NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

**The Integrative Model of Organizational Trust
as a Framework for Understanding Trust in Government**

by

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We assess the applicability of Mayer, Schoorman, and Davis' (1995) Integrative Model of Organizational Trust for modelling citizens' trust in their government, using country-level survey data collected in four Western Trans-Sahel countries (Burkina Faso, Senegal, Mali, and Nigeria) in 2010. Although the original model focused on trust between individuals, our fundamental supposition is that the model also applies to individuals' trust in an organizational-level entity: government. Our findings also suggest there are two separate dimensions to ability and benevolence/integrity associated with trust in government, as well as the existence of a new term that we hypothesize is related to government reputation.

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I.   INTRODUCTION

Multiple social science perspectives state that trust is critical to human interaction. For example, psychologists suggest that "trust is one of the most important components—and perhaps the most essential ingredient—for the development and maintenance of … well-functioning relationships" (Simpson, 2007a, p. 587). Similarly, commentators from the field of international relations have stated that trust within the international system is "the underpinning of all human contact and institutional interaction" (Blind, 2006, p. 3). Organizational management perspectives reach a similar conclusion about the cross-disciplinary importance of trust studies (e.g., Colquitt, Scott, & LePine, 2007). Even American military perspectives from the counterinsurgency battlefields of Iraq and Afghanistan suggest that generating trust between American service members and local populations is more important than kinetics and force. For example, David Kilcullen, the noted Australian counterinsurgency expert, states that trust building in the counterinsurgency context is the military's "true main effort: everything else is secondary" (Kilcullen, 2010, p. 37). As a result of these growing perspectives, researchers have called for more relevant, cross-cultural, macro-level investigations of trust (e.g., Bachmann, 2011; Li, 2011; Mishra & Mishra, 2013).

This manuscript is the first to explore the utility of Mayer, Davis, and Schoorman's (1995) Integrative Model of Organizational Trust for understanding citizen trust in government. Mayer et al.'s Integrative Model of Organizational Trust has been used to explain interpersonal trust outcomes in the business world (Davis, Schoorman, Mayer, & Tan, 2000), the medical community (Schoorman, Mayer, & Davis, 1996), psychology (Simpson, 2007a; 2007b), and others (e.g., Colquitt et al., 2007). Despite the overwhelming utility of the Mayer model for understanding interpersonal trust generation in multiple contexts, it has, to our knowledge, never been used to understand citizen trust in government. This is surprising since Mayer and colleagues (e.g., Schoorman, Mayer, & Davis, 2007) claim that their model is robust for understanding an individual's trust in organizations, though they tend to think of trust in business organizations as opposed to governments, and as Mayer and colleagues noted, "the 1995 framework is fairly robust across levels of analysis" (Schoorman et al., p. 345). From their perspective, the same

variables that impact trust between people "also affect the extent to which an organization will be trusted" by people (Schoorman et al., 2007, p. 345).

This paper is organized as follows. In the next section, we describe Mayer et al.'s Integrative Model of Organizational Trust and how elements of the framework can be applied to understanding citizen trust in government. We also discuss existing research on trust in government that, despite not using the Mayer et al. model as an organizing framework, appears to support the Mayer et al. concept. Subsequently, we describe our analysis of survey data from four countries in the Trans-Sahel region of Africa (Senegal, Nigeria, Burkina Faso, and Mali), where we assess whether the Integrative Model of Organizational Trust is appropriate for understanding citizen reports of trust in government. Finally, we conclude with a discussion of our results and recommendations for future research.

II.   BACKGROUND

Multiple theoretical frameworks, across disciplines, attempt to explain how trust is generated. For example, Wieselquist, Rusbult, Foster, and Agnew (1999) propose a trust generation theory based in psychology, often used to explain trust in romantic relationships, which describes how trust is generated between two people. Simpson (2007a; 2007b) proposes a dyadic theory of trust generation that focuses on the impact of personality variables across multiple stages of the trust generation process. Hardin (2006) proposes a view based in political philosophy that helps explain how people have developed trust across time. Vigoda-Gadot (2006), in a model of voice orientations, proposes that trust in governance is a function of satisfaction with services, organizational politics, and ethics. Combs and Blincoe (2013) propose a new theoretical framework specifically designed to understand how trust is generated cross culturally, with an aim towards understanding trust on the battlefield. While each of these trust models is useful, perhaps the most celebrated social science model of trust generation is Mayer et al.'s now classic Integrative Model of Organizational Trust (Mayer et al., 1995). Developed in the mid-1990s to organize a very disjointed social sciences trust literature, Mayer et al.'s model has now received extensive supporting empirical treatment and, by 2007, has been cited over a thousand times (Schoorman et al., 2007).

A.   INTEGRATIVE MODEL OF ORGANIZATIONAL TRUST

In 1995, Mayer and colleagues introduced their Integrative Model of Organizational Trust. Trust, from Mayer et al.'s perspective, is "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995, p. 712). According to their framework, as shown in Figure 1, trust is a result of trustworthiness. In this case, trustworthiness is a function of the trustor's (the person doing the trusting) perceptions of the trustee's (the person who would be trusted) ability, benevolence, and integrity (each explained in more detail in Section B). These components of trustworthiness, along with a person's dispositional propensity to trust, theoretically predict the level of trust that a trustor has in a trustee. The Mayer et al.

model is a feedback loop, where trust is tested in a risk-taking situation, an outcome is observed, and then the trustor's assessment of the trustee is subsequently updated.
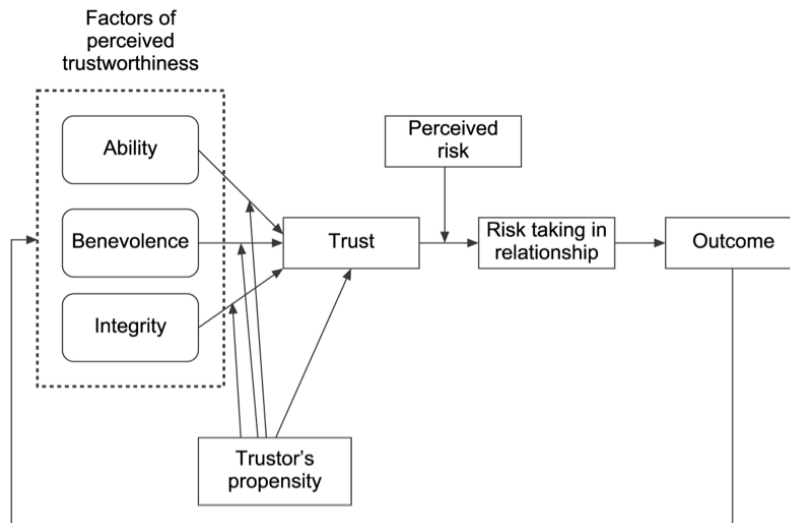

Figure 1.   Mayer et al.'s (1995) Integrative Model of Organizational Trust.

Mayer et al.'s model was originally proposed to explain trust in business relationships. For example, the process in Figure 1 was designed to explain when an employee might trust a supervisor. If the employee perceives the supervisor as having sufficient ability, benevolence, and integrity, then the employee is more likely to trust the supervisor and be willing to be vulnerable to his or her direction, leadership, etc.

B.   COMPONENTS AND DEFINITIONS WITHIN THE INTEGRATIVE MODEL OF ORGANIZATIONAL TRUST

As noted, Mayer et al. (1995) suggest that trustworthiness is made up of ability, benevolence, and integrity. This section characterizes each of these trustworthiness elements and provides research examples indicating that each has an impact on trust in government. The section concludes with a brief example of how the overall framework could play out regarding trust in government.

Mayer et al. (1995) define *ability* as "that group of skills, competencies, and characteristics that enable a party to have influence within some specific domain" (p. 717). Essentially, ability is a trustor's perception of a person or organization's ability to successfully complete a task. The impact of this trustworthiness component on trust makes

intuitive sense. A trustor would not be willing to make themselves vulnerable to the actions of a trustee if the trustee is incompetent to achieve some relevant task. Of course, as Combs and Blincoe (2013) note, "ability varies from domain to domain and situation to situation." At a personal trust level, an auto mechanic might be very good at repairing domestic cars, but have little background with foreign cars. As such, a trustor's sense of a trustee's ability to repair his or her car will clearly vary across situations, as will a trustor's overall trust in the trustee.

From an organizational standpoint, the degree to which a person believes a business or government is trustworthy, and therefore trusts the business or government, should also depend on the ability of the organization in question. For example, trust in an auto manufacturer is probably dependent, to a degree, on the organization's ability to produce a quality product. That is, people probably ask themselves some variant of the question: Can this manufacturer get the job done? Similarly, trust in government is probably dependent, to a degree, on the government's ability to produce things like effective security, infrastructure, and economic growth. Like the auto manufacturer example, people probably ask themselves some variant of the question: Can this government get the job done?

Multiple research projects, often from the field of political science, have examined the impact of citizens' perception of government ability on reports of citizens' trust in government.[1] For example, Blind (2006) points out that a government's ability to provide security and services impacts citizens' trust in government. Blind also states that a sense of government professionalism and competence has much the same effect. Hetherington (1998) similarly points out that a number of perspectives on government trust are based on perceptions of government efficiency:

> Because people are likely to trust things they perceive to be working effectively, the
> quality of policy outcomes should also help explain trust. Public perceptions of the

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[1] It is important to keep in mind that, in some cases, the term *trust* is used differently in political science than the way that Mayer et al. use the term. Sometimes the term *trust* in political science more resembles the psychological term *attitude* (e.g., Hetherington, 1998). In other cases, the term *trust* more resembles Mayer et al.'s trustworthiness construct (e.g., Blind 2006). Regardless, usage of the term is similar enough between the political science research and the Mayer et al. research that we use the concept interchangeably.

government's ability to solve problems that are personally most important should have a strong bearing on political trust. (p. 794)

Kim (2010) finds "that government performance on the economy, . . . the quality of public services, crime, and attention to citizen input are significantly associated with broad public trust in government in both Japan and South Korea" (p. 801). Similarly, Christensen and Laegreid (2005) conclude that "citizens who are satisfied with specific public services generally have a higher trust in public institutions than citizens who are dissatisfied" (p. 487). Hetherington (2006) also states that, "Most Americans simply do not think the government is capable of doing the job [referring to a number of policy matters] well enough or fairly enough" (p. 5). In his analysis, Hetherington found that citizens' trust in government was strongly related to support for government programs, such as foreign aid and food stamps.

Mayer et al. (1995) define *benevolence* as "the extent to which a trustee is believed to want to do good for the trustor" (p. 720). Essentially, benevolence is a trustor's perception that a person or organization cares about the trustor. A trustor might believe that a trustee has high ability, but if a trustor does not believe that the trustee wants to do good for the trustor, then his or her trust is clearly diminished. As Davis et al. (2000) note, "Benevolence represents a positive personal orientation of the trustee to the trustor" (p. 566). They suggest that in a business context, at the individual level, benevolence might manifest for an employee (the trustor) when a manager (the trustee) is willing to "go out of his or her way" for the employee.

From an organizational standpoint, the degree to which a person or persons believes a business or government is trustworthy, and therefore trusts the business or government, should also depend on the benevolence of the organization in question. From Mayer and colleagues' perspective, benevolence might not be a major factor in trust in a business since, after all, what business can afford to be truly benevolent? Yet, clearly, the benevolence of a government, the degree to which a trustor believes that a government wants to do good for the citizens, should have an impact on citizen trust. As Vigoda-Gadot (2006) argued:

. . . when citizens perceive bureaucracy as insensitive, feel that it promotes the interests of powerful individuals or groups based on political considerations, and

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believe that it engages in unfair practices, public attitudes towards democracy may become more cynical. Similarly, citizens may react negatively, either cognitively and/or behaviorally, by reducing their levels of trust and confidence in governance. (p. 290)

Thus, if a government seems uncaring about the day-to-day travails of its citizenry, citizen willingness to trust that government should be hampered. On the other hand, if a government is perceived as caring and responsive to the needs of its citizens, it makes sense that the citizens might afford the government more trust.

As Blind (2006) notes, in many developed nations where trust is lowest, citizens commonly report that their government does not care about their needs (also see Dalton, 2005). Along these lines, Warren (1999) suggests that governments are better trusted when they take on the interests of their citizens. Warren (2006) also notes that citizens' perceptions of government sincerity are helpful in generating government-level trust. Miller (1974) made a similar point when he found that the perception that a government "does not function for [the citizens]" is associated with distrust (p. 951). He also points out that one way to reduce citizens' distrust in government is for a government to generate policies that are more clearly and obviously responsive to the needs of the citizenry. Miller and Listhaug (1990) came to a similar conclusion in their comparative analysis between Sweden, Norway, and the United States. They found that governments that have a more flexible party system (as opposed to a rigid, two-party system) are often more trusted because the citizenry believes that at least some element of the government, even if it is a very small party, cares about their specific needs.

The final element of Mayer et al.'s trustworthiness construct is integrity. Mayer et al. (1995) define *integrity* as "the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable" (p. 719). This concept does not imply that the trustor and trustee have exactly the same set of principles; rather, this definition indicates that the trustor adheres to some consistent moral code and is generally fair and just (e.g., Colquitt et al., 2007). As Davis et al. (2000) put it, "Such factors as consistency, a reputation for honesty, and fairness all contribute to the . . . perception of integrity" (p. 567). Van Ryzin (2011) found that "process has a consistently large effect on trust of

civil servants" (p. 745) and the beneficial aspects of government processes include fairness, equity, respect, and honesty.

From an organizational standpoint, the degree to which a person or persons believes a business or government is trustworthy and, therefore, trusts the business or government, should also depend on the integrity of the organization in question. From the perspective of a business, perceptions of integrity are probably based on a company's fulfilment of contractual obligations and a general abiding by business rules and norms. For a government, perceptions of integrity are probably based on similar perceptions. In addition, a sense that a government operates within the rules it has created and avoids corruption probably has an impact on integrity and subsequent trust.

Research on perceptions of government corruption support the Integrative Model of Organizational Trust in the sense that governmental integrity (or lack thereof) affects citizens' trust in government. For example, multiple research perspectives note that scandal and corruption have devastating impacts on reports of trust in government. Warren (2006), for example, notes that corruption is corrosive, undermines democracy, and creates cynicism. Kim (2010) finds "that government performance on . . . controlling political corruption . . . [is] significantly associated with broad public trust in government" (p. 801). Research by Morris and Klesner (2010) supports this notion and found that government-level corruption not only diminishes trust in government, it also produces increased corruption, creating a vicious cycle of decreased trust and increased corruption. Morris and Klesner (2010) also point out that exposure to political scandal reduces political trust and has even been linked to voter apathy in both the United States (U.S.) (Peters & Welsh, 1980) and Mexico (McCann & Dominguez, 1998). Similarly, Dalton (2005) expanded on the pervasiveness of these issues and noted that political scandals over the past several decades have contributed to the decreasing levels of trust in government found across almost all advanced industrial democracies.

C.   TRUST, RISK TAKING, OUTCOMES, AND PRACTICAL APPLICATION

Within the Mayer et al. framework, the more trustworthy that a trustee is, presumably, the more a trustor will be willing to be vulnerable to that person (or organization). In our case, the more trustworthy that a government is, the more trust that a

trustor should have in his or her government, in the sense that the trustor should be willing to take on more risk when a risk-taking situation presents itself. For example, strong trust in a government might manifest itself in risk-taking actions, such as general support for a government, as well as practical action, such as voting. Presumably, as detailed by the model framework, after a person engages in some kind of risk-taking behaviour (such as casting a vote to keep a government in power), the outcome of that risk-taking situation should feedback and update subsequent perceptions of the government's trustworthiness.

A relevant example of this framework of trust generation relates to a recent policy directive of the Obama Administration. In June 2012, the U.S. government implemented the Deferred Action for Childhood Arrivals (DACA). Under the DACA, illegal immigrants who were brought into the United States as children, who have graduated from U.S. schools, and who meet other requirements can obtain official deferment of deportation from the U.S. government (U.S. Department of Homeland Security, 2013). In order to do so, however, they must first make themselves very vulnerable by identifying themselves to the government, trusting that the government will honour its promise and not immediately deport them. The degree to which such "illegal" individuals believe that the American government is trustworthy (i.e., possesses ability, benevolence, and integrity), should predict the degree to which they trust the government of the United States and the degree to which they will be willing to take a risk and operate within the bounds of the DACA framework.

D. THEORETICAL DEBATE REGARDING THE INTEGRATIVE MODEL OF ORGANIZATIONAL TRUST

While this section has explained the distinctions between ability, benevolence, and integrity, and their theoretically unique impacts on trust, it is important to note that there is some debate in the literature regarding the unique contributions of each trustworthiness factor on trust. Some empirical analyses (e.g., Jarvenpaa, Knoll, & Leidner, 1998; Mayer & Gavin, 2005) have found that integrity and benevolence do not uniquely contribute to trust. For example, Mayer and Gavin (2005), in a study regarding factory workers' trust in leadership, found that benevolence did not uniquely predict trust, while ability and integrity were significant contributors to trust. Mayer and Gavin suggested that this was likely due to multicollinearity among the trustworthiness survey items. On the other hand, Colquitt

et al.'s (2007) meta-analysis of dozens of papers on trust found that each trustworthiness factor did have a unique impact on trust. Ultimately, this matter has not been resolved in the literature.

III.   RESEARCH HYPOTHESES

This study addresses the following questions: Is the Integrative Model of Organizational Trust, applied to citizens' trust in their government, empirically supported by our data? If so, is there a consistent model construct across countries? And, in terms of modelling citizen trust in government, do the benevolence and integrity trustworthiness factors have a unique impact on trust?

To address these questions, we posed the following hypotheses:

- *H1:*   The Integrative Model of Organizational Trust is an appropriate framework for understanding and modelling citizens' trust in government.

- *H2:* The ability, integrity, and benevolence trustworthiness factor constructs are country-specific.

- *H3:*   The benevolence and integrity trustworthiness factors each have a unique impact on trust.

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IV.   METHODS

The data for this study comes from surveys independently fielded in Burkina Faso, Mali, Nigeria, and Senegal in November and December of 2010. We selected these nations both because of their geographic proximity in the Western Trans-Sahel region of Africa and because of their differences in history, perception of democracy, and the adherence to governance. By separately modelling four countries, which represent different governmental, political, and cultural variants (see Appendix A), we are able to assess how robust the resulting framework is and whether our results are likely to be generalizable or country-specific.

The survey was administered to a representative cross-section of people in each country. The questions are predominantly 4- and 5-point Likert scale-based and focus on quality of life, governance, politics, security, social tolerance, and opinions about international relations. The surveys were designed and fielded following standard survey principles and procedures (e.g., Dillman, 2006; Groves et al., 2004). Upon completion of instrument design, the surveys underwent extensive pretesting in the field prior to their use in the 2010 data collection effort.

A.   SAMPLE

Strict probability samples were selected via a stratified, clustered area sampling scheme designed to be nationally representative, with a margin of error of 2.6% or less. The target population was adults aged 18 and over. A total of N = 8,786 responses were obtained; the final sample sizes, response rates, and margins of error for each country are shown in Table 1.

Table 1. Sample sizes, response rates, and margins of error by country.

Country	Initial Sample Size	Final Sample Size	Response Rate	Margin of Error
Burkina Faso	1,447	1,481	98.0%	2.6%
Mali	2,091	1,874	89.6%	2.3%
Nigeria	4,423	3,770	85.2%	1.6%
Senegal	1,703	1,661	97.5%	2.5%
Aggregate	*9,664*	*8,786*	*90.9%*	*N/A*

Data were collected via face-to-face interviews conducted by professional, local survey companies using interviewers who were fluent in the local dialect(s) and who were culturally aware and sensitive to local and national customs. With minor exceptions, the surveys asked the same questions, translated into the appropriate languages and dialects, across all four countries.

B.   MEASURES

Measures were initially derived from the survey questions using exploratory factor analysis via the R statistical package (R Core Team, 2012). In particular, we used parallel analysis to determine the number of factors via the **fa.parallel** function of the R **psych** package (Revelle, 2011) and we used the **factanal** function in the base package to derive the factor loadings (using the varimax rotation). The intent of this exploratory modelling is to gain some insight into whether the survey items produce factors that reflect the Mayer et al. trustworthiness constructs—ability, benevolence, and integrity—as well as trust in government and propensity to trust constructs. See Fricker, Kulzy, and Appleget (2012); Mulaik (2010); and DiStefano, Zhu, and Mîndrilă (2009) for additional discussions of factor analysis.

Tables 2-4 show the resulting factors for Mali, while the detailed results for all four countries, including factor loadings, are shown in Appendix B. Table 5 shows Guttman's λ_6 values (Guttman, 1945) for all factors and all countries. While Guttman's λ_6 values in Table 5 suggest reasonable scale reliability, we note that the fact that the factors largely replicate across the four countries indicates that the λ_6 values are conservative lower bounds on the actual reliability.

As Tables 2-5 and Appendix B show, and as discussed in more detail in Appendix B, the factors do, in fact, align well with the Mayer et al.'s constructs, though each of the trustworthiness constructs manifest in greater detail than single "ability," "integrity," and "benevolence" measures and the specific measures vary some between the countries. Similarly, a clear trustor propensity measure manifests, as do measures of trust in government. These measures were then used as the starting point for structural equation models, discussed in the next section, which we fit to test our hypotheses.

Table 2. Survey items that measure trust in government and trustor propensity, along with mean and standard deviations for Mali respondents.

Measure	Survey Item	Minimum	Maximum	Mean	SD
Trust in Government (TiG)	3. How much trust do you have in President [NAME]?	−2 = No trust at all	+2 = A lot	1.247	1.11
	4. To what extent do you approve of President [NAME]'s overall performance?	−2 = Strongly disapprove	+2 = Strongly approve	1.312	0.91
	5. How much trust do you have in Prime Minister [NAME]?	−2 = No trust at all	+2 = A lot	0.733	1.36
	6. How much trust do you have in your National Assembly?	−2 = No trust at all	+2 = A lot	0.406	1.43
	7. How much trust do you have in your political parties?	−2 = No trust at all	+2 = A lot	−0.175	1.46
	8. How much trust do you have in your armed forces?	−2 = No trust at all	+2 = A lot	1.239	1.11
	9. How much trust do you have in your local police?	−2 = No trust at all	+2 = A lot	0.547	1.40
	10. How much trust do you have in your local government?	−2 = No trust at all	+2 = A lot	0.486	1.35
	11. How much trust do you have in your courts and judges?	−2 = No trust at all	+2 = A lot	−0.292	1.53
Trustor Propensity (TP)	13. How much do you trust your relatives?	−2 = No trust at all	+2 = A lot	1.770	0.67
	14. How much do you trust people from your ethnic group?	−2 = No trust at all	+2 = A lot	1.429	1.01
	15. How much do you trust people who share your religion?	−2 = No trust at all	+2 = A lot	1.505	0.94
	16. How much do you trust people from other ethnic groups?	−2 = No trust at all	+2 = A lot	0.772	1.35
	17. How much do you trust people who practice a different religion?	−2 = No trust at all	+2 = A lot	0.459	1.47

Table 3. Survey items that measure integrity and benevolence, along with mean and standard deviations for Mali respondents.

Measure	Survey Item	Minimum	Maximum	Mean	SD
Free & Fair Society (FFS)	*How much do you agree or disagree with the following statements:*				
	18. People of all religions are free to practice their faith.	–2 = Strongly disagree	+2 = Strongly agree	1.623	0.85
	19. People are free to join any organization they want.	–2 = Strongly disagree	+2 = Strongly agree	1.607	0.84
	20. People are free to criticize the government.	–2 = Strongly disagree	+2 = Strongly agree	1.199	1.18
	21. People choose their political leaders through fair elections.	–2 = Strongly disagree	+2 = Strongly agree	0.829	1.41
	22. The media are free to accurately report the news.	–2 = Strongly disagree	+2 = Strongly agree	1.140	1.11
Democracy (D)	1. How satisfied are you with the way democracy works in your country?	–2 = Not at all satisfied	+2 = Very satisfied	0.491	1.28
	2. In your opinion, how stable is democracy in your country?	–2 = Very fragile	+2 = Very stable	0.710	1.17

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Table 4. Survey items that measure ability, along with mean and standard deviations for Mali respondents.

Measure	Survey Item	Minimum	Maximum	Mean	SD
Essential Services (ES)	32. How would you rate water in your community?	–2 = Poor	+2 = Very good	0.002	1.42
	33. Do you think that water has improved, stayed the same, or gotten worse from a year ago?	–2 = Gotten worse	+2 = Improved	0.528	1.19
	34. How would you rate roads in your community?	–2 = Poor	+2 = Very good	–0.840	1.42
	35. Do you think that roads has improved, stayed the same, or gotten worse from a year ago?	–2 = Gotten worse	+2 = Improved	0.048	1.44
	36. How would you rate electricity in your community?	–2 = Poor	+2 = Very good	–0.703	1.52
	37. Do you think that electricity has improved, stayed the same, or gotten worse from a year ago?	–2 = Gotten worse	+2 = Improved	–0.046	1.37
	38. In your neighbourhood, how often do you have electricity?	–2 = Never	+2 = Always	–0.417	1.80
Education & Health Care (E&HC)	28. How would you rate education in your community?	–2 = Poor	+2 = Very good	–0.184	1.38
	29. Do you think that education has improved, stayed the same, or gotten worse from a year ago?	–2 = Gotten worse	+2 = Improved	0.471	1.30
	30. How would you rate health care in your community?	–2 = Poor	+2 = Very good	–0.102	1.37
	31. Do you think that health care has improved, stayed the same, or gotten worse from a year ago?	–2 = Gotten worse	+2 = Improved	0.704	1.25
Security Concerns (SC)	40. How much do economic problems in the country worry you?	–2 = A lot	+2 = Not at all	1.529	0.96
	41. How much does border security worry you?	–2 = A lot	+2 = Not at all	1.193	1.22
	42. How much does terrorist attacks in neighbouring countries worry you?	–2 = A lot	+2 = Not at all	0.859	1.44
	43. How much does the war in Iraq worry you?	–2 = A lot	+2 = Not at all	0.482	1.51
	44. How much does the Palestinian/Israeli crisis worry you?	–2 = A lot	+2 = Not at all	0.526	1.52
	45. How much does the conflict in Afghanistan worry you?	–2 = A lot	+2 = Not at all	0.377	1.53

Table 5. Guttman's λ_6 values for Tables 2-4 and related factors for all countries. Shaded cells indicate factors that are not relevant for the associated country.

Measure	Nigeria	Senegal	Mali	Burkina Faso
Trust in Government			0.70	0.61
Trust in Government Agencies	0.77	0.66		
Trust in Policy Makers	0.78	0.63		
Trustor Propensity	0.78	0.66	0.71	0.63
Free & Fair Society	0.78	0.67	0.71	0.63
Democracy	0.77	0.66	0.72	0.62
Essential Services	0.77	0.64	0.72	
Essential Services, current				0.63
Essential Services, changes in				0.66
Electricity	0.78	0.64		
Roads	0.77	0.64		
Education & Health Care			0.72	
Security Concerns	0.78	0.62	0.74	0.64
Economics & eth. relations/borders	0.79			0.65
Terrorism Concerns				0.64

C.   ANALYSES

We evaluated Mayer et al.'s Integrative Model of Organizational Trust (Figure 1) for explaining citizens' trust in government by fitting structural equation models (SEMs via the R **lavaan** package (Rosseel, 2012) using standard maximum likelihood estimation, with robust standard errors and a Satorra-Bentler scaled test statistic. Before doing so, we assessed the joint significance of the ability, integrity, benevolence, and trustor propensity measures in Tables 2-4 and Appendix B with the trust in government measure(s) for the four countries via "Baseline" multiple regression models (see Kulzy, 2012). These models are similar in approach to those that Kim (2010), Vigoda-Gadot (2006), and Christensen and Laegreid (2005) used for modelling trust in government.

We then evaluated the form of the Mayer et al. model in two ways. First, we assessed whether trust in government is better modelled directly as a function of the measures from Tables 3 and 4 (and those in Appendix B for the other countries) expressed as first order factors, or whether these first order factors are more appropriately aggregated

into second order factors representing ability, integrity, and benevolence.[2] The latter would be more consistent with the Mayer et al. model of Figure 1. Second, we also assessed whether there might be additional significant predictors of trust in government that are not captured by the ability, integrity, and benevolence terms in the Mayer et al. model. For example, our survey also contains items about foreign assistance (Table 6), as well as items soliciting respondent opinions of other countries (Table 7), that coalesce into one or more factors. Testing whether these "non-Mayer" measures are significant in the models helped us assess whether the Integrative Model of Organizational Trust might require additional terms to best model trust in government.

Thus, using the Mali measures to illustrate, we fit the "Baseline" multiple regression model shown in the path diagram of Figure 2. Per convention, the squares denote observed variables (in the form of responses to survey questions), the circles are latent variables (originally derived via exploratory factor analysis), and the arrows denote paths (see the Results section for significance tests). In the Baseline model, all of the factors directly affect the trust in government variable additively. To simplify this and subsequent path diagram displays, we suppress the measurement error and disturbance terms, as well as labeling the paths with their associated parameters.

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[2] Here we are using the terminology of Rosseel (2012) and Hair et al. (2009), where first order factors are those factors that are measured directly via survey items, while second order factors are functions of the first order factors. Rosseel (20012, p. 6) describes the second order factors as comprising the structural part of the model while the first order factors comprise the measurement part of the model.

Table 6. Survey items that measure foreign assistance, along with mean and standard deviations for Mali respondents.

Measure	Survey Item	Minimum	Maximum	Mean	SD
Foreign Assistance (FA)	*How much do you think that foreign countries [READ NEXT ITEM] in [SURVEY COUNTRY]?*				
	48. Helps the military	–2 = Not at all	+2 = A lot	0.813	1.27
	49. Improves public health	–2 = Not at all	+2 = A lot	0.529	1.28
	50. Strengthens the education sector	–2 = Not at all	+2 = A lot	0.355	1.30
	51. Prevents terrorist attacks	–2 = Not at all	+2 = A lot	0.464	1.33
	52. Helps reduce corruption	–2 = Not at all	+2 = A lot	–0.212	1.32
	53. Helps develop the economy though investment	–2 = Not at all	+2 = A lot	0.474	1.30
	54. Provides humanitarian aid	–2 = Not at all	+2 = A lot	0.637	1.32
	55. Builds roads, bridges, and buildings	–2 = Not at all	+2 = A lot	–0.408	1.37

Table 7. Items that measure respondent's opinions of other countries.

Measure	Survey Item	Minimum	Maximum	Mean	SD
International Opinions (IO)	*Overall, do you have a very favourable, somewhat favourable, somewhat unfavourable, or very unfavourable option of the [READ COUNTRY]?*				
	56. United Kingdom	–2 = Very unfavorable	+2 = Very favorable	0.346	1.20
	57. France	–2 = Very unfavorable	+2 = Very favorable	0.695	1.21
	58. United States	–2 = Very unfavorable	+2 = Very favorable	1.122	1.02
	59. China	–2 = Very favorable	+2 = Very unfavorable	1.512	0.84
	60. Iran	–2 = Very favorable	+2 = Very unfavorable	0.319	1.23
	61. Saudi Arabia	–2 = Very favorable	+2 = Very unfavorable	1.152	1.03
	62. Libya	–2 = Very favorable	+2 = Very unfavorable	1.324	0.91
	63. Niger	–2 = Very unfavorable	+2 = Very favorable	0.455	1.23
	64. South Africa	–2 = Very unfavorable	+2 = Very favorable	0.600	1.17
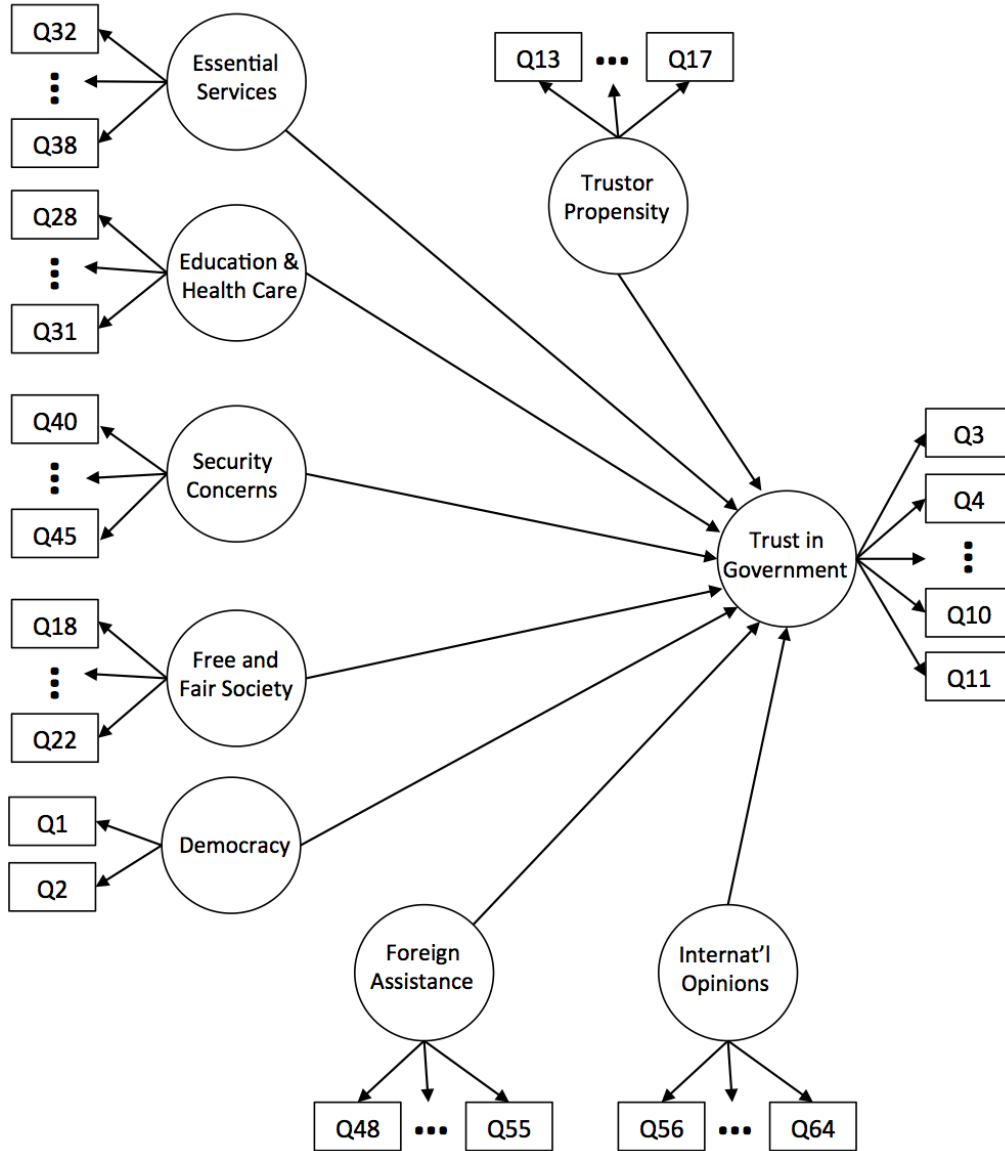
Figure 2. "Baseline" model formulation for Mali. Squares denote observed variables (in the form of responses to survey questions), circles are latent variables (derived via exploratory factor analysis), and the arrows denote the paths. For display simplicity, only two "non-Mayer" terms (FA: foreign assistance, and IO: International Opinions) are shown, though there were various additional terms that varied by country.

We then compare the Baseline model in Figure 2 to two alternatives. First, we have a model in Figure 3 similar to the Baseline model, except that Trustor Propensity also acts as a mediating variable for all the other variables in the model. We refer to this as the "First Order SEM" model formulation, a name that follows from the fact that the model only contains first order factors. Second, in Figure 4, we have the "Second Order SEM"

model formulation, where this name follows because the model contains both first and second order factors. For this model, note that the second order factors comprising the structural part of the model correspond directly to the Mayer et al. model ability and integrity/benevolence constructs of Figure 1, as well as a third "non-Mayer" construct.
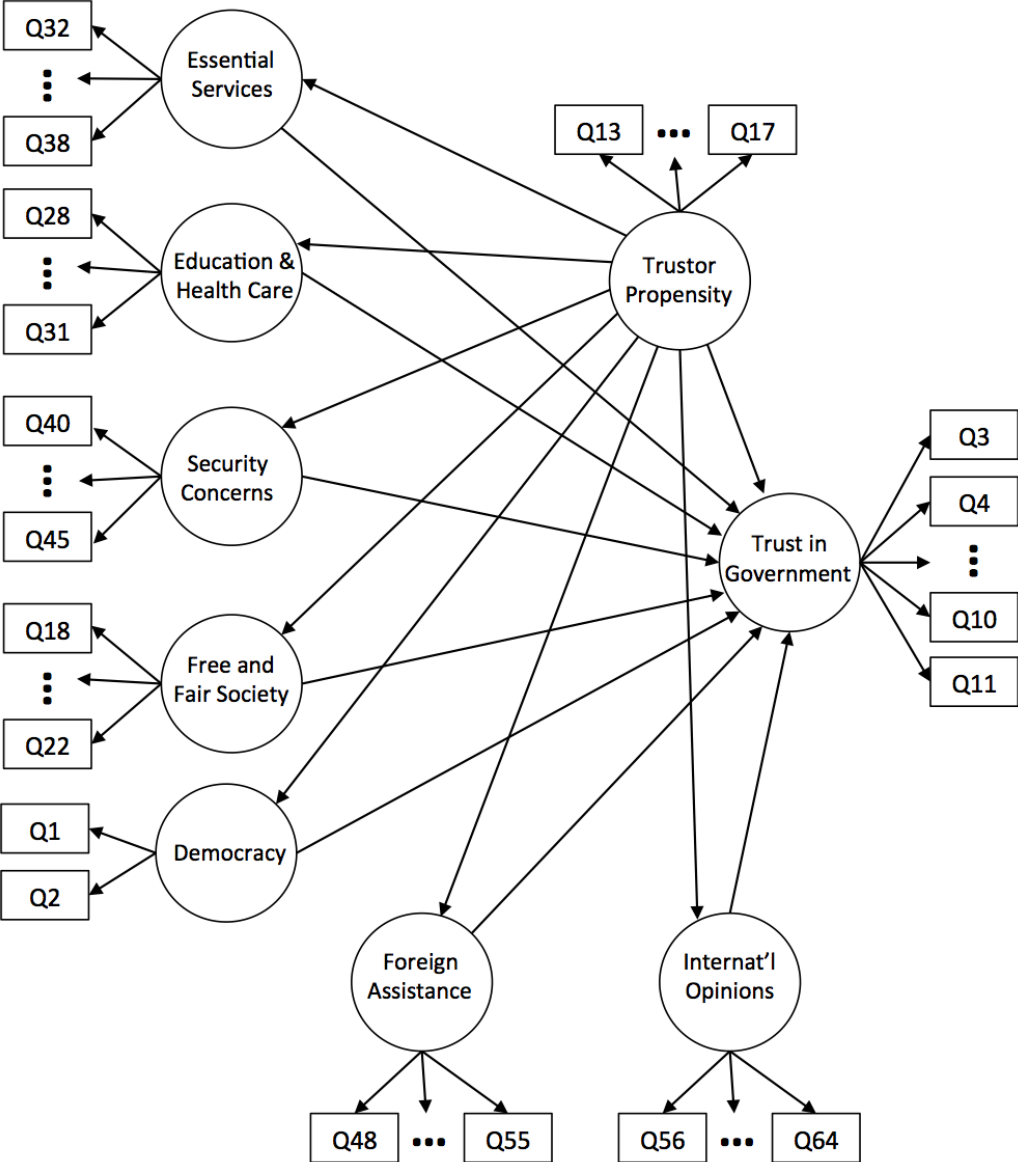
Figure 3. "First Order SEM" model formulation for Mali, with trustor propensity acting as a moderator variable on the other model variables.
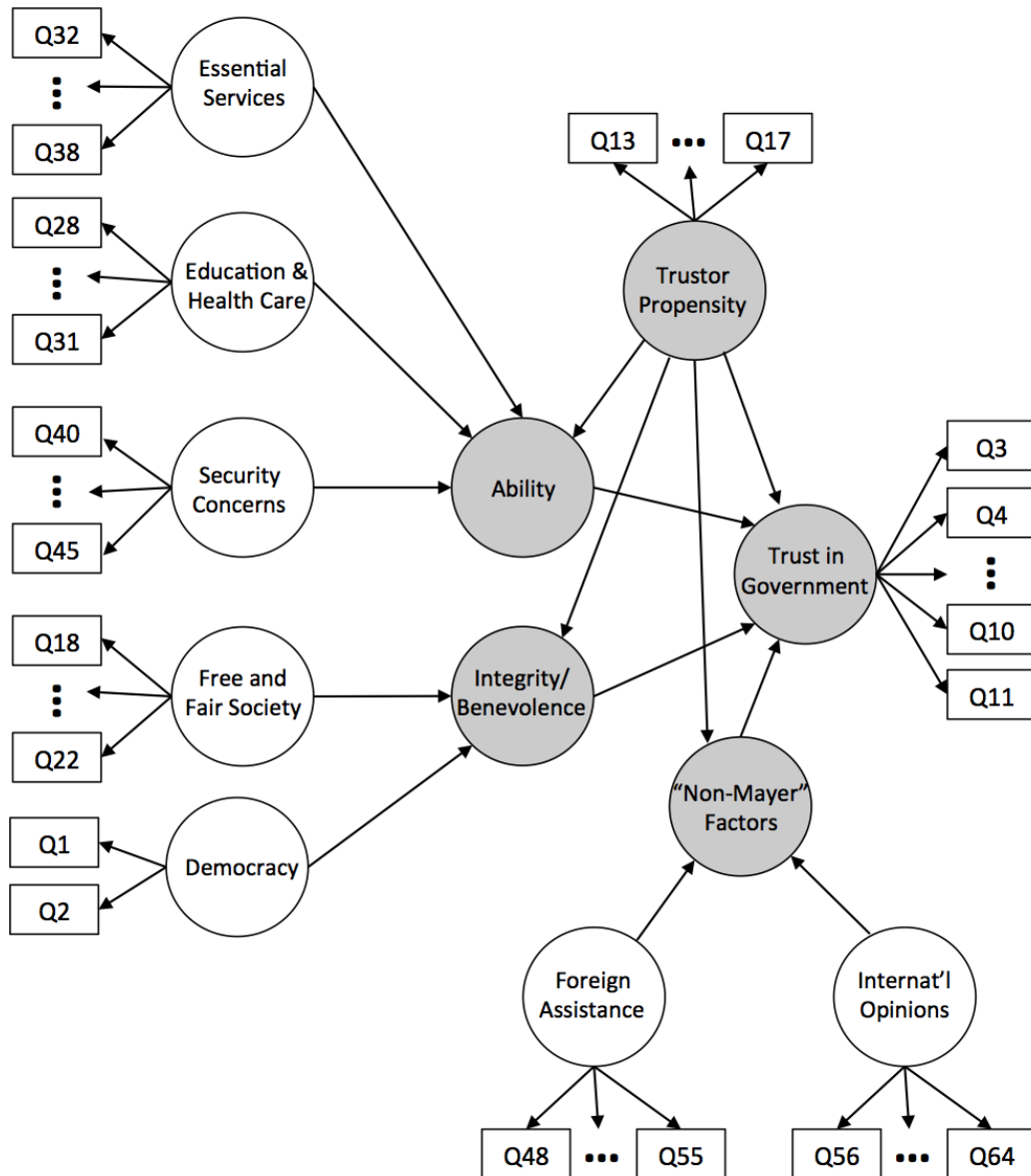
Figure 4. "Second Order SEM" model formulation for Mali, with second order factors for ability and integrity/benevolence, per Mayer et al.'s (1995) Integrative Model of Organizational Trust, as well as other "non-Mayer" terms. The grey circles are those factors that directly affect trust in government (and the trust in government term itself).

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V. RESULTS

Our analysis shows that Second Order SEMs are preferred to First Order SEMs and the Baseline models. When comparing model fits by country, this preference manifests itself in two ways. First, as shown in Table 8, the fraction of trust in government variance explained (R^2) is higher, generally by quite a bit, for the Second Order SEMs compared to the other model formulations.

Table 8. Fraction of trust in government variance explained (R^2 values) for the Baseline, First, and Second Order SEMs by country.

|	Burkina Faso	Mali	Nigeria	Senegal
Baseline Model	0.430	0.340	0.330	0.230
First Order SEM	0.345	0.390	0.577	0.228
Second Order SEM	0.512	0.685	0.788	0.270

Second, Table 9 summarizes the key modelling results where, for the purposes of display clarity, we have left out the estimated model parameter values and simply display the significance (or lack thereof) of each of the parameters. (See Tables C-1 to C-4 in Appendix C for detailed model results, including *p*-values.)

Table 9. Statistical significance of the paths between the grey factors in the Second Order SEM of Figure 4.

	Burkina Faso	Mali	Nigeria	Senegal
Trust in Government				
Ability	***	***	***	**
Integrity/Benevolence	***	***	***	*
Trustor Propensity	***	*		
Other "Non-Mayer" Terms		**	***	
Ability				
Trustor Propensity	***	***	***	
Integrity/Benevolence				
Trustor Propensity	***	***	***	
Other "Non-Mayer" Terms				
Trustor Propensity		***	***	

$* \, p < 0.05, \, ** \, p < 0.01, \, *** \, p < 0.001$

Table 9 shows that, broadly speaking, the Mayer et al. model formulation is appropriate across all four countries in the sense that virtually all of the terms posited by

Mayer et al. are statistically significant. The only deviations from their theory is that trustor propensity is not significant in predicting trust in government in Nigeria and it does not significantly predict any of the terms in the Senegal model. Also, Mali and Nigeria have significant "non-Mayer" terms that both are predictive of trust in government and that are often predicted by trustor propensity.

In terms of model fit, the chi-square tests for all four Second Order SEM models are significant, though given the survey sample sizes for each country this is expected (c.f. Table 12-4 of Hair et al., 2009, as well as the discussion in Chapter 13 of Hoyle, 2012). As Table 8 shows, for three of the four countries, the models explain from half to three-quarters of the variation in the trust in government outcome measure. The comparative fit index (CFI) is between 0.67 and 0.83 for all four countries (with very similar Tucker-Lewis indices) and the root mean square error of approximation (RMSEA) is between 0.057 and 0.072 for all four countries. These are indicative of an adequate model fit; but, as we will discuss in the next section, also suggestive that model improvements are possible.

Returning to our hypotheses, we find that our results support two of the three. Specifically, for Hypothesis #1, our results show that the Integrative Model of Organizational Trust is an appropriate framework for understanding and modelling citizen trust in government, at least for the four countries in our analysis. We reach this conclusion based on the fact that our SEM results are consistent with the Mayer et al. model for all four countries we evaluated.

For Hypothesis #2, we find that the constructs of the ability, integrity, and benevolence factors in the Integrative Model of Organizational Trust are country-specific. What Table 9 does not show, but that is evident from Appendices B and C, is that the first order factors that define ability and integrity/benevolence are uniquely specified for each country. For example, ability in Mali consists of effective education systems and health care infrastructure and attracting foreign aid and investment, while in Burkina Faso ability is much more broadly defined. This suggests that, while ability, integrity and benevolence are indeed predictive of trust in government following the Mayer et al. model, just what constitutes ability, integrity, and benevolence is country-specific.

For Hypothesis #3, we were unable to find separate benevolence and integrity trustworthiness factors, each with a unique impact on trust. This may be because integrity and benevolence do not uniquely contribute to trust, as found in Jarvenpaa et al. (1998), and Mayer and Gavin (2005), but it could just as well be due to some weakness in our survey items and measures. Hence, we are unable to reach a definitive conclusion for this hypothesis.

A. DISCUSSION

Our results are consistent with previous research. For example, Safadi and Lombe (2011), Kim (2010), Vigoda-Gadot (2006), Christensen and Laegreid (2005), and Marlowe (2004) all find that governmental ability to provide social services, in one form or another, is associated with increased trust in government. In terms of our integrity/benevolence construct, Christensen and Laegreid (2005) find, as we do, that "trust in government generally increases according to the level of satisfaction with democracy" (p. 500). Marlowe (2004) also finds a positive association between perceptions of a democratic system and the trustworthiness of public administrators. Vigoda-Gadot (2006) finds that ethics, as measured in terms of the perceived integrity of civil servants, is a good predictor of trust in governance. Finally, just as we find similarities and differences by country in terms of the specific ability and integrity/benevolence components, Kim (2010) finds that "there are similarities and differences in the factors affecting public trust in Japan and South Korea" (p. 807).

However, our fundamental supposition is that our results support Mayer et al.'s (1995) model. This is in spite of the fact that the original model was posed as a model of trust between individuals and we have applied it to individuals' trust in an organizational-level entity: government. In particular, we found that models with second order latent variables representing ability, benevolence/integrity, and a third "non-Mayer" term generally fit better models than other model formulations. With the exception of Senegal, the resulting models explained from just over half to three-quarters of the variation in respondent trust in government. This is substantial for a social science model, though it also suggests improvements are possible, particularly with respect to better understanding of the "non-Mayer" term or terms.

Hence, we posit some modifications to the Mayer et al. model for modelling trust in government, both in terms of potential additional factors, and a further delineation of what it means for a government to demonstrate ability, benevolence, and integrity. We illustrate these ideas in what we call the Integrative Model of Governmental Trust (Figure 5), where to begin we hypothesize that governmental ability has two main facets. The first facet is *internal ability*, defined as those skills and competencies necessary to provide domestic services desired by citizens, such as essential infrastructure, effectively managing the country's economy, providing for individual safety and security, etc. The second facet is *external ability*, defined as those skills and competencies necessary for governing the country within the international community, such as maintaining a national security apparatus, attracting external aid as necessary, etc.
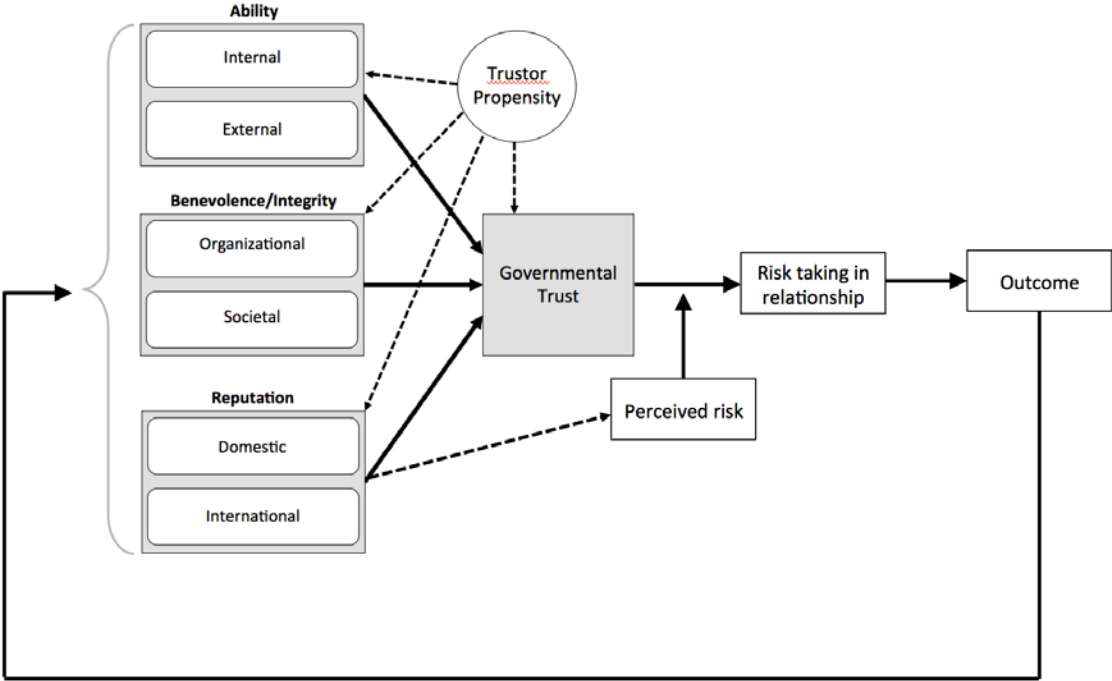
Figure 5. Integrative Model of Governmental Trust.

Similarly, we hypothesize that governmental benevolence/integrity also has two main facets. The first facet is *organizational benevolence/integrity*, which is defined as the extent to which the government adheres to a set of acceptable principles and is operated in a manner that is good for the country. For example, the government operates according to democratic principles; it functions in an open and transparent manner; etc. The second

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facet is *societal benevolence/integrity*, which is defined as the extent to which the government promotes and advances societal conditions and principles that are good for and desired by the citizenry. For example, the government promotes a society that is free and fair, peaceful and tolerant, etc.

In addition, our results suggest that there may be a third factor or set of factors that affect governmental trust. Unfortunately, there were not enough significant variables in our model to fully define it or them, but we hypothesize that they are related to governmental reputation. As with ability and benevolence/integrity, we posit that there may be two facets to governmental reputation. The first facet is the government's *international reputation*, which is defined as the estimation in which the country and its government is held by the international community, including other countries and governments and the people of other countries. For example, it is the perception of whether the government conducts effective international relations, the country's status among the world's nations, etc. The second facet is the government's *domestic reputation*, which is defined as the estimation in which the country's citizenry holds the government. This is a reputation for effective governance, as opposed to, for example, whether or not it is actually effective. Whether this facet can be measured separately from ability and benevolence/integrity is an open question.

The role of reputation in trust in government is potentially an important one because it is likely that most citizens have limited personal interaction with their government. That is, unlike in the Mayer et al. interpersonal model in which individuals are likely to have multiple opportunities to iterate around the loop shown in Figure 1 and develop trust as a result of direct, repeated interaction, most citizens will likely have much less such interaction with their government. Because of this, we expect that individuals will likely base at least some of their trust in government on the government's reputation, as determined via mass media, interaction with family, friends, and colleagues, etc. Furthermore, there are likely to be aspects of ability, benevolence, and integrity that certain citizens are simply unable to observe or experience. In these cases, the only assessment that an individual will be able to make, both of how much to trust the government and how much risk is inherent in some action, may be mainly based on reputation.

This additional reputation component of trustworthiness is consistent with some of the popular business management literature. For example, Covey and Merrill (2006) say that trust is based on four "cores": integrity, intent, capabilities, and results. The first three map directly to Mayer et al.'s integrity, benevolence, and ability components of trustworthiness. For the fourth, their "results core," Covey and Merrill say it "refers to our track record, our performance, our getting the right things done. . . . when we achieve the results we promised, we establish a positive reputation of performing . . . and our reputation precedes us" (p. 55). They go on to say that "Results are the fruits—the visible, tangible, measurable outcomes that are most easily seen and evaluated by others" (p. 56). In this regard, the reputation component in Figure 3 differs slightly, as reputation is the result of both directly observable outcomes and unobserved or unobservable outcomes. The latter aspect is important because unobserved outcomes may be correct, actual outcomes, say as related via a responsible news medium, and they may also be incorrect, untrue or distorted outcomes, perhaps reported in other types of mass or social media, or that are spread via rumour, etc. Reputation is also a function of the trustor's viewpoint and disposition.

Of course, reputation may not be the only non-Mayer trustworthiness construct in the Integrative Model of Governmental Trust. Van Ryzin (2011) finds that institutional trust depends on process as much as outcome. To the extent that Van Ryzin's process construct captures citizen's observations that the government is ethical and fair, it could be a particular dimension of the Mayer et al. benevolence/integrity construct. If it is based more on perception than observation, however, then it may also be a part of the hypothesized reputation trustworthiness construct. Moreover, if it is simply that the process in and of itself is important, then it may be that it is an entirely separate construct. Vigoda-Gadot (2006) finds that trust in government is a function of satisfaction with services, ethics, and organizational politics. The first two can be mapped onto the Mayer ability and integrity/benevolence trustworthiness constructs. The third, organizational politics, is described by Vigoda-Gadot as "unethical or even immoral or corrupt behaviour" (p. 287) and as such it is a specific dimension within the Mayer integrity/benevolence construct. However, to the extent that governmental trust depends on the alignment of the individual's political views with the government's, there may be a different organizational politics construct that captures this alignment or misalignment as a separate non-Mayer

construct. This definition of organizational politics is similar to some of the items in Christensen and Laegreid's (2005) political factors construct.

B. LIMITATIONS OF CURRENT RESEARCH

There are two limitations of the current research. First, as noted earlier in this manuscript, the Mayer et al. definition of trust states, in essence, that Person A trusts Person B when he or she is willing to be vulnerable to the actions of Person B. However, the items used to measure trust in the current survey do not explicitly examine a person's willingness to be vulnerable to their government. Instead, the items included are more standard "do you trust person X" items. It is important for future research to include items that tap the "willingness to be vulnerable" element of Mayer et al.'s model, as well as the more standard trust items included in the current survey.

That said, the items used in this research are consistent with previous research that assessed trust in government using survey items that asked respondents to directly rate their trust. For example, "Please indicate to what extent you trust the following institutions [the central government, the local government] to operate in the best interests of society" (Kim, 2010); "Below are the names of various institutions, such as the police, the cabinet, the civil service etc. How much trust do you have in each of these institutions?" (Christensen & Laegreid, 2005); and, "Most civil servants can be trusted to do what is best for the country" (Van Ryzin, 2011). Research by Safadi and Lombe (2011), Van de Walle (2007), Vigoda-Gadot (2006), Rahn and Rudolph (2005), Marlowe (2004), and Chanley, Rudolph, and Rahn (2000) are also based on similar items.

Second, the current survey included only one item that explicitly examined the Mayer concept of "benevolence." Future research should aim to more thoroughly examine this construct. Clearly, any government benevolence construct will probably be multifaceted—future work should attempt to examine methods in which governments can demonstrate benevolence to their citizenry—and whether citizens perceive those methods as benevolent. Benevolence undoubtedly looks different in different nations with different forms of government. The manner in which a democracy demonstrates benevolence might be by passing laws desired by the populace, while a dictatorship might demonstrate benevolence by unilaterally increasing spending on similarly desired projects. Regardless

of the mechanism by which benevolence is demonstrated, the question is: do citizens perceive their government as benevolent?

VI.   CONCLUSIONS

Returning to our model results, our empirical work suggests that the Mayer et al. model is an extremely helpful organizational framework for understanding and predicting citizens' trust in government. Of course, citizens of different countries have specific local concerns and needs that impact their trust ratings. The important point here, however, is that the Mayer et al. model is robust to capturing these nuances. In particular, when thinking about trust, we find that just within our four countries some separate trust in their individual leaders from trust in broader governmental institutions, while others do not distinguish between the two. Similarly, while this research confirms that Mayer et al.'s categories of ability, benevolence, and integrity are relevant and applicable, it also shows that each of these is a country-specific construct composed of those things that each citizenry judges relevant and important to its society.

In some sense, this brings us full-circle back to Combs and Blincoe's (2013) assertion that "ability varies from domain to domain and situation to situation," although what we find with trust in government is that the definitions of ability, benevolence, and integrity vary from country to country. This finding thus suggests a series of future research opportunities. One important line of research is further defining survey items from which to derive robust measures of the various aspects of ability, benevolence, integrity, and reputation. Another line of research is further evaluating whether or not reputation is an important aspect of the model and, if so, whether that is the correct characterization of the term. Then, given these results, political scientists, organizational theorists, and international relations experts will likely be interested in comparing and contrasting trust in government models across various countries, societies, and governmental structures.

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APPENDIX A: A BRIEF SUMMARY OF THE COUNTRIES IN THIS STUDY

To put the factor analytic and modelling results in perspective, this appendix provides a brief summary of the history, geography, and culture of each country in the study.

SENEGAL

Senegal is a former French colony that gained its independence from France in 1960. It is a constitutional republic whose civil law system is derived from French law. Senegal's population is approximately 13 million and its citizenry is more than 90% Muslim. The capital, Dakar, is the westernmost point in Africa, and the country is roughly the size of South Dakota.

Senegal is considered one of the most Westernized countries of Africa and, with the country located along historical trading routes, the Senegalese people have thrived throughout their history. Indeed, because of their tenacious nature and focus on business, the Senegalese are often referred to as "the New Yorkers of Africa with a French accent" (Richmond & Gestrin, 2010). While its political system has not always been free of scandals, Senegal has never had a coup, a fate that has befallen many other African countries. Senegal places great pride in being a stable, democratic country and it has had successful, peaceful transitions of power in 2000 and again in 2012, after a very contested election.

NIGERIA

As a former British colony, Nigeria gained its independence in 1960. It is a federal republic with a mixed legal system derived from English common law, Islamic law in the northern states, and traditional law. Nigeria's population exceeds 150 million and its citizenry is approximately 50% Muslim, 40% Christian, and 10% other religions. Lagos is the largest city in Nigeria, with a population of over 11 million, and the country is roughly the combined size of California and Nevada.

Nigeria is a country rich in resources, with strong relationships with the United States, China, and Europe, and with an infrastructure that has been developed at

levels far superior to other African countries in the region. However, Nigeria's rampant poverty, internal government strife, bloody coups and assassinations, and flawed elections have impeded the country's development. Indeed, the wealth of resources has created a vicious circle where, with no sense of nationality, corruption in Nigeria has actually restricted growth (Rabasa, Boraz, Chalk, Cragin, & Karasik, 2007).

BURKINA FASO

Like Senegal, Burkina Faso is a former French colony that gained its independence in 1960. It is a parliamentary republic whose civil law system is derived from French law and customary law. Burkina's population is about 17 million and is roughly the size of Nevada. It is located about half way between Senegal and Nigeria in the Sahel region of Africa. The religious make-up of its citizenry is approximately 60% Muslim, 25% Christian, and 15% other.

Burkina Faso has had a tumultuous history, with repeated military coups in the 1970s and 1980s, and it is currently one of the poorest of the countries in the Sahel, and hence it is among the poorest in the world. However, with exports of cotton and gold, and as the first African country to receive World Bank/IMF funding and debt relief, it is beginning to show signs of economic improvement (World Bank, 2014). Burkina Faso is one of four countries in Africa that recognize the sovereignty of Taiwan. As one would expect, this point of fact remains controversial with China and, as a result, relations have been terminated between the two countries and economic advancement has subsequently suffered.

MALI

Also a former French colony that gained its independence in 1960, Mali's population is estimated to be slightly more than 15 million and the country is roughly twice the size of Texas. Mali has a republican form of government whose civil law system is based on French law and customary law. The southern part of Mali is located between Senegal and Burkina Faso in the Sahel region, while the northern part of the country extends well into the Sahara desert. The country is almost 95% Muslim.

Mali has had a slow start since it became an independent country. Landlocked, it is considered one of the poorest countries in the world, and it was not until the early 1990s

that Mali began to enjoy a free society governed by freely elected officials. After the collection of our data, however, Mali had a coup in which their army, displeased with the government's management of a Tuareg rebellion, overthrew the elected president in March 2012. Subsequently, the situation in northern Mali deteriorated to the extent that extremist forces established a foothold in the region and then expanded their presence throughout the northern half of the country. With French military assistance, the northern part of the country was retaken and presidential elections were held in mid-2013. Security challenges remain in the northern part of the country, however, and, as of this writing, controversy surrounds some late 2013 parliamentary elections (Diarra, 2014).

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APPENDIX B: EXPLORATORY FACTOR ANALYSIS
DETAILED RESULTS

Table B-1 shows derived measures that capture the notion of trust in government generated from (up to) 12 survey items.[3] Burkina Faso and Mali have one factor that captures trust in all of the government. For Nigeria and Senegal, the questions coalesce into two separate factors: trust in policy makers and trust in government agencies.

Table B-1. Trust in government factors for Nigeria, Senegal, Mali, and Burkina Faso. The boxes show the factor definitions in terms of their constituent questions and associated loadings.

Item	Government Trust Factors & Loadings			
	Nigeria	Senegal	Mali	Burkina Faso
Q1: How satisfied are you with the way democracy works in your country today?				0.49
Q2: In your opinion, how stable is democracy in your country?				0.53
Q3: How much trust do you have in President [NAME]?	0.85	0.90	0.72	0.81
Q4: To what extent do you approve of President [NAME]'s overall performance?	0.47	0.74	0.57	0.67
Q5: How much trust do you have in Prime Minister [NAME]?	0.53	0.85	0.77	0.80
Q6: How much trust do you have in your National Assembly?	0.62	0.66	0.73	0.83
Q7: How much trust do you have in your political parties?	0.68		0.56	0.78
Q8: How much trust do you have in your armed forces?	0.55	0.55	0.45	0.72
Q9: How much trust do you have in your local police?	0.54	0.60	0.56	0.76
Q10: How much trust do you have in your local government?	0.60	0.44	0.63	0.81
Q11: How much trust do you have in your courts and judges?	0.56	0.44	0.47	0.79
Q12: How much trust do you have in your religious leaders?				0.66

(Nigeria Q3–Q5: Trust in Policy Makers; Q6–Q11: Trust in Government Agencies. Senegal Q3–Q6: Trust in Policy Makers; Q8–Q11: Trust in Government Agencies. Mali Q3–Q11: Trust in Government. Burkina Faso Q1–Q12: Trust in Government.)

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[3] The numbers in the table are the loadings that correspond to each of the questions on the left and the boxes show how the factors are defined in terms of the questions and associated loadings (where small loadings are suppressed for reading clarity).

Table B-2 shows what we consider to be a reasonable approximation of Mayer et al.'s, trustor propensity factor for all four countries. The similarity in the factor definitions across all four countries is striking. Not only are they constructed of the same questions, but the factor loadings are quite similar; this, in spite of the fact that the surveys and subsequent factor analyses were conducted completely independently. These results suggest that the trustor propensity construct is robust.

Table B-2. Trustor propensity factors for Nigeria, Senegal, Mali, and Burkina Faso. The boxes show the factor definitions in terms of their constituent questions and associated loadings.

Item	Trust Propensity Factors & Loadings			
	Nigeria	Senegal	Mali	Burkina Faso
Q13: How much do you trust your relatives?	0.64	0.45	0.55	0.55
Q14: How much do you trust people from your ethnic group?	0.83	0.68	0.79	0.77
Q15: How much do you trust people who share your religion?	0.69	0.57	0.72	0.75
Q16: How much do you trust people from other ethnic groups?	0.74	0.73	0.59	0.83
Q17: How much do you trust people who practice a different religion?	0.61	0.54	0.44	0.81

Table B-3 shows a series of factors that appear to capture, at least roughly, the integrity/benevolence concepts described by Mayer et al. For example, we would expect any integrity factor to include items regarding government adherence to laws. The factors in Table B-3 clearly support this notion (though they also clearly vary by country). Similarly, we would expect any benevolence factor to provide some indication of a perception that a government cares about the people. These factors seem to bear this out. One important point to emphasize is, as noted in the main text, that there is some debate in the literature regarding the exact nature of the integrity and benevolence constructs, with some suggesting that the two might not be so distinct. The factors in Table B-3 seem to support the notion that there is probably some blurring of the constructs.

Table B-3. Integrity/benevolence factors for Nigeria, Senegal, Mali, and Burkina Faso. The boxes show the factor definitions in terms of their constituent questions and associated loadings.
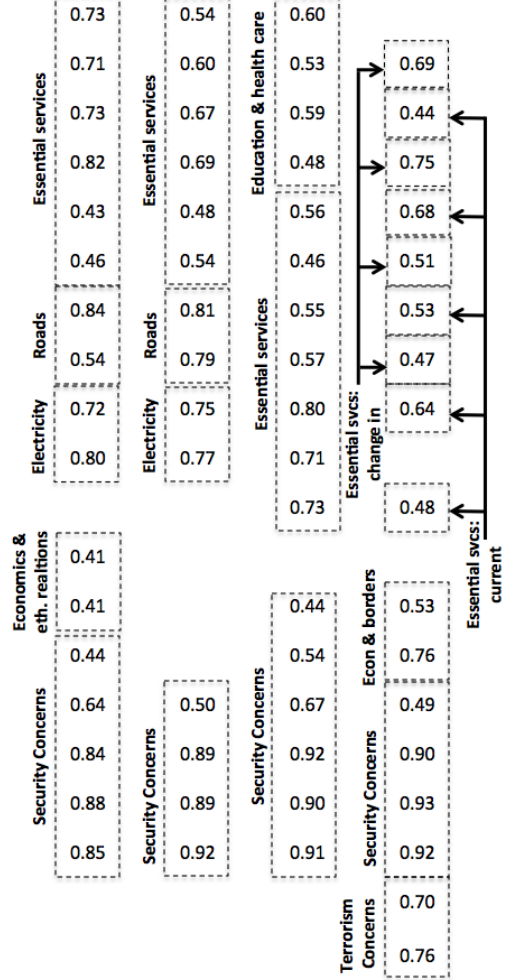
Item	Integrity/Benevolence Factors & Loadings			
	Nigeria	**Senegal**	**Mali**	**Burkina Faso**
Q18: How much do you agree or disagree with the statement, "People of all religions are free to practice their faith"?	0.49		0.67	
Q19: How much do you agree or disagree with the statement, "People are free to join any organization they want"?	0.55		0.64	
Q20: How much do you agree or disagree with the statement, "People are free to criticize the government"?	0.58		0.53	0.58
Q21: How much do you agree or disagree with the statement, "People choose their political leaders through fair elections"?	0.66	0.65	0.46	0.62
Q22: How much do you agree or disagree with the statement, "The media are free to accurately report the news"?	0.75	0.69	0.52	0.68
Q23: How much do you agree or disagree with the statement, "The courts treat everyone equally under the law"?	0.57	0.46		0.61
Q1: How satisfied are you with the way democracy works in your country today?	0.51	0.65	0.83	**
Q2: In your opinion, how stable is democracy in your country?	0.54	0.68	0.80	**
Q24: How confident are you that the government will oversee a fair and transparent presidential election? (*Nigeria only*)	0.79	n/a	n/a	n/a
Q25: On the whole, how confident are you that the presidential elections next year will be free and fair? (*Nigeria only*)	0.76	n/a	n/a	n/a
Q26: In your experience, have relations between different ethnic groups in [SURVEY COUNTRY] improved, stayed the same, or worsened in the last five years?				0.73
Q27: In your experience have relations between different religious communities in [SURVEY COUNTRY] improved, stayed the same, or worsened in the last five years?				0.78

Factor labels (boxed): Nigeria — Free and Fair Society (Q18–Q23), Democracy (Q1, Q2, Q24, Q25); Senegal — Free and Fair Society (Q21–Q23), Democracy (Q1, Q2); Mali — Free and Fair Society (Q18–Q22), Democracy (Q1, Q2); Burkina Faso — Free and Fair Society (Q20–Q23), Community Relations (Q26, Q27).

** *Included in the Burkina Faso dependent variable*

Table B-4 shows the derived ability factors. As described by Mayer et al., we would expect any ability factor to have items related to government competence or ability to efficiently conduct the people's business. The factors in Table B-4 seem to mirror this concept.

Table B-4. Ability factors for Nigeria, Senegal, Mali, and Burkina Faso.

Item	Ability Factors & Loadings			
	Nigeria	Senegal	Mali	Burkina Faso
Q28: How would you rate education in your community?	0.73	0.54	0.60	
Q29: Do you think that education has improved, stayed the same, or gotten worse from a year ago?	0.71	0.60	0.53	0.69
Q30: How would you rate health care in your community?	0.73	0.67	0.59	0.44
Q31: Do you think that health care has improved, stayed the same, or gotten worse from a year ago?	0.82	0.69	0.48	0.75
Q32: How would you rate water in your community?	0.43	0.48	0.56	0.68
Q33: Do you think that water has improved, stayed the same, or gotten worse from a year ago?	0.46	0.54	0.46	0.51
Q34: How would you rate roads in your community?	0.84	0.81	0.55	0.53
Q35: Do you think that roads has improved, stayed the same, or gotten worse from a year ago?	0.54	0.79	0.57	0.47
Q36: How would you rate electricity in your community?	0.72	0.75	0.80	0.64
Q37: Do you think that electricity has improved, stayed the same, or gotten worse from a year ago?	0.80	0.77	0.71	
Q38: In your neighborhood, how often do you have electricity?			0.73	0.48
Q39: Have relations between different ethnic groups in your country improved, stayed the same, or worsened in the last five years?	0.41			
Q40: How much do economic problems in the country worry you?	0.41		0.44	0.53
Q41: How much does border security worry you?	0.44		0.54	0.76
Q42: How much does terrorist attacks in neighboring countries worry you?	0.64	0.50	0.67	0.49
Q43: How much does the war in Iraq worry you?	0.84	0.89	0.92	0.90
Q44: How much does the Palestinian/Israeli crisis worry you?	0.88	0.89	0.90	0.93
Q45: How much does the conflict in Afghanistan worry you?	0.85	0.92	0.91	0.92
Q46: Our government needs to work with American/European countries to combat terrorism.				0.70
Q47: Leaders in this country should speak out against terrorism.				0.76

Factor groupings (vertical labels):
- Nigeria: Essential services (Q28–Q33), Roads (Q34–Q35), Electricity (Q36–Q37); Economics & eth. realtions (Q39–Q40); Security Concerns (Q41–Q45)
- Senegal: Essential services (Q28–Q33), Roads (Q34–Q35), Electricity (Q36–Q37); Security Concerns (Q42–Q45)
- Mali: Education & health care (Q28–Q31), Essential services (Q32–Q38); Security Concerns (Q40–Q45)
- Burkina Faso: Essential svcs: change in (Q29–Q38); Essential svcs: current; Econ & borders (Q40–Q41); Security Concerns (Q42–Q45); Terrorism Concerns (Q46–Q47)

APPENDIX C: DETAILED MODEL RESULTS

Table C-1. Structural equation model results for Burkina Faso.

lavaan (0.5-15) converged normally after 148 iterations				
Number of observations				1418
Estimator				ML
Minimum Function Test Statistic				7465.804
Degrees of freedom				1210
P-value (Chi-square)				0.000
Parameter estimates:				
Information				Expected
Standard Errors				Standard
	Estimate	Std.err	Z-value	P(>|z|)
Latent variables:				
SC =~				
Q42	1.000			
Q43	1.650	0.069	23.882	0.000
Q44	1.667	0.069	24.018	0.000
Q45	1.711	0.071	24.064	0.000
ESF =~				
Q29	1.000			
Q31	1.169	0.063	18.566	0.000
Q35	0.949	0.058	16.251	0.000
Q33	0.902	0.054	16.774	0.000
TC =~				
Q46	1.000			
Q47	0.654	0.135	4.840	0.000
E&B =~				
Q40	1.000			
ESN =~				
Q38	1.000			
Q36	1.140	0.084	13.572	0.000
Q30	0.381	0.038	10.154	0.000
Q34	0.449	0.033	13.450	0.000
FFS =~				
Q20	1.000			
Q21	1.317	0.069	19.176	0.000
Q22	1.235	0.066	18.804	0.000
Q23	1.325	0.071	18.566	0.000
TP =~				
Q13	1.000			
Q14	1.884	0.089	21.204	0.000

Q15	2.272	0.101	22.502	0.000
Q16	1.861	0.089	20.941	0.000
Q17	2.206	0.099	22.252	0.000
FA =~				
Q48	1.000			
Q49	1.437	0.074	19.317	0.000
Q50	1.387	0.073	18.929	0.000
Q51	0.929	0.066	14.176	0.000
Q52	0.925	0.060	15.315	0.000
Q53	1.294	0.071	18.211	0.000
Q54	1.258	0.070	18.082	0.000
Q55	1.149	0.069	16.548	0.000
TiG =~				
Q1	1.000			
Q2	1.025	0.058	17.706	0.000
Q8	1.341	0.065	20.792	0.000
Q11	1.526	0.069	21.990	0.000
Q10	1.548	0.069	22.324	0.000
Q9	1.450	0.067	21.789	0.000
Q6	1.569	0.071	22.238	0.000
Q5	1.494	0.069	21.750	0.000
Q7	1.475	0.069	21.415	0.000
Q3	1.510	0.069	21.938	0.000
Q12	1.177	0.060	19.579	0.000
Q4	1.152	0.058	20.010	0.000
Ability =~				
SC	1.000			
ESF	1.706	0.491	3.475	0.001
TC	2.220	0.672	3.301	0.001
E&B	1.084	0.438	2.475	0.013
ESN	1.740	0.531	3.277	0.001
FA	1.829	0.505	3.620	0.000
Ben&Integ =~				
FFS	1.000			
Regressions:				
Ability ~				
TP	0.099	0.027	3.696	0.000
Ben&Integ ~				
TP	0.201	0.043	4.703	0.000
TiG ~				
TP	0.213	0.057	3.756	0.000
Ability	2.273	0.646	3.519	0.000
Ben&Integ	0.630	0.089	7.107	0.000

Table C-2. Structural equation model results for Mali.

lavaan (0.5-15) converged normally after 114 iterations				
Number of observations				1874
Estimator				ML
Minimum Function Test Statistic				19633.400
Degrees of freedom				2192
P-value (Chi-square)				0.000
Parameter estimates:				
Information				Expected
Standard Errors				Standard
	Estimate	Std.err	Z-value	P(>|z|)
Latent variables:				
SC =~				
Q42	1.000			
Q43	1.444	0.039	37.332	0.000
Q44	1.435	0.039	36.983	0.000
Q45	1.453	0.039	37.210	0.000
Q40	0.404	0.023	17.328	0.000
Q41	0.660	0.030	22.124	0.000
E&HC =~				
Q28	1.000			
Q30	1.218	0.059	20.619	0.000
Q29	0.836	0.047	17.934	0.000
Q31	0.885	0.046	19.275	0.000
ES =~				
Q32	1.000			
Q33	0.736	0.040	18.269	0.000
Q34	0.927	0.049	18.980	0.000
Q35	1.002	0.050	19.981	0.000
Q37	1.199	0.051	23.386	0.000
Q38	1.581	0.067	23.435	0.000
Q36	1.457	0.059	24.631	0.000
FFS =~				
Q20	1.000			
Q21	1.038	0.061	16.882	0.000
Q22	0.961	0.051	18.895	0.000
Q18	0.812	0.041	19.984	0.000
Q91	0.791	0.040	19.716	0.000
D =~				
Q1	1.000			
Q2	0.778	0.041	19.123	0.000
TP =~				
Q13	1.000			

Q14	2.163	0.103	21.056	0.000
Q15	2.467	0.126	19.586	0.000
Q16	1.824	0.090	20.288	0.000
Q17	2.226	0.127	17.532	0.000
FA =~				
Q58	1.000			
Q48	1.908	0.112	16.998	0.000
Q49	2.032	0.117	17.328	0.000
Q51	2.021	0.119	16.990	0.000
Q52	1.821	0.111	16.427	0.000
Q53	2.239	0.125	17.858	0.000
Q54	2.168	0.124	17.546	0.000
Q55	1.486	0.102	14.506	0.000
IO =~				
Q59	1.000			
Q57	0.636	0.037	17.045	0.000
Q60	1.072	0.041	26.069	0.000
Q56	0.885	0.038	23.268	0.000
Q61	0.614	0.032	19.245	0.000
Q64	0.785	0.037	21.486	0.000
TiG =~				
Q8	1.000			
Q11	1.337	0.089	14.990	0.000
Q10	1.566	0.088	17.731	0.000
Q9	1.472	0.088	16.774	0.000
Q5	1.940	0.099	19.504	0.000
Q7	1.532	0.091	16.763	0.000
Q3	1.583	0.081	19.488	0.000
Q4	1.096	0.061	17.959	0.000
Ability =~				
E&S	1.000			
E&HC	0.663	0.135	4.896	0.000
ES	-0.040	0.101	-0.392	0.695
FA	1.459	0.204	7.150	0.000
Ben&Integ =~				
FFS	1.000			
D	2.824	0.312	9.058	0.000
Non-Mayer =~				
IO	1.000			
Regressions:				
Ability ~				
TP	0.110	0.025	4.369	0.000
Ben&Integ ~				
TP	0.249	0.038	6.606	0.000
Non-Mayer ~				
TP	0.365	0.065	5.590	0.000

TiG ~				
TP	-0.185	0.081	-2.284	0.022
Ability	0.440	0.078	5.611	0.000
Ben&Integ	1.688	0.259	6.521	0.000
Non-Mayer	0.228	0.066	3.468	0.001

Table C-3. Structural equation model results for Nigeria.

lavaan (0.5-15) converged normally after 109 iterations				
Number of observations				3770
Estimator				ML
Minimum Function Test Statistic				29643.090
Degrees of freedom				2257
P-value (Chi-square)				0.000
Parameter estimates:				
Information				Expected
Standard Errors				Standard
	Estimate	Std.err	Z-value	P(>|z|)
Latent variables:				
SC =~				
Q41	1.000			
Q42	1.544	0.060	25.773	0.000
Q43	2.133	0.074	28.764	0.000
Q44	2.215	0.076	29.015	0.000
Q45	2.163	0.075	28.836	0.000
ES =~				
Q28	1.000			
Q30	0.977	0.018	54.061	0.000
Q32	0.789	0.019	41.194	0.000
Q33	0.709	0.020	34.994	0.000
Q29	0.948	0.020	47.918	0.000
Q31	0.867	0.019	44.938	0.000
R =~				
Q34	1.000			
Q35	0.846	0.023	36.973	0.000
E =~				
Q36	1.000			
Q37	0.795	0.028	27.973	0.000
E&ER =~				
Q40	1.000			
Q39	1.474	0.221	6.649	0.000
FFS =~				
Q20	1.000			
Q21	1.241	0.040	31.328	0.000
Q22	1.178	0.036	32.509	0.000
Q18	0.607	0.025	24.125	0.000
Q19	0.740	0.028	26.667	0.000
Q23	1.024	0.036	28.621	0.000
D =~				
Q1	1.000			

Q2	1.093	0.036	30.275	0.000
Q24	1.522	0.043	35.469	0.000
Q25	1.470	0.042	35.426	0.000
TP =~				
Q13	1.000			
Q14	1.579	0.039	40.999	0.000
Q15	1.489	0.039	38.617	0.000
Q16	1.328	0.036	36.745	0.000
Q17	1.257	0.038	32.847	0.000
FA =~				
Q48	1.000			
Q49	1.001	0.026	38.441	0.000
Q50	1.059	0.027	39.587	0.000
Q51	0.996	0.028	36.216	0.000
Q52	0.954	0.027	35.285	0.000
Q53	0.972	0.026	36.837	0.000
Q54	0.979	0.026	37.114	0.000
Q55	0.828	0.026	31.941	0.000
IO1 =~				
Q60	1.000			
Q63	0.853	0.032	26.977	0.000
Q62	1.236	0.036	33.980	0.000
Q61	1.232	0.038	32.323	0.000
Q64	0.748	0.030	25.265	0.000
IO2 =~				
Q57	1.000			
Q56	1.491	0.059	25.431	0.000
Q58	0.877	0.032	27.844	0.000
TiA =~				
Q8	1.000			
Q11	1.040	0.037	27.849	0.000
Q10	1.111	0.037	29.954	0.000
Q9	0.970	0.036	27.160	0.000
Q6	1.170	0.038	31.125	0.000
Q7	1.215	0.038	31.594	0.000
TiP =~				
Q5	1.000			
Q3	1.375	0.038	36.664	0.000
Q4	0.895	0.025	35.153	0.000
Ability =~				
SC	1.000			
ES	5.259	0.419	12.543	0.000
R	5.690	0.452	12.599	0.000
E	4.523	0.366	12.352	0.000
E&ER	0.879	0.123	7.157	0.000
FA	2.580	0.226	11.410	0.000

Ben&Integ =~				
FFS	1.000			
D	1.383	0.090	15.421	0.000
TiG =~				
TiA	1.000			
TiP	0.667	0.038	17.449	0.000
Non-Mayer =~				
IO1	1.000			
IO2	0.925	0.093	9.919	0.000
Regressions:				
Ability ~				
TP	0.064	0.007	9.101	0.000
Ben&Integ ~				
TP	0.188	0.016	11.389	0.000
Non-Mayer ~				
TP	0.196	0.021	9.245	0.000
TiG ~				
Ability	0.914	0.106	8.586	0.000
Ben&Integ	1.223	0.080	14.330	0.000
Non-Mayer	0.236	0.039	6.022	0.000

Table C-4. Structural equation model results for Senegal.

```
lavaan (0.5-15) converged normally after 265 iterations
  Number of observations                              1661
  Estimator                                             ML
  Minimum Function Test Statistic                 9716.000
  Degrees of freedom                                  1061
  P-value (Chi-square)                               0.000


Parameter estimates:
  Information                                     Expected
  Standard Errors                                 Standard
```

	Estimate	Std.err	Z-value	P(>|z|)
Latent variables:				
SC =~				
Q42	1.000			
Q43	1.599	0.062	25.924	0.000
Q44	1.537	0.059	25.939	0.000
Q45	1.674	0.063	26.380	0.000
ES =~				
Q28	1.000			
Q30	1.259	0.058	21.787	0.000
Q32	0.772	0.051	15.236	0.000
Q33	0.842	0.052	16.350	0.000
Q29	1.056	0.055	19.222	0.000
Q31	1.295	0.061	21.402	0.000
R =~				
Q34	1.000			
Q35	1.268	0.090	14.062	0.000
E =~				
Q38	1.000			
Q37	0.859	0.044	19.464	0.000
FFS =~				
Q21	1.000			
Q22	1.988	0.152	13.047	0.000
Q23	1.376	0.090	15.285	0.000
TP =~				
Q13	1.000			
Q14	3.029	0.206	14.694	0.000
Q15	4.953	0.324	15.289	0.000
Q16	2.129	0.156	13.629	0.000
Q17	4.244	0.300	14.162	0.000
D =~				
Q1	1.000			
Q2	0.931	0.056	16.595	0.000

TiG =~				
Q8	1.000			
Q11	1.628	0.151	10.751	0.000
Q10	1.631	0.151	10.827	0.000
Q9	1.017	0.117	8.698	0.000
Q5	3.587	0.266	13.468	0.000
Q3	3.902	0.288	13.545	0.000
Q4	2.825	0.215	13.170	0.000
Q6	2.899	0.224	12.948	0.000
Ability =~				
SC	1.000			
ES	4.539	1.141	3.977	0.015
R	5.365	1.348	3.980	0.018
E	3.643	0.943	3.862	0.014
Ben&Integ =~				
FFS	1.000			
D	22.782	11.939	1.908	0.056
Regressions:				
Ben&Integ ~				
TP	0.046	0.025	1.857	0.063
Trust ~				
Ability	0.998	0.271	3.685	0.000
Ben&Integ	3.990	1.831	2.180	0.029

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