision making, project success and strategy implementation(Garland, 2009; Joslin & Müller, 2016; Pinto, 2014; Turner & Keegan, 2001; ul Musawir et al., 2020). However, the effect of implementation of agile project management methodology and its effect on project success remain implicit and is not directly addressed in the most focused and concerted way in the available literature yet.

Research is fairly new in this field, several characteristics e.g. Collaboration, Modularity, Iteration, Time-Bounding, Parsimony, Adaptiveness and Incremental development (Miller, 2001) are to be associated with the Agile Project Management, Organizational culture and Project Success. We will be exploring the new avenues to test effectiveness of the agile philosophy and its relationship with project success. Though agile project management methodology is popular due to many reasons (less risk, more visibility, increased business value, more adaptability, faster delivery and reduced costs) but researchers need to explore the possibilities to make this claim valid. So far, previous research on agile project management methodology was incidental and more focused research in this area will help practitioners and researchers to add value in agile project management methodology literature and practical implementation.

(Lee & Xia, 2010) have concluded after quantitative and qualitative analysis on software development agility that there is no positive relationship between agile project management methodology and the project success. The adoption of the agile methods in any organization is not unproblematic challenges are being encountered while migrating to agile project management methodologies (Boehm & Turner, 2005; Chan & Thong, 2009; Cockburn & Highsmith, 2001) and employees behave reluctantly in accepting this transformation (Nerur, Mahapatra, & Mangalaraj, 2005). The main objective of this research is to investigate that for achieving project success adoption of agile project management methodology works better than traditional project management approaches with moderating role of organizational culture. Agile project management methodology has become a preferable approach for planning and executing projects (Pace, 2019) however there are still some issues in adoption of agile culture in organizations. The purpose of this paper is to investigate, through a quantitative study, the evidence that that for achieving higher rate of project success adoption of agile project management methodology works better than traditional project management approaches with moderating effect of organizational culture

This research sheds light on:

To determine the impact of adoption of agile project management methodology and its effect on Project Success.

To check moderating role of organizational culture between agile project management methodology and Project Success.

Following questions will be addressed in this Research paper.

To what extent does agile project management methodology influence project success?

To what extent does project management methodology influence project success and is this relationship influenced by moderating role of Organizational Culture?

2. Literature Review

2.1. Concept and Definitions

With ever growing complexity of the projects, organizations seems to be more vigilant in choosing a suitable application of project management methodology (Joslin & Müller, 2016) as it plays a very critical role in making a project successful or failure. Up till now, research and the findings on project management methodologies are biased to some extent e.g., available literature is divided on whether success of the project is directly related to project methodologies or not (Lehtonen & Martinsuo, 2006). While researching the impact of project management methodologies on project success (Milosevic & Patanakul, 2005) inferred that project management methodologies, higher or singular level, may not be sufficient in concluding the effect of project management methodology on project success. To get a complete understanding and clarification of project management methodology element(s) and their inconsistent impact on project success in depth analysis and knowledge is required as some element(s) may have a greater impact on project success in collective manner than being studied alone.

2.2. Agile Project Management Methodology

Integration of planning and execution phase is core of agile project management methodology which allows an organization to build up a working force capable of responding to emerging requirements in an efficient manner through collaborative working and then prioritizing work packages i.e. lowest level of WBS. Although the agile techniques are set of guidelines that are performed in the software development and it is new method to achieve the project goals and to quickly perform the tasks by reducing the impact of the factors that delay the project. Meaning of term agile is comprehensible, adoption of agile project management methodology is making a paradigm shift in project management techniques by using best practices of management science (Anderson, 2004). Agile project management methodology focuses on delivering maximum value against business priorities i.e. features of the product by applying very tight discipline to "Time and Cost" and keeping iteration on review and prioritization of the features whereas in traditional project management approaches feature were considered to be fixed by the time the project is initiated.

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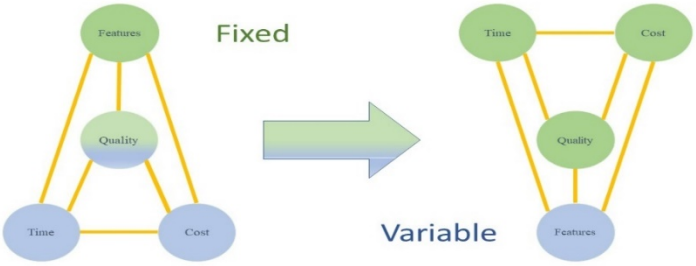
Figure 1 What's Different about Agile?

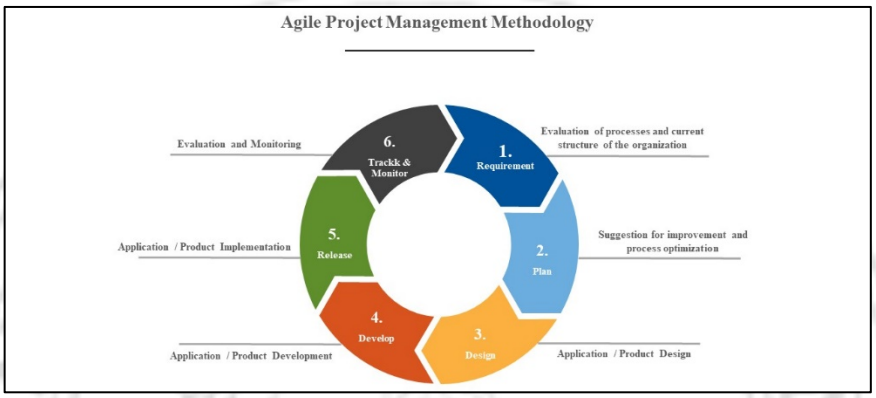


Source: Author elaboration

Whenever any organization decides to adopt agile project management methodology major change in traditional culture, mindset and sometime in project team are also required. Considering the need for smoothing the process of project planning, the iterative technique was introduced in which re-planning during the execution phase of the project was considered. Experienced project managers believe that margin should be kept in planning phase of the project considering the uncertain environment and changing business needs so that adjustments can be made at the later stages of planning as well. Agile technique therefore was required to deal with such needs of the project managers where they can modify plans in accordance with the demanding situations. In 2001, the "Agile Manifesto" was written which states that agile implementation need to cognizance on 04 values and 12 principles (Dybå & Dingsøyr, 2008) which are that there should be interaction among the individuals over the technique, there should be interactions with the client and their requirements should be negotiated and lastly the plan should be changed according the responses received. Project documentation is not a top priority in the agile project management methodology like traditional project management and this is to facilitate the project managers in the dynamic environment where the plans need not to be rigid and there is a cushion so that the response can be documented by project managers when and where required. It is also to be noted that unlike traditional planning techniques, in agile more flexibility is utilized for project management. (Lindvall et al., 2002) stated that the agile strategies have turned out to be more effective because they immediately deal with the issues that are raised specially when the projects are being executed and managed in dynamic environments. Project managers from numerous organizations were interviewed to validate this and it was inferred that project managers need to modify their plans according to the changing timelines, resources, techniques etc. (Collyer, Warren, Hemsley, & Stevens, 2010). Although

agile is flexible method of project planning and changes can be later made but it is also important to note that the agile project management methodology does not ignore the planning in the earlier stage of the project. The fact is to be understood that the planning phase in agile method is not just confined to one point but is spread over the course of cycle in place of plans been made in one go.

Figure 2 Agile Project Management Methodology



Source: Author elaboration

(Serrador & Turner, 2015) analyzed 1386 projects and found an inverted-U relationship between agile project planning and success of the project, in terms of planning time. By this study, they observed that if much amount of time is given to the planning it will have a negative impact on the project success, and vice versa. (Mann & Maurer, 2005) explained that thorough iterative planning technique in agile project management methodology success rate of the projects can be increased. With ever growing popularity of agile project management methodology one limitation of agile project management methodology was also under observation of researchers and it was concluded that agile technique can't be applied on mega-scale projects however in small-scale projects it is considered to be most effective and followed technique (Paasivaara, Lassenius, Heikkilä, Dikert, & Engblom, 2013). Most of this analysis is based on narratives and smaller number of samples were studied. An example can be quoted to explain this, 48 respondents were interviewed from 08 groups to study the variation among organizations that have adopted the agile techniques of project planning and organization that have not yet adopted the agile planning technique. It was noted that the project success in terms of completing the project withing budget and time was similar in both agile and non-agile organizations (Feldt & Magazinius, 2010) it was also concluded that although planning strategies have progressed through the years, there are other elements too which are

to be associated with the non-compliance of project goals. The consequences of such research have confused organizations for the adoption of agile planning technique.

2.3. Project Success

To have a holistic view and to obtain a learning opportunity for future project, Scope, Schedule, Cost, Team Satisfaction, Customer Satisfaction and Quality are the main objective and subjective criteria which are considered to measure the true effectiveness of the project. Project success could also be summarized by comprehensive assessment of external factors starting from Initiation, Planning, Execution, Monitoring and Control to the Closing phase. For a project to be successful there must be acknowledgement of the role of project management within project.

Adopting a relevant and efficient project management methodology is very vital for achieving project success. Many researchers have tried to make a consensus on notion of project success and believed that the conventional / traditional project management methodologies were mainly focused on triple constraints of PMI i.e. time, scope and cost and producing a quality project (Parker, Parsons, & Isharyanto, 2015; P. Williams, Ashill, Naumann, & Jackson, 2015). There are 10 dimensions of success of project described by (Müller & Turner, 2007) while they were contributing to the research and have great collection of study on the capabilities of the project managers. (Kloppenborg, Manolis, & Tesch, 2009) restated similar concept that project success is linked with the traditionally used triple constraints where all these collectively contribute as the necessary elements of the project success. A vast correlation among efficiency of project and success of the project was found by (Serrador & Turner, 2015) they argued the efficiency is not alone measurement scale for project success, but it also can't be overlooked while (Pinto, 2014) focused on satisfaction of stakeholder expectations. The use of right project management methodology to deliver unique results does involve financial investment for organizations (Fisher, 2011). Project success is now being measured through the lens of organizational achievement instead of meeting the constraints.

2.4. Organizational Culture

Culture is the environment we live in. Organizational culture is a system of the shared values, beliefs, ideologies, principles, attitudes and the set of assumptions (McLaughlin, 2013) also unwritten rules that have been developed over time and are

considered to be integral part of social and psychological environment of an organization. These rules and values are required to abided by the employees. These values, beliefs, ideologies, principles, attitudes and the set of assumptions have a strong influence on the employees in the organization and outside the organization (Iivari & Iivari, 2011). According to the previous research (Iivari & Huisman, 2007) organizational culture is based on vision, values, norms, systems, symbols, language, assumptions, beliefs, and habits of the organization. The model presented by (Quinn, 1984; Quinn & Rohrbaugh, 1983) was mainly focused on values as core constituents of organizational culture. Organizational culture has been associated with different opinions (Smircich, 1983) presented a framework in which system development depends upon organizational culture. (Cameron & Quinn, 2011) explained that there are 04 types of organizational cultures: Clan (family-like), Adhocracy (dynamic and entrepreneurial), Market (results oriented), and Hierarchy (structured and controlled). Organizational culture, more particularly, influence employees' insights of the work environment and their behaviors and creates a relatively more homogeneous working environment among employees which directly impacts organizational progress and functioning (Borucki & Burke, 1999). Specific research has also been done on the relationship between agile project management methodology adoption and organizational culture (Siakas & Siakas, 2007; Strode, Huff, & Tretiakov, 2009; Tolfo & Wazlawick, 2008) and its effects (Robinson & Sharp, 2005) which clearly depicts a strong impact of organizational culture on transforming behaviors of employees. Different studies identified and recommended certain characteristics to achieve the compatibility with agile project management methodology. Few researchers argued hard to change the entire culture of the organization (Tolfo & Wazlawick, 2008; Tolfo, Wazlawick, Ferreira, & Forcellini, 2011) though it's quite difficult.

2.5. Agile Project Management Methodology and Project Success

Research on the project success and project management has been carried out for more than 03 decades but in the recent times adoption of agile project management methodology has shown a significant improvement in statistics of project success and it is dominating other project management methodologies (Stankovic, Nikolic, Djordjevic, & Cao, 2013). After thoroughly analyzing the data available from previous researchers (Sheffield & Lemétayer, 2013) concluded that culture of the organization is the key aspect of the project success. Agile project management methodology has evolved substantially to respond to the modifications that were required during the course of the project. This paradigm shift from conventional project management methodology like Waterfall to Agile project management methodology was not only limited to software-based industries (Serrador & Pinto, 2015) due to the facts that it is different and efficient in project results. Agile project management methodology emphasis on communication with all the stakeholders at each level of the planning to cater the ongoing changes which make agile project management methodology the best iterative technique in project management. Organizations should be extra cautious in understanding agile project management

methodology before adoption (Nerur et al., 2005). Agile project management methodology is not only limited to software industry. Traditional project management methodology is outdated, complicated in nature and becoming obsolete with time. (Conforto, Salum, Amaral, Da Silva, & De Almeida, 2014) said that opportunities must be created within the organizations / industries to implement agile project management methodology for achieving project success. Many researchers have denied the fact that project success is related to agile project management methodology adoption as not much difference was observed between the companies that are using agile project management methodology and the companies which use conventional / traditional project management methodology. Seasoned Project Managers and (Magazinius & Feldt, 2011) concluded that project success is not only a factor to measure relation between project management methodology adoption and project success. A distinction of opinion has been highlighted within available literature and therefore aim of this paper is to examine through quantitative analysis the relation between the adoption of agile project management methodology and success of the project.

2.6. Moderating role of Organizational Culture between Agile Project Management Methodology and Project Success

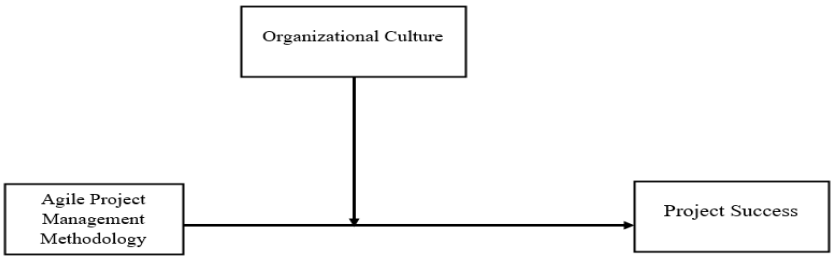
It is not easy to change the culture of any organization overnight and if project success is intended then agile project management methodology should be blended with traditional project management technique (Boehm, 2002). Transformation in organizational culture is essential for agile project management methodology adoption (Pace, 2019) as there are many challenges and changes to overcome during this process. Researchers also recommended that organizations and enterprises need to be more responsive to change to achieve higher project success rate (Sherehiy et al., 2007). Project Management Institute (PMI) in their annual global survey of project, program and portfolio track and publish the major trends in project management and in edition of 2017 PMI mentioned that 'organizational culture sets the tone that change the work-life experiences of employees which ultimately translated in to Organizational and Project Success'. Previous researchers (Cameron & Quinn, 2011) examined the 04 types of organizational cultures and how it contributes to projects success and summarized that Clan orientation culture (family-like) had the strongest association with project success and organizational culture. Agile method strongly advocates that organizational culture has an effect on the extent to which an agile method

is used and for effective and efficient creation of project management culture, organizations must understand the benefits it can bring along with.

2.7. Summary of Literature

Hypothesis and conceptual framework for this research study listed as:

Figure 3 Theoretical Model underlying empirical research



Source: Author elaboration

H_1: Agile Project Management Methodology is positively and significantly associated with Project Success.

H_2: Organizational Culture moderates the relationship between Agile Project Management Methodology and Project Success.

3. Method

Research was carried out to find how the impact of Agile Project Management methodology relates with the Project Success with moderating role of Organizational culture. Questionnaire was developed on the basis of previously established questions available in literature. The survey questionnaire contained two (02) sections, including demographic information while the other part comprised of questions related to variables under investigation. We have used three (03) variables naming Agile Project Management Methodology (APM), Organizational Culture (OC) and Project Success (PS) these variables were measured using 5-point Likert Scale that ranges from 01 (strongly agreed) to 05 (strongly disagreed). Seven (07) Questions for variable APM were adopted from research work of (Lu & Ramamurthy, 2011), Twelve (12) Questions related to OC were taken from research work of (Iivari & Iivari, 2011) and four (04) Questions for variable PS were adopted from research work of (Aga, 2016).

Main reason for adopting the questionnaire owes to its appropriateness in measuring adoption of agile project management methodology, organizational culture and project success. All the variables and measurement items are mentioned in Appendix - A

3.1. Research design and data collection

Data collection for this research study has been conducted through "Questionnaire" technique. The population selected for this study was Telecommunication Services Provider Industry of Pakistan. The use of simple random sample selection allows researchers to determine the appropriate sample size of participants, which can be generalized to a larger population (Trochim, 2006). The sampling frame consisted of individuals and non-probability sampling technique was adopted, based on their willingness to participate. Initially questionnaire was distributed to the employees working in different telecommunication services providing organization operating in Pakistan which includes Huawei, Jazz, PTCL, Telenor, Ufone, Zong and ZTE. Respondents were selected randomly and there were no specific numbers for any organization, role, gender etc. The study was performed from February to May 2020. Initially fifty (50) questionnaires were distributed with 41 returned out of which 38 were valid questionnaires in second phase of data collection due to COVID-19 pandemic it was not possible to collect the response through visits and meetings. Therefore, researcher utilized 'SurveyMonkey' and 'Google Forms' to deliver the questionnaire and 159 responses were recorded via internet which makes the total to 197 responses.

3.2. Data Analysis

Detailed analysis of the collected survey responses was performed vi Statistical Package for the Social Sciences (SPSS). The data was confirmed to have no missing values which might prevent accurate analysis. The results of Skewness and Kurtosis with respect to each variable independently shows that all the values are well within range. The reliability of every variable scale used was tested through Cronbach's Alpha (ά) calculation and all the values of Cronbach's ά were greater than 0.7, which confirms that the questionnaire has a very good reliability.

Table 1 Results of reliability

Reliability Statistics		
Variable Name	Cronbach's Alpha ά	Number of Items
Agile Project Management Methodology (APM)	0.872	7
Organizational Culture (OC)	0.843	12
Project Success (PS)	0.893	4

Source: Author elaboration

Data preparation for factor analysis was done using Kaiser-Meyer-Olkin (KMO) and Bartlett's tests. KMO measure of sampling adequacy value is greater than 0.4 that indicates that sample is adequate. Bartlett's Test of Sphericity significance level is less than 0.05 which indicates that factor loading analysis is suitable for the data.

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	.837
Bartlett's Test of Sphericity (Sig.)	.000

Source: Author elaboration

4. Result

Research survey questionnaire also includes demographic scale such as the Gender, Age, Qualifications and Experience of the respondents. 66% respondent were male, 72% respondent holding Project Management Experience, 79% respondent have experience between 8 to 11 years, and 95% respondent working on Projects. Descriptive analysis shows that variables distributions proved to be normal, Skewness and Kurtosis with respect to each variable independently shows that the values are well within range. In our factor analysis any value less than 0.70 have been be dropped in order to have acceptable results overall. Therefore, values against APM6, APM7, OC5, OC8, OC10 and OC12 were dropped in further analysis.

4.1. Variable Relationship

Correlation tells the intensity of the relationship between all the variables under discussion Pearson. Correlation analysis was conducted for this research work which shows that the relationship between APM and OC is very weak and not significant (+0.080), relationship between APM and PS is very strong and significant (+0.733) and relationship between OC and PS is weak but significant (+0.010).

Table 3 Correlation between Variables

		APM	OC	PS
Agile Project Management Methodology (APM)	Pearson Correlation	1		
	Sig. (2-tailed)			
	N			
Organizational Culture (OC)	Pearson Correlation	.080	1	
	Sig. (2-tailed)	.262		
	N	197	109	
Project Success (PS)	Pearson Correlation	.733**	.184**	1
	Sig. (2-tailed)	.000	.010	
	N	197	197	

** Correlation is significant at the 0.01 level (2-tailed).
Source: Author Elaboration

4.2. Linear Regression

In our study Linear Regression analysis shows Adjusted R Square value 0.535 that shows independent variable Agile Project Management Methodology (APM) will bring 53.5% change in dependent variable Project Success (PS). To calculate variable moderation effect, direct & indirect effects and conditional effects of Moderator Variable i.e. Organizational Culture (OC) researchers' used Model Number-1 of Preacher and Hayes with bootstrap (n = 1000, 95% CI) using SPSS

Path	R-Sq.	Adjusted R Sq.	Beta Value	T Value	P Value
APM→ PS	.537	.535	.733	15.037	.000

Model Summary

From the results we can clearly observe that model is significant. Moderator (OC) have significant positive effect on Project Success as p-Value < 0.05. Results shows that with addition of Organization Culture support Project Success is enhanced.

R	R-Sq.	MSE	F	df-1	df-2	p Value
.745	.555	6.457	88.810	3.000	193.0	.000

Model Details

	coeff	se	t	p	LLCI	ULCI
constant	14.839	0.183	80.903	0	14.478	15.201
OC	0.105	0.042	2.513	0.013	0.023	0.187
APM	0.794	0.05	15.938	0	0.696	0.893
int_1	-0.013	0.015	-0.853	0.395	-0.043	0.017

Agile project management methodology is showing significant positive effect on project success as p-Value < 0.05 and effect of agile project management methodology (79.4%) is much higher than Organizational Culture (10.5%). In interaction-1 (int_1) it is visible that confidence interval i.e. LLCI and ULCI values range from -.043 to .017 and it contains value 0 in its range which depicts that in our moderation interaction is not significance. Further it is interesting to note here that interaction have a negative effect (-.013) and with p-Value (0.395) > 0.05 means it is statistically insignificant relationship.

Table 7 Conditional effect of X on Y at values of the moderator(s)

Level	OC	Effect	se	t	p	LLCI	ULCI
Low	-4.866	0.857	0.091	9.44	0	0.678	1.036
Medium	0	0.794	0.05	15.938	0	0.696	0.893
High	4.866	0.732	0.087	8.421	0	0.56	0.903

**Values for quantitative moderators are the mean and plus/minus one SD from mean.*
**Values for dichotomous moderators are the two values of the moderator.*
Source: Author elaboration

Moderator value(s) defining Johnson-Neyman significance region(s)

Table 8 Johnson-Neyman Conditional effect of X on Y at values of the moderator(s)

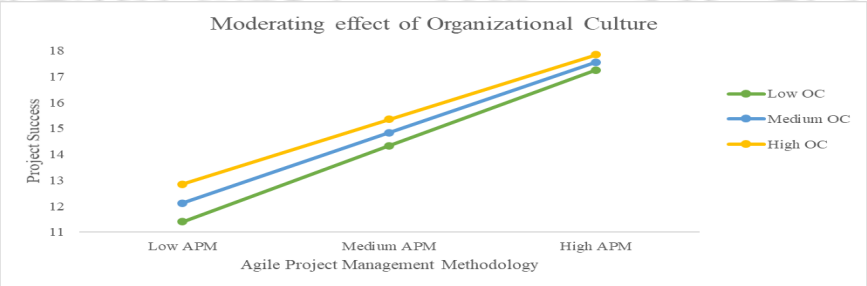
OC	Effect	se	t	p	LLCI	ULCI
-7.191	*0.824*	*0.162*	*5.074*	*0.000*	*0.502*	*1.146*
-6.227	*0.791*	*0.142*	*5.552*	*0.000*	*0.509*	*1.074*
-5.263	*0.758*	*0.123*	*6.152*	*0.000*	*0.514*	*1.002*
-4.298	*0.725*	*0.105*	*6.904*	*0.000*	*0.516*	*0.933*
-3.334	*0.691*	*0.088*	*7.816*	*0.000*	*0.516*	*0.867*
-2.37	*0.658*	*0.075*	*8.795*	*0.000*	*0.51*	*0.806*
-1.406	*0.625*	*0.066*	*9.483*	*0.000*	*0.494*	*0.755*

OC	Effect	se	t	p	LLCI	ULCI
-0.441	*0.591*	*0.064*	*9.293*	*0.000*	*0.465*	*0.718*
0.523	*0.558*	*0.069*	*8.117*	*0.000*	*0.422*	*0.695*
1.487	*0.525*	*0.08*	*6.575*	*0.000*	*0.367*	*0.683*
2.452	*0.492*	*0.095*	*5.186*	*0.000*	*0.304*	*0.68*
3.416	*0.458*	*0.112*	*4.089*	*0.000*	*0.236*	*0.681*
4.38	*0.425*	*0.131*	*3.25*	*0.002*	*0.166*	*0.685*
5.344	*0.392*	*0.15*	*2.605*	*0.011*	*0.094*	*0.69*
6.309	*0.359*	*0.171*	*2.102*	*0.038*	*0.02*	*0.697*
6.574	0.349	0.176	1.983	0.05	0.000	0.699
7.273	0.325	0.191	1.701	0.092	-0.054	0.704
8.237	0.292	0.212	1.377	0.171	-0.128	0.713
9.202	0.259	0.233	1.11	0.27	-0.204	0.721
10.166	0.226	0.254	0.887	0.377	-0.279	0.73
11.13	0.192	0.276	0.697	0.487	-0.354	0.739
12.094	0.159	0.297	0.535	0.594	-0.43	0.748

Source: Author elaboration

Further Johnson-Neyman Conditional effect of X on Y at different values of the moderator was studied which shows that up to a certain level Moderator (OC) helps in creating a positive effect of IV (APM) on DV (PS) beyond that effect becomes insignificant i.e. p-value > 0.05

Figure 4 Moderating effect of Organizational Culture



Source: Author elaboration

Hence, we can conclude that OC has insignificant moderator effect on relationship APM and PS. Whereas, Conditional effect of X on Y at different levels of the moderator (Low, Medium and High Level) depicts that when the value of Moderator (OC) is increased value of effect of IV (APM) on DV (PS) tends to decrease.

Results of Hypothesis

The results of hypothesis after detailed analysis is mentioned in Table 9

Table 9 Result of Hypothesis

Sr. No.	Hypothesis	Result
1	Agile Project Management Methodology is positively and significantly associated with Project Success.	Supported
2	Organizational Culture moderates the relationship between Agile Project Management Methodology and Project Success.	Not Supported

Source: Author elaboration

5. Discussion

The relationship between Project Success and Agile Project Management Methodology is a noteworthy issue. Reasons for this are the profusion of the concept of organizational culture, popularity of agile methodology for project planning and execution, ambiguity of the concept of agility in the context of project management and the variety of ways the two variables may be related with each other. While the theories that support agile project management methodology adoption are attractive and logical what has been missing is empirical validation. Projects with Agile Project Management Methodology are more likely to succeed than the one that relies on traditional approaches ?

Our findings suggest that there is research support for the application of agile project management methodology in achieving higher project success rate. This study described whether and how agile project management methodology effects the project success through a comprehensive and empirical analysis of Telecommunication Services Provider Industry of Pakistan. Study also discussed that with varying levels of agile approaches Project Success factor can be increased. Our findings offer limited support for previous research work by (Budzier & Flyvbjerg, 2013) in which the relationship between agile project management methodology and project success was explored in data set of IT projects and they found that agile project management methodology appears to improve project delivery times but no evidence was found that agile project management methodology have positive impact on other success factors. An insignificant moderator effect of organizational culture was observed between agile project management methodology and project success, through the bootstrapping results. There is also additional empirical

evidence resulted out of this study to support the fact that organizations and enterprises need to be more agile, more responsive to changes to achieve more success (Sherehiy et al., 2007).

6. Conclusion

Aim of this study was to explore the direct effect of agile project management methodology on project success and what are the indirect effect of agile project management methodology on project success via organizational culture. There was positive relationship witnessed between agile project management methodology on project success. On the other hand, the proposed moderator organizational culture has insignificant effect on relationship between agile project management methodology and project success. It is interesting to note that our original regression analysis showed statistical significance but low values for percentage of variance explained (R^2). It is witnessed that up to a certain level moderator helps in creating a positive effect of IV on DV after which if level of organizational culture is increased the effect of agile project management methodology on project success becomes insignificant.

6.1. Theoretical and Practical Implications

This study has enabled us to understand the concept of agile project management methodology, organizational culture and how these variables effects project success via their relationship as described in theoretical framework. We have examined the linking of agile project management methodology and project success through Telecommunication Professionals sample. First, agile project management methodology has been studied with regards to the project success perspective and then addition of proposed moderator organizational culture. This study is an addition to literature of agile project management methodology and provides a guideline to the policy makers in organizations that are striving to maximize project success and are not very clear about the adoption of effective and efficient project management methodology. We have also found that the theoretical model got the practical implications, both for the managers and organization involved in project. This study can be referred to adopt these changes establishing relationships between agile project management methodology, project success and organizational culture.

6.2. Limitation and Future Work

Although our findings offered some intriguing perspectives on the adoption of agile project management methodology and its direct impact on project success, there were also some limitations to the study that need to be acknowledged. First, 'non-response' errors in survey questionnaire i.e. the participants fail to understand and respond to particular questions in its true essence and 'response error' survey questionnaire i.e. where the participant does not give an accurate response or gives an incomplete response (Cooper & Schindler, 2001). Secondly, limitation of this research was an examination of the impact of underlying factors of organizational cultural behaviors (shared values, beliefs, ideologies, principles, attitudes etc.) on the relationship between agile project management methodology and project success. Although Agile has been used for project planning for several years now, to our knowledge, this research report is one of the first empirical studies on adoption of the of Agile methods for project success in Telecommunication sector of Pakistan. Future researchers should examine underlying factors of organizational culture and establish their relationship with project success, as measured by multiple perspectives (efficiency, stakeholder satisfaction etc.) and using different flavors of agile project management methodology (Agile Scrum Methodology, Lean Software Development, Kanban, Extreme Programming etc.)

Conflict of Interest

There is no conflict of interest

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Appendix A

Measurements for Agile Project Management Methodology (APM), Organizational Culture (OC) and Project Success (PS)

Variable Name	Measurement Question
Agile Project Management Methodology (APM)	APM-1: We are quick to make and implement appropriate decisions in the face of market/customer-changes. APM-2: We constantly look for ways to reinvent/reengineer our organization to better serve our market place. APM-3: We utilize our skills better in agile practice. APM-4: We fulfill demands for rapid-response, special requests of our customers whenever such demands arise; our customers have confidence in our ability. APM-5: We can quickly scale up or scale down our production/service levels to support fluctuations in demand from the market. APM-6: Where necessary, members of this team try to simplify existing code without changing its functionality. APM-7: Whenever there is a disruption in supply from our suppliers we can quickly make necessary alternative arrangements and internal adjustments.
Organizational Culture (OC)	OC-1: The organization values feedback and learning. OC-2: Social interaction in the organization is trustful, collaborative, and competent. OC-3: The organization values teamwork. OC-4: The organization is flexible and participative and encourages social interaction. OC-5: The project manager acts as a facilitator. OC-6: The organization enables empowerment of people. OC-7: The management style is that of leadership and collaboration. OC-8: The organization values face-to-face communication. OC-9: Communication in the organization is informal. OC-10: The organization is results oriented. OC-11: The leadership in this organization is entrepreneurial, innovative, and risk taking. OC-12: The organization is based on loyalty and mutual trust and commitment.
Project Success (PS)	PS-1: The project was completed on time when agile methodology was followed. PS-2: The project was completed according to the budget allocated in agile practice. PS-3: Agile Project specifications were met by the time of handover to the target beneficiaries. PS-4: Given the problem for which it was developed in agile environment, the project seems to do the best job of solving that problem.

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