CULTURAL ATTRIBUTES: A KEY ANTECEDENT OF RESILIENCE AMONG AGRICULTURAL INNOVATION PLATFORMS IN CENTRAL AND SOUTH WESTERN UGANDA

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ABSTRACT

The increasing quest for project success has accelerated demand for collaboration among project network actors to guarantee their resilience. However, since most project networks are temporally endeavours, there is need for creating and maintaining effective interactions that guarantee success of future projects. Sustaining interactions on these networks is a complex governance question due to the unique nature and interests of actors. Among these challenges is the diverse cultural orientations of various actors. This study sought to investigate the effect of cultural attributes on resilience of project networks among agricultural innovation platforms in Central and South western Uganda. The study was anchored on the systems theory and positivism research philosophy adopting explanatory research design. The target population comprised of 220 AIP actors drawn from farmer representatives, traders/processor, researchers, government agents, extension agents, and NGOs in central and Southwestern Uganda. A sample of 132 respondents was drawn from this population using stratified sampling technique. Primary data was collected via semi-structured questionnaire. Collected data was analysed using both descriptive and inferential analysis. The fitness of the model was measured using F-statistic while the predictive power of the model was measured using R2. The significance of the variable coefficient was determined at 0.05 significance level. Results showed that largely, cultural attributes of norms, values, and power distance should be embraced. A positive correlation existed between resilience of project networks and cultural attributes, and cultural attributes significantly predicted resilience of project networks. The study recommends that AIP leaders should promote the practice of cultural attributes such as network norms, values, and power distance as key components of network governance. This study contributes towards designing a management approach that is able to accommodate and take full advantage of potentialities that come with dynamism and complexity like cultural attributes among project networks. Since the study was restricted to Central and South western Uganda, it is proposed that other studies be conducted in the whole country or indeed other countries to validate generalizability of results.

Keywords: Cultural attributes, norms, values, power distance, and resilience.

INTRODUCTION

The ever-increasing demand for project success has inevitably called for closer interaction between the various actors within project networks. However, governance of these networks continues to face numerous challenges that render success of projects implemented thereon a distant reality. It is thus indispensable to have proper structures within networks that anchor their sustainable operation. One of the ways to anchor network operation and resilience is by systematically accommodating diverse cultural attributes of the different actors (Muller, 2017). This involves facilitating interaction amongst various actors in a manner that their unique cultural attributes are deeply embedded in the network interconnectedness. Actor diversity often derived from their personal and organizational background, when well harnessed allows pooling of a variety of ideas and innovations. Therefore, to attain a resilient network (depicting innovativeness, sustainability and reproduction); there is need for adaptive management approaches that engender cultural diversity of actors (Gielen, Salas & Cuadrado, 2017).

To understand relational dynamics of actors in a network, one needs to recognize the fundamental organizational aspects related to power relations, normative and value systems. Such systems define cultural orientations of actors thereby shaping the nature and direction of their relationships (Nederlof & Pyburn, 2012). Cultural attributes concept derives its origin from the famous Hofstede (2005) cultural dimensions model. The model identified four cultural dimensions, that is, individualism vs collectivism (values), power distance, uncertainty avoidance (norms) and masculinity versus femininity. Collectivism vs individualism was conceptualized as the extent to which a person pursues individual goals as opposed to collective goals, while uncertainty avoidance focuses on regulating behaviour in order to minimize levels of stress in society.

On the other hand, power distance illustrates a situation whereby less powerful members in a given society/institution, admit, expect, and accept that power is unequally distributed and that such distribution affects all aspects of human collaboration. As a result, societies practising lower power distance emphasize equality, decentralized power, and shared authority. While societies practising large power distance manifest centrally managed structures and minimum interaction between powerful and less-powerful actors. Power distance can also manifest through differences in education levels, wealth status or positions of authority. It is therefore important that network management regulate the relationship between the uneducated and the highly educated, the poor and the rich, the weak and the strong; for the common good of a project network (Hofstede, 2011). This study interrogates and presents the three dimensions of power distance, values, and norms as key considerations that a network manager should consider when facilitating actor interactions.

Since project networks play a compensating role between the “contrasting temporary organizational configuration of

projects and their permanent environments" (Burström & Jacobsson, 2012), their resilience is key in achieving consistent project conceptualization and operationalization. In this sense, resilience refers to a network's ability to establish institutional structures that enable it overcome shocks, learn from them, and emerge strengthened and transformed. Such resilience involves internal capability to reconstitute after undergoing a massive shock or sustained attack (Aranda, Zeeman, Scholes, & Morales, 2012). Beer (1984, 1989) in his famous 'Viable System Model' viewed resilience as the capacity of a network to quickly regain its original state after experiencing difficulties. The model was developed following a study about properties and application of materials to understand a material's ability to absorb energy after being elastically deformed, thereafter unloading and releasing that energy.

In project management, the term resilience was used by Borgert (2013) and Kutsch and Hall (2016) to mean establishing mechanisms that enable leaders to detect and foresee situations, realistically interpret challenges, better prepare themselves, and quickly and appropriately recover from such challenges at the minimum cost possible. Kutsch and Hall (2016) concluded that resilience in the context of projects involves management's ability to foresee risks, quickly adapt towards unavoidable changing environments, and rapidly mobilize internal energies to recover from adversity. As such, any system's resilience is premised on its capacity to overcome a disturbance and yet keep its strategic focus, identity and structure, with strength to re-constitute while increasing learning and adaptability to new realities (Laursen & Salter, 2013; MacKinnon & Derickson, 2012). It equally follows therefore, that a resilient project network is one, which is able to continuously learn and innovate from disturbances, reconstitute itself after shock, expand and multiply, and sustainably consolidate its achievements to avoid recurrence of instability.

Agricultural innovation platforms (AIPS), largely embraced as drivers of agricultural transformation in Central and South Western Uganda, offer a clear illustration of project networks. These AIPS are intermediary arrangements that bring different actors together in an innovation system with an aim of creating effective and sustainable change in the livelihoods of members by learning from each other, promoting adoption of modern farming methods and collectively marketing their products for better prices (Mulema, 2012). AIPs also promote exchange of ideas among key actors with a common purpose for shared diagnosis of problems, shared discovery of opportunities, finding alternative options, and promotion of technical knowhow along defined value chains (Adekunle, Oluwole, Buruchara & Nyamwaro, 2013). AIPs are expected to create space where different actors such as researchers, farmers, extension agents, traders, processors, development specialists, and policy makers, come together with an aim of facilitating effective, efficient and targeted interventions that yield more and cheaper benefits for all the stakeholders involved. Diverse actors generate innovation when they join forces in AIPs, by bringing together their indigenous knowledge, business interests and organizational skills (Adekunle et.al., 2013).

The AIP concept was first introduced in Africa through a project called Sub-Saharan Africa challenge program (SSACP), funded by the International Fund for Agricultural Development (IFAD) , coordinated by Forum for Agricultural Research (FARA) with an overall objective of testing a concept whether AIP networks could deliver projects cheaper and more sustainably. SSACP established twelve AIPs in each Pilot Learning Site (PLS) of Eastern and Central Africa (area around Lake Kivu basin), Western Africa and Southern Africa. In the Lake Kivu region, twelve (12) AIPs were formed, four in each of the selected sub-regions of South western Uganda, North-eastern Rwanda and Eastern Democratic Republic of Congo. Each AIP focused on a specific value chain (as an entry point) bringing together stakeholders along a commodity continuum from resource to consumption (Mulema, 2012). The concept quickly spread to the horn of Africa and Madagascar flagging a compelling agenda of attracting diverse knowledge capacities and skills sets, transforming and learning from them, and sharing resource products for sustainable agricultural transformation.

However, as noted by Kutsch and Hall (2016) over 70% of these AIPs failed due to factors attributed to bureaucracy and lack of proper stakeholder engagement depicting weaknesses in the governance of project networks. For instance, according to Cullen et al. (2014), AIPs in the Ethiopian highlands could not uphold their desired interventions due to power dynamics. SSACP (2011) reports on AIPs in Lake Kivu region painted a picture of struggling networks; majority had either collapsed or stagnated. Mudende AIP in Rwanda almost collapsed due to conflicting interests between farmer actors and Inyange milk processing factory (project reports, 2012-2013). Similar observations were made regarding Bubaare AIP in South western Uganda whose flagship product (Mamera) was stunted due to unresolved conflicts between processor and farmers (Kasenge, 2010). At about the same time, Chahi AIP, located in Kisoro district, western Uganda dissolved due to unsolved disputes between actors, only to recover after approximately two years (SSACP, 2016). Most of the conflicts revolved around unregulated actor interactions and power asymmetries especially between farmers (less powerful, less educated, and less wealthy) on one side and other actors (more powerful, more educated and wealthier) on the other.

Following a nationwide verification by NARO (2018) of all AIPs formed in Uganda between 2006 and 2017, it was established that by 2018 only 59% of them were functioning while the remaining 41% were either existing but not functioning or had collapsed all together. In particular, 40% of AIPS established in Kachwekano Zone had collapsed by 2017, 70% of AIPS established in Buginyanya- Mt. Elgon region had collapsed, 75% of all AIPS in Bulindi Zone were not functional while all AIPS established in Ngetta Zone had failed. At the same time, 29% of AIPS in Mukono Zone had collapsed and only 63% of all AIPS established in Rwebitaba zone were still functional by the time of the verification exercise. It was therefore imperative to empirically study the cultural dynamics underlying these Agricultural innovation platforms and interrogate explanations behind their current state of resilience. Consequently, the study sought to investigate the effect of cultural attributes on resilience of project networks among agricultural innovation platforms in Central and South western Uganda.

LITERATURE REVIEW

The nature of relationships existing between stakeholders and their position in the network shapes their behaviour and interaction with others. Continuous behaviour will overtime shape network normative and value system. The systems theory as advanced by Ludwig (1968) points to this fact by

viewing a system as an interconnection of two or more elements where each element is unique in its own way but its action affects all the others, either individually, or the functioning of the whole. Arising from this interconnectedness is synergy, where the whole counts more than the sum total of the individual elements. Therefore, AIPs can derive synergy by actors cooperating and accommodating their unique different cultural orientations, setting aside their individualistic goals for the better of the whole.

Empirically, a few studies have been carried out on the construct of cultural attributes among project networks. The Hofstede (2011) study deduced power distance as a situation where less powerful members in a given institution, admit, expect and accept that power is unequally distributed and that such distribution affects all aspects of human collaboration. The study illuminated (Hofstede, 2005) model and reaffirmed collectivism vs individualism concept whereby persons pursue individual goals at the expense of collective goals. In addition, the study conceptualized uncertainty avoidance as regulating behaviour in order to minimize levels of stress in society. The study concludes by asserting that societies, which practise lower power distance, emphasize equality, decentralized power, and shared authority. On the other hand, societies, which practise large power distance, manifest centrally managed structures and minimum interaction between powerful and non-powerful actors.

In their study about culture and climate for innovation, Ahmed cited by Valencia, Jiménez and Sanz-Valle (2011) and noted that innovativeness thrives in a culture where organisations deliberately nurture innovation and creativity. The study focused on how organisational factors affect innovation concluding that companies, which have created appropriate cultures and climates, are the ones that will dominate the future. Study findings showed that appropriate cultures and climate nurture innovation. However, these results were based on literature review, devoid of empirical testing. The study findings highlighted the need for creating appropriate cultures and climate for innovation with a relatively similar variable combination but not in the context of predicting resilience of agricultural innovation platforms.

While studying management of open innovation platforms, Ojasalo (2016) noted that behaviour/relation control (norms) is important in protecting network values. Norms help to control members from behaving in a manner that hurts the core values of a network. Norms create a social control mechanism that enforce an expected behavioural standard. A good value system is one whose normative system is strong enough to keep members focused on what brings them together and makes them proud as a network.

Studying the influence of organizational culture on commercial banks performance in Kenya, Maina (2016) used a descriptive survey design to collect data from 120 employees sampled from 42 banks in Nairobi, Kenya. Data was analysed employing descriptive and inferential techniques to understand the impact corporate culture has a on the success of commercial banks in Kenya. The study concluded that organizational culture determines work dynamics, creating a like-mindedness environment among employees while holding similar beliefs and values. The study further noted that banks are guided by values of effective communication, adaptability, and consistency. Even though the commercial bank setting was undoubtedly different from agricultural innovation platforms, the study found very interesting aspects of cultural influences on performance applicable to project networks.

Pant (2012) while evaluating transportation network resiliency adopted Heaslip et al. (2009) definition of resilience as the system's ability to keep a visible level of operation or recompose itself to original level of operation in a given period after a shocking event. The study showed that a robust and optimized recovery process significantly enhances network performance and resilience. This study also showed that effective network performance measurement provides faster self-annealing abilities and resilience in the aftermath of disasters. This study provides vital insights into resilience of networks, albeit based on transportation networks, which have significantly different operational frameworks from agricultural innovation platforms. Further, in the Pant (2012) study, resilience of network was operationalized through total loss on a network's robustness and recovery optimization while in the current study network resilience was operationalized through innovativeness, sustainability, and reproduction.

While conducting an evaluation of network resilience, disruption tolerance and survivability, Sterbenz, Çetinkaya, Hameed, Jabbar, Qian and Rohrer (2013) looked at resilience in respect to a network's ability to continue providing a desired service even when disturbed by large-scale disasters, attacks and other failures. In this study, the authors described a set of methods for evaluating network resilience using a combination of experimental emulation techniques, simulation, analytical, topology generation with an aim to improving network resilience. It should be noted that in this study the authors only showed how to evaluate network resilience but does not show its tenets and causality.

The foregoing evidently demonstrates the role of project networks (AIPs) in bringing together multi-stakeholder collaborations aimed at achieving synergy. Majority of existing studies have successfully magnified the deficiency that most network managers continue to borrow (with minimum or no creativity) traditional management discourses without purposeful consideration to the fragility, complexity and dynamic structural and process configuration of project networks. Of particular interest is the role played by network management in dealing with diverse cultural attributes demonstrated by actors in a network. To interrogate this empirical gap, the study sought to investigate the effect of cultural attributes on resilience of project networks among agricultural innovation platforms in Central and South western Uganda. The corresponding hypothesis was that: Cultural attributes have no significant effect on resilience of project networks among agricultural innovation platforms in Central and South western Uganda.

METHODS

A positivism paradigm was adopted in the study where the researcher independently studied the subjects with no influence whatsoever on the obtained facts. The variables in the study were hypothesized based on existing theories while data was analysed using scientific methods as recommended by the anchoring philosophy. The research design adopted was explanatory, which enabled the researcher to characterize and understand study subjects while explaining casual relationships between study variables as advised by Saunders, Lewis and Thornhill, (2009). The study targeted 220 AIP actors drawn from each of the 22 active AIPs in the two regions. The target population comprised of five (5) farmer representatives, and one (1) representative each for the other five (5) actors

(traders/processor, researchers, government agents, extension agents, and NGOs). A sample of 132 respondents was drawn from this population using stratified sampling technique by selecting one respondent to represent each of the six (6) actor categories. Primary data was collected via semi-structured electronic questionnaire using tablets connected to a cloud server. Data was analysed using both descriptive and inferential techniques. Descriptive statistics included mean score and standard deviation. Inferential analysis was conducted using correlation and regression techniques to establish the nature and direction of relationships between study variables. The regression model was summarised as follows:

$$RPN = \beta_0 + \beta_1 CA + \varepsilon \quad (1)$$

Where:

RPN: Resilience of Project Networks

β0: - intercept

β1: - coefficient of Cultural Attributes

ε: - Error Term

The coefficient of determination, R2, was computed to measure the extent by which changes in resilience of project networks are attributable to changes in cultural attributes. The study used Analysis of Variance (ANOVA) test to ascertain if the selected empirical model was fit for the study. All hypothesized relationships were analysed using simple linear regression. The research hypothesis was tested at 95% confidence interval.

RESULTS AND DISCUSSIONS

Out of the 132-targeted respondents, 103 responded to the research instrument forming a 78% response rate. Obtained data was analyzed as follows.

Descriptive Results for Cultural Attributes

The study sought to determine the extent to which cultural attributes (values, norms, and power distance) affect network resilience among agricultural innovation platforms in Central and South western Uganda. Descriptive analysis results (showing the mean and standard deviations score) for all the measurements of cultural attributes were as shown in table 1.

Table 1: Descriptive Statistics

	N	Min.	Max.	Mean	Std. Dev.
Values					
The AIP has a set of values to be espoused by all members	103	2	5	4.16	.556
AIP values are written, displayed and rehearsed during meetings.	103	2	5	3.70	.765
Average				**3.93**	**0.661**
Norms					
AIP has set of norms to regulate member behaviour amongst themselves and towards the public	103	2	5	4.12	.530
AIP norms are written, displayed and rehearsed during meetings.	103	2	5	3.70	.712
Average				**3.91**	**0.621**
Power distance					
The AIP has some powerful active members e.g very rich, very politically powerful	103	1	5	4.05	.922
The AIP has a mechanism of regulating such power distance during AIP activities.	103	1	5	3.61	1.059
The AIP has ground rules that regulate meetings to enable all members share views	103	2	5	4.03	.734
Average				**3.897**	**0.905**

Source: Research Data (2026)

Table 1 shows that AIP actors largely considered cultural attributes as an important factor to their networks' resilience (mean score = 3.912). A low standard deviation of 0.729 indicates that most of the respondents concurred that AIPs need to adopt cultural attributes as a key antecedent to network resilience. In agreement with Maina (2016), respondents confirmed that when organizational culture is properly harnessed, it positively affects network performance. Findings further agree with Twumasi-Ankrah (2012) that organizational culture is a precursor to employee creativity, which in turn enhances network performance.

Respondents believed that AIPS should greatly embrace values (mean = 3.93). Results also showed that values had a low standard deviation of 0.661 implying that respondents largely agreed that values should be embraced as a key tenet of AIP management. Likewise, results indicated majority respondents believed that norms should be observed among AIPs (mean = 3.91). A low standard deviation of 0.621 indicates that respondents were largely in agreement about the extent to which norms should be considered among AIPs. These findings resonate with Ojasalo (2016) that behaviour or relation control (norms) is important in protecting network values.

Further, power distance was considered an important factor among AIP actors (mean = 3.897). Results show a low variability in respondent opinions on the relevance of power distance as shown by a low standard deviation of 0.905. These findings concurred with those reached by Hofstede, (2011) that societies with lower power distance embrace aspects of equality, power decentralization, and devolved authority, while societies with large power distances, manifest highly centralized management with low regard for interaction among the powerful and less powerful members.

Descriptive Statistics for Resilience of Project Networks

The study also sought to establish how AIPs in Central and South western Uganda exhibited characteristics of resilient networks. Descriptive analysis results showing the mean score and their respective standard deviations for the indicators of network resilience were as shown in table 2.

Table 2: Descriptive Statistics for Resilience of Project Networks

	N	Min.	Max.	Mean	Std. Dev.
Network Innovativeness	103	2	5	4.145	0.757
Network Sustainability	103	1	5	3.465	1.141
Network Reproduction	103	1	5	3.825	1.025
Average for Resilience				3.812	0.974

Source: Research Data (2026)

Resilience of project networks had a mean score of 3.812 indicating that a good number of the respondents perceived AIPS to have a huge potential for resilience. Results also showed that there were minimal variations in respondent opinions about resilience of project networks as indicated

by a low standard deviation of 0.974. These results were consistent with those of (Aranda et al., 2012) who stated that a resilient network is one, which possess inner strength, resourcefulness and ability to revive after a shock or sustained attacks.

Respondents largely agreed that AIPS had potential for innovativeness as shown by a mean score of 4.145. A low standard deviation of 0.757 shows that majority of respondents agreed to this potentiality among the AIPs. Additionally, results showed a mean score for network reproduction of 3.825 meaning that a good number of respondents agreed that AIPs were showing indicators of network reproduction. Respondents however varied in their opinions concerning the capabilities for network reproduction as shown by a high standard deviation of 1.025. Further, majority of the respondents agreed on the indicators of network sustainability in the AIPs as a shown by a mean score of 3.465. Like reproduction, respondents highly varied in observations as shown by a high standard deviation of 1.141.

Correlation Analysis

Correlation analysis was conducted to establish direction and strength of the relationship between study variables as recommended by Dancey and Reidy (2004). The results were as shown in Table 2.

Table 2: Linearity Test Correlations

Correlations Analysis Results		Cultural Attributes
Resilience of Project Networks	Pearson Correlation	.610**
	Sig. (2-tailed)	.000
	N	103

**. Correlation is significant at 0.05 level (2-tailed). Source: Research Data (2026)

Correlation results in table 2 indicated that the correlation coefficient between resilience of project networks and cultural attributes was 0.610 indicating that a positive correlation exists between resilience of project networks and cultural attributes. These results were consistent with postulations of Gustafsoon et al. (2014) who opined that governance of project networks is a necessary condition to regulating and generating compromise between different interests, sustaining constructive interactions to achieve resilience in project networks.

Regression Results

The study conducted simple linear regression analysis by computing the coefficient of determination, R2, to measure the extent by which changes in resilience of agricultural innovation platforms are attributable to changes in cultural attributes. The results were as shown in table 3, 4 and 5.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.836	0.699	0.696	0.32878

Predictors: (Constant), Cultural Attributes
Source: Research Data (2026)

Results in Table 3 show that the coefficient of adjusted determination (R2) was 0.696 suggesting that cultural attributes explained 69.6% of all variations in resilience of project networks. Conversely, the results showed that 30.4% of all variations in resilience of project networks was explained by external factors other than cultural attributes.

To determine the fitness of the model over a normally distributed data, the study conducted Analysis of Variance (ANOVA) and the results were as shown in table 4.

Table 4: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.367	1	25.367	234.664	0.000
	Residual	10.918	101	0.108		
	Total	36.285	102			

Dependent Variable: Resilience of Project Networks
Predictors: (Constant), Cultural Attributes Source: Research Data (2026)

Results indicated that the F statistic at (1, 101= 234.664) was greater than F-critical of 2.694, meaning the model was fit in predicting resilience of project networks. Additionally, P-value for the F-statistic was 0.000< 0.05 further emphasizing the fitness of the model.

The regression coefficient results were as shown in table 5.

Table 4.1: Regression Coefficients

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	0.157	0.024	0.128	6.542	0.000
	Cultural Attributes	0.264	0.114	0.225	2.316	0.022

Dependent Variable: Resilience of Project Networks Source: Research Data (2026)

Regression results were summarised as shown in equation 2

RPN = 0.157+ 0.264 CA……..(2)

If cultural attributes were absent and holding all other factors constant, resilience of project networks would be equal to 0.157. At the same time, holding all other factors constant, a unit change in cultural attributes would result in a 0.264 change in resilience of project networks. This relationship was significant at 0.05 significance level (0.0226< 0.05). Consequently, the null hypothesis was rejected and concluded that cultural attributes has a significant effect on resilience of project networks among agricultural innovation platforms in Central and South western Uganda. These results were consistent with Priem (2010) that a project network needs to implement a “clan” culture in order to obtain the highest level of job satisfaction. Twumasi-Ankrah (2012) also concluded that organizational culture has a positive significant impact on employee innovativeness.

CONCLUSION

The study found that AIPs in South western and Central Uganda largely believed in embracing attributes of values, norms, and power distance as key antecedents to network resilience. The study also found that there is a moderate positive correlation between cultural attributes and resilience of project networks. Regression analysis confirmed that cultural attributes is a significant predictor of network resilience. Consequently, the study concluded that cultural attributes has a significant effect on network resilience among AIPs in South western and Central Uganda.

The study focused on innovation platforms in agricultural sector, leaving innovation platforms in other sectors such as information technology, entertainment, construction, and service sector. The results are therefore only true for networks based in the agricultural sector and may not be generalised to other sectors of the economy.

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