

## X-RAYING VIRTUAL TEAMS AND EFFECTIVE DECISION MAKING IN AN EMERGENT ENVIRONMENT: A STUDY OF LAGOS STATE INTERNAL REVENUE SERVICE

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### Abstract

*The virtual team approach has been in existence in advanced economies, but this became more prevalent in most developing countries like Nigeria during the lockdown occasioned by the outbreak of Covid-19. Most organizations started considering using virtual platforms in Nigeria like video conferencing and virtual teams in carrying out firm activities because of the restriction of movement. This approach has become “a new normal” across the globe after the ease of the lockdown. However, the influence of this digital application on decision-making has not been adequately examined in the literature since the approach, whereby the team members are carrying out their group tasks virtually is relatively new in the Nigerian system. This study, therefore, with the aid of Adaptive Structuration Theory (AST), examined the effect of virtual teams on effective decision-making in the Lagos State Internal Revenue Service. A cross-sectional survey method was employed to administer 347 copies of the questionnaire to the 2,635 staff population of Lagos State Internal Revenue Service in 39 tax offices across the State out of which 254 copies were properly filled and returned representing a 73.2% response rate. Multiple regression was adopted, and the results revealed that group leadership was the strongest predictor of effective decision-making followed by group communication and group trust. However, group cohesion did not show any significant influence but was found to have a positive relationship. The study concludes that virtual teams affect the effectiveness of decision-making in an emergent situation. It is recommended in this study, therefore, that there is a need to develop a control mechanism to constantly evaluate the decision-making process in virtual teams to avoid its pitfalls.*

**Keywords:** Cohesion, communication, effective decision-making, leadership, trust.

## **1. Introduction**

The present economic situation with the high cost of running government does not permit states in Nigeria to solely depend on monthly statutory allocation from the revenue that the federal government generates majorly from oil and gas. States like Lagos, therefore, came up with strategies to improve their internally generated revenue for infrastructural development and to meet up with other social and economic demands. To achieve this, every state in Nigeria is expected to establish an institution that administers tax collection and fees from licenses to boost their revenue generation. Statistics show that Lagos State Internal Revenue Service has been maintaining the lead amongst other states in Nigeria in terms of revenue collection. For example, the report of National Bureau of Statistics-NBS (2021) reveals that the internally generated revenue (IGR) of Lagos State in 2020 increased by 5.08% compared to 2019 and 32.08% of the total IGR of all the 36 States the same year in Nigeria including Abuja, the Federal Capital. There is need therefore, to understand how the environment affects the decisions of this public institution saddled with the responsibility of generating revenue from tax collection for the state.

The operations and decisions of Lagos State Internal Revenue Service could be affected by any changing condition like the recent global pandemic occasioned by Covid-19 since the establishment operates in the same environment like every other public parastatal or private organization. The outbreak of Covid-19 caused a global lockdown between the first and second quarters in the year 2020 that led to a total restriction in human and vehicular movement across the globe. Many companies particularly in advanced economies had been using electronic media to support their business activities virtually before the lockdown, however, this suddenly became “a new normal” for organizations both in advanced and developing nations during the lockdown. Most of the organizational team tasks that required members to meet physically before the lockdown resorted to virtual meetings through videoconferencing Zoom, Skype and other means of electronic communication.

Zoom’s valuation exceeded \$100 billion during the pandemic, about 383% increase on its value because companies all over the world counted more than 300 million participants on daily basis in virtual meetings, and people needed to be connected to do their businesses during the lockdown. Work is concurrently becoming more collective and more technologically dependent. Therefore, firms are gradually shifting away from methods of individual progression and accomplishment toward paradigms that underscore team-based

performance and firm's success (Charlier, Stewart, Greco & Reeves, 2016; Hanna, Smith, Kirkman & Griffin, 2021). Teams that consider using electronic media for their communication are regarded as virtual teams (VTs), and they are now common in today's work environment (O'Neill, Hancock, Zivkov, Larson & Law, 2016).

## **2. Statement of the Problem**

Virtual team approach was not very common in developing countries like Nigeria before the outbreak of Covid-19. Virtual teams require infrastructure that drive the required technology, but it appears that most organizations in Nigeria are not supported with the facilities to leverage the opportunity. Considering the prevalent and growing adoption of virtual teams, an in-depth understanding of it remains a research priority (Breuer, Hüffmeier, Hibben & Hertel, 2020; Singh, 2021).

Virtual teams tend to assemble members with different skills to solve a particular problem and reach decisions. However, the failure of these groups to perform according to expectations had made scholars to investigate factors that contribute to effective group decision-making particularly in virtual teams (Morrison-Smith & Ruiz, 2020; Stahl & Maznevski, 2021). It is indisputably clear that the adoption of VTs in the developing economies was because of the changing conditions occasioned by the COVID-19 lockdown, but how it affects effective decision making in public institutions like Lagos State Internal Revenue Service has not been adequately examined. The study, therefore, intends to examine the effect of group cohesion, communication, trust, and leadership as components of virtual teams on effective decision-making in an emergent environment like covid-19.

## **3. Theoretical Foundation**

### **Adaptive Structuration Theory (AST)**

Adaptive structuration theory is one of the topmost three theories of group communication, and it was inspired by Anthony Giddens' concept of structuration (Lima & O'Dwyer, 2020; Xu, Li, Yu, Zha, He & Hong, 2021). The theory was developed by M. Scott Poole based on the work of Giddens, Robert McPhee, and David Seibold (LaBelle & Waldeck, 2020; Pari, Lubis & Bintari, 2020). It was developed via research comprising technology applications such as group decision support systems and collaborative technology (Kumar, 2020). The main assumption of adaptive structuration theory is that technology is incorporated into a larger social context engendered by human interaction (Poole & DeSanctis, 1990), and that the outcomes

of a team are not direct results of the technology adopted by the team members, but a reflection of the way they utilize the technology (Charlier *et al.*, 2016).

Adaptive structuration theory seeks to be a logical approach for examining social structures that emerge owing to innovation being experienced in organizations like video conferencing (Soderstrom & Weber, 2020). The theory proposes that for a team that utilizes an innovation for task completion, such innovation should be viewed as part of an overall social context, and that it should be well appropriated by team members (Charlier *et al.*, 2016). Considering AST in this study as a foundation theory demonstrates that in a situation where team members do not have an opportunity to meet physically, virtual teams become necessary. However, the argument here is about how structure can be developed around virtual teams through group cohesion, communication, trust, and leadership towards effective decision making.

#### **4. The Concept of Virtual Teams**

Studies about virtual teams emerged since the early 1990s, together with the attractiveness of virtual communication tools like video conferencing, electronic mail, and other electronic-based groupware - a class of software that aid groups or a social group attached to a communication network to organize their activities (Liao, 2017). The concept of virtual teams emerged from “teleworkers and virtual groups” (Maduka, Edwards, Greenwood, Osborne & Babatunde, 2018). Teleworkers are characterized as those working partially, or entirely outside of their main workplace with the aid of information and telecommunication services (Hosseini, 2012). Due to advancement in technology, firms needed to run their projects across the globe. This led to an evolution in the concept of teleworkers to what is now called virtual groups that are regarded as several virtual teleworkers reporting to the same manager (Maduka *et al.*, 2018). Thereafter, virtual groups changed to virtual teams regarded as virtual groups who interact with one another to achieve common goals (Zigurs, 2003).

Researchers have developed several definitions of virtual teams (Hertel, Geister, & Konradt, 2005; Zigurs, 2003). However, the definitions vary in terms of their specific languages (Liao, 2017), but they commonly share three defining attributes as summarized by Cohen and Gibson (2003). 1), a virtual team is a group of individuals who engage on tasks that share different degrees of interdependence and shared accountability to achieve a common goal. 2), these individuals are dispersed in certain manners. 3), instead of interrelating or communicating face-to-face in traditional teams,

members primarily depend on technology to interconnect and communicate with peer team members.

Conceptually, virtual teams tend to reduce the need for individuals to travel between sites, thereby reducing costs in terms of time, money, and stress (Morrison-Smith & Ruiz, 2020). The implication of this is that virtual teams have become vital tools to maintaining progressively globalized social and economic infrastructure. Like co-located teams, virtual teams involve in different collaborative activities like formal and informal meetings using technology such as video conferencing (Zoom, Skype, and text etc.) for information sharing and decision making (Olson & Olson, 2013). To avoid the problem of relocating team members for specific assignment especially when relocation is not a viable option, technology is being deployed to facilitate virtual teams (Siebdrat, Hoegl & Ernst, 2014; Van den Bulte & Moenaert, 1998). However, virtual teams can experience difficulties collaborating compared to co-located teams (Dubé & Robey, 2009; Morrison-Smith & Ruiz, 2020; Olson & Olson, 2000; White, 2014).

## **5. Hypotheses Development and Conceptual Framework**

### **Group Cohesion and Effective Decision Making**

The effect of group cohesion on the quality of decision making in group is an essential element of Janis' (1972, 1982) theory of groupthink. In the opinion of Janis (1972, p.9) groupthink is "a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of actions". Two factors that can affect group decision-making are high levels of group cohesion and group politics (Griffin, 1997; Vecchio, 2003; Wetmore & Summers, 2004), and the combination of the two has been classified as groupthink (Bowler & McElroy, 2015). Various critical strategic and operational decisions in organizational setting are group based (Schouten, van den Hooff & Feldberg, 2016; Wang, Wan, Zhang, Li & Zhang, 2016).

However, group members might feel intimidated owing to the presence of an assertive or outspoken group member; thereby limiting the opportunity of information sharing for a knowledgeable decision (Wetmore & Summers, 2003). Superior group members could have influence on the decision of other members of the group considering the power of authority instilled in such member. In other word, some members might decide not to support an idea if a substantial element of risk is involved (Griffin, 1997; Lohan, Acton & Conboy, 2013). The argument in this study is that since the conversation among the

team members regarding their tasks is virtual, and there is tendency of dominant factor, there is need for a reasonable level of cohesion towards effective decision making.

H<sub>01</sub>: Group cohesion does not have any significant effect on effective decision making in virtual teams

### **Group Communication and Effective Decision Making**

It is noted in the literature that the quality of decisions made in any organizational setting is a function of how the teams involved in the decision-making are able to manage their group communication with one another in such a way that it facilitates information sharing, and critical evaluation of available options (Elegbe & Ibikunle, 2015; Elwyn Frosch & Kobrin, 2015; Uitdewilligen & Waller, 2018). In addition, deviations in the quality of the decisions made by virtual teams could be attributed to the quality of communication that preceded their choice making in the group (Hirokawa, 1988; Manata, Garcia, Mollaoglu & Miller, 2021; Shaw, 1981). However, members of team communicate for them to discover the best solution (Adamu & Mohamad, 2019). In this case, therefore, team members are expected to examine the accuracy, importance, and quality of information more intensely and pay more attention to exceptional information needed to make effective decision making (O'Neill et al., 2016; Schulz-Hardt & Mojzisch 2012). The argument around this is that body language of team members also contributes to their communication, therefore, it goes beyond being verbal as mostly the case in virtual communication. Therefore, the outcomes of the group communication could affect the effectiveness of the decision made by virtual teams since they cannot realistically observe the body language of the team members.

H<sub>02</sub>: Group Communication does not have significant effect on effective decision making in virtual teams

### **Group Trust and Effective Decision Making**

Owing to the absence of physical interaction between team members, group trust in virtual teams is recognized in a different dimension compared to traditional teams (Davidaviciene, Majzoub & Meidute-Kavaliauskiene, 2020). Group trust in a virtual team is complex because trust itself is the degree at which one party is disposed to rely on another person in a particular circumstance with a sense of relative security (Liu, Liang, Chiclana & Wu, 2017; McKnight & Chervany, 2001). Group trust in virtual teams depends on the assumption that every member is acting upon the established commitment with good intents and working hard on behalf of the entire group (Gilson,

Maynard & Bergiel, 2013). Group members who tend to have a sound interpersonal relation could be more liable to trust each other (Šmite, Wohlin, Aurum, Jabangwe & Numminen, 2013). The word “trust” comprises of three factors namely ability, benevolence, and integrity (Ackermann, Yearworth & White, 2018; Kolbe, Bossink & de Man, 2019; Paul, Drake & Liang, 2016).

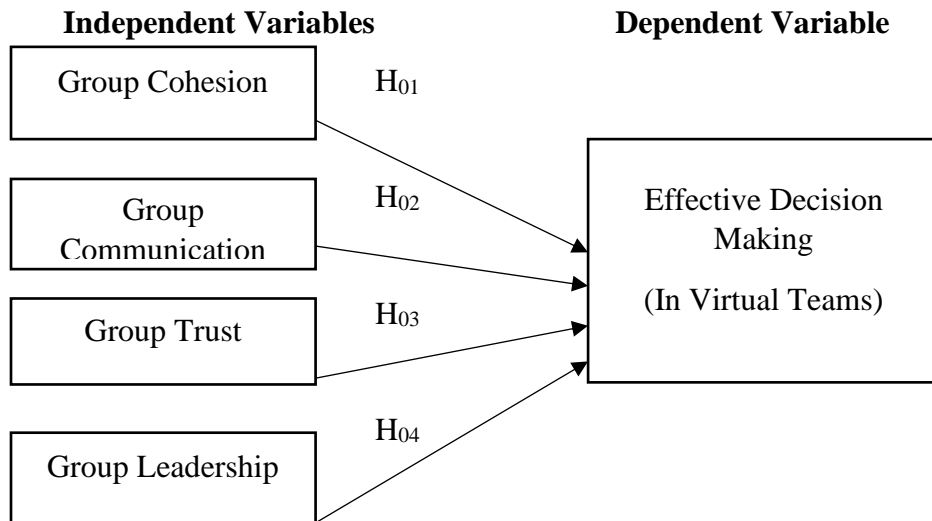
The type of group trust required in a virtual team is cognitive-based trust, this is because feelings and emotions seem tough to share among team members via electronic devices (Zuofa & Ochieng, 2017). Geographical distance is one of the reasons for distrust in virtual teams (Davidaviciene *et al.*, 2020). Trust between and among team members can influence decision making (Eisenberg, Post & DiTomaso, 2019). Studies have established a positive effect of group trust on virtual teams’ decision-making processes (Alsharo, Gregg & Ramirez, 2017; Berg, 2012). Group trust plays a vital role in a virtual decision making and in sustaining relationships among virtual team members (Ackermann *et al.*, 2018), because decision makers trust the opinions of trusted members (Drouin & Bourgault, 2013).

H<sub>03</sub>: Group trust does not have significant effect on effective decision making in virtual teams

### **Group Leadership and Effective Decision Making**

The importance of leadership in virtual teams cannot be overstated (Maduka *et al.*, 2018). It is no longer an assumption that differences occur between this type of environment and conventional teamwork in ensuring an effective leading of a high-performing team driven towards decision making execution in organisations (Turkay & Tirthali, 2010; van Ginkel & van Knippenberg, 2012). Leadership is the “adoption of social influence and power to change the character of others, and this can be possible through a social network of influence” (Donald, 2004). In the opinion of Turkay and Tirthali (2010), leadership with virtual competence is a sign of good leadership and is a significant factor in fostering effective decision making towards attaining successful project deliverables. The argument in this study centered around the level of leadership capacity of the team members in developing nations like Nigeria regarding decision making since virtual team approach was recently considered as a coping strategy during the Covid-19.

H<sub>04</sub>: Leadership does not have any significant effect on effective decision making in virtual teams

**Fig. 2.1: Conceptual Model**

**Source:** Researchers' Field Survey (2022).

## 6. Methods

Field survey was employed in this study by way of distributing questionnaire to the staff of Lagos State Internal Revenue Service who are the participants. Survey method was considered in this study because it allows the researchers to get primary and reliable data from the relevant respondents through distribution of questionnaire. In addition, where secondary source of data fails to provide sufficient information like the issue of virtual teams and effective decision making in Lagos State Internal Revenue Service, primary source of data serves as a better alternative. The study applied cross-sectional approach to administer 347 copies of questionnaire to 2,635 staff population of Lagos State Internal Revenue Service in 39 tax offices across the State using Yamane (1967) sampling technique. Out of 347 copies of questionnaire administered to the participants, 254 copies were properly filled and returned representing 73.2% response rate that was used for the testing of the hypotheses. Inferential statistics was deployed via multiple regression to demonstrate the contribution of each predictor's variable.

## 7. Measures

The questionnaire constructs were adapted from relevant literature such as group cohesion items that were modified from Dobbins and Zaccaro (1986) and Griffith (1988). Group communication items were adapted from the studies of Schouten, van den Hooff, and Feldberg (2016), and Hirokawa (1988). The items that measure group trust were adapted from Yamagishi and Yamagishi (1994), Davidaviciene,



Majzoub and Meidute-Kavaliauskiene (2020), and Liu (2017). The items that measure group leadership were adapted from van Ginkel and van Knippenberg (2012), Aarons, Ehrhart and Farahnak (2014), and Maduka *et al* (2018). In the case of effective decision making, the items were adapted from Anderson, Martin, and Infante (1998), and O'Neill *et al* (2016). The validation of the questionnaire was done by experts in the field of organizational behaviour regarding virtual teams and decision making in organization while the relationship among the constructs were tested using Pearson correlation.

## 8. Analysis

A correlation analysis is carried out to measure how the variables used in this study are interrelated.

**Table 1: Correlation matrix among the study variables**

	N	1	2	3	4	5
1 Effective Decision Making	254	1				
2 Group Cohesion	254	.565**	1			
3 Group Communication	254	.656**	.555**	1		
4 Group Trust	254	.629**	.543**	.563**	1	
5 Group Leadership	254	.616**	.560**	.648**	.599**	1

Source: Researchers' Computation (2022)

The correlation matrix in Table 1 demonstrates the degree of relationship among the variables, basically to determine the correlation coefficient among the variables. However, the results do not indicate prediction but to find out the interactions among the variables using Pearson correlation statistical analysis at  $**p < 0.01$ . In the Table 1, effective decision making (dependent variable) is significantly correlated to the four components of virtual teams (e.g. group cohesion =  $.565^{**}$ ,  $p < 0.01$ , group communication =  $.656^{**}$ ,  $p < 0.01$ , group trust =  $.629^{**}$ ,  $p < 0.01$ , and group leadership =  $.616^{**}$ ,  $p < 0.01$ ). In addition, the association among the predictors revealed the relationship between group cohesion and other three variables as ( $.555^{**}$ ,  $p < 0.01$ ;  $.543^{**}$ ,  $p < 0.01$ ;  $.560^{**}$ ,  $p < 0.01$ ), group communication and other two predictors revealed ( $.563^{**}$ ,  $p < 0.01$ ;  $.648^{**}$ ,  $p < 0.01$ ) while the relationship between group trust and group leadership showed ( $.599^{**}$ ,  $p < 0.01$ ). Looking at the degree of relationship among the independent variables as demonstrated in the Table 1, the study discovered that they are moderately normal as they hovered between -0.01 and 0.656 which does not cause concern for multicollinearity.

**Table 2: Regression analysis table**

	Description	B	T	P-Value	R	R <sup>2</sup>	F	Sig.	Remark
H <sub>01</sub>	GRH	.109	2.131	.034					Accepted
H <sub>02</sub>	GRC	.230	4.165	.000	.786	.618	100.621	.000	Rejected
H <sub>03</sub>	GRT	.213	4.034	.000					Rejected
H <sub>04</sub>	GRL	.379	6.672	.000					Rejected

Dependent Variable: Effective Decision Making ( $P < 0.01$ )

Source: Researchers' Computation (2022)

Keys: GRH= Group cohesion, GRC= Group communication, GRT= Group trust, GRL= Group leadership

The Table 2 indicates combined relationship of virtual teams' components and effective decision making with respect to Lagos State Internal Revenue Service with R value of .786. The table 2 also shows the outcome of multiple regressions, which indicates the combined effect of the predictor variables (GRH, GRC, GRT, and GRL) on effective decision making particularly in a changing and emergent business environment. The coefficient of determination of R<sup>2</sup> reveals that 61.8% of the variation in the effective decision making is due to the joint effect of virtual teams' components. The F-statistic value of 100.621,  $p < .01$  reveals the goodness of fit of the model to describe the variants and to either reject the null hypothesis or accept it. In view of this, hypothesis one was accepted with  $P$  value of .034 that is greater than 0.01 while hypotheses two, three and four were rejected because they have  $P$  values of .000 that are lesser than 0.01 respectively.

The implication of these values is that group cohesion was not found having a significant effect on effective decision of virtual teams, though, there is positive relationship. In the case of group communication, group trust, and group leadership, they were found having significant effects on effective decision making in a virtual team. In addition, the Beta ( $\beta$ ) values of .786 also demonstrated positive and significant association among the variables. However, when the predictor variables of (GRH, GRC, GRT, and GRL) were disaggregated, the relative contribution of GRL was the strongest predictor of effective decision making with ( $\beta = .379$ ,  $t = 6.672$ ;  $p < 0.01$ ), followed by GRC with ( $\beta = .230$ ,  $t = 4.165$ ;  $p < 0.01$ ), GRT with ( $\beta = .213$ ,  $t = 4.034$ ;  $p < 0.01$ ) while GRH with ( $\beta = .109$ ,  $t = 2.131$ ;  $p > 0.0$ ) was not showing significant contribution but having positive relationship.

## 9. Discussion of Findings and Conclusion

Technology innovation has become a major driver of business success across the globe. In addition, the increasing workplace demand for virtual team's deployment became a viable option as a coping strategy

for organizations and government institutions in developing countries like Nigeria during the lockdown. Virtual team approach was adopted in Nigeria particularly because employees of many organizations could not go about carrying out their tasks as a result of the lockdown occasioned by the outbreak of Covid-19. However, even though this model had been in existence in advanced economies before the global pandemic, it is now considered more viable than face-to-face contact globally even in a post-lockdown era. It is generally recognized now as “a new normal” in the business environment. The argument in this study centered on how this model affects effective decision making of the group members since they do not meet physically to discuss.

The findings of this study revealed that group cohesion does not have any significant effect on effective decision making in a virtual team, though, there is a positive relationship. The implication of this is that since virtual teams do not have the opportunity to interact physically, it might be difficult for them to understand the body language during communication. Therefore, the level of closeness would be reduced and bonding could also be affected. While this finding supports the argument of Lohan, Acton and Conboy (2013) with assumption that time pressure in group cohesiveness affects the decision of team members, it negates the assumption of Schouten, Van den Hooff and Feldberg (2016) who submit that group cohesion influences the effectiveness of decision making.

Group communication affects the effectiveness of decision making in a virtual team particularly when individual can leverage on the opportunity in technology to clearly inform their team members about any new development in the tasks they are jointly carrying out. However, this might be thwarted when the process of communication is not flexible enough to foster dissemination of information. This is the area where managers are expected to intervene by constantly evaluating the communication process in a virtual team. The findings of Elegbe and Ibikunle (2015) support this result, though, Adamu and Mohamad (2019) submit that group communication might not be effective enough to influence the decision of team members during the crisis like Covid-19.

Group trust is identified in this study as a component of virtual team that can affect decision making because the members perceive themselves as a family unit, thereby feeling comfortable to rub minds and share new ideas. Virtual teams have made some employees to develop a sense of belonging in the group. Ordinarily, this might not have been possible considering the conventional workplace setting characterized by several offices physically dispersed, and walled away from one another, thereby limiting the level of interaction and

conversation amongst individuals. This finding corroborates Davidaviciene *et al* (2020) who infer that trust is one of the major factors of virtual teams that can significantly affect effective decision making in organizations.

In any setting where two or more people come together with the aim of accomplishing a task or a common goal, leadership is naturally needed. On this basis, it is established in the findings of this study that group leadership is a major factor for decision making in a virtual team. Good leadership can engender motivation in a critical situation as well as facilitating the establishment of clear standards towards implementation of group tasks in an organization. In the same vein, Van Ginkel and Van Knippenberg (2012) and Maduka *et al* (2018) in their separate studies demonstrate that group leadership is one of the major determinant factors for effective decision making in virtual teams. However, a team leader might play a significant role in developing a socially shared understanding of the team task. Based on these findings, this study concludes that virtual teams through group cohesion, communication, trust, and leadership can significantly affect decision making in an emergent environment, though, group cohesion does not have any significant contribution but a positive influence.

#### **10. Policy Implication**

Virtual teaming has been recognized as a new way of managing work that allows individuals or groups to carry out tasks together even though they are geographically detached. Consequently, the need to examine factors that can manage such complex environment is necessary to facilitate effective decision making towards achieving superior performance in the face of changing conditions. Individuals working in virtual teams apply electronic devices to communicate with one another, rather than physical or face-to-face communication. Therefore, organizations are expected to monitor their cohesiveness to avoid mistrust and communication gap. There is also need to develop a control mechanism to constantly evaluate the decision making process of team members *vis-à-vis* major factors of virtual teams as identified in this study to allow necessary actions to be taken for improvement. Managers and policy makers can therefore, leverage on the study conceptual model to understand a particular component of virtual teams that needs urgent attention of management than the other at a particular time.

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